

Northern Long-eared Bat Research Project
Eastern North Carolina
Summer 2017 Survey Phase IV
Northeast Section Report

TIP R-9999

WBS No. 34634.1.4

Prepared for



The North Carolina Department of Transportation
Environmental Analysis Unit
Biological Surveys Group
1598 Mail Service Center
Raleigh, NC 27699-1598
(919) 707-6000

December 2017

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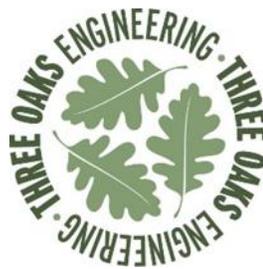
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December 2017

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1.0 PROJECT DESCRIPTION

The North Carolina Department of Transportation (NCDOT) contracted with Three Oaks Engineering (Three Oaks) to assist in conducting part of a research study of the federally Threatened northern long-eared bat (*Myotis septentrionalis*; NLEB) in eastern North Carolina. The objective of this summer study was to determine the distribution of NLEB in eastern North Carolina.

Three Oaks conducted mist-netting in six counties in the North Carolina coastal plain and in a seventh county in the Piedmont. NCDOT coordinated sampling locations with state and federal resource agencies to avoid duplicating efforts. All mist-netting locations addressed in this report were situated in north central or northeastern North Carolina. This report includes results of the Summer 2017 phase of the overall Eastern NC NLEB Programmatic Agreement research project. This research project was developed to occur over five years to collect data on the distribution, habitat characteristics, and behavior of NLEB in eastern NC. The 2017 summer surveys described in this report occurred from April to September.

The goal of the survey was to catch the target species, NLEB. Surveys were conducted within suitable summer roosting and foraging habitat for NLEB. All surveys were conducted by a qualified bat biologist with current US Fish and Wildlife Service (USFWS) and NC Wildlife Resources Commission (NCWRC) permits (Section 4.0 Investigator Qualifications).

2.0 METHODS

This section describes the methods used to perform habitat assessments and field surveys. Survey methodology followed procedures and protocols set forth by the NCDOT project scope and the Standardization for NLEB Research document provided by NCDOT (2016). All survey work was consistent with the protocols stipulated in the National White Nose Syndrome Decontamination Protocol (USFWS 2016a), North Carolina's White-nose Syndrome (WNS) Surveillance and Response Plan (NCWRC 2013), USFWS Guidance and Justification for Decontamination in North Carolina (USFWS 2016b), and the NCDOT WNS Decontamination Protocol (NCDOT 2014).

Surveys were conducted in the following counties:

1. Beaufort County
2. Caswell County
3. Edgecombe County
4. Hertford County
5. Halifax County
6. Hyde County
7. Northampton County

Locations for netting within each county were suggested by USFWS and NCDOT. State game lands were targeted locations due to the amount of habitat available. The most suitable net sites for capturing NLEB within each location were selected by Three Oaks' bat biologist, with consultation from NCDOT. Forty-two calendar nights of mist-netting were conducted, with six

calendar nights of netting conducted in Caswell, Edgecombe, and Northampton Counties. Due to the capture of the NLEB in Hyde County, only one night of netting was conducted in this county. Nights not used in Hyde County were reallocated in Hertford County (8 nights total), Halifax County (8 nights total) and Beaufort County (7 nights total). The number of locations netted in each county depended on the availability of quality habitat and potential sites for mist-netting. Locations selected were:

Beaufort County

- Goose Creek State Park
- Van Swamp Game Land

Caswell County

- Caswell Game Land

Edgecombe County

- Lower Fishing Creek Game Land
- Mildred Woods Wetland Mitigation Site (NCDOT)

Halifax County

- Medoc Mountain State Park*
- Tillery Game Land
- Upper Roanoke River Wetlands Game Land (Pollock's Ferry Tract)
- Roanoke River Preserve (The Nature Conservancy)

Hertford County

- Chowan Swamp Game Land*

Hyde County

- Gull Rock Game Land

Northampton County

- Upper Roanoke River Wetlands Game Land

*Location previously mist-netted by NCDOT contractor

2.1 Habitat Characterization

Most locations had not previously been surveyed. An initial desktop-GIS assessment was performed using the latest orthoimagery to determine potential mist-netting sites for NLEB at each new location. (A location was considered new if NCDOT contractors had not previously conducted field work there in 2015 or 2016.)

At each survey site, the habitat was described. The natural community type was characterized using the Classification of the Natural Communities of North Carolina, Fourth Approximation (Schafale 2012).

Habitat in the survey area was scored by selecting one from each of the following:

- 1) Pine/Hardwood/Mixed
- 2) Upland/Bottomland
- 3) Managed (thinned, burned, or pine plantation)/Unmanaged
- 4) Cutover/Immature forest/Mature forest
- 5) Clutter* (Classifications 1-4)
 - (1) Sparse/no, < 10% cover (example: open for 40m in all directions)

- (2) Low, 10–39% cover (low clutter stands typically contain <6 or >95-year-old trees,
- (3) Medium, 40–75% cover (medium clutter stands typically contain 70–100 year-old trees, example: at least 10-m wide travel corridor, fairly open above)
- (4) High, > 75% cover (high clutter stands typically contain 10–25 year-old trees, example: closed canopy & travel corridor < 10-m wide)
- 6) Natural (>50% wooded)/Rural (>50% agricultural land)/Mixed (primary land use is not wooded or agricultural)

*Clutter was characterized visually as an average cover of all strata for the forested area

Where NLEB were captured, additional habitat data were collected: forest basal area (m²/ha) was assessed using a 10-factor prism and canopy cover was assessed using a sighting tube at 10 random locations within a 0.05-ha circular plot around each site (Cook et al. 1995, Ford et al. 2006).

2.2 Mist-net Surveys

Surveys were conducted between April 25th and September 15th, 2017. There were three locations (Goose Creek State Park, Medoc Mountain State Park, and Chowan Swamp Game Land) where mist-net surveys had been conducted previously, so minimal (if any) scouting was necessary. At the remaining locations, extensive scouting was conducted to determine the best mist-netting sites. A variety of community types were selected for sampling. Site coordinates were recorded using a handheld GPS unit.

Three Oaks' bat biologist determined the location and number of nets to set each night using best professional judgement. Net sites were placed in high quality foraging/roosting habitat within each study location. Digital photographs were taken of each net set placement (Appendix A). Mist-net surveys followed methodologies as outlined by the USFWS Range-Wide Indiana Bat Summer Survey Guidelines (USFWS 2017) and the NCDOT document, Standardization for NLEB Research (2016). Surveys were repeated if winds moved the nets more than 50 percent of the time, or if rain/fog persisted for 30 minutes or continued intermittently throughout the survey period. Mist-netting did not take place if the ambient air temperature was forecast to fall below 50° Fahrenheit.

Nets were checked for bats every eight to ten minutes. Data (e.g., bat captures, weather, habitat type) were recorded on waterproof NCDOT mist-netting data sheets (Appendix B). For each bat capture, data collection included time of capture, species, age, sex, reproductive condition, weight, and right forearm length. All bats were banded with a uniquely-numbered Porzana band on the right forearm (males) or left forearm (females).

Nets remained open at least five hours a night unless the target species (NLEB) was captured. Netting was stopped at each county once a NLEB was captured. Prior to release, NLEB were photographed (Appendix C) following techniques provided in the USFWS 2017 Indiana bat survey guidelines, as were other *Myotis* species.

3.0 FINDINGS

3.1 Habitat Characterization

Natural community types at each mist-net site were as follows:

1. Beaufort County

Goose Creek State Park

Site 1 – Coastal Fringe Evergreen Forest (Typic Subtype)

Van Swamp Game Land

Site 2 – Nonriverine Swamp Forest (Mixed Subtype)

Site 3 – Nonriverine Swamp Forest (Mixed Subtype)

2. Caswell County

Caswell Game Land

Site 1 – Dry-mesic Oak-hickory Forest (Piedmont Subtype)

Site 2 – Mesic Mixed Hardwood Forest (Piedmont Subtype)

Site 3 – Piedmont Alluvial Forest

Site 4 – Dry-mesic Oak-hickory Forest (Piedmont Subtype)

3. Edgecombe County

Lower Fishing Creek Game Land

Site 1 – Brownwater Levee Forest/Loblolly Pine Plantation

Site 2 – Mesic Mixed Hardwood Forest (Coastal Plain Subtype)

Site 4 – Nonriverine Swamp Forest (Mixed Subtype)

Mildred Woods Wetland Mitigation Site

Site 3 – Coastal Plain Small Stream Swamp (disturbed)

4. Halifax County

Medoc Mountain State Park

Site 1 – Mesic Mixed Hardwood Forest (Piedmont Subtype)

Tillery Game Land

Site 2 – Loblolly Pine Plantation/Nonriverine Swamp Forest (Sweetgum Subtype)

Upper Roanoke River Wetlands Game Land (Pollock's Ferry Tract)

Site 4 – Brownwater Bottomland Hardwoods (High Subtype)

Roanoke River Preserve (TNC)

Site 3 – Mesic Mixed Hardwood Forest (Coastal Plain Subtype)

Site 5 – Brownwater Bottomland Hardwoods (High Subtype)

5. Hertford County

Chowan Swamp Game Land

Site 1b* – Brownwater Bottomland Hardwoods (High Subtype)

Site 2 – Brownwater Bottomland Hardwoods (Swamp Transition Subtype)

Site 3 – Loblolly Plantation/Dry-mesic Oak-hickory Forest (Coastal Plain Subtype)

Site 4 – Brownwater Bottomland Hardwood (Swamp Transition Subtype)

6. Hyde County

Gull Rock Game Land

Site 1 – Nonriverine Swamp Forest (Sweetgum Subtype) – see Photo 1.

7. Northampton County

Upper Roanoke River Wetlands Game Land

Site 1 – Brownwater Bottomland Hardwood (Swamp Transition Subtype)

Site 2 – Mesic Mixed Hardwood Forest (Coastal Plain Subtype)

Site 3 – Brownwater Bottomland Hardwoods (High Subtype)

*Site numbering system follows survey work conducted for NCDOT in 2016

Photo 1. Nonriverine Swamp / NLEB Capture Site in Gull Rock Game Land, Hyde County



3.2 Mist-net Surveys

Forty-one full nights of mist-netting were conducted. A forty-second night of netting ended early due to the capture of a NLEB on June 26th, at which point netting was concluded in Hyde County per the project scope. Six nights of netting were conducted per county, with the following exceptions: Beaufort County, seven nights; Halifax County, eight nights; Hertford County, eight nights; Hyde County, one night.

Weather conditions varied from clear to 100% overcast, while the nightly temperature ranged from 56° to 84° Fahrenheit. Netting was conducted from approximately 20:00 to 1:00 Eastern Daylight time. Three to five nets were typically erected at each net site; most nets were stacked

double-high or triple-high. Some nets were moved from one night to another within a site in order to sample an alternative fly-way.

A summary of mist-netting captures is given in Table 1 (organized by county). Four hundred forty-two (442) bats were captured in total, representing nine species. Mildred Woods Wetland Mitigation Site was the location with the fewest bats captured (three over the course of one night), while Chowan Swamp Game Land had the most (101 captured in eight nights). The most commonly captured species was the eastern red bat. One individual was captured for each of the following two species: NLEB and Seminole bat (*Lasiurus seminolus*). Four Silver-haired bats (*Lasionycteris noctivagans*) were captured. Captures per night ranged from one to 34 bats. Photos for each mist-net site are provided in Appendix A; data sheets are in Appendix B.

Two bats observed during the survey, both big brown bats (*Eptesicus fuscus*) captured at Goose Creek State Park the night of April 25th, had significant amounts of scarring on their wings, warranting a rating of 2 on the Reichard wing index score (2009) (photos in Appendix C). It is not known if this was due to WNS or some other cause. Both bats were adult females, one was pregnant and one non-reproductive, both bats appeared healthy otherwise. The nonreproductive female was swabbed for WNS, but the lab results have not been received.

The NLEB was captured on June 26th at Gull Rock Game Land in Hyde County off Outfall Canal Road near Pamlico Sound. The bat was a post-lactating adult female, which indicates that breeding probably occurred in the area. The bat's wing condition was rated as zero; forearm length was 35 mm; weight was 5.7 grams. The bat was banded on the left forearm with 3OAKSNC0356. Photos of the NLEB and other representative *Myotis* (all *M. austroriparius*) are in Appendix C.

NLEB capture site:

Gull Rock Game Land, Site 1, 35.365876°, -76.159534°. Nonriverine Swamp Forest (Sweetgum Subtype); medium clutter. Two triple-high 6m nets were set along a wooded grassy road running in between forested habitat. A double-high 18m net was set on a second road, parallel to a linear water feature. The NLEB was captured in the triple-high 6m net closest to the junction of the two roads. Vegetation included loblolly pine (*Pinus taeda*), wax-myrtle (*Morella cerifera*), sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), black cherry (*Prunus serotina*), red bay (*Persea borbonia*), sweetbay (*Magnolia virginiana*), Cane (*Arundinaria tecta*). Basal area was 120ft²/ac; canopy coverage was 53%.

3.3 Other Surveys

Three Caswell County bridges, located in areas of quality foraging habitat, were inspected to determine if NLEB or other bat species could be using them for roosting. The bridges were selected as they all received abundant sunlight and had concrete guardrails; two of the bridges had concrete decks as well. There was no evidence of bats at any of the bridges. See Figure 17 for bridge locations and Appendix D for data forms.

Table 1. Mist-netting Capture Summary

Location	Site No.	Night	Date (2017)	CORA	EPFU	LABO	LANO	LASE	MYAU	MYSE	MYLU	NYHU	PESU	TOTAL	NOTES
Beaufort County															
Goose Creek State Park	1	1	4/25		16	2						3	1	22	
		2	4/26		5	2			1			2	2	12	
		3	4/27		6	2	1			1			2	2	14
Van Swamp Game Land	2	1	6/27		3	3						4		10	Bear activity
		2	6/28	1		4						3	1	9	
	3	1	8/16			3			2			1		6	
		2	8/17		1	1						1		3	
Caswell County															
Caswell Game Lands	1	1	5/15		2	10	2					4		18	
		2	5/16		1	5	1					2		9	
	2	1	5/17		2	15						3	1	21	
		2	5/18		1	9								10	
	3	1	5/22			3								3	
	4	1	5/25			12						1		13	
Edgecombe County															
Lower Fishing Creek Game Land	1	1	5/31	1		6								7	Thunder
		2	6/1			1								1	
	2	1	6/19	4	2	1				2			1	10	Brief rain
		2	6/21	1		1				1				3	
	4	1	8/22			1						2		3	
Mildred Woods Mitigati on Site	3	1	6/22									3		3	
Halifax County															
Medoc Mtn. State Park	1	1	7/24			23								23	
		2	7/25			8								8	
Tillery Game Land	2	1	7/26			9						2		11	
Upper Roanoke Game Land	4	1	8/2		2	8		1	1				1	13	
		2	8/3		1	23			1			2	2	29	

Location	Site No.	Night	Date (2017)	CORA	EPFU	LABO	LANO	LASE	MYAU	MYSE	MYLU	NYHU	PESU	TOTAL	NOTES	
Roanoke River Preserve	3	1	7/31		1	2			1					4		
	5	1	9/13						3					3		
		2	9/14			2				1				3		
Hertford County																
Chowan Game Lands	1b*	1	6/6			5			4			4		13		
		2	6/7	1										1		
	2	1	6/8			2			1					3		
		2	8/8		1	2								3		
	3	1	8/9		17	17								34		
		2	8/10		8	25							1	34		
	4	1	8/30		1	5				1				7		
		2	8/31			8							1	9	Brief rain	
Hyde County																
Gull Rock Game Land	1	1	6/26		1					1		2		4	Ended early due to MYSE capture	
Northampton County																
Upper Roanoke River Wetlands Game Land	1	1	7/11		1	6								7		
		2	7/12	1		5			2			1		9		
	2	1	7/13		2	4						7	2	15		
		2	8/1	1	2	9				2		4		18		
	3	1	7/19			5				3			2	1	11	
		2	7/20			1				2					3	
Totals				10	76	250	4	1	29	1		55	16	442		

*Numbering system follows survey work conducted in 2015 & 2016

SPECIES: Rafinesque's big-eared bat=CORA, big brown bat=EPFU, red bat=LABO, silver-haired bat=LANO, Seminole bat=LASE, southeastern bat=MYAU, northern long-eared=MYSE, little brown bat=MYLU, evening=NYHU, tricolor=PESU

4.0 INVESTIGATOR QUALIFICATIONS

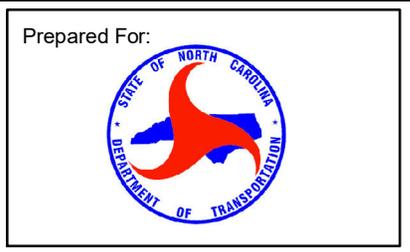
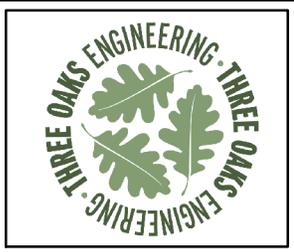
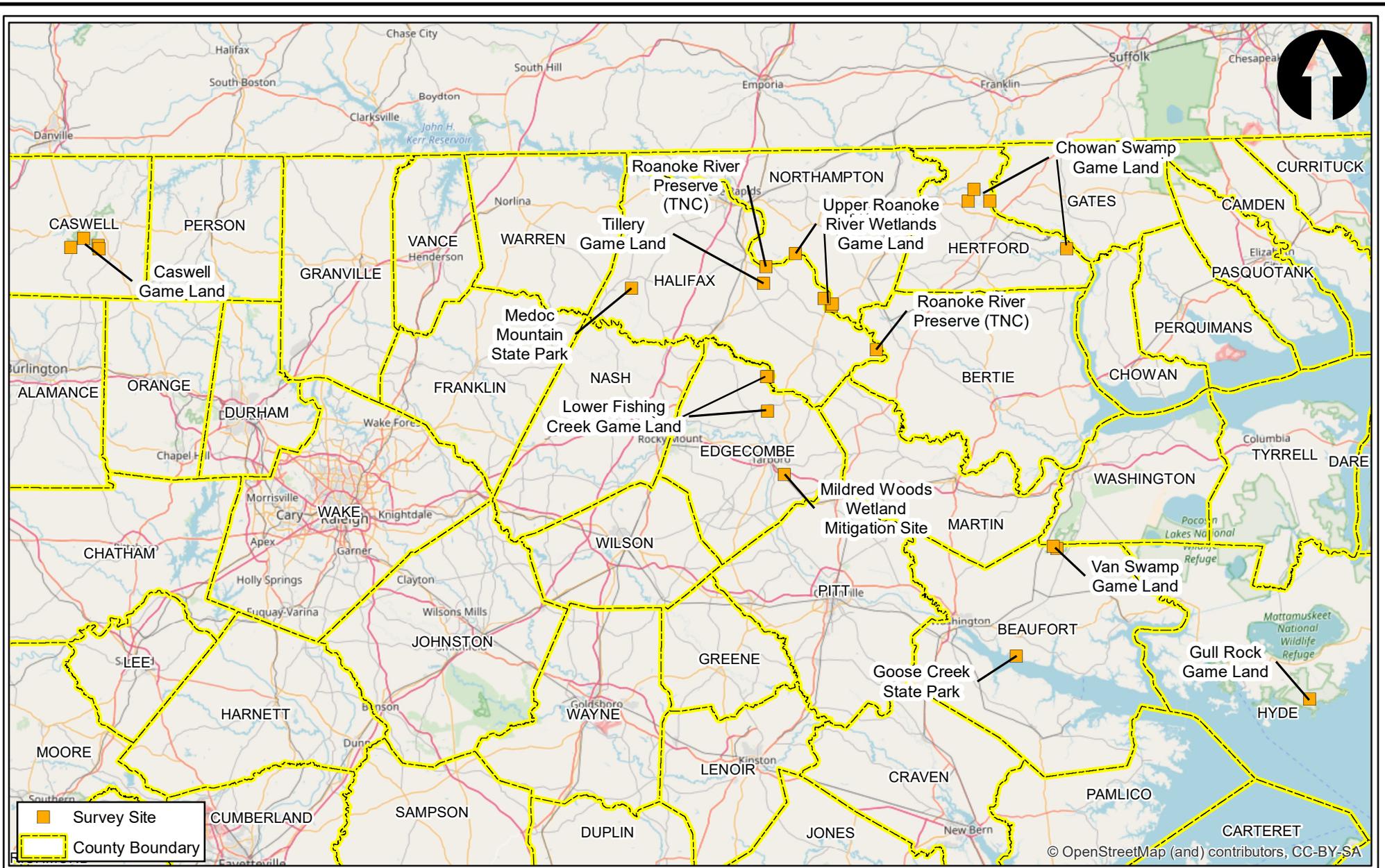
Investigator:	Mary Frazer
Education:	M.E.M., Resource Ecology, Duke University B.S. Zoology, University of Wisconsin
Experience:	Environmental Specialist, Three Oaks Engineering, July 2015-present Environmental Program Consultant, NCDOT, 2000-2015 Environmental Specialist, Wisc. Coastal Mgt Program, 1996-2000 Water Regulation Specialist, Wisc. Dept Natural Resources, 1994-1996 Biologist, Soil and Environmental Consultants, 1992-1994
Permits:	NCWRC 16-ES0024 & 16-SC00161; USFWS TE54578B-0
Responsibilities:	Field survey, document preparation
Investigator:	Nathan Howell
Education:	B.S. Fisheries, Wildlife, and Conservation Biology, North Carolina State University, 2013 M.S. Plant and Microbial Biology, North Carolina State University, 2015
Experience:	Environmental Scientist, Three Oaks Engineering, 2015-Present
Internship:	Species Inventory, Monitoring, and Research in NC State Parks
Responsibilities:	Field survey
Investigator:	Nancy Scott
Education:	M.E.M., Water Resources, Duke University, 2011 B.S. Environmental Science, University of Delaware, 2006
Experience:	Environmental Scientist, Three Oaks Engineering, 2015-Present Environmental Scientist, The Catena Group, 2012-2015
Responsibilities:	Field survey, document preparation
Investigator:	Hannah Slyce
Education:	B.S. Environmental Science, University of South Carolina, 2016
Experience:	Environmental Scientist, Three Oaks Engineering, May 2016- Sept 2017
Responsibilities:	Field survey
Investigator:	Lizzy Stokes-Cawley
Education:	B.S. Conservation Biology, St. Lawrence University, 2011 M.E.M. Water Resources, Duke University, 2016
Experience:	Environmental Scientist, Three Oaks Engineering, 2017-Present
Responsibilities:	Field survey, document preparation
Investigator:	Kate Sevick
Education:	M.S. Environmental Sciences, University of Rhode Island, 2004 B.A. Biology, Reed College, 2000
Experience:	Environmental Scientist, Three Oaks Engineering, June 2015-Present Environmental Specialist and Graphics Coordinator, The Catena Group, November 2004-June 2015
Responsibilities:	Field survey, document preparation

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FIGURES



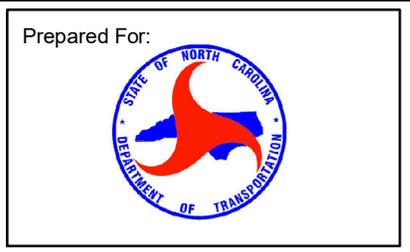
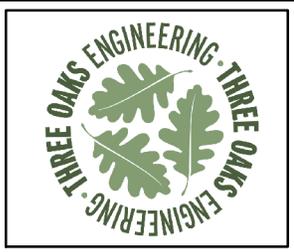
**Eastern North Carolina Northern
 Long-Eared Bat Research Project**

Summer 2017 Survey Sites

 Beaufort, Caswell, Edgecombe, Halifax, Hertford, Hyde,
 and Northampton Counties, North Carolina

Date:	November 2017
Scale:	0 5 10 Miles
Job No.:	17-304
Drawn By:	KMS
Checked By:	MF

Figure
1



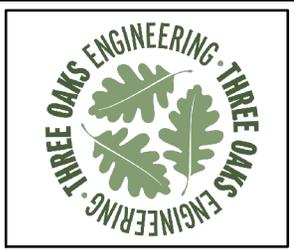
**Eastern North Carolina Northern
 Long-Eared Bat Research Project**
 Goose Creek State Park
 Survey Sites
 Beaufort County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

Figure
2



■ Survey Site
Managed Areas
■ Federal
■ Local Government
■ Private
■ State
 County Boundary

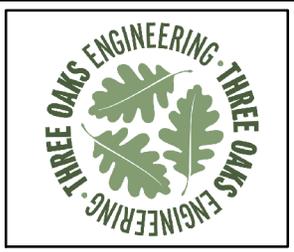
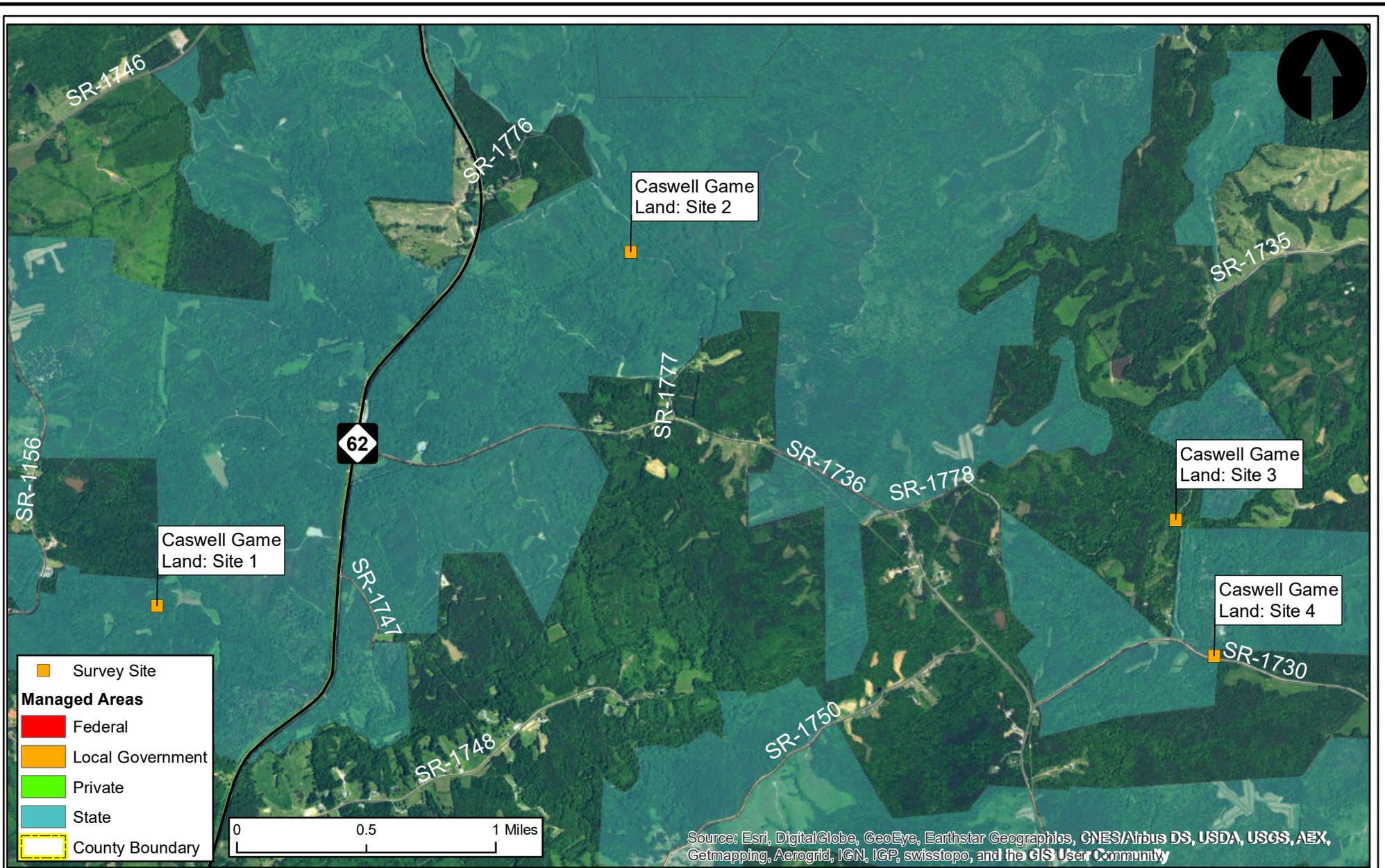


Prepared For:

Eastern North Carolina Northern
 Long-Eared Bat Research Project
 Van Swamp Game Land
 Survey Sites
 Beaufort County, North Carolina

Date: November 2017	
Scale: As Shown	
Job No.: 17-304	
Drawn By: KMS	Checked By: MF

Figure
3

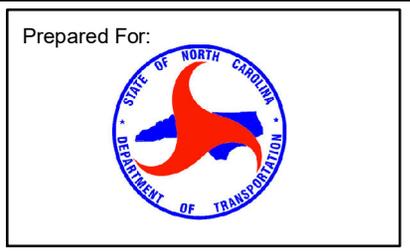
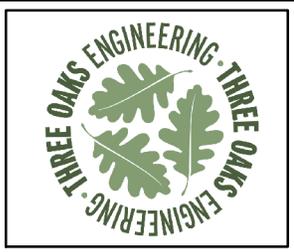
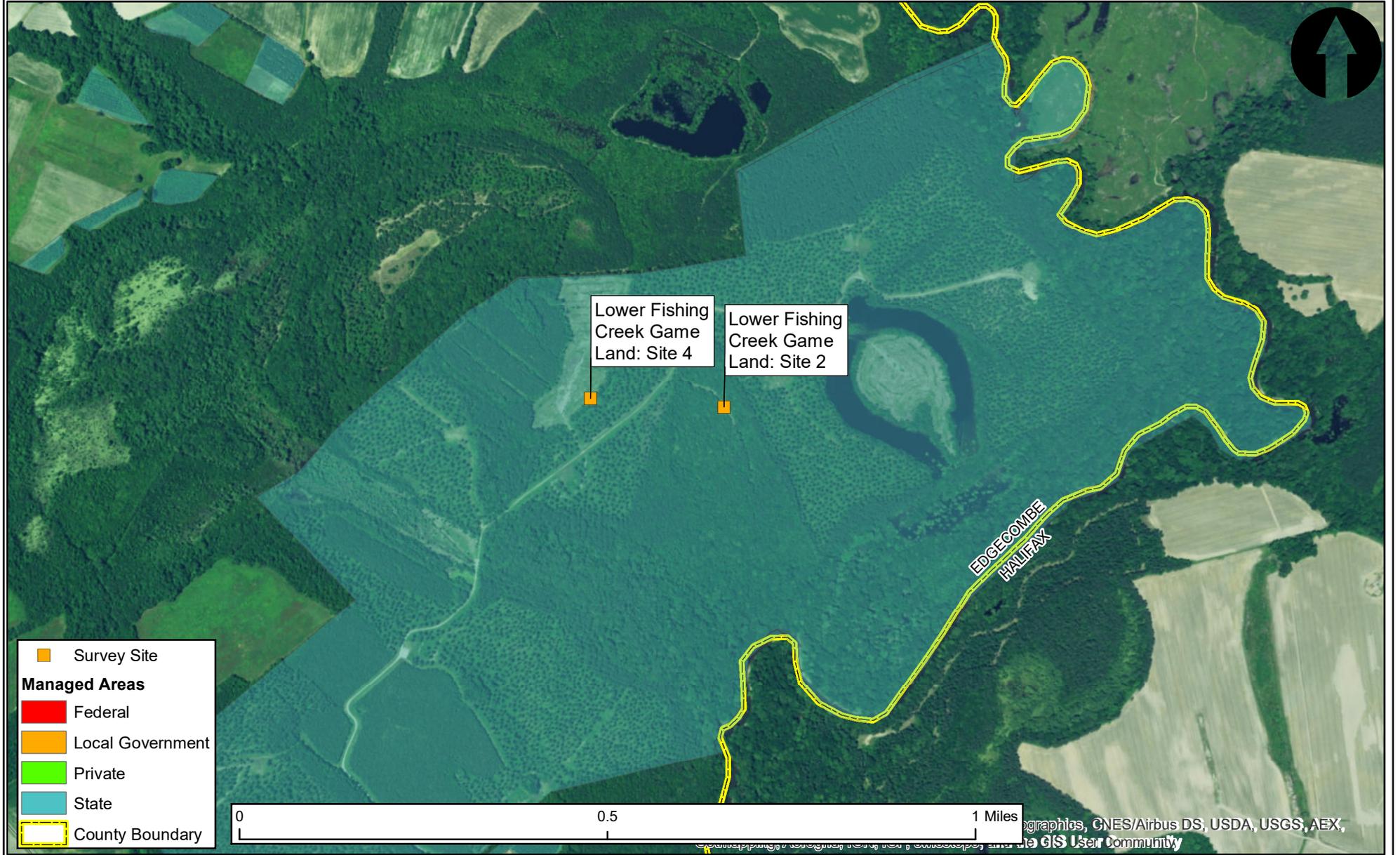


Prepared For:

**Eastern North Carolina Northern
 Long-Eared Bat Research Project**
**Caswell Game Land
 Survey Sites**
 Caswell County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

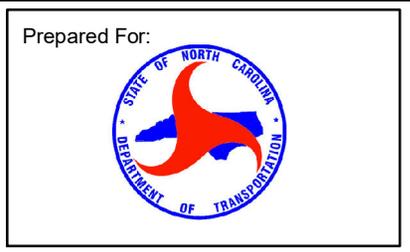
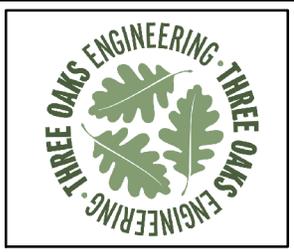
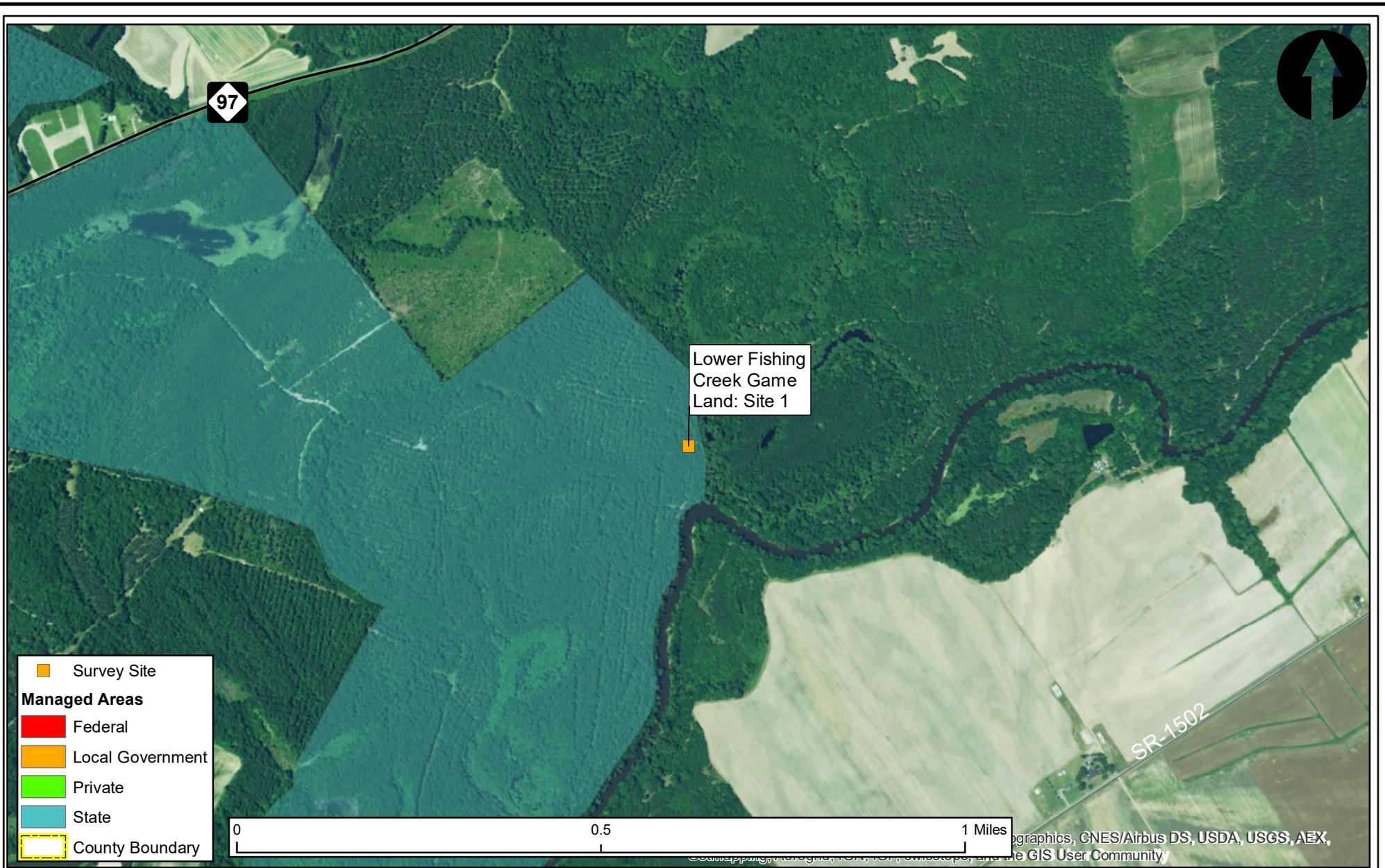
Figure
4



**Eastern North Carolina Northern
 Long-Eared Bat Research Project**
 Lower Fishing Creek Game Land
 Survey Sites
 Edgecombe County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

Figure
5

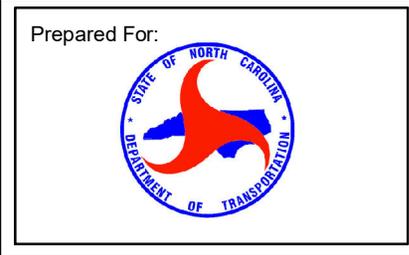
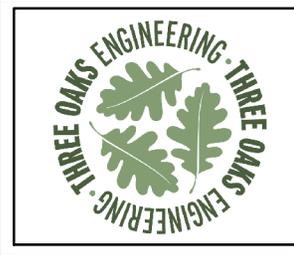


Eastern North Carolina Northern
 Long-Eared Bat Research Project
 Lower Fishing Creek Game Land
 Survey Sites

Edgecombe County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

Figure
 6



**Eastern North Carolina Northern
 Long-Eared Bat Research Project
 Mildred Woods Wetland Mitigation Site
 Survey Sites**

Edgecombe County, North Carolina

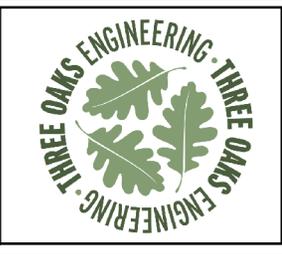
Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

Figure
7

561



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



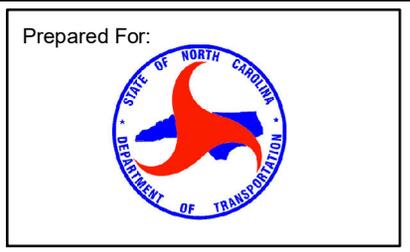
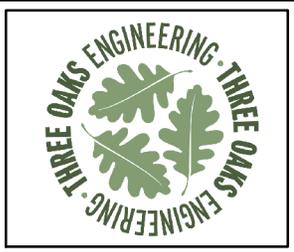
Prepared For:

Eastern North Carolina Northern
 Long-Eared Bat Research Project
 Medoc Mountain State Park
 Survey Sites

Halifax County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

Figure
 8



**Eastern North Carolina Northern
 Long-Eared Bat Research Project**
**Tillery Game Land
 Survey Sites**
 Halifax County, North Carolina

Date:		November 2017
Scale:		As Shown
Job No.:		17-304
Drawn By:	Checked By:	
KMS	MF	

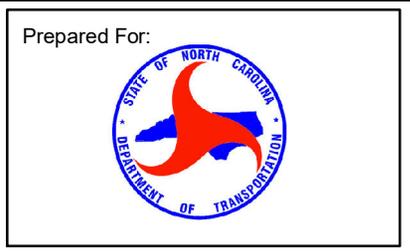
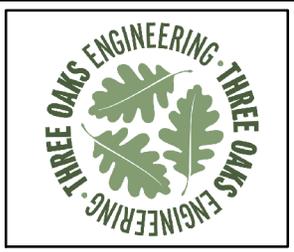
Figure
9



- Survey Site
- Managed Areas**
- Federal
- Local Government
- Private
- State
- County Boundary

0 0.5 1 Miles

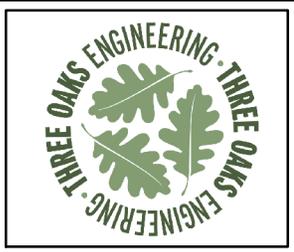
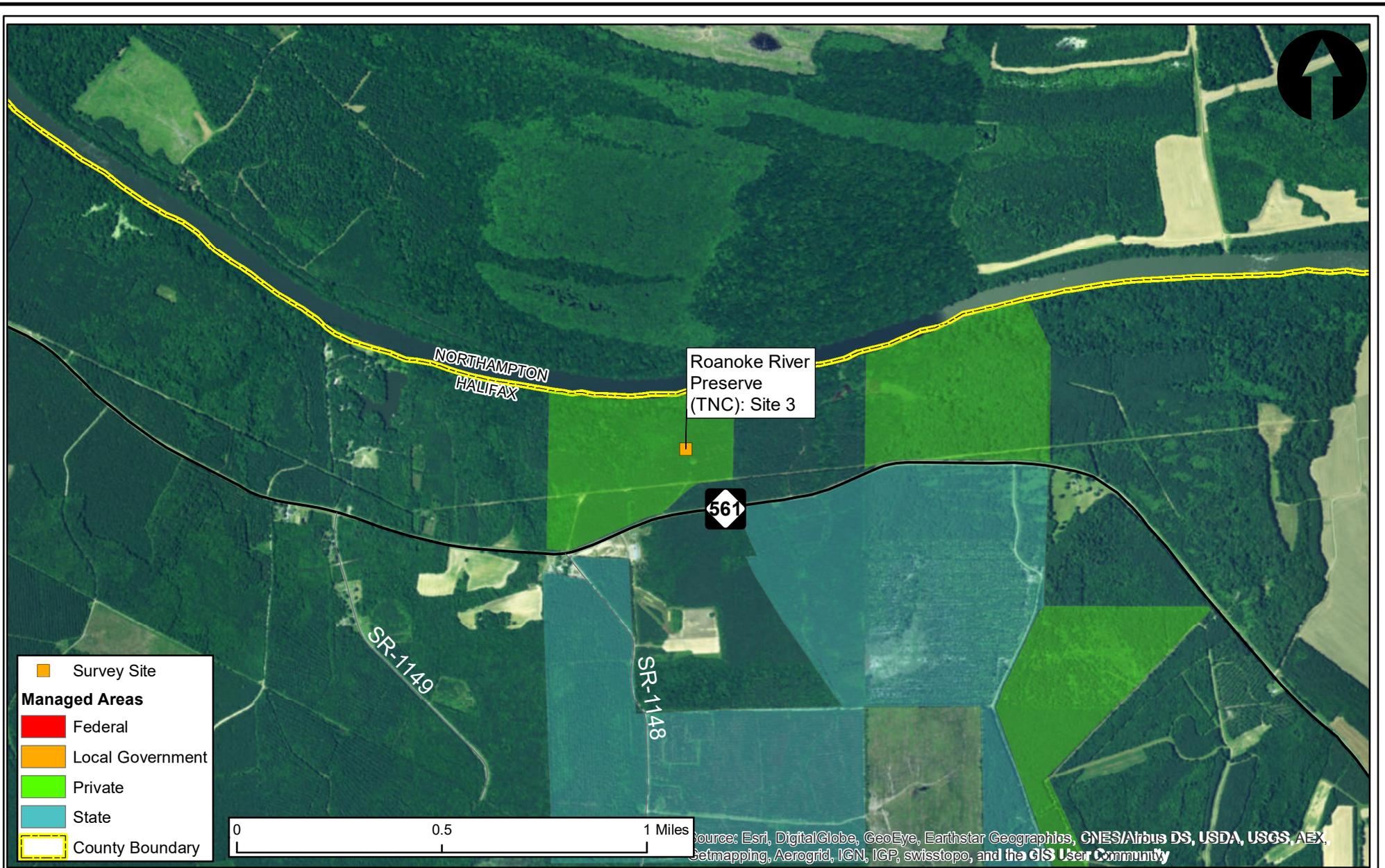
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Intermap, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



**Eastern North Carolina Northern
 Long-Eared Bat Research Project
 Upper Roanoke River Wetlands Game Land
 Survey Sites**
 Halifax and Northampton County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

Figure
10

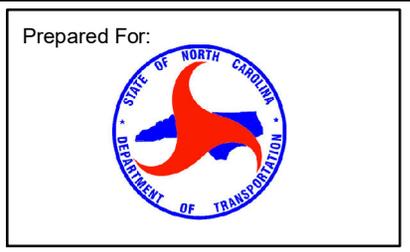
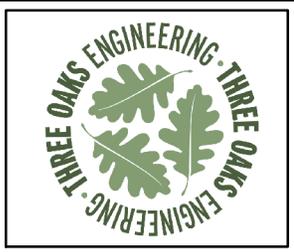
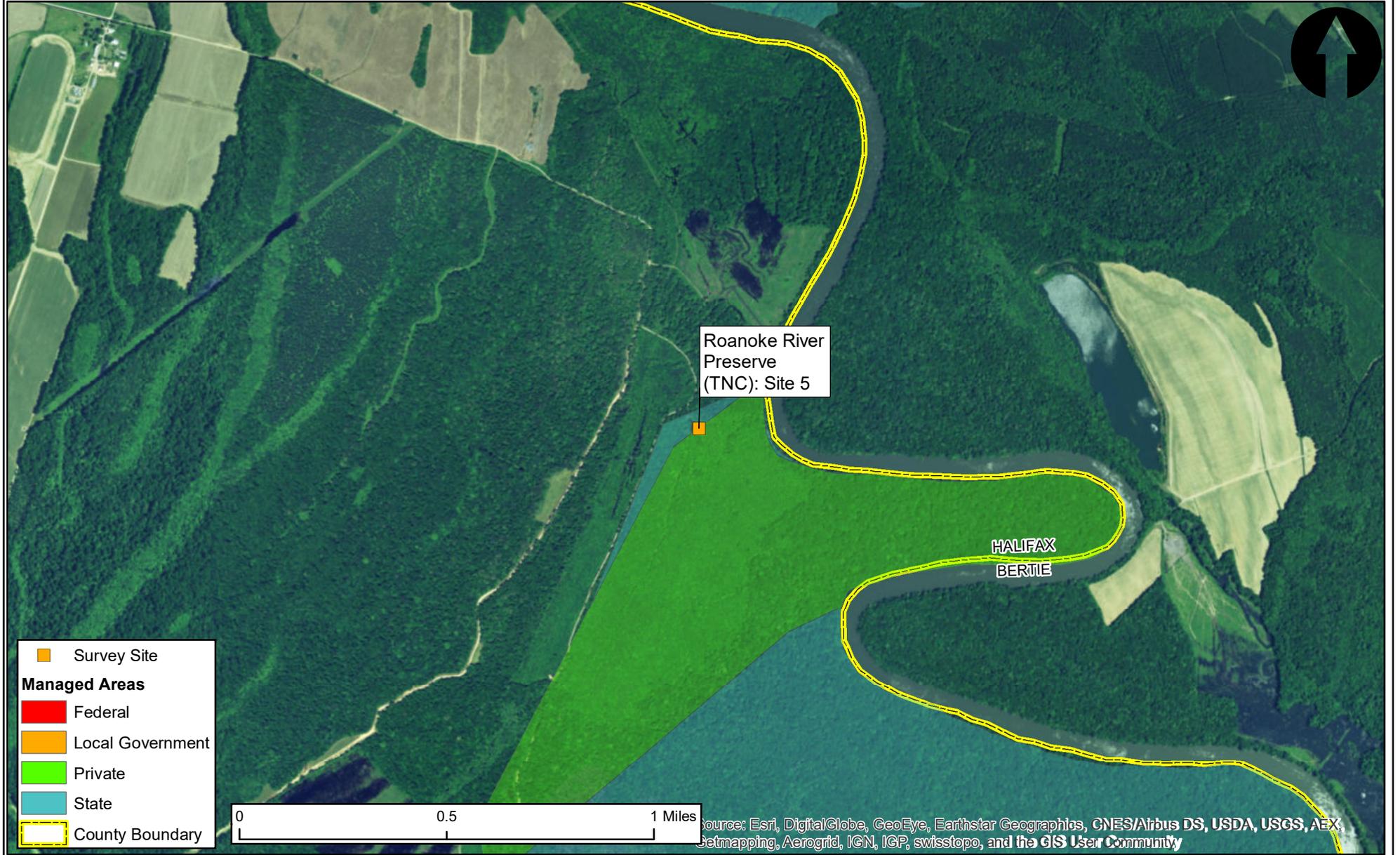


Prepared For:

**Eastern North Carolina Northern
 Long-Eared Bat Research Project**
 Roanoke River Preserve (TNC)
 Survey Sites
 Halifax County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	KMS
Checked By:	MF

Figure
11

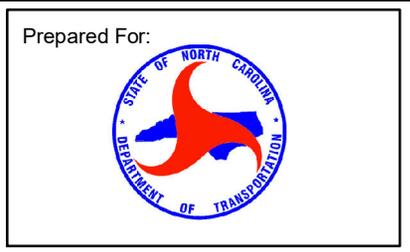
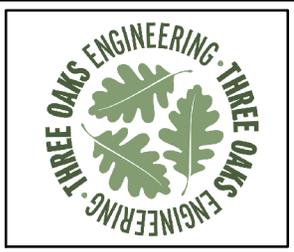


Eastern North Carolina Northern
 Long-Eared Bat Research Project
 Roanoke River Preserve (TNC)
 Survey Sites

Halifax County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

Figure
 12

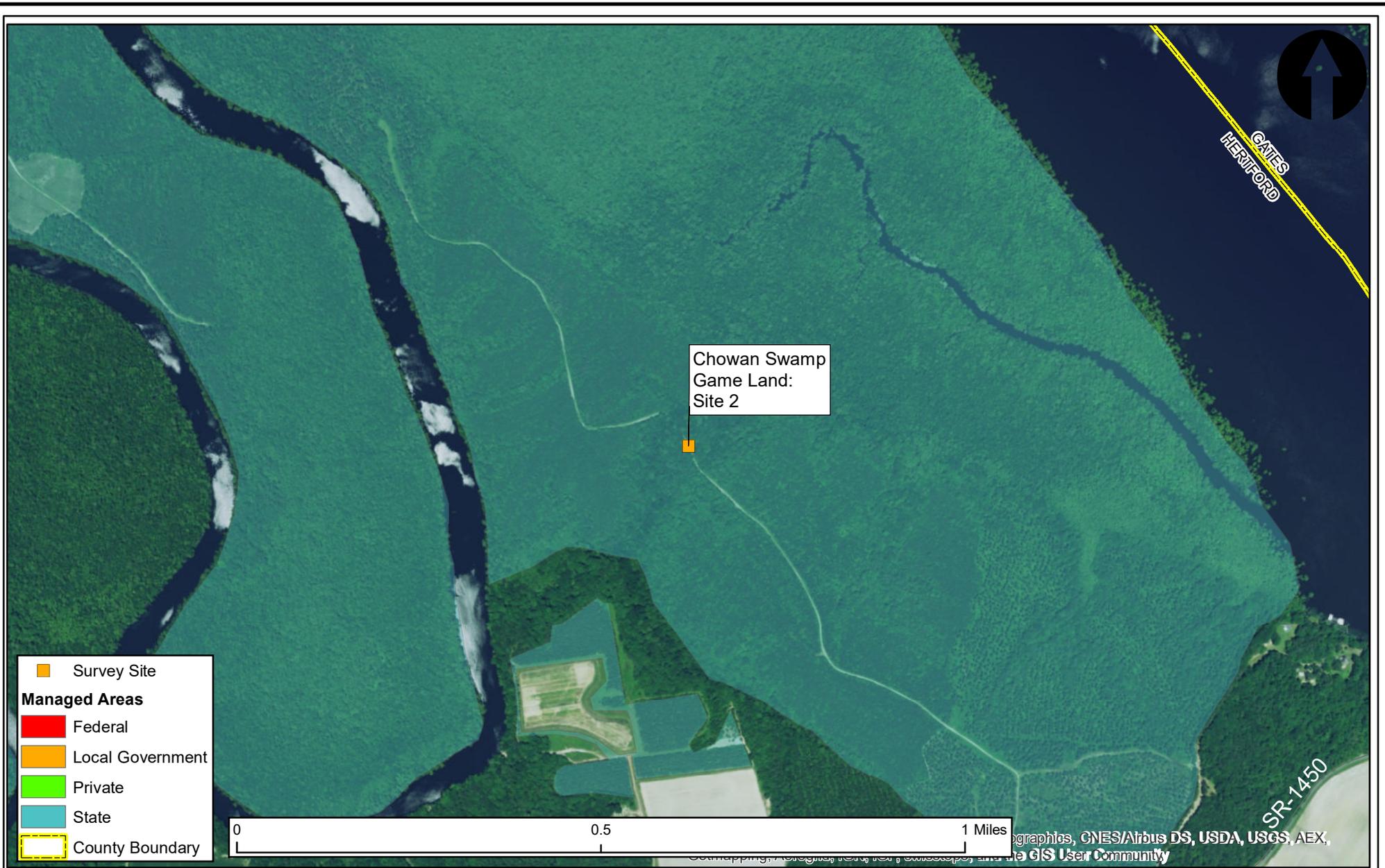


Eastern North Carolina Northern
 Long-Eared Bat Research Project
 Chowan Swamp Game Land
 Survey Sites

Hertford County, North Carolina

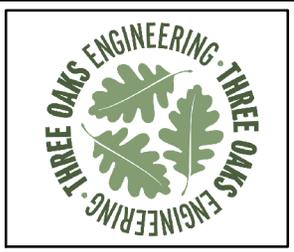
Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

Figure
 13



- Survey Site
- Managed Areas**
- Federal
- Local Government
- Private
- State
- County Boundary

0 0.5 1 Miles

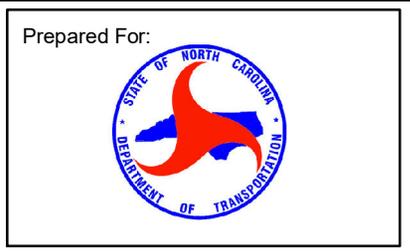
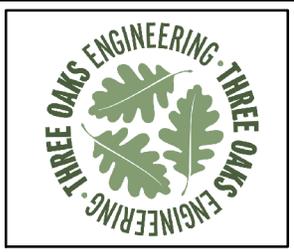
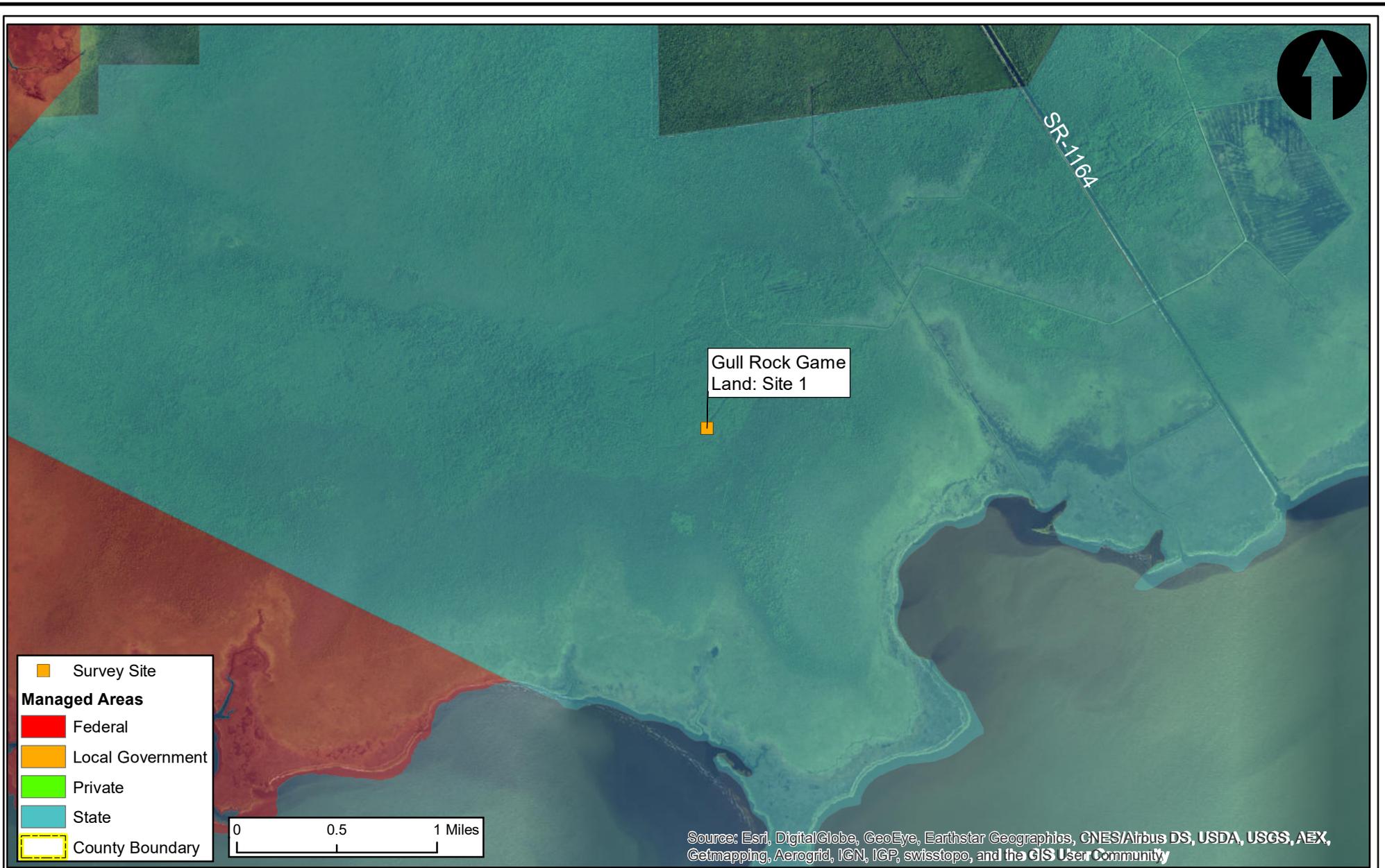


Prepared For:

**Eastern North Carolina Northern
 Long-Eared Bat Research Project**
 Chowan Swamp Game Land
 Survey Sites
 Hertford County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

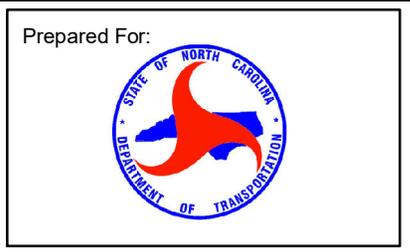
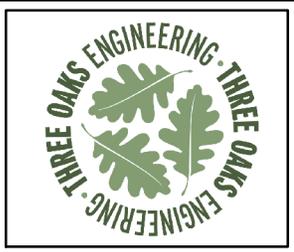
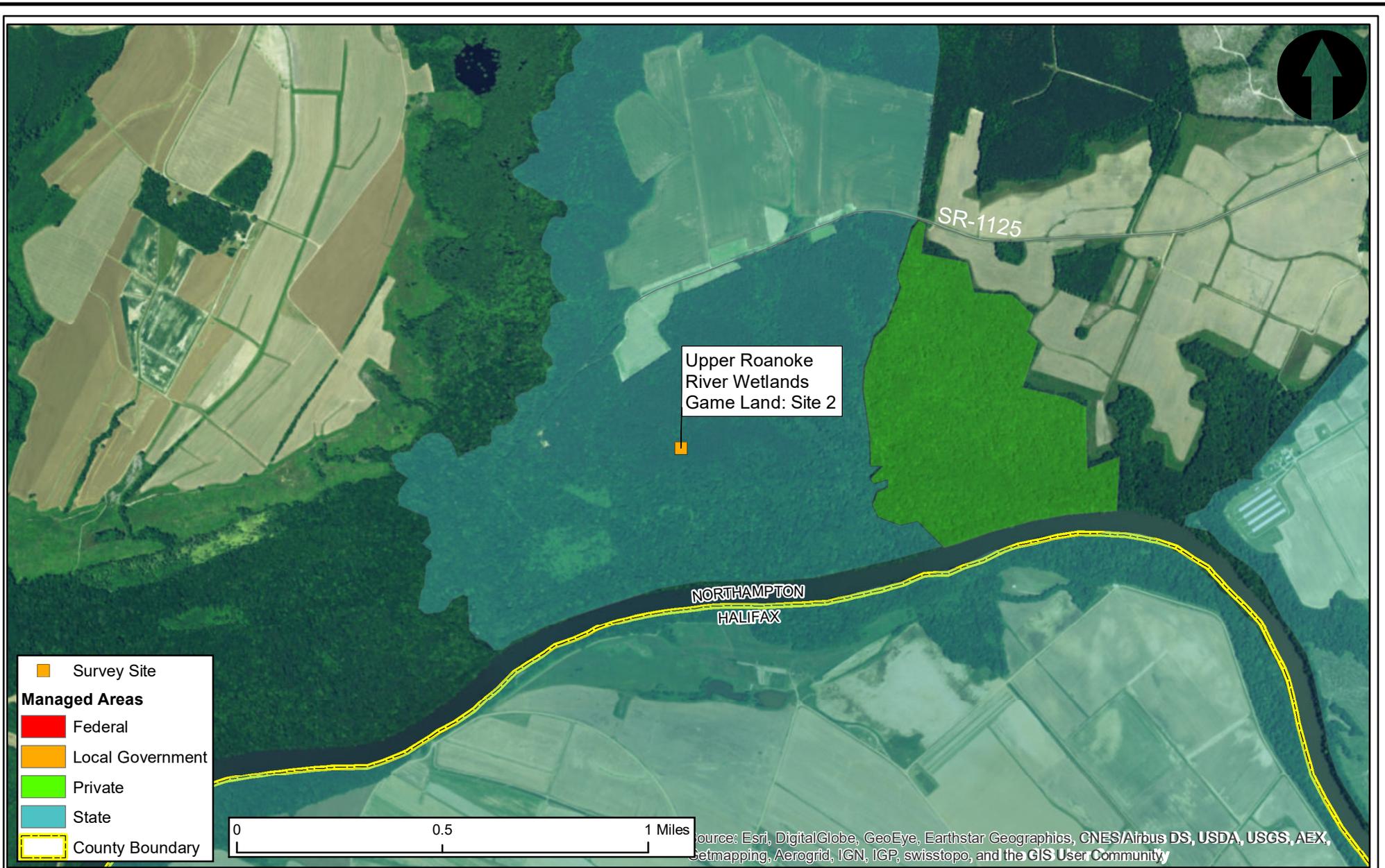
Figure
14



**Eastern North Carolina Northern
 Long-Eared Bat Research Project**
**Gull Rock Game Land
 Survey Sites**
 Hyde County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

Figure
15

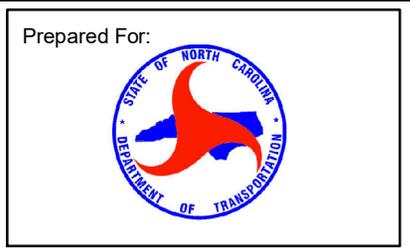
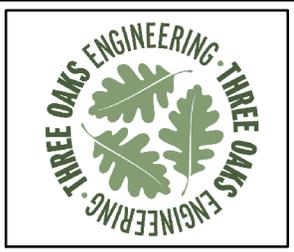
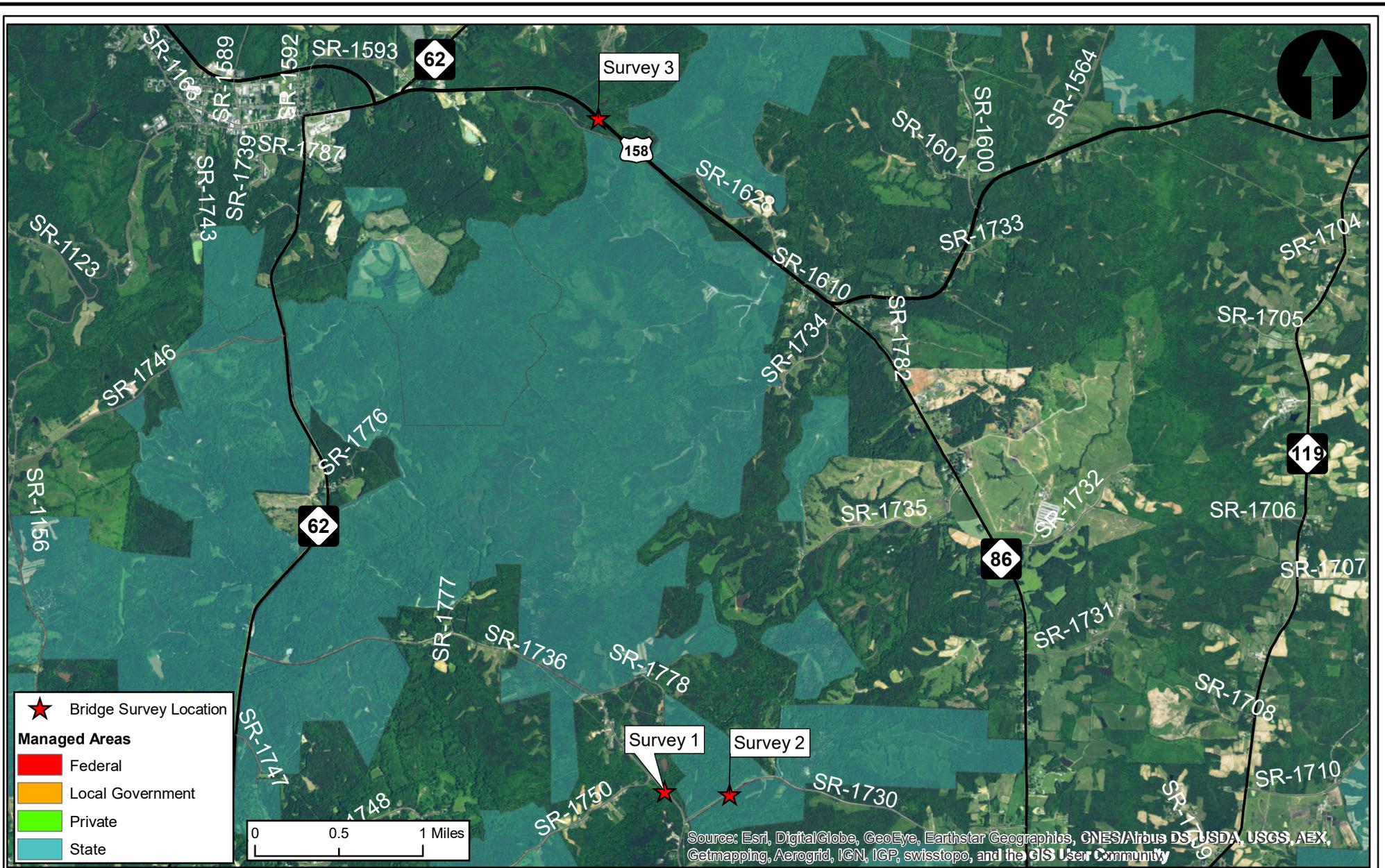


**Eastern North Carolina Northern
 Long-Eared Bat Research Project
 Upper Roanoke River Wetlands Game Land
 Survey Sites**

Northampton County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	Checked By:
KMS	MF

Figure
16



Eastern North Carolina Northern
Long-Eared Bat Research Project

Bridge Survey Locations

Caswell County, North Carolina

Date:	November 2017
Scale:	As Shown
Job No.:	17-304
Drawn By:	KMS
Checked By:	MF

Figure

17

APPENDICES

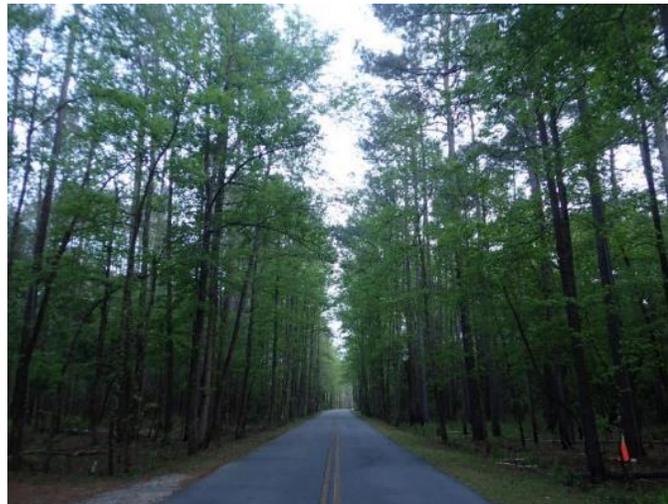
Appendix A. Net-Set Photographs

Goose Creek State Park, Beaufort County



Site1, Net A (4/26 and 4/27) and Net B (4/25)

(Note that same nets were relabeled as they were rearranged from one night to another within a site)

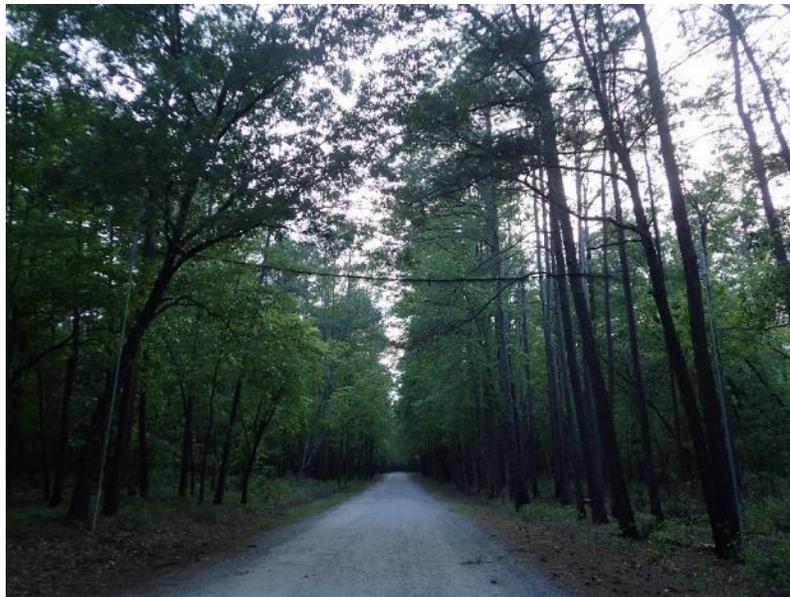


Site 1, Net B (4/27)

Goose Creek State Park, Beaufort County



Site 1, Nets B and C (4/26) and Nets C and D (4/25 and 4/27)



Site 1, Net E (4/25 and 4/27) and Net F (4/26)

Van Swamp Game Land, Beaufort County



Site 2, Net A



Site 2, Net B



Site 2, Net C

Van Swamp Game Land, Beaufort County



Site 2, Net D



Site 3, Net A



Site 3, Net B (8/16)

Van Swamp Game Land, Beaufort County



Site 3, Net C



Site 3, Set D

Caswell Game Lands, Caswell County



Site 1, Net A



Site 1, Net B



Site 1, Net C

Caswell Game Lands, Caswell County



Site 1, Net D



Site 2, Net A



Site 2, Net B

Caswell Game Lands, Caswell County



Site 2, Net C and Net D



Site 2, Net E



Site 3, Net A

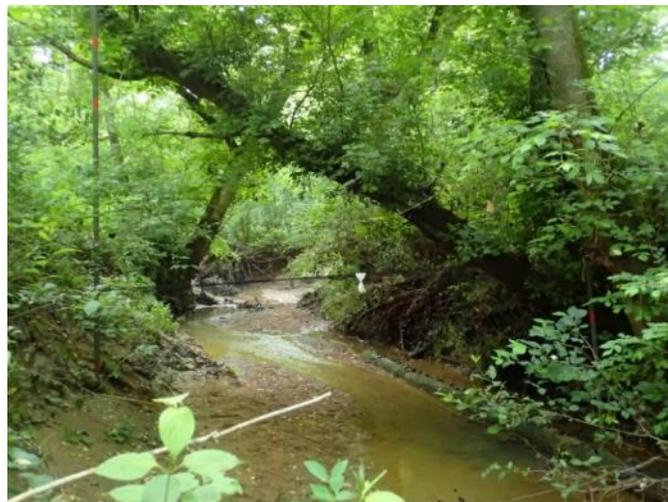
Caswell Game Lands, Caswell County



Site 3, Net B



Site 3, Net C



Site 3, Net D

Caswell Game Lands, Caswell County



Site 4, Net A



Site 4, Net B



Site 4, Net C

Lower Fishing Creek Game Land, Edgecombe County



Site 1, Net A



Site 1, Net B



Site 1, Net C

Lower Fishing Creek Game Land, Edgecombe County



Site 1, Net D



Site 2, Net A



Site 2, Net B

Lower Fishing Creek Game Land, Edgecombe County



Site 2, Net C

Mildred Woods Mitigation Site, Edgecombe County



Site 3, Net A

Mildred Woods Mitigation Site, Edgecombe County



Site 3, Net B and Net C



Site 3, Net D



Site 3, Net E

Medoc Mountain State Park, Halifax County



Site 1, Net A



Site 1, Net B



Site 1, Net C

Medoc Mountain State Park, Halifax County



Site 1, Net D

Tillery Game Land, Halifax County



Site 2, Net A

Tillery Game Land, Halifax County



Site 2, Net B



Site 2, Net C

Upper Roanoke River Wetlands Game Land, Halifax County



Site 4, Net A



Site 4, Net B



Site 4, Net C

Roanoke River Preserve (TNC), Halifax County



Site 3, Net A



Site 3, Net B

Roanoke River Preserve (TNC), Halifax County



Site 3, Net C



Site 5, Net A



Site 5, Net B (9/13)

Roanoke River Preserve (TNC), Halifax County



Site 5, Net B (9/14)



Site 5, Net C



Site 5, Net D

Roanoke River Preserve (TNC), Halifax County



Site 5, Net E (9/13)



Site 5, Net E (9/14)

Chowan Swamp Game Land, Hertford County



Site 1b, Net A



Site 1b, Net B



Site 1b, Net C

Chowan Swamp Game Land, Hertford County



Site 2, Net A



Site 2, Net B (6/8)



Site 2, Net C

Chowan Swamp Game Land, Hertford County



Site 2, Net D (8/8)



Site 2, Net E (8/8)



Site 3, Net A

Chowan Swamp Game Land, Hertford County



Site 3, Net B



Site 3, Net C



Site 4, Net A

Chowan Swamp Game Land, Hertford County



Site 4, Net B



Site 4, Net C (8/30)



Site 4, Net D (8/31)

Gull Rock Game Land, Hyde County



Site 1, Net A



Site 1, Net B (NLEB capture)



Site 1, Net C

Upper Roanoke River Wetlands Game Land, Northampton County



Site 1, Net A



Site 1, Net B



Site 1, Net C

Upper Roanoke River Wetlands Game Land, Northampton County



Site 2, Net A



Site 2, Net B



Site 2, Net C

Upper Roanoke River Wetlands Game Land, Northampton County



Site 2, Net D



Site 3, Net A



Site 3, Net B

Upper Roanoke River Wetlands Game Land, Northampton County



Site 3, Net C

Appendix B. Mist-Net Survey Data Forms

NCDOT Mist-Netting & Acoustic Survey Data Form

RD JUNCTION

Project: NLEB		County: BEAUFORT		Site#: 1	Night#: 1	Site Name: GOOSE CREEK		Date: 4/25/17					
Latitude:				Longitude:		Datum:		Elevation:					
Observers: M. FRAZER, L. STOKES-CAWLEY, H. SINCE, FD COREN								Start Time: 20:20		End Time: 00:20			
Conditions:		Time: 20:20	Temp: 68°F	Wind: NONE	Clouds: 35%	Time: 22:40	Temp: 64°	Wind: NONE	Clouds: NONE	Time: 1:20	Temp: 63°F	Wind: None	Clouds: 0%
Moon Effect: NONE		Start:		Stop:		Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren (describe): gravel roads & small roadside pond in the pine forest							
NETS/TRAPS:		A: double 6m		B: double 6m		C: single 4m		D: single 9m		E: double 12m		F:	
Pool size WxL													
Swoop WxL													
Photo? or #													

BD#	Latitude	Longitude	Mic	Ht	clutter	gain	trigger	interval	Start time	Stop Time	Photo?
/											

Site Description: loblolly pine forest

Heavy rain previous night → hungry & thirsty bats

Remarks: lots of big scarab beetles, bats are really fat, lots of fish flies

Site sketch (label to match Nets/Traps and BD# above)

Bat Survey Data Form

Project: NLEB		County: BEAUFORT		Site# 1		Night# 1		Site Name: GOOSE CREEK PARK			Date: 4/25/17	
	TIME	SPECIES	Sex	Age	P/L/PL/NR	FA	EAR	WT	Net #	Height	Band / WS	Comment / Photo #
1	20:20	LABO	F	A	P	42mm		20.5g 13.3g	A	2M	30AKC02SS 0	Pinhole left
2	20:42	EPFU	F	A	P	45mm		25g- 8.0=17g	B	1.5M	30AKS0995 2	healed scars on wings, & blotchy
3	20:42	EPFU	M	A	NR	46mm		23.5g- 8g=15.5g	B	.5M	30AKS0956 0	Slight pinpr. damage
4	20:51	EPFU	F	A	P	44mm		29.0g 8g=21g	E		30AKS0960 1	1
5	20:57	EPFU	M	A	NR	46mm		24.5g- 7.5=17g	D	1.5M	30AKS0998 0	
6	20:59	NYHU	M	A	NR	32mm		16.6g 7.6=11.0g	C	.75M	30AKS0390 0	
7	21:05	EPFU	F	A	NR	46mm		27.0g- 8.19=18.8g	D	.5M	30AKS0982 1	Recapture 10:40
8	21:05	EPFU	M	A	NR	46mm		23.0g- 8.02=15.0g	D	1M	30AKS0985 0	minor physical damage
9	21:31	EPFU	M	A	NR	42mm		23.0g-8g =15.0g	D	0.5M	30AKS0969 0	Pencil hole right wing seen
10	21:37	EPFU	F	A	NR	48mm		30.5g- 7.5=23.0g	D	0.5M	30AKS0976 0	Physical damage Small hole
11	21:45	PEJU	F	A	P	34mm		13.8g- 7.9=5.9g	E	1M	30AKS0396 0	
12	21:45	EPFU	F	A	NR	47mm		28g-8g 20.0g	E	4M	30AKS0588 2	Hand term slightly worn
13	22:20	EPFU	M	A	NR	46mm		24.5g-8g 16.5g	E	4M	NEWCA1915 0	RECAPTURE from 2016 Pinhole left wing
14	22:24	EPFU	F	A	P	46mm		28g-8g 20g	D	0.5M	30AKS0999 0	
15	22:40	NYHU							D	0.5M		Escape! EFN
16	23:00	NYHU	F	A	P	35mm		18.8g-7.8g =11g	B	1M	30AKR0096 0	
17	23:00	EPFU	F	A	NR	44mm		26g-8g 18.0g	D	0.5M	30AKC0952 0	FATTY!
18	23:20	EPFU	F	A	P	46mm		28.5g-7.5g 20.75g	C	1.5M	30AKS0981 1	
19	23:28	EPFU	M	A	NR	46mm		22.0g 7.5g 14.5g	E	3M	30AKS0961 0	
20	23:50	EPFU	M	A	NR	43mm		21g-8g 13g	E	4M	30AKS0953 0	Small DM/ Damage

NCDOT Mist-Netting & Acoustic Survey Data Form

see data sheet 1

Project: NLEB		County: Beaufort		Site#: 1	Night#: 1	Site Name: Goose Creek		Date: 4/25/17				
Latitude:			Longitude:			Datum:		Elevation:		ID By:		
Observers:						Start Time:			End Time:			
Conditions:	Time	Temp	Wind	Clouds	Time	Temp	Wind	Clouds	Time	Temp	Wind	Clouds
Moon Effect:		Start:		Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren (describe):								
		Stop:										
NETS/TRAPS:	A:	B:		C:		D:		E:		F:		
Pool size WxL												
Swoop WxL												
Photo? or #												
BD#	Latitude	Longitude		Mic	Ht	clutter	gain	trigger	interval	Start time	Stop Time	Photo?
Site Description:				Site sketch (label to match Nets/Traps and BD# above)								
Remarks:												

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NCDOT Mist-Netting & Acoustic Survey Data Form

Goose Creek

Project: NCEB Research	County: Beaufort	Site#: 1	Night#: 2	Site Name: road junction	Date: 4/20/17
Latitude: 35.472004 N		Longitude: 76.911254 W		Datum:	Elevation:
Observers: H. Slyce, L. Stokes-Carley				Start Time: 20:00	End Time:
Conditions:	Time 20:30	Temp 69°	Wind NNE	Clouds 10%	Time 23:05
					Temp 66°F
					Wind light
					Clouds
					Time 00:45
					Temp 65°F
					Wind
					Clouds
Moon Effect:	Start:	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren (describe): dirt roads + 2 small roadside ponds in pine forest			
	Stop:				
NETS/TRAPS:	A: double 6m	B: single 4m	C: single 2m	D: single 6m	E: single 6m
Pool size WxL					F: triple 12m
Swoop WxL					
Photo? or #					
BD#	Latitude	Longitude	Mic	Ht	clutter
					gain
					trigger
					interval
					Start time
					Stop Time
					Photo?
Site Description: loblolly pine forest w/ sweet gum, hickory, dogwood, holly, wax myrtle, s. red oak, water oaks, black gum, red bay			<p>The sketch shows a road junction with traps A-F. Trap A is a double net, B is a single net, C is a single net, D is a single net, E is a single net, and F is a triple net. There are two ponds, one near trap C and one near trap D. A bat camp is marked with an 'X'. Arrows point to the 'campground' and 'visitor's center'.</p>		
pinewoods, squirrel & green tree frogs, bullfrog, green + southern leopard frog.					
Remarks: One Southern Flying squirrel in net 1					
Misquito's abundant, some fish flies					
and scarab beetles although less than previous night					

Site sketch (label to match Nets/Traps and BD# above)

NCDOT Mist-Netting & Acoustic Survey Data Form

R-9999

Goose Creek

Project: NLEB research	County: Beaufort	Site#: 1	Night#: 3	Site Name: road junction	Date: 4/27/17	
Latitude: 35.471750° N		Longitude: 76.911203° W		Datum:	Elevation:	
Observers: H. Slyce, L. Stokes-Cawley				Start Time: 20:15	End Time: 01:15	
Conditions:	Time: 21:16	Temp: 74°	Wind: NONE	Clouds: 10%	Time: 22:23	
					Temp: 72°	
					Wind: NONE	
					Clouds: 0%	
					Time: 00:45	
					Temp: 70°	
					Wind: NONE	
					Clouds: 80%	
Moon Effect: new moon	Start:	Land Use: Urban / Agriculture / Forest Water / Wetland / Barren (describe): road set in				
	Stop:	holly forest & small pond adj. to road				
NETS/TRAPS:	A: double 6m	B: double 8m	C: single 4M	D: single 9M	E: triple 12M	
Pool size WxL						
Swoop WxL						
Photo? or #						
BD#	Latitude	Longitude	Mic	Ht	clutter	
					gain	
					trigger	
					interval	
					Start time	
					Stop Time	
					Photo?	
Site Description: see night 2 data sheets			<p>Site sketch (label to match Nets/Traps and BD# above)</p>			
gnat-catchers, great-crested flycatchers, pileated woodpecker, king rail, chuck-wills-widow						
bill frog, s. leopard frogs, pinewoods tree						
Remarks: Black bear spotted between nets at 23:35						
2 minute rain @ 23:55.						

Bat Survey Data Form

Project: NUUB	County: BEAUFORT	Site #: 2	Night #: 1	Site name: VAN SWAMP 1	Date: 6/27/17
Directions to site: off NC 32 @ Long		Latitude: 35 35.697415	Longitude: -83 -76.799925		Elevation:
Directions, cont. Acce Church. Entrance in Beaufort County.					
ID person(s): M. FRAZER		Observers: H. SLICE, L. STOLCE-CAWLEY		Net open time: 20:45	Net close time: 1:45
Sky:	DUSK-time, temp, description 20:45-68°-CLEAR	MID-SAMPLE-time, temp, description 23:10 63° clear	END-time, temp, description 01:16 58° clear		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0		7=hard to walk 8=twigs break from trees; go home, this is a gale! 0	
Moon effect: WAXING CRESCENT - mostly below behind tree line <small>(moon phase, start/stop time visible, # nets illuminated)</small>					
Number/type of nets: A: DOUBLE 9M, B: TRIPLE 12M, C: DOUBLE 6M, D: TRIPLE 6M <small>(label & include size)</small>					
Site description: see data form from 6/28 for details <small>(net placement, stream data, Habitat description, dominant species, canopy cover)</small>					
mixed-age pine hard wood forest (bay forest) w/ medium clutter on dirt roads					
Disturbance: gravel roads, ditches <small>(List 3 most signif. disturbances within 500m)</small>					
ANABAT file name: SD2 @ truck (started late)		<p>Site sketch (net labels, north arrow, landmarks)</p>			
ANABAT location(s): sensitivity 5 due to noise					
Remarks: bear activity near net B @ 21:20. waited in truck for ~20 minutes					
Barred owls periodically calling after midnight. Only 1-2 beetles in net. Many mosquitoes					

Bat Survey Data Form

Project: NLSB	County: BEAUFORT	Site #: 2	Night #: 2	Site name: VAN SWAMP 1	Date: 6/28/17
Directions to site: OFF NC 32 @ LONG		Latitude: 35	Longitude: -83		Elevation:
Directions, cont. ACRE CHURCH ENTRANCE IN BEAUFORT COUNTY					
ID person(s): M FRAZER		Observers: H. SEICE, LIZZY STOKES-CANLEY		Net open time: 20:30	Net close time: 1:30
Sky:	DUSK-time, temp, description 20:30, 71°, clear	MID-SAMPLE-time, temp, description 23:10 - 63° - clear	END-time, temp, description 01:20 - 60° - Clear		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 2; occasionally	4=small branches in motion 5=small trees sway 6=large branches in motion 0	7=hard to walk 8=twigs break from trees; go home, this is a gale! 0		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) waxing crescent; nets all in shadow					
Number/type of nets: (label & include size) A: DOUBLE 9M, B: TRIPLE 12M, C: DOUBLE 6M, D: TRIPLE 6M					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Mixed age pine-hardwood forest (bay forest)					
wax myrtle, red maple, arundinaria, elderberry, loblolly pine, Ilex glabra, Ilex coriacea Ulmus alrifolius (coastal pepperbush), red bay/swamp red bay, Gordonia lasianthus Magnolia virginiana					
Nets set on gravel & dirt roads bordered by large ditches. Medium clutter.					
Disturbance: (List 3 most signif. disturbances within 500m)					
ANABAT file name: SD2 @ truck, bit sensitivity					
ANABAT location(s): set to S due to insect noise					
Remarks: (rain events, other wildlife, etc.) Many leopard frog & other frogs on grassed-over road.					
yellow-billed cuckoo; distant barred owls					
Site sketch (net labels, north arrow, landmarks)					

[SAME AS NIGHT 1]
(6/27/17)

Bat Survey Data Form

Project: NUB		County: BEAUFORT				Site# 2	Night # 2	Site name: VAN SWAMP 1					Date: 6/28/17
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PG/L/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond [^]	Band	# wing punches	Comments
22:05	NYHU	B	JV	M	NR	37	19.2	10.9	8.3	0	300KS 0483		Faint mite scars on wings 1
22:05	PESU	B	JV	F	NR	32	14.6	10.8	3.8	0	300KS 0427		
22:05	NYHU	B	JV	M	NR	34	18.0	10.5	7.5	0	✓		mites No band / small bat 10:23 Kelsey ³
22:05	LABO	B	A	F	PL	41	23.0	10.8	12.2	0	300KS 0050		numerous scars on left wing Right wing scar b/w 3rd-4th digit pin 4
22:55	NYHU	B	A	M	NR	34	17.7	8.0	9.7	0	300KS 0212		22:59 recording 5
00:10	LABO	B	JV	M	NR	38	18.2	11.0	7.2	0	300KS 0378		
00:40	LABO	B	A	M	NR	39	21.0	8.0	13.0	0	300KS 0001		Small mite scar on wings 7
00:40	LABO	B	A	F	L								Escape from net 8
01:00	CORA	A	A	F	PL	43	17.2	7.8		0	✓	2xQ16	Q16 sample punch + hair sample 2 wing 1:12 recording 9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-eared=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU, red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-eared=COTO, Brazilian free-tail=TABR

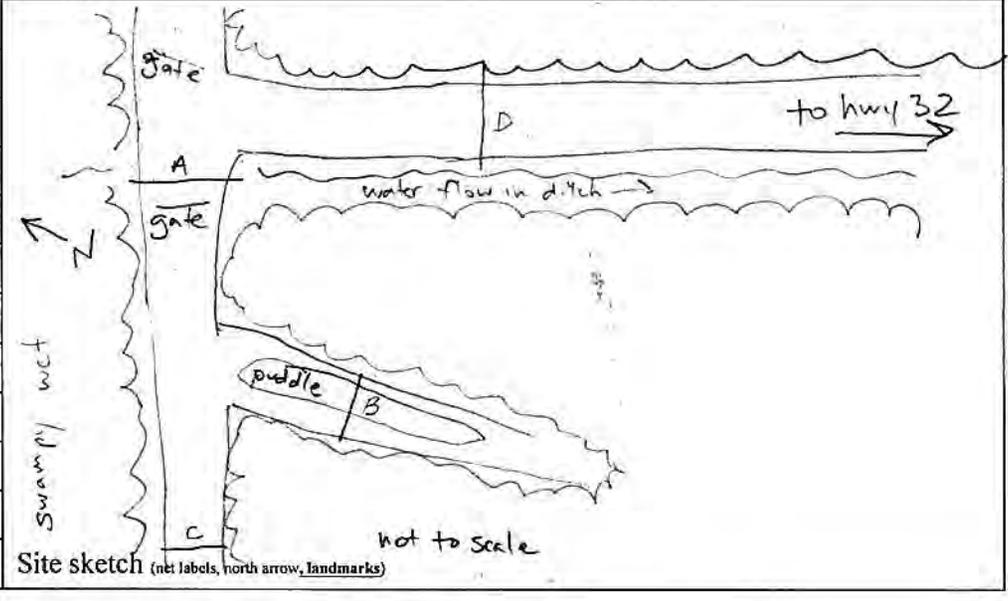
[^]WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage
TAKE PICTURE!

Bat Survey Data Form

(2nd site for Van Swamp)

Project: NLEB R-9999	County: Beaufort	Site #: 3	Night #: 1	Site name: Van Swamp road end	Date: 8/16/17
Directions to site: Turn off hwy 32 at		Latitude: 35 35.701390	Longitude: -83 76.809925		Elevation:
Directions, cont. Long Acre Church into game land. Continue along main road until it ends in a T.					
ID person(s): Mary Frazer		Observers: Nathan Howell + Lizzy Stokes-Cook		Net open time: 20:20	Net close time: 1:20
Sky:	DUSK-time, temp, description 20:50 clear, 77°F	MID-SAMPLE-time, temp, description 23:10 clear, 75°F	END-time, temp, description 74°F 01:00 Clear		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0 very humid	4=small branches in motion 5=small trees sway 6=large branches in motion 0 very humid	7=hard to walk 8=twigs break from trees; go home, this is a gale! 0		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) none - waning crescent (~28%)					
Number/type of nets: (label & include size) A - triple high 6m, B - 9m single, C - 6m single, D - 9m triple					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Red maple - loblolly swamp.					

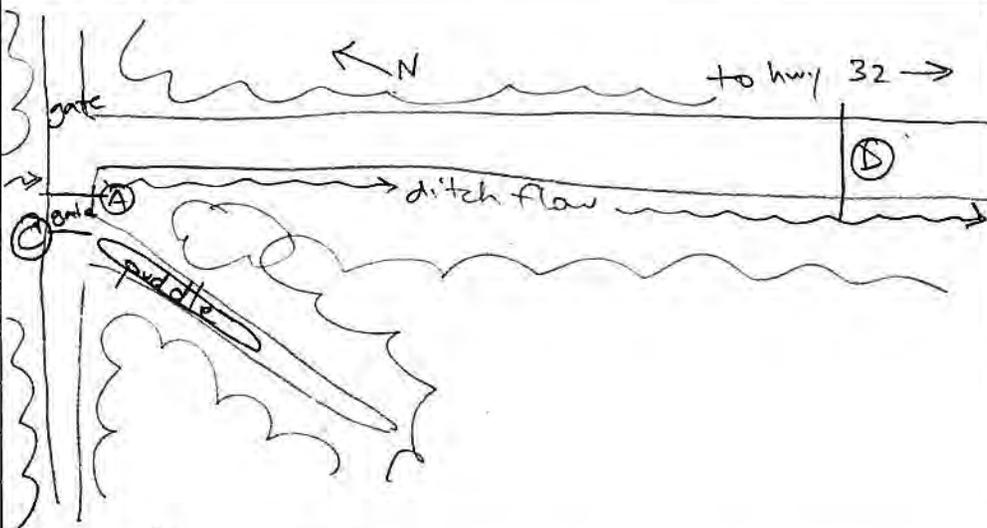
Disturbance: (List 3 most signif. disturbances within 500m)	dirt roads, ditch
ANABAT file name:	SD2 @ truck, but
ANABAT location(s):	sensitivity very low.
Remarks: (rain events, other wildlife, etc.)	Barred owl monkey call @ dusk. Brief rain an hour before sunset. green frogs, copper gray tree frogs, "Megaloptera" frogs
No beetles in net; just 1 imperial moth. Few fireflies	



Bat Survey Data Form

could be worth netting another time in better weather - good overhang at new net D site

Project: 09999 NLEB County: Beaufort		Site #: 3	Night #: 2	Site name: Van Swamp (End of Rd)	Date: 08/17/17
Directions to site: off hwy 32 (near Long Acre Church)		Latitude: 35	Longitude: -83		Elevation:
Directions, cont. at end of game land road at T intersection.					
ID person(s): Mary Frazer (MF) Observers: MF, Nathan Howell, Lizzy Stokes-Cawley			Net open time: 21:20	Net close time: 1:45	
Sky:	DUSK-time, temp, description 21:20, 86°F, clear mostly (post thunderstorm)	MID-SAMPLE-time, temp, description 23:50, 78°, mostly clear	END-time, temp, description 1:30, 76°F, clear humid		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed very humid	4=small branches in motion 5=small trees sway 6=large branches in motion humid	7=hard to walk 8=twigs break from trees, go home, this is a gale! 0		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) none - waning crescent					
Number/type of nets: (label & include size) A - Triple high 6 meter; C - Single high 6 meter; D - Triple high 9 meters;					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover)					
Net C from site 2, Night 1 was moved to a spot about 30 yards away from Net A on the same road. (Double bump set)					
Net D " " " was moved ~200m.					
Medium clutter over main road, (High clutter behind gate.)					
Rain from ~19:00 to 21:10, Distant thunder too.					
Disturbance: (List 3 most signif. disturbances within 500m) gravel/dirt road & ditch					
copperhead (night 1); red belly snake; cottonmouth					
ANABAT file name: too humid - off					
ANABAT location(s):					
Remarks: (rain events, other wildlife, etc.) Many frogs! Gray tree frog, green pine warblers, leopard					
+ Shrub: Gordonia lasianthus, Cyrilla racemiflora, Itea virginica,					
Clethra alnifolia, Symplocos tinctoria, Persea palustris, Acer					
floridanus. Vines: Smilax spp. Herbs: Arundinaria tecta,					
Carex spp., Sunus effusus, various grasses.					



Site sketch (net labels, north arrow, landmarks)

Bat Survey Data Form

Project: NLEB Research Eastern NC		County: Caswell	Site #: 7	Night #: 7	Site name: Caswell Pond	Date: 05/15/2017
Directions to site: Caswell gameland			Latitude: 36.34926	Longitude: -79.348859	Elevation:	
Directions, cont. Sated entrance (handicapped entrance) off NC 62. (S. of Burton Chapel Rd)						
ID person(s): Mary Frazer		Observers: Nancy Scott, Nathan Howell		Net open time: 20:40	Net close time: 1:50	
Sky:	DUSK-time, temp, description 22:14, 68°F, Clear sky		MID-SAMPLE-time, temp, description 23:28, 62°F, clear sky		END-time, temp, description 1:31 61°F clear	
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0		4=small branches in motion 5=small trees sway 6=large branches in motion 0		7=hard to walk 8=twigs break from trees; go home, this is a gale! 0	
Moon effect: (moon phase, start/stop time visible, # nets illuminated) none waning gibbous just rising @ 1:30						
Number/type of nets: (label & include size) A = 6m Triple High, B = 6m Double High, C = 12m Single High, D = 9m Single High						
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) gravel roads & old farm pond in mixed oak-hickory forest. See 5/16 data form for more info.						
dry mesic oak-hickory						
Disturbance: (List 3 most signif. disturbances within 500m) gravel roads			<p>Site sketch (net labels, north arrow, landmarks)</p>			
ANABAT file name:						
ANABAT location(s): BD 2 @ track @ 24:30						
Remarks: (rain events, other wildlife, etc.) cricket frogs - many frogs - at pond. And many many HUGE leeches. Pond too deep to net easily.						

Bat Survey Data Form

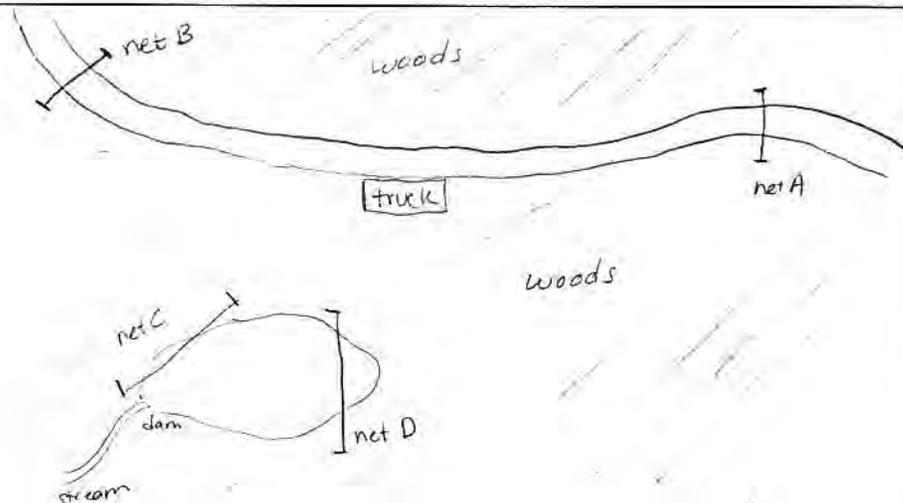
Project: Research NLEB Eastern NC		County: Caswell		Site# 1		Night # 1		Site name: Caswell Pond			Date: 05/16/2017		
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PG/LP/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond^	Band	# wing punches	Comments
20:45	LABO	A	A	F	NR	—	—	—	—	—	—	0	Released at net
20:50	NYHU	A	A	M	NR	34mm	16.0	7.5	8.5	0	30AKS NC 0414	0	
21:00	NYHU	B	—	M	—	—	16.0	7.5	8.5	—	—	0	EFH
21:10	LABO	A	A	F	NR	40mm	21.5	7.5	14	0	30AKS NC 0431	0	recaptured @ 1:40
21:10	EPPU	A	A	M	NR	46mm	24.5	7.5	17	0	30AKS NC 0842	0	Physical damage on right wing
21:15	LABO	B	A	—	—	—	19.0	—	—	—	—	0	EFH
21:57	EPPU	A	A	F	PG	48mm	31.5	7.5	24	0	30AKS NC 0812	0	
21:57	NYHU	B	A	M	NR	35mm	17.5	7.5	10	0	30AKS NC 0448	0	small hole in tip of left wing Recaptured @ 22:20
22:20	LABO	A	A	F	PG	33mm	21.5	7.5	14	0	30AKS NC 0406	0	Pinholes left wing
22:20	LABO	A	A	M	NR	41mm	20.0	6.5	13.5	0	0471	0	Released with no band
23:38	LABO	A	A	F	PG?	44mm	23.0	7.0	16.0	0	30AKS NC 0450	0	
23:38	LABO	A	A	M	NR	41mm	19.0	7.5	11.5	0	30AKS NC 0409	0	
23:55	LANO	A	A	M	NR	—	—	—	—	—	—	0	Escaped from net.
00:15	LANO	C	A	M	NR	43mm	16.0	7.5	8.5	—	30AKS NC 0447	0	Bat detector @ 00:28
00:41	LABO	B	A	M	NR	41mm	15.5	7.0	8.5	0	0442	0	Light physical damage on each wing
00:41	LABO	B	A	F	PG	40mm	23.5	7.5	16.0	0	0453	0	Bat detector @ 01:00
1:07	NYHU	B	A	M	NR	36	16.5	7.5	9.0	0	0429	0	Bat det. @ 01:26
1:08	LABO	A	A	F	PG	40	18.5	7.0	11.5	0	0417	0	

*SPECIES: big brown=EPPU, Pip/tricolor=PESU, little brown=MYLU, northern long-ear=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU
 red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-ear=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage
 TAKE PICTURE!

Bat Survey Data Form

Project: NLEB Research Eastern, NC	County: Caswell	Site #: 7	Night #: 2	Site name: Caswell Pond	Date: 05/16/2017
Directions to site: Game land access road		Latitude: 35	Longitude: -83		Elevation:
Directions, cont. off NC 62.					
ID person(s): Mary Frazer		Observers: Nathan Howell, Nancy Scott		Net open time: 20:30	Net close time: 1:35
Sky:	DUSK-time, temp, description 20:25, 72°F, clear	MID-SAMPLE-time, temp, description 23:15, 68°F, clear		END-time, temp, description 1:15, 67°F, clear	
Wind:	(0=no wind) 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed	4=small branches in motion 5=small trees sway 6=large branches in motion		7=hard to walk 8=twigs break from trees; go home, this is a gale!	
Moon effect: (moon phase, start/stop time visible, # nets illuminated)					
Number/type of nets: A: 6m triple B: 6m double C: 12m single D: 12m single (label & include size)					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover)					
Gravel road & small pond in mixed oak forest.					
Bats circling over the pond earlier in the evening; not later - but detector pretty quiet too. dung beetle in net					
Disturbance: (List 3 most signif. disturbances within 500m)			gravel roads		
ANABAT file name:					
ANABAT location(s): BD 2 @ truck					
Remarks: (rain events, other wildlife, etc.)					
Pinus echinata, P. virginiana, Quercus alba, Q. stellata, Q. coccinea, Liquidambar styraciflua, Oxidendrum arboreum, Juniperus virginiana, Cornus florida, Quercus falcata, Ager subrum, Prunus serotina. Most likely DMOHF in 4th Approx. Coopers Fabescens, Chimaphila maculata					
Barred owls calling					



Site sketch (net labels, north arrow, landmarks)

Bat Survey Data Form

Project: NLEB Research Eastern NC		County: Caswell	Site #: 2	Night #: 1	Site name: creek @ wild life lane	Date: 05/17/2017
Directions to site: Game land road ;			Latitude: 35 36.368948	Longitude: -83 -77.316342	Elevation:	
Directions, cont. which connects to wild life lane, which connects to Burton Chapel rd.						
ID person(s): Mary Frazer		Observers: Nancy Scott, Nathan Howell		Net open time: 20:30	Net close time: 01:30	
Sky:	DUSK-time, temp, description 20:25, 70°F, Partly cloudy	MID-SAMPLE-time, temp, description 23:30, 65°F, overcast		END-time, temp, description 1:12 65° clear		
Wind:	(0=no wind) 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0		7=hard to walk 8=twigs break from trees; go home, this is a galc! 1		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) none						
Number/type of nets: (label & include size) A = 6m double high, B = 9m 1.5 high, C = 6m single high, D = 6m single high, E = 9m double high						
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Gravel road (curvy & hilly) in a creek in mixed forest						
Tanager, acadia flycatcher, hooded warbler, narrow-mouth toad. Screech owls after 21:00. Jue bugs & a couple dung beetles in net. Flying squirrel in Net E.						
Disturbance: (List 3 most signif. disturbances within 500m) gravel roads			<p>Site sketch (net labels, north arrow, landmarks)</p>			
ANABAT file name:						
ANABAT location(s): BD 2 @ truck detector fairly active						
Remarks: (rain events, other wildlife, etc.) Acer floridanum, Fagus grandifolia, Quercus alba, Platanus occidentalis, Carpinus caroliniana, Liquidambar styraciflua, Liriodendron tulipifera, Lindera benzoin. Station set up about 90 m away from creek. Probably MMHF. Polystichum acrostichoides						
Site sketch (net labels, north arrow, landmarks)						

Bat Survey Data Form

Project: NLEB Research Eastern NC		County: Caswell				Site# 2	Night # 1	Site name: creek @ Wildlife Lane			Date: 05/17/2017		
Time	Species*	Net	Age (A/J/V)	Sex (M/F)	Repro NR/PG/LP/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond^	Band	# wing punches	Comments
20:40	LABO	B	A	M	NR	40	17.5	7.5	10.0	0	30AKS NC 0413	—	light physical damage
21:03	LABO	C	A	F	PG	41	24.0	8.1	15.9	0	—	—	Released with no band & to speed up processing
20:50	LABO	B	A	F	PG	44	24.0	7.5	16.5	0	30AKS NC 0497	—	Released no band
21:02	LABO	B	A	F	NR	38	18.0	7.5	10.5	0	—	—	Released no band
20:40	LABO	E	A	M	NR	36	15.0	6.5	8.5	0	0457	—	
20:40	LABO	E	A	F	NR	38	16.0	7.5	8.5	0	0403	—	
20:40	PESU	E	A	F	PG	34	14.2	7.9	6.3	0	0486	—	small hole in right wing
21:10	NYHU	B	A	M	NR	34	15.5	7.6	7.9	0	0441	—	
21:20	LABO	D	A	F	PG	43	18.4	7.0	11.4	0	0444	—	
21:22	EPPU	C	A	F	PG	46	32.0	7.5	24.5	0	0440	—	no band
21:30	LABO	E	A	M	NR	40	17.4	7.8	9.6	0	0438	—	
21:40	LABO	B	A	F	PG	43	23.5	7.5	16.0	0	0421	—	
21:45	NYHU	D	A	F	PG	35	17.5	7.0	10.5	0	0434	—	
21:50	EPPU	E	A	M	NR	48	24	7.5	16.5	0	0828	—	
22:05	NYHU	B	A	M	NR	36	15.8	7.6	8.2	0	0487	—	
22:15	LABO	D	—	—	—	—	—	—	—	—	—	—	EFN
22:00	?	B	—	—	—	—	—	—	—	—	—	—	EFN
22:44	LABO	B	A	M	NR	40	18.5	8.0	10.5	0	0489	—	
22:50	LABO	D	A	F	PG?	44	16.0	8.0	8.0	0	0476	—	
22:55	LABO	B	A	F	PG	45	24.0	8.0	16.0	0	0491	—	
23:35	LABO	E	A	F	PG	39	23.0	7.5	15.5	0	0456	—	
00:00	LABO	B	A	F	—	—	—	—	—	—	—	—	EFN

*SPECIES: big brown=EPPU, Pip/tricolor=PESU, little brown=MYLU, northern long-eared=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU
red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-eared=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage
TAKE PICTURE!

Bat Survey Data Form

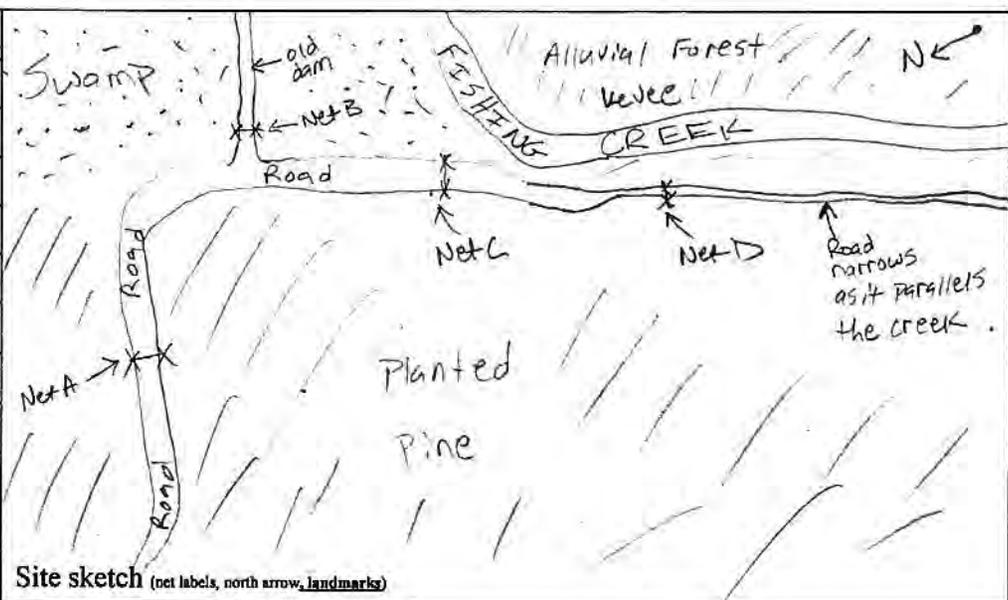
Project: NLEB RESEARCH	County: CASWELL	Site #: 3	Night #: 1	Site name: MARY JANE BIGELOW	Date: 5/22/17
Directions to site: BURTON CHAPEL RD TO		Latitude: 35° 36.354127° N	Longitude: -83° 79.278402° W		Elevation:
Directions, cont. MARY JANE BIGELOW TO GAMELANDS ACCESS ROAD.					
ID person(s): MARY FRAZER			Observers: HANNAH SLICE, NATHAN HOWELL	Net open time: 20:30	Net close time: 1:30
Sky:	DUSK-time, temp, description 20:40 cloudy 69°F humid	MID-SAMPLE-time, temp, description 23:15 clear, 65° humid	END-time, temp, description 01:07 63°F, cloudy		
Wind:	0 (no wind) 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed	0 4=small branches in motion 5=small trees sway 6=large branches in motion	0 7=hard to walk 8=twigs break from trees; go home, this is a gale!		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) none					
Number/type of nets: (label & include size) A=9m double, B=double 4m, C=single 2.0m, D=single 4m					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Gravel road in mixed hardwood forest + canopied creek					
Betula nigra, Platanus occidentalis, Acer regundo, L. glans nigra					
Lindera benzoin, Asimina triloba, Rosa multiflora, Ligustrum sinense					
Piedmont alluvial forest					
Disturbance: (List 3 most signif. disturbances within 500m) gravel road, paved road		<p>Site sketch (net labels, north arrow, landmarks)</p>			
ANABAT file name: BD2 @ truck					
ANABAT location(s):					
Remarks: (rain events, other wildlife, etc.) Fowler's toad, Cope's gray treefrog					
Paula, indigo bunting,					
Rain started as well left @ 2:30 → affected bat activity?					
Coyotes - distant - at 22:30					
Few calls on bat detector					
Mostly dung beetles in net.					

Bat Survey Data Form

Project: MEB Research	County: Caswell	Site #: 4	Night #: 1	Site name: Mary Jane Bigelow upland	Date: 5/25/17
Directions to site: NG 62 to Burton Chapel Rd to		Latitude: 35 36.346589	Longitude: -83 79.275672		Elevation:
Directions, cont. Mary Jane Bigelow Rd. Entrance is last gameland entrance on the north.					
ID person(s): M. Frazer		Observers: N. Howell, L. Stokes-Cawley		Net open time: 20:40	Net close time: 1:40
Sky:	DUSK-time, temp, description 60°F @ 21:10	MID-SAMPLE-time, temp, description 57°F 23:45		END-time, temp, description 01:26, 56°F, clear	
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed wind - 1	4=small branches in motion 5=small trees sway 6=large branches in motion 0-1		7=hard to walk 8=twigs break from trees; go home, this is a gale! 0-1	
Moon effect: (moon phase, start/stop time visible, # nets illuminated)					
Number/type of nets: (label & include size) 1 - triple high 9m 1 - triple high 6m 1 single high 6m					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Carya spp., Quercus falcata, Pinus echinata, Q. alba, Fraxinus americana, Ulmus spp., Juniperus virginiana, Q. coccinea, Acer rubrum, Virburnum rafinesqueanum, Oxydendron aboreum, Prunus serotina, Q. stellata, Cercis canadensis Dirt road with puddle in mixed upland forest. dry mesic oak hickory?					
Disturbance: (List 3 most signif. disturbances within 500m) Paved road, small clear-cut, possibly 7 house.			<p>A hand-drawn site sketch showing three net locations labeled A, B, and C. Location A is a 'triple high' net, B is a 'triple high' net, and C is a 'single high' net. A 'Gate' is marked to the right of C. A north arrow points towards the bottom right. The sketch is labeled 'Mary Jane Bigelow' and 'Road'.</p>		
ANABAT file name: BD2 @ truck					
ANABAT location(s):					
Remarks: (rain events, other wildlife, etc.) indigo bunting, blue gray gnat catcher Rain @ 18:50, ended - 19:25. Only a couple beetles in net. Bat detector pretty quiet as of ~22:30.					
			Site sketch (net labels, north arrow, landmarks)		

Bat Survey Data Form

Project: NLEB Research Eastern, NC	County: Edgecombe	Site #: 2	Night #: 1	Site name: Maple Swamp @ Fishing Creek	Date: 05/31/2017
Directions to site: Gated gameland road (dirt)	Latitude: 35 35.996942	Longitude: -83 -77.541645	Elevation:		
Directions, cont. off NC 97, near where maple swamp joins Fishing Creek.					
ID person(s): Mary Frazer	Observers: Nathan Howell, Lizzy Stokes-Cawley, Chris Manley	Net open time: 20:30	Net close time: 1:30		
Sky: 20:35 75°F overcast	MID-SAMPLE-time, temp, description: 23:00 71°F clear heat lightning distant thunder	END-time, temp, description: 1:10 70°F clear			
Wind: 1	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed	4=small branches in motion 5=small trees sway 6=large branches in motion	7=hard to walk 8=twigs break from trees; go home, this is a gale!		
Moon effect: first quarter, visible at sunset, but nets are all under tree canopy. No longer visible @ 23:30.					
Number/type of nets: A=Triple high 4m, B=Single high 6m, C=Triple high 9m, D=Single high 4m					
Site description: Dirt road in mixed forest - loblolly & hardwood.					
Heat lightning / thunder (bat clear sky) @ 22:40. ^{storm} Front cleared through by 1:00.					
Disturbance: Dirt road & old dam/levee					
ANABAT file name: SD2 @ truck. (clock is set)					
ANABAT location(s): Flash card 3 ~5 min fast					
Remarks: Levee Forest / Planted loblolly pine					
Bat detector pretty quiet → few calls					
A few Junebugs + a dung beetle in net.					
green frogs; green tree frog, cricket frogs					
fire flies almost synchronous!					
Too many mosquitos					



Site sketch (net labels, north arrow, landmarks)

Bat Survey Data Form

Project: NLEB Research Eastern, NC		County: Edgecombe				Site# 7	Night # 7	Site name: Maple Swamp @ Fishing Creek				Date: 05/31/2017	
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PG/L/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond^	Band	# wing punches	Comments
22:20	LABO	A	A	F	PG	41	24.5	7.5	17.0	0	3005 NC 0394	N/A	1
22:40	LABO	A	A	F	PG	42	27.0	8.0	19.0	0	3005 NC 0492	—	2 light phys. damage on L wing
00:40	CORA	C	A	F	NR	44	18.0	8.0	10.0	0	—	—	3 No band (CORA)
1:15	LABO	A	A	M	NR	40	18.0	7.5	10.5	0	3005 NC 0009	—	4
1:20	LABO	A	A	F	PG	42	25.5	8	17.5	0	3005 NC 0351	—	5
1:35	LABO	C	A	F	PG	38	25.0	8	17	0	—	—	6
1:30	LABO	C	A	F	PG	39	24.0	7	17	0	—	—	7
													8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-ear=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU
 red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-ear=COTO, Brazilian free-tail=TABR

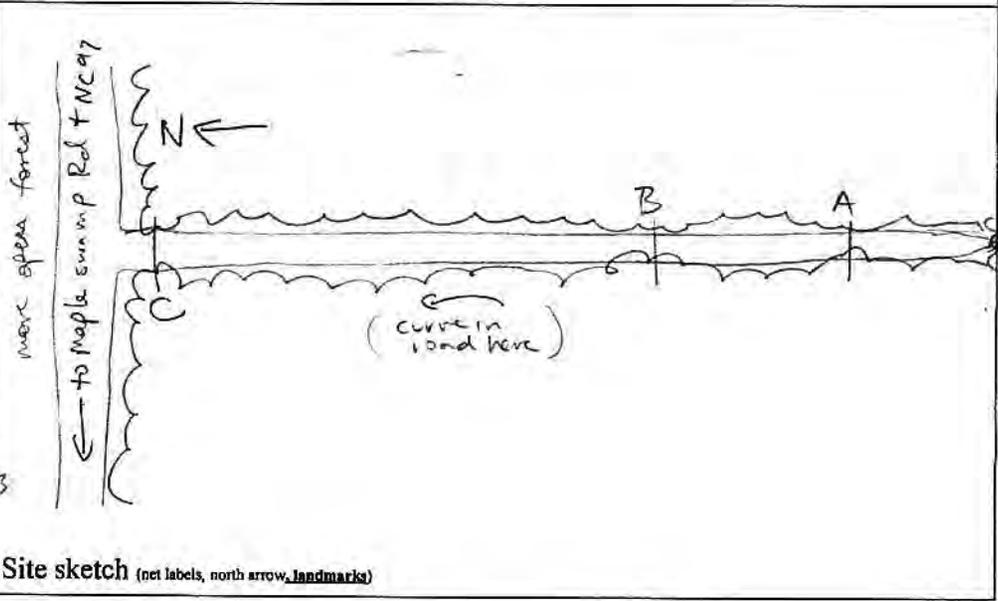
^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage
 TAKE PICTURE!

Bat Survey Data Form

Project: NLEB Research Eastern, NC		County: Edgecombe	Site #: 1	Night #: 2	Site name: Maple Swamp @ Fishing Creek	Date: 06/01/2017
Directions to site: Game land property			Latitude: 35	Longitude: -83		Elevation:
Directions, cont. (Lower Fishing Creek) southeast of NC 97.						
ID person(s): Mary Frazer		Observers: Nathan Howell, Lizzy Stokes-Cawley		Net open time: 20:40	Net close time: 1:40	
Sky:	DUSK-time, temp, description 21:20 71° overcast	MID-SAMPLE-time, temp, description 23:50 67° slightly overcast	END-time, temp, description 01:18 69°F, slightly overcast			
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0		7=hard to walk 8=twigs break from trees: go home, this is a gale!		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) visible at sunset, but behind trees (first quarter)						
Number/type of nets: (label & include size) A = Triple high 9m, B = Single High 6m, C = Triple high 9m, E = Double high						
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Dirt road in mixed forest, adjacent to swamp & creek.						
Betula nigra, Carpinus caroliniana, Fagus grandifolia, Pinus taeda, Ilex, Taxodium, Carya sp.						
Disturbance: (List 3 most signif. disturbances within 500m) dirt road, ^{old} dam			<p>Site sketch (net labels, north arrow, landmarks)</p>			
ANABAT file name: BD2 @ truck						
ANABAT location(s):						
Remarks: (rain events, other wildlife, etc.) Planted Pine / Levee Forest Hardly any calls on bat detector Many frogs + mosquitoes. Check willb widow.						

Bat Survey Data Form

Project: NLEB	County: Edgecombe	Site #: 2	Night #: 1	Site name: Lower Fishing Creek Maple Swamp Rd	Date: 6/19/2017
Directions to site: Game land access road		Latitude: 35° 36.069486	Longitude: -83° 77.539485		Elevation:
Directions, cont. between ag land property, off Maple Swamp Rd. At northern game land tract.					
ID person(s): Mary Frazer, obs		Observers: Nancy Scott, Lizzy Stokes-Cawley		Net open time: 20:50	Net close time:
Sky:	DUSK-time, temp, description 79, occasional breeze, humid	MID-SAMPLE-time, temp, description 23:27, 77°, 100% cloudy	END-time, temp, description 01:38, 77°, cloudy, thunder (distant)		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 2-4	4=small branches in motion 5=small trees sway 6=large branches in motion 0-1 light drizzle	7=hard to walk 8=twigs break from trees; go home, this is a gale! 1-2		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) last quarter - none visible					
Number/type of nets: 3 mist nets A=triple 6m, B=double 9m, C=triple high 6m					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Mixed-age hardwood forest w/ dirt road. Medium clutter on road.					
<p>Quercus alba, Q. nigra, Q. phellos, Ulmus americana, Prunus serotina, Q. botryd, Liquidambar, Acer rubrum Myrica sp., Q. velutina, D. tyopsis, Heliconia</p>					
Disturbance: (List 3 most signif. disturbances within 500m) dirt roads, forestry mat, nearby					
ANABAT file name: SD2 @ truck until ~ 23:00					
ANABAT location(s): CFC 47					
lightning bugs all night					
Remarks: (rain events, other wildlife, etc.) Wind level 2-3 @ net C, but wind only @ 0-2 at nets A+B, since they are tucked under canopy. dung beetles, June bugs & long-horn beetles in nets					
Heat lightning @ sunset					
Light rain @ 23:10 - 23:35 → did not close nets					
Periodic distant thunder after midnight.					



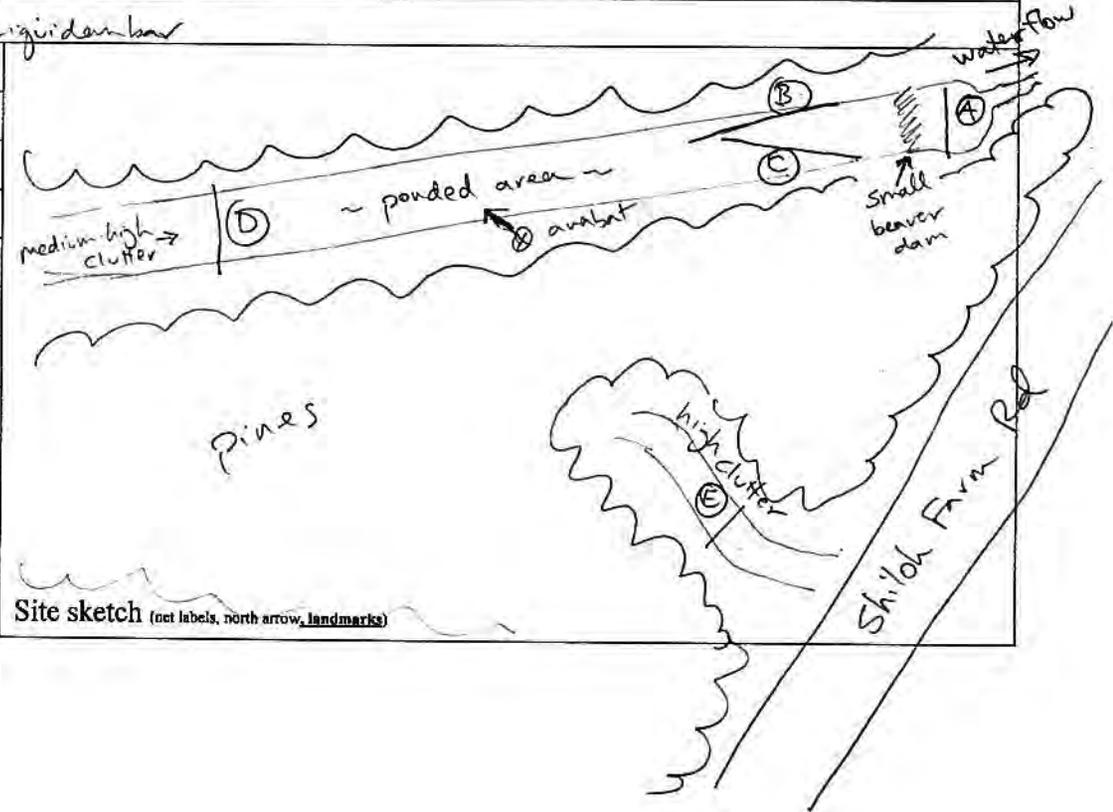
bat fly vial = 300ks 0003

Bat Survey Data Form

Project: NLEB	County: Edgecombe	Site #: 2	Night #: 2(forsite)	Site name: Lower Fishing Creek Maple Swamp Rd	Date: 6/21/2017
Directions to site: Gameland access Road		Latitude: 35 36.069486	Longitude: -83 77.539485		Elevation:
Directions, cont. Between ag Land property, off Maple Swamp Rd. At Northern game land tract,					
ID person(s): Mary Frazer		Observers: Nathan Howell, Lizzy Stokes-Cauly		Net open time: 20:50	Net close time: 1:50
Sky:	DUSK-time, temp, description 20:50, 72, high humidity	MID-SAMPLE-time, temp, description 23:30, partly cloudy, humid 72°	END-time, temp, description 1:15, partly cloudy, humid, 71°F		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0		7=hard to walk 8=twigs break from trees, go home, this is a gale! 0	
Moon effect: (moon phase, start/stop time visible, # nets illuminated) None - waning crescent (5%)					
Number/type of nets: 3 Mist nets A=triple 6m, B=double 9m, C=triple high 6m (label & include size)					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Mixed-age hard wood forest w/ dirt road Medium clutter on Road - see 6/19/17 data form for species.					
Disturbance: (List 3 most signif. disturbances within 500m) dirt roads					
ANABAT file name: SD2 @ truck. → Quiet except for katydids.					
ANABAT location(s):					
Remarks: (rain events, other wildlife, etc.) scarlet tanager, chat, prothonotary, wood thrush, cuckoo Many beetles in net Mosquitoes!! Horseflies in net @ net opening Lightning bugs - many. Many distant green treefrogs.					
Site sketch (net labels, north arrow, landmarks)					

Bat Survey Data Form

Project: NLEB	County: Edgecombe	Site #: 3	Night #: 1	Site name: Mildred woods mitigation site	Date: 6/22/2017
Directions to site: off of South Shiloh Farm Rd.		Latitude: 35 35,863907	Longitude: -83 77,501172	Elevation:	
Directions, cont. Access entrance to NCDOT mitigation site					
ID person(s): Mary Frazer		Observers: Nathan Howell + Lizzy Stokes-Cutler		Net open time: 20:35	Net close time: 1:35
Sky:	DUSK-time, temp, description 20:30 77°F 100% overcast	MID-SAMPLE-time, temp, description 23:37 74°F 100% overcast	END-time, temp, description 1:08 75°F 100% cloudy		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0	7=hard to walk 8=twigs break from trees; go home, this is a gale! 0		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) none - waning crescent, last quarter					
Number/type of nets: (label & include size) (A) single 2.6m (B) 9m single (C) 9m single (D) 6m double (E) 4m single					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) wetland mitigation site, pine loblolly forest with old road bed that has been restored to a long ponded area. → alligator weed Medium-high clutter					
Understory: Q. michauxii, Q. pagodifolia, Ulmus sp., Liquidambar					
Disturbance: (List 3 most signif. disturbances within 500m) Highway.					
ANABAT file name: SD2 on rebar pointing out over					
ANABAT location(s): water. sensitivity @ 5 due to frog/bug noise.					
Remarks: (rain events, other wildlife, etc.) cricket frogs deafening. Also green tree frog & bullfrogs, leopard frogs.					
Site sketch (net labels, north arrow, landmarks)					



MAP 1000 - 10000 ft ... 2.00 ...
 11.54.2777

Bat Survey Data Form

game land

Lower Fishing Creek NCDOT

Project: NLEB	County: Edgecombe	Site #: 4	Night #: 1	Site name: Maple Swamp Rd West	Date: 8-22-17
Directions to site: NWRC gate on east side of Maple Swamp Rd; site is on NW side of tract.		Latitude: 35 36.069681	Longitude: -83 71.542777		Elevation:
ID person(s): M. Frazer			Observers: N. Scott, K. Sevick	Net open time: 20:20 pm	Net close time: 1:20
Sky:	DUSK-time, temp, description clear 76°F 20:10	MID-SAMPLE-time, temp, description 23:05, 75°, clear	END-time, temp, description 1:00 73° clear		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0-1	4=small branches in motion 5=small trees sway 6=large branches in motion 1 humid	7=hard to walk 8=twigs break from trees; go home, this is a gale! 0-1 humid		
Moon effect: new moon - no effect <small>(moon phase, start/stop time visible, # nets illuminated)</small>					
Number/type of nets: A=4m double, B=6m triple, C=9m triple <small>(label & include size)</small>					
Site description: <small>(net placement, stream data, Habitat description, dominant species, canopy cover)</small> Sweet gum, Red maple, loblolly, River birch, sycamore, ironwood, Virginia magnolia, water oak, swamp chestnut oak gate E off Maple Swamp Mixed-age pine-hardwood forest					
low clutter @ net C + truck; high clutter @ nets A + B.					
Disturbance: <small>(List 3 most signif. disturbances within 500m)</small> dirt road		<p>Site sketch <small>(net labels, north arrow, landmarks)</small></p>			
ANABAT file name: SD2 @ truck, sensi = 7					
ANABAT location(s): little bat activity heard.					
Remarks: <small>(rain events, other wildlife, etc.)</small> baby possum in tree					
barred owl nearby @ dusk					

Bat Survey Data Form

Project: NLSB	County: HALIFAX	Site #: 1	Night #: 1	Site name: MEDOC MTN: LYNCHA HOMESTEAD	Date: 7/24/17
Directions to site: MEDOC MT STATE PARK RD		Latitude: 35.36.259757	Longitude: -83.77.801233		Elevation:
Directions, cont. Dirt roads intersecting, about 1/4 mile west of Medoc Mtn state park.					
ID person(s): MF	Observers: JEC, HS, NH, ML		Net open time: 20:35	Net close time: 1:35	
Sky:	DUSK-time, temp, description 20:10, 82°, clear	MID-SAMPLE-time, temp, description 23:00 75°F clear	END-time, temp, description 01:15 73°F clear		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0	7=hard to walk 8=twigs break from trees; go home, this is a gale!		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) waxing crescent (4%)					
Number/type of nets: (label & include size) A: double 2M, B: double 6M, C: double 6M, D: double 9M					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover)					
L. styraciflua, P. taeda, B. nigra, Juniperus virginica, Prunus serotina, Fraxinus pennsylv.					
Q. nigra, A. rubrum, Morella sp.					
Disturbance: (List 3 most signif. disturbances within 500m) Mowed/dirt roads, parcel state road.					
ANABAT file name: SDZ @ truck. Sensitivity					
ANABAT location(s): S-6, due to excessive insect noise.					
Remarks: (rain events, other wildlife, etc.) A few dung beetles in nets - earlier in the evening.					
Imperial moths in a few nets.					
<p>Site sketch (net labels, north arrow, landmarks)</p>					

Bat Survey Data Form

Medoc Mtn

Page 1 of 1

Project: NLEB		County: HALIFAX			Site# 1	Night # 1	Site name: LYNCH HOMESTEAD				Date: 7/24/17		
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PG/L/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond^	Band	# wing punches	Comments
20:40	LABO	A	JV	M	NR	39	16g	7.8g	8.2g	0	0462	✓	PIVOTAL R WING RECAP 20:40
20:40	LABO	C	JV	F	NR	41	22g	10.5g	11.5g	0	0746	✓	PIVOTAL L WING
20:40	LABO	C	JV	F	NR	42	17.3g	8g	9.3g	0	0210	✓	
20:40	LABO	C	JV	M	NR	38	14.8g	7.9g	6.9g	0	0459	✓	
20:57	LABO	B	A	F	PL	41	20.5g	7.6g	12.9g	0 ^P	0007	✓	Teeth bleeding from being in bag.
21:00	LABO	A	JV	M	NR	38	17.5g	10.5g	7g	0	0336	✓	
21:00	LABO	C	JV	F	NR	42	17.5g	8.0g	9.5g	0	0360	✓	darker fur, but reddish (light) face. pics
21:00	LABO	C	JV	M	NR	39	15.2g	7.4g	7.3g	0	0027	✓	Bleeding from impact
21:12	LABO	B	JV	F	NR	42	19.6g	10.7g	9.0g	0	0229	✓	darker fur, but light face. pics
21:00	LABO	C	A	F	NR	41	21.0g	8.0g	13.0g	0	0344	✓	
21:25	LABO	C	A	F	PL	42	23.5g	8.8g	15.5g	0	0019	✓	bleeding from bag
21:12	LABO	D											escape from net
22:20	LABO	A	JV	F	NR	42	17.9g	7.9g	10g	0	0048	✓	
23:08	LABO	B	A	F	PL	43	22g	8g	14g	0	0020	✓	Pinhole on right wing bleeding from net
23:30	LABO	B	JV	F	NR	41	21.5g	11.6g	10.5g	0	0453	✓	
23:45	LABO	B	JV	M	NR	39	20g	10.5g	9.5g	0	0250	✓	
23:58	LABO	C	JV	M	NR	38	19.5g	10.5g	9g	0	0473	✓	BLOODY
23:58	LABO	B	JV	F	NR	41	17.8g	8g	9.8g	0	0445	✓	BLOODMOUTH - BENT FANG
00:12	LABO	A	JV	F	NR	39	12g	7.8g	9.2g	0	0282	✓	
23:45	LABO	A											EFN
1:00	LABO	A	JV	F	NR	39	22.5g	10.7g	11.75g	0	0216	✓	
1:00	LABO	C	JV	F	NR	42	21.5g	11g	10.5g	0	0383	✓	

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-eared=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYOR, southeastern=MYAU
red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-eared=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage

TAKE PICTURE!

1:20	LABO	D	JV	F	NR	42	17.7g	8.4g	9.3g	0	0225	✓	WHITE BLEACHING INSIDE L WING NEAR LEG
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Bat Survey Data Form

MEDOC MTN ~~STATE PARK~~

Project: NLEB	County: HALIFAX	Site #: 1	Night #: 2	Site name: LYNCH HOMESTEAD	Date: 7/25/17
Directions to site: MEDOC MTN STATE PARK RD		Latitude: 35 36.29757	Longitude: -83 77.891233		Elevation:
Directions, cont. DIRT ROADS INTERSECTING, ABOUT 1/4 MILE WEST OF MEDOC MTN STATE PARK					
ID person(s): MF	Observers: JEC, NA, HS		Net open time: 20:30	Net close time:	
Sky:	DUSK-time, temp, description 20:30 79°F partly cloudy	MID-SAMPLE-time, temp, description 23:00 77°F partly cloudy	END-time, temp, description 1:00 70° 0 Clear		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0-2	7=hard to walk 8=twigs break from trees; go home, this is a gale!		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) None - waxing crescent (9%)					
Number/type of nets: (label & include size) A: DOUBLE 9M, B: DOUBLE 6M, C: DOUBLE 6M, D: DOUBLE 9M					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Mixed age hard wood/pine forest; some upland, some more low-lying					
SAME AS NIGHT 1 (7/24/17)					
Medium clutter					
Disturbance: (List 3 most signif. disturbances within 500m) Dirt/grass roads, paved state road.					
ANABAT file name: SD2C + track					
ANABAT location(s):					
Remarks: (rain events, other wildlife, etc.) Periodic breeze from 22:00-00:30.					
Net D billowed, but other nets mostly out of the breeze.					
spotted jive beetle = grape hopper beetle = tan w/ spots					
			<p>Site sketch (net labels, north arrow, landmarks)</p>		

Dando

Bat Survey Data Form

Project: NLEB Research R-9999		County: Halifax	Site #: 2	Night #: 1	Site name: Tillery GL / Hwy 903	Date: 07/26/2017
Directions to site: At end of gameland		Latitude: 35 36.206721	Longitude: -83 77.548147		Elevation:	
Directions, cont. road off hwy 903, take right fork in gameland road.						
ID person(s): Mary Frazer		Observers: Hannah Slye Nathan Howell		Net open time: 20:32	Net close time: 1:32	
Sky: DUSK-time, temp, description 20:30 77°F, clear	MID-SAMPLE-time, temp, description 23:04 73° clear		END-time, temp, description 1:10 72° partly clear			
Wind: (0=no wind) 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0			7=hard to walk 8=twigs break from trees; go home, this is a gale!		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) 16% waxing crescent - on net C from 21:00-22:00, but dim.						
Number/type of nets: A: Triple high 4m; B: Triple high 4m; C: Double high 12m						
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Net C on wide open dirt road; nets A+B on shady cluttered dirt path. Loblolly pine forest (thinned plantation) adjacent to swamp.						
imperial moth. a couple long-horn beetles in nets						
Disturbance: (List 3 most signif. disturbances within 500m) dirt roads		<p>Site sketch (net labels, north arrow, landmarks)</p>				
bambing range indistance?						
ANABAT file name: SD2 @ truck						
ANABAT location(s): sensitivity @ G → katydid noise						
Remarks: (rain events, other wildlife, etc.) Loblolly Pine Plantations. Midstory: Acer rubrum, Liquidambar styraciflua, ulmus alata, Quercus phellos, ulmus rubra, Carya tomentosa, Diospyros virginiana.						

SWAMP

Bat Survey Data Form

Project: R-2222 NCEB	County: HANFAX	Site #: 3	Night #: 1	Site name: TNC ROANOKE RIVER PRESERVE	Date: 7/31/17
Directions to site: OFF NC-561	Latitude: 35 36.301205	Longitude: -83 77.541700	Elevation:		
Directions, cont. ROANOKE RIVER PRESERVE just south off river					
ID person(s): MErazer	Observers: H. Slyce + L. Stokes Canley	Net open time: 20:30	Net close time: 1:30		
Sky: 70° Clear	20:25	65° Clear 100%	23:00	01:10 Clear	64°
Wind: 0	0	0	0	0	
Moon effect: first quarter (63%) - behind trees, not shining on nets					
Number/type of nets: A: double 6M B: double 6M C: triple 4M					
Site description: loblolly forest mixed w/ red maple, sweet gum, winged elm, ash, hickory (fuzzy). Transitions to chestnut oak & hickories just beyond Net A.					
small puddle in road					
Disturbance: state highway, jeep track					
Not far from farm house w/ barking dog.					
ANABAT file name: SD2 @ truck, sensitivity = 6					
ANABAT location(s): family high clutter					
Remarks: No beetles in net. 1 lightning bug only. Weird stinky fungus not far from net B. (smells like animal urine) → old ^{octopus} stinkhorn?					
<p>The site sketch shows three net locations labeled A, B, and C. Net C is on the left, B is in the middle, and A is on the right. A road labeled 'ROAD' runs horizontally between the nets. A north arrow points to the right. A river labeled 'Roanoke River' is on the right side. Forest areas are indicated by cloud-like shapes. A 'Camp' is marked with a tent icon above the road. A 'Levee forest' is marked on the right side. A 'TO MAIN RD (NC-561)' arrow points to the left.</p>					

Site sketch (net labels, north arrow, landmarks)

Bat Survey Data Form

UPPER Roanoke River
Wetland Game Land

data forms
5/10/17
bag for 12m

Project: NLEB	County: Halifax	Site #: 4	Night #: 1	Site name: Dallocks Ferry	Date: 8-02-2017
Directions to site: Ridge Road in Game land		Latitude: 35 36.23234	Longitude: -83 77.391350		Elevation:
Directions, cont. Off of Shields Rd					
ID person(s): Mary Frazer			Observers: H. Slyre, L. Stokes Cawley		Net open time: 20:25
Net close time: 01:30					
Sky:	DUSK-time, temp, description 20:30 78° Overcast	MID-SAMPLE-time, temp, description 23:15 72° Clear	END-time, temp, description 00:12 69° Clear		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0	7=hard to walk 8=twigs break from trees; go home, this is a gale!		
Moon effect: 79% Waning Gibbous Nets shaded until midnight ^{00:40} Net A lit.					
Number/type of nets: (label & include size) A-triple high 12m B-double high 9m C-single 4m					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Bottomland mixed pine hardwood forest.					
loblolly, swamp chestnut oak, red maple, iron wood, deciduous holly, paw paw, sycamore, red bud rattan vine, ash, swamp cottonwood					
Disturbance: (List 3 most signif. disturbances within 500m) gravel road					
ANABAT file name: SD2 @ truck, sensitivity ~ 6			ANABAT location(s):		
Remarks: (rain events, other wildlife, etc.) lots of bats seen & heard on bat detector right at dusk.					
no beetles or lightning bugs. lots of "backswimmers"					
<p>Site sketch (net labels, north arrow, landmarks) ↓ to creek</p>					

Bat Survey Data Form

Ventosa Rd
TNC

NCDOT

Project: R-9999 NLEB		County: Halifax	Site #: 5	Night #: 1	Site name: Roanoke River Preserve	Date: 09/13/2014
Directions to site: From the end			Latitude: 35 36.123127°N	Longitude: -83 77.258240	Elevation:	
Directions, cont. of Shields Comm. Bypass Rd (near airport) ^{continue to Ventosa, then} drive towards river through hunt club properties.						
ID person(s): Mary Frazer		Observers: Nathan Howell & Lizzy Stokes-Cowley		Net open time: 19:40	Net close time: 00:50	
Sky:	DUSK-time, temp, description 19:40, 69° clear	MID-SAMPLE-time, temp, description 22:00 clear 67° humid	END-time, temp, description 00:35 Clear 66° humid			
Wind:	0=no wind 1=snow drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0	7=hard to walk 8=twigs break from trees; go home, this is a gale! 0			
Moon effect: (moon phase, start/stop time visible, # nets illuminated) East quarter - 40% . not visible						
Number/type of nets: (label & include size) A- 6m double B- 6m double C- 9m double D- 9m double E- 9m triple						
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Bottomland hardwoods, not mature. Narrow dirt roads w/ fairly regular canopy overhead.						
Sweet Gum - Liriodendron, Red Maple - Acer Rubrum, Chinese privet, sycamore, box elder, paw paw, deciduous holly, red elm, green ash, cherry bark oak, shumard oak, Bitternut hickory, Black Walnut, hackberry, Switchcane,						
Disturbance: (List 3 most signif. disturbances within 500m) Dirt roads						
ANABAT file name: SD2 @ truck						
ANABAT location(s): didn't pick up many calls						
Remarks: (rain events, other wildlife, etc.) Flying squirrel @ 20:30 screech owls calling just after dusk. a later Barred owls called before sunset a later @ night.						
Warbler in net A @ 23:20.						
Site sketch (net labels, north arrow, landmarks)						

to Ventosa Rd ↓

Bat Survey Data Form

Shields Commissary Rd

Project: R-9999 NLEB		County: Halifax				Site# 5	Night # 1	Site name: TNC Roanoke River Preserve				Date: 09/13/2017	
Time	Species*	Net	Age (A/J/V)	Sex (M/F)	Repro NR/PG/L/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond^	Band 3000s NC	# wing punches	Comments
20:45	MYAU	C	A	M	SCR	36	14.5	7.9	6.6	0	0088	1	nowing punch, bat was a bit lethargic 20156 rel.
23:35	MY-sp.	B										2	EFN
23:55	MYAU	B					15.0	7.5	7.5			3	EFH
00:30	MYAU	B	A	F	NR	40	15.0	8.0	7.0	0	0105	4	EG9-NC x2 small bleed, 5h on left wing 12:50 Release, wing
												5	
												6	
												7	All gray, no orange coloration
												8	
												9	
												10	
												11	
												12	
												13	
												14	
												15	
												16	
												17	
												18	
												19	
												20	
												21	
												22	

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-eared=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU, red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-eared=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage
TAKE PICTURE!

rescan

Bat Survey Data Form

NCDOT

Project: NLEBR-9999	County: Halifax	Site #: 5	Night #: 2	Site name: TNC Roanoke River Preserve off Ventosa	Date: 09/14/2017
Directions to site:		Latitude: 35 36.123146	Longitude: -83 77.257853	Elevation:	
Directions, cont. off Shields Commissary Rd, take that to Ventosa Rd, then continue through hunt club land; go left					
ID person(s): Mary Frazer	Observers: Lizzy Stokes-Cawley + Nathan Howell	Net open time: 19:25	Net close time: 00:35		
Sky:	DUSK-time, temp, description 20:00, clear, 71°F	MID-SAMPLE-time, temp, description 22:10, cloudy, 71°F	END-time, temp, description 00:20, cloudy, 70° humid		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0	7=hard to walk 8=twigs break from trees, go home, (this is a gale!) 0		

Moon effect: (moon phase, start/stop time visible, # nets illuminated) Waxing crescent - 30%. Not visible

Number/type of nets: (label & include size) A - 6m double (repositioned from 9/13), B - 10m double, C - 9m double, D - 9m double, E - 6m triple

Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Young (~30 y.o.?) bottom-land hardwood forest in the middle of nowhere. See 9/13/17 for details. Fairly closed canopy on TNC roads - high clutter.

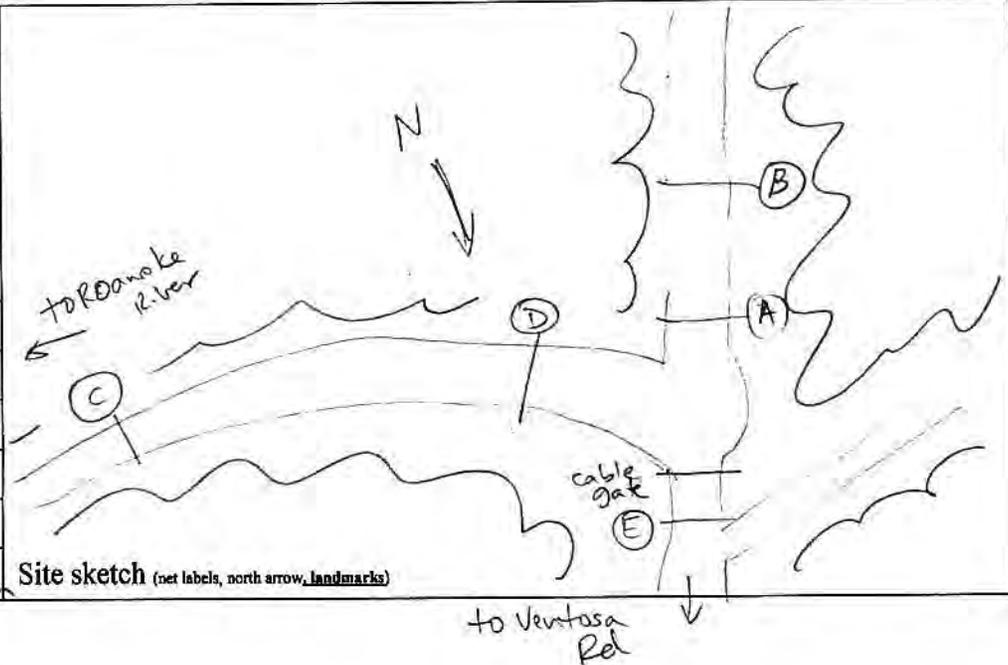
Disturbance: (List 3 most signif. disturbances within 500m) dirt roads

ANABAT file name: SD2 at truck - open

ANABAT location(s): habitat. No bat calls heard.

Remarks: (rain events, other wildlife, etc.) barred & screech owls calling fox yipped at dusk.

fox squirrel



All MYAU @ this site were gray - no orange coloration

Site sketch (net labels, north arrow, landmarks)

Bat Survey Data Form

Project: R-9999		County: Halifax				Site# 5	Night # 2	Site name: TNC Roanoke River Preserve Ventos Rd					Date: 9/14/2017
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PGL/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond^	Band	# wing punches	Comments
21:35	LABO	C	-	M									EFN 1
21:47	MYAU	D	A	M	SCR	36	14.5	7.75	6.75	0	looks NC 0035	2 E68-NC (2)	21:59 Recording. Fur sample taken E68-NC 2
22:45	LABO												EFN 3
23:10	MY SP.	C											EFN - possible Recapture 4 may have had a band 5
													6
													7 All MYAU at this site 8 were grayish. 9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-ear=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU, red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-ear=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage
TAKE PICTURE!

Chowan Swamp

Bat Survey Data Form

Project: NLEB RESEARCH	County: HERTFORD	Site #: 16	Night #: 1	Site name: RIVER RD	Date: 6/6/17
Directions to site: Harewood Rd to \rightarrow		Latitude: 35 ³⁶ .456674°N	Longitude: -83 ¹⁶ .996394		Elevation:
Directions, cont. River Rd (2nd left inside game land gate)					
ID person(s): MARY FRAZER			Observers: LISA GATENS, HANNAH SLYCE		Net open time: 20:40
Net close time: 1:40					
Sky:	DUSK-time, temp, description 20:30 / 72°F / MOSTLY CLEAR w/10% cloud	MID-SAMPLE-time, temp, description 23:40 / 69°F / OVERCAST 100% (w/veg)		END-time, temp, description 1:37 / 67°F / mostly cloudy	
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion OCCASIONALLY breeze not steady		7=hard to walk 8=twigs break from trees; go home, this is a gale! 0-2	
Moon effect: (moon phase, start/stop time visible, # nets illuminated) not visible - behind clouds					
Number/type of nets: (label & include size) A: 12m triple B: 9m triple C: 6m triple					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover)					
see 6/7/17 for site info					
Disturbance: (List 3 most signif. disturbances within 500m) dirt roads					
ANABAT file name: B22@ truck					
ANABAT location(s): lots of insect noise - had to reduce sensitivity					
Remarks: (rain events, other wildlife, etc.) many narrow malthoids distant barred owl, mosquitoes < many a variety of beetles in nets whip-poor-will					
<p>The sketch shows a cross-section of the site. At the top is a cloud-like canopy. Below it, three vertical lines represent nets labeled NET A, NET B, and NET C. To the right of the nets is a box labeled 'STATION'. A wavy line on the right side represents the 'M & HERRIN RIVER'. A north arrow points towards the top right. The caption below reads 'Site sketch (net labels, north arrow, landmarks)'.</p>					

records
6/21/17
1/1/17
1/1/17

Bat Survey Data Form

Project: NLSB		County: HERTFORD				Site# 1b		Night # 1		Site name: River Rd			Date: 6/6/17	
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/ PG/L/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond [^]	Band	# wing punches	Comments	
21:24	LABO	B	A	F	NR	44mm	22g	7.5g	14.5g	0	30AKSNC 0302	/	FEW WHITE SPLITS / RECAP!	1
21:30	LABO	B	A	F	P	42mm	27g	7.8g	19.2g	0	30AKSNC 0025	/	LONG SCAR LEFT W/ NR	2
21:47	MYAU	A											EFN	3
21:46	NYHU	C	A	M	NR	36mm	16.9g	7.9	9.0	0	30aks NC 0236	/		4
21:46	NYHU	C	A	M	NR	36mm	17.5	7.8	9.7	0	30AKSNC 0220	/		5
22:08	NYHU	C	A	M	NR	34mm	17.2	7.8	9.4	0		/	bat stressed, not banded	6
22:30	LABO	B	A	F	P	44mm	24.8	8.0	16.8	0	30aks NC 0016	/		7
22:30	MYHU	B	A	M	NR	34.5mm	17.2g	8g	9.25	0	30AKSNC 0222	/		8
23:17	LABO	B	A	M	NR	38mm	18g	8g	10g	0	30AKSNC 0488	/		9
23:17	MYAU	C	A	F	P	37mm	16g	7.7g	8.3	0	30AKSNC 0460	/	23:24 rel (minus S) pics	10
23:20	LABO	A	A	F	L	42	22g	7.8	14.2	0	30aks NC 0030	/		11
23:20	MYAU	B	A	F	L	39	16.5g	8.4	8.1	0	30aks NC 0471	/	23:32 rel add injury distal to wrist	12
23:19	EFN (not LABO)												EFN	13
1:50	MYAU	A	A	F	L	38	16	8	8	0		/	notes + 2 pin holes on rt wing	14
														15
														16
														17
														18
														19
														20
														21
														22

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-eared=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU
red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-eared=COTO, Brazilian free-tail=TABR

[^]WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage
TAKE PICTURE!

Bat Survey Data Form

Chowan Swamp

Project: NLEB Research		County: Hertford	Site #: 1b	Night #: 2	Site name: River Rd	Date: 6/7/17
Directions to site: River Rd off Harewood		Latitude: 35		Longitude: -83		Elevation:
Directions, cont. Road near Como, NC. 2nd left inside game land gate.						
ID person(s): M. Frizer, L. Gatens				Observers: H. Slyce	Net open time: 20:40	Net close time: 7:40
Sky:	DUSK-time, temp, description 20:51 61°F cloudy overcast		MID-SAMPLE-time, temp, description 23:18 57° partly cloudy		END-time, temp, description 1:13 57° partly cloudy	
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 1-3		4=small branches in motion 5=small trees sway 6=large branches in motion 0-2		7=hard to walk 8=twigs break from trees; go home, this is a gale! 0-1	
Moon effect: (moon phase, start/stop time visible, # nets illuminated) Full moon, but obscured by cloud cover						
Number/type of nets: (label & include size) A - triple 12m B - triple 9m C - triple 6m						
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) <i>Acer rubrum</i> , <i>Pinus taeda</i> , <i>Betula nigra</i> , <i>Platanus occidentalis</i> , <i>Ulmus</i> sp., <i>Populus heterophylla</i> , <i>Quercus phellos</i> , <i>Symplocos tinctoria</i> , <i>Ilex americana</i> , <i>Carya</i> sp., <i>Liquidambar styraciflua</i> , <i>Carpinus caroliniana</i> , <i>Quercus pagodaefolia</i> , <i>Nyssa aquatica</i> , <i>Taxodium distichum</i>						
Dirt road ending at Meherrin River. Mixed age alluvial forest becoming swampy near river.						
Disturbance: (List 3 most signif. disturbances within 500m) dirt roads						
ANABAT file name: SBZ @ truck						
ANABAT location(s): katydid noise all night						
Remarks: (rain events, other wildlife, etc.) Distinct barred owl						
no frog calling; no beetles in net						
A couple bats circling low over river ~ 23:38.						
1-2 bats seen flying overhead on road.						
many mosquitos						
				<p>Site sketch (net labels, north arrow, landmarks)</p>		

LIGHTER

Bat Survey Data Form

Chowan Swamp

Project: NLERB	County: HERTFORD	Site #: 2	Night #: 1	Site name: PAWNEE RD	Date: 6/8/17
Directions to site: Pawnee Rd to NCWRC		Latitude: 35 36.327621	Longitude: -83 76.757242		Elevation:
Directions, cont. <i>game land access; hang left at fork.</i>					
ID person(s): FRATER, M		Observers: L. GATENS, H. SLYCE		Net open time: 20:40	Net close time: 1:40
Sky:	DUSK-time, temp, description 20:50 / 62 / PARTY CLOUDS, CHILLY	MID-SAMPLE-time, temp, description 23:45 mostly clear 58°F	END-time, temp, description 1:23 clear 56°F		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0		7=hard to walk 8=twigs break from trees; go home, this is a gale! 0	
Moon effect: (moon phase, start/stop time visible, # nets illuminated) <i>Ful moon. Nets not affected - under tree canopy.</i>					
Number/type of nets: (label & include size) <i>A: 9m triple B: 12m triple C: 6m triple</i>					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover)					
<i>upland area</i> <i>Acer rubrum, Ulmus americanus, Nyssa sylvatica, Quercus alba, Quercus rubra, Liriodendron tulipifera, Carpinus caroliniana</i>					
<i>Swamp: Acer rubrum + Taxodium distichum</i>					
Disturbance: (List 3 most signif. disturbances within 500m) <i>dirt roads</i>					
ANABAT file name: <i>BZ @ truck</i>					
ANABAT location(s): <i>few calls as of 23:00</i>					
Remarks: (rain events, other wildlife, etc.) <i>green frogs after dark</i> <i>distant barred owl just after sunset.</i>					
<i>scarlet tanager, prairie warbler, vireos</i>					

next time: put dbl 18 m on triple high poles for lateral

lighter charge D cells

to Pawnee Rd

Bat Survey Data Form

Project: NLEB		County: HERTFORD				Site# 2	Night # 1	Site name: PAWNEE RD				Date: 6/8/17	
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PG/L/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond^	Band	# wing punches	Comments
20:50	LABO	A	A	F	L	40mm	19g	7.5g	11.5	0	30AKS NC 019P	1	PINOLE R. WING
21:40	LABO	C	A	M	NR	40mm	17.75g	7.25g	10.5g	0	30AKS NC 000S	2	ABRATED WING (RIGHT) WINGS DIRTY
23:30	MYAU	C	A	M	NR	37.5mm	13g	7.3g		0	30AKS NC 0043	3	VIAL Q10 + fur rel. 23/45
												4	
												5	
												6	
												7	
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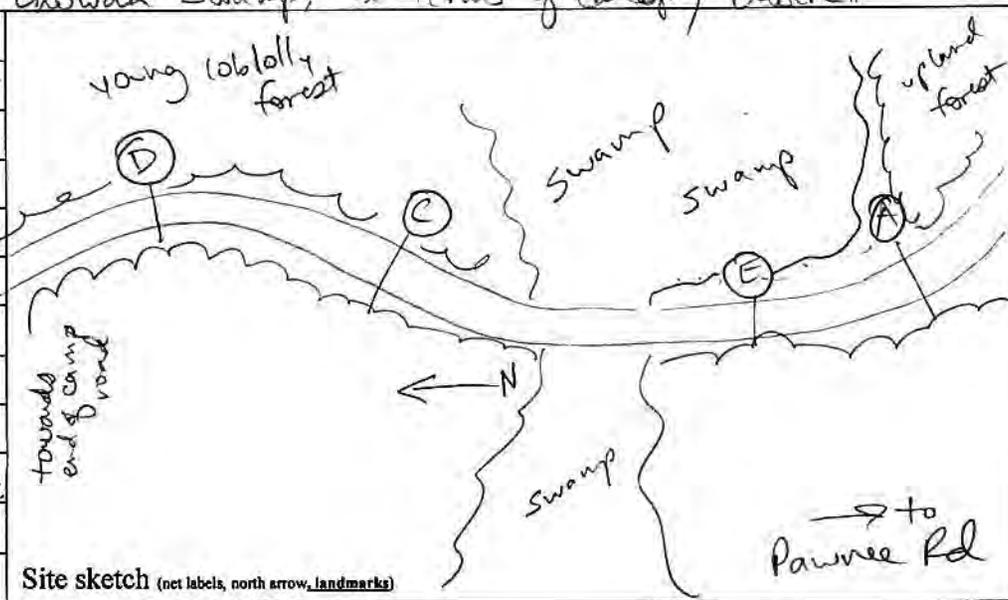
*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-ear=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU
 red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-ear=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage
 TAKE PICTURE!

Bat Survey Data Form

Chowan Swamp NCDOT

Project: NLEB R9999		County: Hertford	Site #: 2	Night #: 2	Site name: Pawnee Rd	Date: 8/8/17
Directions to site: Gameland road (GPS)			Latitude: 35	See night 1	Longitude: -83	Elevation:
Directions, cont. called it "camp road" off Pawnee Rd.						
ID person(s): M. Frazer			Observers: H. Slyce, N. Scott		Net open time: 20:30	Net close time: 1:30
Sky:	DUSK-time, temp, description 20:37 73°F, cloudy		MID-SAMPLE-time, temp, description 23:00 73°F cloudy		END-time, temp, description 01:20, 70°F, cloudy	
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0		4=small branches in motion 5=small trees sway 6=large branches in motion 0		7=hard to walk 8=twigs break from trees; go home/this is a gale! 0	
Moon effect: (moon phase, start/stop time visible, # nets illuminated) 0 full moon, but very cloudy. Briefly visible @ net A @ 23:35.						
Number/type of nets: (label & include size) A: triple 9m, E: single 6m, C: double 6m, D: double 6m						
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Swamp forest w/ ash, gum & red maple, as well as mixed upland forest w/ ironwood, wax myrtle, loblolly, shingle oak, striped oak, tulip poplar, medium clutter along road. High clutter in woods. swamp white oak, cypress, red maple, sweet gum.						
This is one of the best net sites in this tract of Chowan Swamp, in terms of canopy closure.						
Disturbance: (List 3 most signif. disturbances within 500m) dirt/gravel road						
→ changed batteries after 10 min sid man appear as 2 nights 2						
ANABAT file name: SD2 @ truck						
ANABAT location(s): sensitivity ~ 5.5 - no bat calls noticed.						
Remarks: (rain events, other wildlife, etc.) Rain during the day & the night before.						
Out nearby at ~ 21:00.						
Green frogs, leopard frogs. One bat observed at dusk.						
Only a couple beetles stuck in net.						
Mother raccoon & 3 young.						



Site sketch (net labels, north arrow, landmarks)

Bat Survey Data Form

Chowan Swamp NCDOT

Project: NLEB R-9999	County: HURTFORD	Site #: 3	Night #: 1	Site name: HAREWOOD RD.	Date: 8/9/17
Directions to site: Harewood Rd into		Latitude: 35 36.431915	Longitude: -83 77.011159		Elevation:
Directions, cont. Chowan swamp, then take a right @ "T" intersection on to "Main Str." (labeled on Game Land map)					
ID person(s): M. FRAZER			Observers: N. SCOTT, H. SLICE		Net open time: 20:25
Sky: DUSK-time, temp, description 20:40 71° MOSTLY CLEAR		MID-SAMPLE-time, temp, description 23:00 64° CLEAR & HUMID!		END-time, temp, description 01:20 60°F clear	
Wind: 0 <small>0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed</small>		0 <small>4=small branches in motion 5=small trees sway 6=large branches in motion</small>		0 <small>7=hard to walk 8=twigs break from trees; go home, this is a gale!</small>	
Moon effect: (moon phase, start/stop time visible, # nets illuminated) Nearly full waning. @ 22:10 on NET C; on net A @ 1:00					
Number/type of nets: (label & include size) A: TRIPLE 12M B: SINGLE 4M C: TRIPLE 6M					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Primarily young loblolly plantation w/ a few hard woods where thinning hasn't occurred: white oak, red maple, sweet gum, sourwood. Net B is on a lane thinned at between loblolly rows.					
Disturbance: (List 3 most signif. disturbances within 500m) Gravel roads, loblolly plantation		<p>Site sketch (net labels, north arrow, landmarks)</p>			
ANABAT file name: SD2 @ truck - low clutter, but					
ANABAT location(s): recorded bat chattering from work up station					
Remarks: (rain events, other wildlife, etc.) VERY HUMID (WATER ON EVERYTHING) as of 22:30. Dewy. Screen owl in area @ sunset & @ midnight					
Only a couple long horn beetles in nets - no other beetles.					

Bat Survey Data Form

Project: NCEB		County: HERTFORD			Site# 3		Night # 1	Site name: HAREFORD RD					Date: 8/9/17
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PGL/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond^	Band	# wing punches	Comments
21:20	EPFU	A	A	F	PL	46	24.0	7.5	16.5	0	0987		1
21:20	EPFU	A	A	F	NR	46	24.5	8.0	16.5	0	1000		2
21:20	LABO	A	JV	F	NR	42	18.5	8.0	10.5	0	0301		3
21:20	LABO	C	JV	M	NR	40	15.5	8.0	7.5	0	0087		4
21:20	EPFU	C	A	M	NR	47	24.0	8.0	16.0	0	0096		5
21:20	LABO	C	JV	F	NR	40	17.5	8.0	9.5	0	0909		6
21:25	LABO	A	JV	M	NR	—	16.5	7.3	—	0	00		7
21:25	EPFU	A	A	F	PL	46	26.2	7	19.2	0	0979		8
21:40	EPFU	C											9
21:40	LA-sp?	C											10
21:40	LABO	C	A	F	PL	37	15.2	8.0	7.2	0	0080		11
21:50	EPFU	A	A	M	NR	46	23.0	7.0	16.0	0	0919		12
21:55	EPFU	A											13
22:09	EPFU	C	A	F	PL	49	28.0	7.5	20.5	0	0934		14
22:09	EPFU	C	A	M	NR	44	20.5	8.0	12.5	0	0938		15
22:09	EPFU	C	A	M	NR					0			16
22:20	EPFU	A	A	F	NR	47	26.2	8.0	18.2	0	0947		17
22:20	EPFU	A	A	F	NR	48	26.0	7.5	18.5	0	0948		18
22:20	LABO	A	JV	M	NR	40	21.0	7.4	18.0	0	0221		19
22:20	EPFU	A	A	F	NR	44	22.0	8.0	19.0	0	0971		20
22:20	EPFU	C											21
22:20	EPFU	C	A	F	NR	49	29.0	8.0	21.0	0	0906		21

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-eared=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU, red=LABO, hoary=LACI, silver=LANO, Seminole=LASE, yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-eared=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage
TAKE PICTURE!

BMO²²
RIGHT WING

SAME AS PAGE 1

Bat Survey Data Form

Chowan County NCDOT

Project: NLER R-99 th		County: HERTFORD		Site #: 3	Night #: 1	Site name: Harwood Rd	Date: 8/9/17
Directions to site:				Latitude: 35		Longitude: -83	
Elevation:							
Directions, cont.							
ID person(s):				Observers:		Net open time:	
Net close time:							
Sky:	DUSK-time, temp, description		MID-SAMPLE-time, temp, description			END-time, temp, description	
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed		4=small branches in motion 5=small trees sway 6=large branches in motion			7=hard to walk 8=twigs break from trees; go home, this is a gale!	
Moon effect: <small>(moon phase, start/stop time visible, # nets illuminated)</small>							
Number/type of nets: <small>(label & include size)</small>							
Site description: <small>(net placement, stream data, Habitat description, dominant species, canopy cover)</small>							
Disturbance: <small>(List 3 most signif. disturbances within 500m)</small>				Site sketch <small>(net labels, north arrow, landmarks)</small>			
ANABAT file name:							
ANABAT location(s):							
Remarks: <small>(rain events, other wildlife, etc.)</small>							

Bat Survey Data Form

Chowan Swamp

Page 2 of 2

Project: NLER		County: HERTFORD		Site# 3		Night # 1		Site name: Harewood Rd		Date: 8/9/17			
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PG/L/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond [^]	Band 3ants/No	# wing punches	Comments
22:20	EPFU	C	A	F	NR	49	26.0	8.0	18.0	0	0913		
22:47	LABO	C											EFN
23:05	Lasivus sp.	C											EFN
23:10	LABO	C	A	F	NR	33	18.1	7.8	10.1	0	0051		pinhole in L wing
23:10	LABO	C	A	M	NR	39	16.5	8	8.5	0	0062		
23:15	LABO	A	J	M	NR	39	15.5	8	7.5	0	0042		
23:15	LABO	A	J	F	NR	37	15.8	7.8	8.0	0	0083		
23:36	EPFU	C	A	F	NR	42	26.8	7.5	19.3	0	0933		tiny blemishes on L. wing
00:10	LABO	C	A	M	SCR	38	18.3	7.4	10.9	0	0362		
00:10	LABO	C	JV	M	NR	39	16.5	8	8.5	0	0086		
00:28	LABO	C	J-V	F	NR	43	17.3	7.9	9.4	0	0333		
00:28	LABO	C	JV	M	NR	38	16.5	8	8.5	0	0202		
00:52	LABO	A	A	F	NR	42	18.8	7.9	11.0	0	0057		
01:05	LABO	C	JV	F	NR	42	18.5	7.8	10.7	0	0067		PIN HOLE R WING

36 bats in net

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-ear=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-ear=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/spotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage TAKE PICTURE!

Bat Survey Data Form

Chowan Swamp

Project: NLEB		County: Hertford				Site# 3		Night # 2	Site name: Harewood Rd				Date: 8/10/17
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PGL/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond^	Band 30aks/UC	# wing punches	Comments
20:40	LABO	C	JV	F	NR	38	16.8	7.8	9.0	0	0232	/	
20:40	LABO	C	A	M	NR	39	19.0	8.0	11.0	0	0082	/	
21:00	LABO	B	A	F	NR	42	23.0	7.5	15.5*	0	0011	/	* MISREAD SCALE?
21:22	LABO	C	A	F	NR	40	18.0	7.5	10.5	0	0095	/	
21:22	PESU	C	A	F	PE	32	15.6	7.8	7.8	0	0239	/	
21:22	LABO	C	JV	F	NR	39	18.2	8.0	10.2	0	0072	/	
21:38	EPFU	C	A	M	NR	43	21.0	8.0	13.0	0	0908	/	
21:38	EPFU	C	A	M	NR	44	23.5	7.5	16.0	0	0939	/	BAT BUG
21:47	EPFU	A	A	F	PL	46	24.0	8.0	16.0	0	0928	/	light blemishes on r/wing
21:47	LABO	C	A	M	SCR	41	16.8	7.8	9.0	0	0059	/	
21:47	LABO	C											EFN
22:00	LABO	C											EFN
22:02	LABO	A	A	M	SCR	39	16.4	8	8.4	0	0435	/	
22:02	LABO	A	A	M	SCR	39	15.0	7.5	7.5	0	0078	/	
22:08	EPFU	C	A	F	NR	48	26	8	18.0	0	0916	/	
22:08	EPFU	C											EFN
22:20	LABO	C											EFN
22:39	LABO	A	A	M	SCR	39	17.5	8.0	9.5	0	0136	/	
22:45	LABO	A	JV	F	NR	39	18.2	7.5	10.7	0	0126	/	BAND ON R. WING
22:50	LABO	B	A	M	SCR	38	17.0	8.0	9.0	0	0077	/	
23:10	EPFU	A		M									EFN
23:10	LABO	A											EFN

LABO SCR?

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-ear=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-ear=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/spotting, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage TAKE PICTURE!

Chowan Swamp

Bat Survey Data Form

Project: NLEB ⁹⁹⁶⁰ County: Hertford		Site #: 4	Night #: 1	Site name: Parker's Ferry Rd site 4	Date: 8/30/2017
Directions to site: Take Parker's Ferry Rd (SR 1175)		Latitude: 35 36.430977	Longitude: -83 76.955268		Elevation:
Directions, cont. North off Hwy 158. Netsite is within 1/2 mile of the Meherrin River.					
ID person(s): Mary Frazer Observers: L. Stokes-Cawley			Net open time: 19:45	Net close time: 00:55	
Sky:	DUSK-time, temp, description 70° @ 20:00 Partly cloudy	MID-SAMPLE-time, temp, description 68° 23:30 Clear	END-time, temp, description 68° 00:30		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0-1	7=hard to walk 8=twigs break from trees; go home, this is a gale! 0		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) First quarter (65%). Nets well-shaded.					
Number/type of nets: (label & include size) A-triple high 6m, B-triple high 12m, C-triple high 9m					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Gravel road, well shaded, with an old logging road heading east.					
Red maple / swamp ^{water} tupelo mixed age swamp forest, with a few bald cypress.					
Also royal fern, Arundinaria, marsh fern; poison ivy, lizard tail, ash.					
Disturbance: (List 3 most signif. disturbances within 500m) Gravel road, small (3-car)		<p style="text-align: center;">Swamp N ↗</p> <p style="text-align: center;">← to highway 158 to Meherrin River →</p> <p style="text-align: center;">Swamp</p> <p style="text-align: center;">100m gravel rd</p>			
Ferry landing ≤ 1/2 mile.					
ANABAT file name: SD2 @ truck, sens. ~7		<p style="text-align: center;">Site sketch (net labels, north arrow, landmarks)</p>			
ANABAT location(s): not much bat activity heard. A couple of bats observed @ dusk.					
Remarks: (rain events, other wildlife, etc.) Barred owl monkey calls @ 20:55.					
Screech owl @ 20:24, ♀ @ 23:05					
leopard frogs					
possum snacking on a mushroom					

Bat Survey Data Form

Project: NLER		County: Hertford		Site# 4		Night # 1		Site name: Parkers Ferry Rd		Date: 8/30/2017			
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PG/L/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond^	Band	# wing punches	Comments
21:50	LABO	B	A	M	SCR	39	16.5	8.0	8.5	0	30-25 0018	-	Spiderweb strand on R. wing 1
22:02	MYAU	C	A	M	SCR	38	14.5	8.0	6.5	0	0103	E70-M 2wing	10:16 Fur sample + wing x 2 punch black belly fur w/ a few orange patches
22:55	LABO	B	-	-	-	-	-	-	-	-	-	-	E FN
00:25	LABO	B	A	M	SCR	42	18.0	7.5	10.5	0	0468	-	4
00:40	LABO	C	A	M	SCR	-	-	-	-	-	-	-	Released at net, net wrapped around neck 5
01:02	EPFY	B	A	M	SCR	45	27.0	8.0	19.0	0	0993	-	Bat bug -> squished 6
01:05	LABO	B	A	F	NR	40	18.5	8.0	10.5	0	0123	-	Pinholes (2) in left wing near tip 7
													8
													9
													10
													11
													12
													13
													14
													15
													16
													17
													18
													19
													20
													21
													22
													23
													24
													25

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-ear=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU, red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-ear=COTO, Brazilian free-tail=TABR
 ^WING condition: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage - TAKE PICTURE!

Bat Survey Data Form

Project: NLEB R-9999	County: Hertford	Site #: 4	Night #: 2	Site name: Parkers Ferry Rd	Date: 8/31/2017
Directions to site: Take Parkers Ferry Rd ^{SR} 175		Latitude: 35 36.430977	Longitude: -83 76.955268		Elevation:
Directions, cont. North off Hwy 158. Netsite is within 1/2 mile off the Meherrin River					
ID person(s): M. Frazier		Observers: L. Stokes-Cawley		Net open time: 19:35	Net close time: 00:35
Sky:	DUSK-time, temp, description 75° @ 20:00 Cloudy	MID-SAMPLE-time, temp, description 73° @ 22:30 cloudy	END-time, temp, description 00:25 73° Cloudy		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0		7=hard to walk 8=twigs break from trees, go home, this is a gale! 0	
Moon effect: (moon phase, start/stop time visible, # nets illuminated) waxing gibbous - 74% . Moon clouded over, not affecting nets.					
Number/type of nets: (label & include size) A - triple 6m B - triple 12m D - triple 9m (D was relocated from net C last night)					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) See description on 8/30.					
Mixed age Maple - gum swamp w/ gravel road Medium clutter					
Disturbance: (List 3 most signif. disturbances within 500m) gravel road			<p>Site sketch (net labels, north arrow, landmarks)</p>		
ANABAT file name: SD2 @ truck sens. ~6					
ANABAT location(s):					
Remarks: (rain events, other wildlife, etc.) Brief rain @ 18:30. owl monkey calls @ 21:00 & @ 22:15.					
E. mud turtle chilling in a puddle					

Bat Survey Data Form

Project: NLEB R-9999	County: HYDE	Site #: 1	Night #: 1	Site name: GULL ROCK / WEST GREEN Rd.	Date: 6/26/17
Directions to site: GULL ROCK GAMELAND		Latitude: 35.365876	Longitude: -83.76159534		Elevation:

Directions, cont. end of West Green Road, off Outfall Canal Rd

ID person(s): M. FRATZER	Observers: A. SENCE, L. STOKES-CAWLEY	Net open time: 20:45	Net close time: 22:20
--------------------------	---------------------------------------	----------------------	-----------------------

Sky: DUSK-time, temp, description 20:55 66°F clear	MID-SAMPLE-time, temp, description	END-time, temp, description 22:20 Clear 64°F
Wind: 0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion	7=hard to walk 8=twigs break from trees; go home, this is a gale!

Moon effect: waxing crescent - below tree line

Number/type of nets: A: TRIPLE 6m B: TRIPLE 6m C: DOUBLE 18m

Site description: Mixed age pine - hard wood forest w/ several standing snags
loblolly pine, white myrtle, red maple, sweet gum, red bay, magnolia virginiana, Arundinacea, black cherry, Gordonia lasianthus
Medium clutter

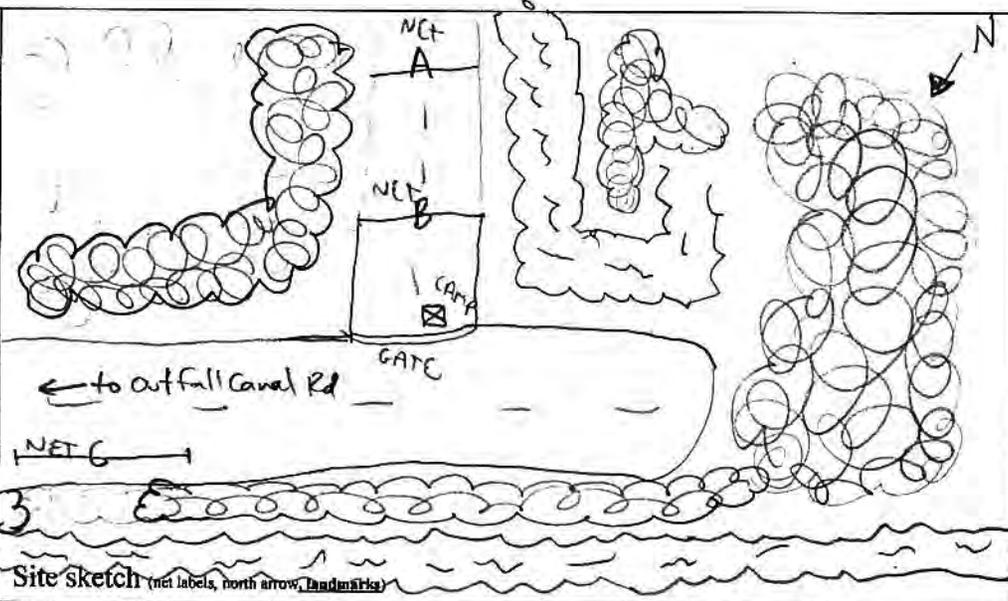
Disturbance: dirt road + ditches

ANABAT file name: SD2 @ truck

ANABAT location(s):

Remarks: chuck wills widows flying around + calling

many yellow flies, frogs + mosquitoes



to my table capture

Bat Survey Data Form

Upper Roanoke

Project: NLEB R-9999		County: Northhampton	Site #: 1	Night #: 1	Site name: BOONE TRACT - ROANOKE SITE 1	Date: 7/11/2017
Directions to site: BOONE TRACT - UPPER ROANOKE RIVER GAMELANDS			Latitude: 35 36.210706	Longitude: -83 77.372992	Elevation:	
Directions, cont. OFF SR 258/561, just N. of Roanoke River on E. side of Hwy.						
ID person(s): Mary Frazer			Observers: Hannah Slyce Lizzy Stokes-Cauld		Net open time: 20:40	Net close time: 1:40
Sky:	DUSK-time, temp, description 80°F @ 20:30, clear		MID-SAMPLE-time, temp, description clear, 78°F 23:15		END-time, temp, description clear, 76°F 01:20 humid	
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0		4=small branches in motion 5=small trees sway 6=large branches in motion 0		7=hard to walk 8=twigs break from trees; go home, this is a gale! 0	
Moon effect: (moon phase, start/stop time visible, # nets illuminated) 92% waning gibbous - not visible, behind trees until ~00:40. Nets all shaded!						
Number/type of nets: (Label & include size) 3 nets A- Double high DM B- Double high DM C- triple high NM						
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Bottomland hardwood forest/swamp. Mature. Box elder, Swamp chestnut oak, bald cypress, swamp cottonwood, chinese privet, pawpaw, green ash, wood nettles, elm (slippery?), spicebush						
Disturbance: (List 3 most signif. disturbances within 500m) Highway with steady truck traffic						
ANABAT file name: SD2@truck, bat sensitivity						
ANABAT location(s): very low due to excessive kathy did noise. Error msg. @ 00:15.						
Remarks: (rain events, other wildlife, etc.) Distant barred owl						
Multiple stag beetles in net just after sunset.						
Box turtle sitting in puddle w/ head under water @ 23:40 until net closure time			<p>Site sketch (net labels, north arrow, landmarks)</p> <p>LAFAYETTE'S TOUR (SR 561/US-258)</p> <p>→ to Roanoke River</p>			

Bat Survey Data Form

Upper Roanoke

Project: NLEB R-9999	County: Northampton	Site #: 1	Night #: 2	Site name: Boone tract, upper Roanoke site 1	Date: 7/12/17
Directions to site: Just off hwy 258/561		Latitude: 35	Longitude: -83		Elevation:
Directions, cont. about a mile north of Roanoke River, E. side of hwy.					
ID person(s): Mr. Frazer		Observers: H. Slyce, L. Stokes-Cawley		Net open-time: 20:35	Net close time: 1:45
Sky:	DUSK-time, temp, description 20:50 80° mostly clear	MID-SAMPLE-time, temp, description 00:30 77° clear	END-time, temp, description 1:25 76° Mostly clear		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0	7=hard to walk 8=twigs break from trees; go home, this is a gale! 0-1		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) 85% waning gibbous, Not visible until 1AM. Nets shaded.					
Number/type of nets: (label & include size) A - double 9m B - double 9m C - triple 12m					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Bottom land hard wood forest / swamp. Mature. See data form from 7/11/17 for species list					
Disturbance: (List 3 most signif. disturbances within 500m) US highway, dirt roads					
ANABAT file name: _____					
ANABAT location(s): _____					
Remarks: (rain events, other wildlife, etc.) Distant barred owls, Green & leopard frog on trail, 2 deer w/ fawn a few stag beetles in net.					
			Site sketch (net labels, north arrow, landmarks) Hwy 561/258		

→ to Roanoke River

Bat Survey Data Form

Project: NLEB R-9999		County: Northampton				Site# 1		Night # 2		Site name: Boone Tract, Upper Roanoke			Date: 7/12/17	
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro (NR/PG/L/PL/SCR)	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond [^]	Band	# wing punches	Comments	
20:55	MYAU	B	A	M	NR	39	14.2	7.9	6.3	0	30aks 0412	2	Q18 2 wing punches Fur sample taken	1
21:07	LABO	A											Escaped from hand	2
21:10	NYHU	C	JV	M	NR	37	16.8	7.8	9.0	0	30aks 0494		3 pin hole size scars right wing close to thumb	3
21:30	LABO	A	JV	F	NR	43	20.5	11.0	9.5	0	30aks 0209			4
22:10	LABO	A	JV	F	NR	41	16.5	7.9	8.6	0	30aks 0463			5
21:28	EFN	A												6
22:55	LABO	B											EFN	7
23:10	CORA	C	A	M	NR	45	17.3	8g	9.3	0		2	Q19 2 wing punches; Fur collected	8
23:30	Flying squirrel													9
01:20	LABO	DA	JV	F	NR	40	17.2	8g	9.2	0	30aks 0215		Pin sized holes right wing	10
01:20	MYAU	A	JV	M	NR	36	13.8	8g	5.8g	0			A few light blotches on left wing (No band seen)	11
														12
														13
														14
														15
														16
														17
														18
														19
														20
														21
														22

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-ear=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU
red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-ear=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage
TAKE PICTURE!

Bat Survey Data Form

Project: <u>NLSB 2-9999</u>	County: <u>Northampton</u>	Site #: <u>2</u>	Night #: <u>1</u>	Site name: <u>Upper Roanoke Garibaldi tract</u>	Date: <u>7/13/17</u>
Directions to site: <u>At end of Garibaldi Rd,</u>		Latitude: <u>35 36.328070</u>	Longitude: <u>-83 77.463163</u>		Elevation:
Directions, cont. <u>(which is off Bryantown Rd)</u>					
ID person(s): <u>M. Frazer</u>		Observers: <u>H. Slyre, K. Sevick</u>		Net open time: <u>20:35</u>	Net close time: <u>1:35</u>
Sky:	DUSK-time, temp, description <u>20:45 84°F clear</u>	MID-SAMPLE-time, temp, description <u>00:30 80° clear</u>	END-time, temp, description <u>1:30 79° clear</u>		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed <u>0</u>	4=small branches in motion 5=small trees sway 6=large branches in motion <u>0-1</u>		7=hard to walk 8=twigs break from trees, go home, this is a gale! <u>0-1</u>	
Moon effect: (moon phase, start/stop time visible, # nets illuminated) <u>Waning gibbous 77% - not visible, behind trees</u>					
Number/type of nets: (label & include size) <u>A - triple 9m, B - triple 6m, C - double 4m, D - double 6m</u>					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) <u>Mixed hardwood pine, mature, upland</u>					
<u>Cobalt pine, red maple, tulip poplar, Fraxinus-^{green ash} white oak white oak, pawpaw, ironwood</u>					
<u>Christmas fern, grape vine, wood water ^{canoe} fern</u>					
<u>Hill top above Roanoke River flood plain / swamp</u>					
Disturbance: (List 3 most signif. disturbances within 500m) <u>dirt roads</u>					
ANABAT file name: _____					
ANABAT location(s): _____					
Remarks: (rain events, other wildlife, etc.) <u>deer, raccoons, turkeys + possum observed, wood thrush</u>					
<u>A few long-horned beetles + June bugs in nets. Quite a few moths flitting.</u>			Site sketch (net labels, north arrow, landmarks)		

Bat Survey Data Form

Project: NLEB R 9999		County: Northampton			Site#:	Night #	Site name: Upper Roanoke Garibaldi Tract		Date: 7-13-17				
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PGL/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond [^]	Band 30AKS NC	# wing punches	Comments
2055	LABO	A	J	F	NR	39	19g	7.8	11.2g	0	0423	—	nipple under chin slightly swollen - all nipples slightly swollen, but wing joint appeared
2055	LABO	A	A	M	NR	39	18g	7.5	10.5g	0	0464	—	
2125	NYHU	D	A	F	PL	37	17.5	8.0	9.5g	0	0308	—	
2145	NYHU	A	A	M	NR	34	16.8	7.8	9.0	0	0017	—	
2155	NYHU	A	J	F	NR	37	20g	10.6	9.4	0	0411	—	
22:25	LABO	A	J	M	NR	40	20.5	11.0	9.5	0	0022	—	
2305	NYHU	C	J	M	NR	37	19.2	11.0	8.2	P	0241	—	scar under right forearm
23:13	NYHU	A	A	M	NR	34	21.5	10.8	10.7	0	0452	—	
23:10	NYHU	A	A	F	PL	38	22.0	10.5	11.5	0	0213	—	bat bug on left wing
00:10	PESU	A	A	M	NR	35	13.8	7.8	6.0	P	0249	—	few small scars on left wing hole near 2nd joint on left
00:11	NYHU	A	A	F	NR	36	22.0	11.0	11.0	0	0238	—	
00:24	PESU	D	A	F	PL	35	17.8	10.4	7.4	0	0493	—	
01:15	LABO	D	J	F	NR	43	22.5	11.0	11.5	0	0227	—	
01:25	EPFU	A	A	M	NR	46	27	10.5	16.5	0	0958	—	
01:33	EPFU												escape from net

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-eared=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU, red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-eared=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes ≥5mm, necrotic tissue, membrane loss; P=physical impact damage
TAKE PICTURE!

Bat Survey Data Form

2 traps

Project: NLEB R-9999		County: Northampton		Site #: 2	Night #: 2	Site name: Upper Roanoke Garibaldi tract	Date: 8/01/2017
Directions to site: At the end of Garibaldi Rd			Latitude: 35 26.328070	Longitude: -83 77.463163		Elevation:	
Directions, cont. (which is off Bryantown Rd)							
ID person(s): M. Frazer				Observers: L. Stokes-Cawley +, H. Slyce		Net open time: 20:25	Net close time: 1:25
Sky:	DUSK-time, temp, description 74° Overcast, humid 20:30		MID-SAMPLE-time, temp, description 71° Partly cloudy/Hazy 23:20		END-time, temp, description 1:00 cloudy 70°		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0		4=small branches in motion 5=small trees sway 6=large branches in motion 0		7=hard to walk 8=twigs break from trees; go home, this is a gale! 0		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) 71% waxing gibbous Nets all shaded							
Number/type of nets: (label & include size) A-triple 9m, B-double 4m, C-double 6m							
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Mixed pine-hard wood forest. Lots lolly pine w/ sweet gum, white oak, hickory, red oak, basswood, winged elm, Carpinus. Upland. Medium clutter. Hill top above Roanoke River floodplain, which has mature swamp forest.							
Disturbance: (List 3 most signif. disturbances within 500m) Dirt road				<p>Site sketch (net labels, north arrow, landmarks)</p>			
ANABAT file name: SD2 @ truck							
ANABAT location(s): lots of katydid noise							
Remarks: (rain events, other wildlife, etc.) nearby owl @ 23:30 no couple staghorn beetles in net							
no lightning bugs imperial moths in net							

Bat Survey Data Form

Project: MLEB R-999		County: Northampton				Site# 2	Night # 2	Site name: Upper Roanoke Garibaldi Tract			Date: 8/1/17		
Time	Species*	Net	Age (A/JV)	Sex (M/F)	Repro NR/PG/L/PL/SCR	Forearm length	Weight + bag	Bag weight	Bat weight	Wing cond^	Band	# wing punches	Comments
20:40													EFN
20:55	LABO	A	JV	F	NR	42	18.8	7.7	11.1	0	3oaks 0385	-	-
21:24	NYHU	A	A	M	SCR	38	18.0	7.8	10.2	0	3oaks 0065	-	-
21:26	NYHU	C	A	F	NR	37	17.0	7.0	10.0	0	3oaks 0069	-	-
21:26	NYHU	C	A	M	SCR	35	17.0	8.0	9.0	0	3oaks 0234	-	-
21:45	LABO	A	A	M	scr	40	19.0	8.0	11.0	0	0097	-	-
21:45	LABO	A	JV	M	NR	39	16.0	7.8	8.2	0	0084	-	Recaptured at 22:00
21:45	EPFM	C	A	M	NR	46	24.4	7.9	16.5	0	0905	-	-
21:47	NYHU	C	A	M	SCR	34	19.0	7.7	11.3	0	3oaks 0452	-	originally captured 7-13-17 Recapture on 9:52 Release
22:25	MYAU	A	A	M	NR	37	15.0	8.0	7.0	0	3oaks 0073	025x2	escape on forearm or right wing (from net) brought fur collected with this bat fly - deceased.
22:30	LABO	A	A	F									EFN
23:10	LABO	C	JV	F	NR	39	18.0	8.0	10.0	0	3oaks 0053	-	-
23:30	LABO	A	A	F	NR	41	18.2	7.8	10.4	0	3oaks 0071	-	Pinhole in left wing
23:55	CORA	A	A	F	NR	42	17.5	8.0	9.5	0		026x2	12:05 Release fur collected
23:58	EPFU	A	A	F	NR	45	27.5	8.0	19.5	0	3oaks 0924	-	-
00:07	LABO	C	JV	F	NR	42	17.1	7.8	9.3	0	0237	-	Bleeding from bag on left + right wing
00:10	LABO	A	A	M	SCR	38	15.5	8.0	7.5	0	0060	-	two pinholes in left wing
00:10	LABO	A	A	M	SCR	39	17.8	8.0	9.8	0	0217	-	Phy damage spots on left wing, phy dam on right wing
1:28	MYAU	C	A	M	NR	36	15.0	8.0	7.0	0			Yellow BELL fur! released @ net

*SPECIES: big brown=EPFU, Pip/tricolor=PESU, little brown=MYLU, northern long-ear=MYSE, smallfooted=MYLE, Indiana=MYSO, gray=MYGR, southeastern=MYAU, red=LABO, hoary=LACI, silver=LANO, Seminole=LASE yellow=LAIN, evening=NYHU, Rafbat=CORA, VA big-ear=COTO, Brazilian free-tail=TABR

^WING condition damage: 0=none; 1=less than 50% pigment loss; 2=greater than 50% scarring/splotching, holes <5mm; 3=holes >5mm, necrotic tissue, membrane loss; P=physical impact damage
TAKE PICTURE!

Bat Survey Data Form

Upper Roanoke River Game Land

Project: NLEB	County: Northampton	Site #: 3	Night #: 1	Site name: Boone tract North	Date: 7/19/2017
Directions to site: Adjacent to Hwy 258,		Latitude: 35 36.221188	Longitude: -83 77.368714		Elevation:
Directions, cont. over a mile north of Roanoke River, E. side of highway.					
ID person(s): Mary Frazer		Observers: Nancy Scott + Lizzy Stokes-Cawley		Net open time: 20:40	Net close time: 1:40
Sky:	DUSK-time, temp, description 20:30 80°F mostly clear	MID-SAMPLE-time, temp, description 00:05 75° mostly clear	END-time, temp, description 01:30 74° mostly clear		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0	4=small branches in motion 5=small trees sway 6=large branches in motion 0-1	7=hard to walk 8=twigs break from trees; go home, this is a gale!		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) Waning crescent 14%					
Number/type of nets: 3 Net sets A=double high 12 meter B=double high 12 meter C=double high 18 meter (label & include size)					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Flood plain forest, Mature hardwoods. Medium clutter, somewhat open understory. See 7/20 (night 2) for tree species					
Disturbance: (List 3 most signif. disturbances within 500m) US highway, gravel road.					
ANABAT file name: SD2R truck, but too many					
ANABAT location(s): katydids - sensitivity @ 14					
Remarks: (rain events, other wildlife, etc.) A second bat hit my hands while I was holding bat #9 (M44U) at the net.					
Distant barred owls. Many small flying insects.					
<p>Site sketch (net labels, north arrow, landmarks)</p>					

Bat Survey Data Form

Upper Roanoke River Game Land ~~02-2017~~

Project: NLEB 29999	County: Northampton	Site #: 3	Night #: 2	Site name: Boone tract North	Date: 7/20/17
Directions to site: just off US 258,		Latitude: 35	see night 1/19	Longitude: -83	Elevation:
Directions, cont. about a mile north of Roanoke River, E. side of hwy.					
ID person(s): Mary Frazer		Observers: Nancy Scott + Lizzy Stokes-Cawley		Net open time: 21:25	Net close time: 2:10
Sky:	DUSK-time, temp, description 79° 21:30 mostly clear	MID-SAMPLE-time, temp, description 77° 00:00 clear (mostly)	END-time, temp, description 77° 01:40 clear		
Wind:	0=no wind 1=smoke drifts vertically 2=wind felt on face 3=hair disturbed 0-1	4=small branches in motion 5=small trees sway 6=large branches in motion 0-1	7=hard to walk 8=twigs break from trees; go home, this is a gale! 0		
Moon effect: (moon phase, start/stop time visible, # nets illuminated) Waning crescent - no effect					
Number/type of nets: (label & include size) A = double high 12m, B = double high 12m, C = double high 18m					
Site description: (net placement, stream data, Habitat description, dominant species, canopy cover) Mixed of Mature flood plain forest. Hardwoods.					
Primarily red maple, also river birch, willow oak, cherry bark oak, loblolly laurel oak trumpet creeper					
Disturbance: (List 3 most signif. disturbances within 500m) Highway, gravel road.					
ANABAT file name: SD2@truck, but sensitivity					
ANABAT location(s): set @ 4 due to excessive katydid noise.					
Remarks: (rain events, other wildlife, etc.) Open nets a bit late due to equipment issue.					
Many leaf hoppers, small moths, & other small insects flying around.					
2 barred owls calling @ midnight					
				<p>(Site sketch (net labels, north arrow, landmarks) to Roanoke River</p>	

Appendix C. Bat Photographs



MYSE, profile, Hyde County (6/26)



MYSE, tragus, Hyde County (6/26)



MYSE, frontal view, Hyde County (6/26)



MYAU, Beaufort County, 4/26



MYAU, Edgecombe County, 6/19



MYAU, Edgecombe County 6/19



MYAU-Halifax County 8/1



MYAU-Halifax County 8/1



MYAU-Halifax County 8/1



MYAU, Halifax County, Roanoke, 9/14



MYAU, Halifax County, Roanoke 9/13



MYAU juvenile, Halifax County, Roanoke 9/13



MYAU, Hertford County, 6/7



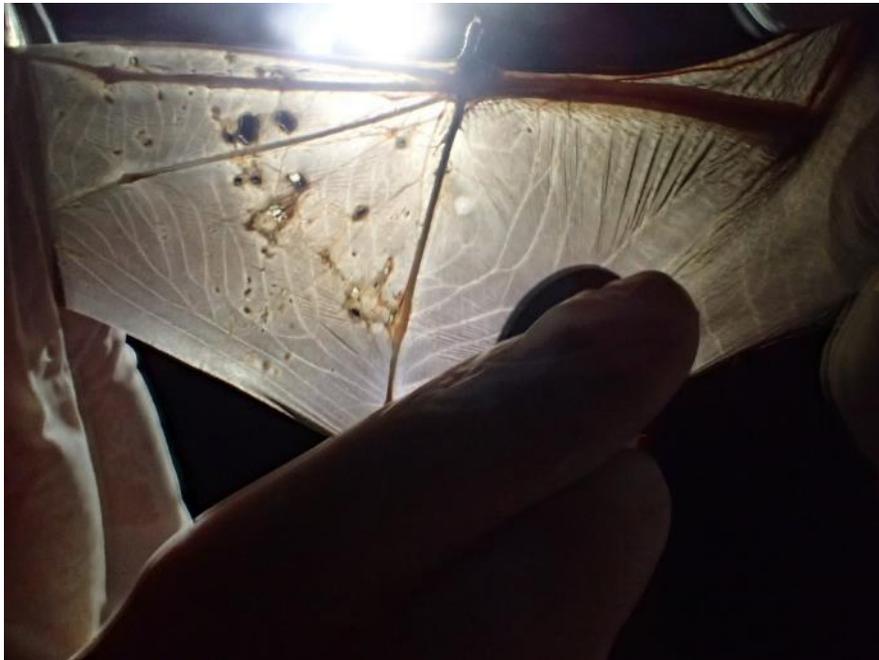
MYAU, Hertford County, 6/7



MYAU, Northampton County, 8/1



EPFU Wing Scarring, Beaufort County, 5/25
Wing swab taken for WNS



EPFU Wing Scarring, Beaufort County, 5/25

Appendix D. Bridge Survey Data Forms

mapped as bridge survey #1



Bat Habitat Assessment Form

NCDOT Bridges

Observers: M. Franza, N. Howell, H. Slyce
Date/Time: 5/23/17 2:30pm
County: Casswell
Waterbody: South Country Live Creeks

TIP or DOT project number: _____
Road Name/SR Number: Burton Chapel Rd
Bridge Number: _____

% Surrounding habitat w/in 1 mi. of project footprint (approx)
Urban/commercial _____ Suburban/residential 10
Natural/rural 75 Agricultural 15

Any trees >3" DBH within project footprint? yes no
Any shaggy trees or snags >5" DBH? yes no
If yes to shag/snag, how much sunlight do they receive during the day? 1-3 hours 4-6 hours 7+ hours
If yes to shag/snag, list species of habitat trees >5" dbh _____

If snags >5" DBH are present in sunlit areas, provide photos and location.
If large hollow trees are present, provide photos and location.

Presence of:
Caves In project footprint no In vicinity (0.5 mi) no
Abandoned mines yes no yes no
If 'yes' to any of the above, provide photos, description, and location.

Major water source in project footprint: river stream/creek pond lake swamp
Suitable drinking habitat in the form of non-stagnant, smooth or slack water? yes no

Guard rails none concrete timber metal
Deck type concrete metal timber open grid
Beam type none concrete steel timber
End/back wall type concrete timber masonry
Creosote evidence yes no
Shallow vertical **top sealed** crevices (1/2 - 1 1/4" wide, 4-12" deep) yes no
Deep vertical **unsealed** crevices (1/2 - 1 1/4" wide, 12+" deep) yes no

Max height of bridge deck above ground/water (ft): 15
Night roost habitat protected yes no - poor -> flat slab bridge
Bridge alignment: N/S E/W NW/SE NE/SW
Hours of sun exposure to bridge 0-1 2-3 >3
Human disturbance under bridge high low none
Emergence count performed? (If yes, complete form next page) yes no
Evidence of bats using bird nests, if present? yes no no nests
Evidence of bats using bridge? (photos needed) yes no
Bat species present: _____

Additional Comments: 36.345946
79.289911

mapped as bridge
survey # 2



Bat Habitat Assessment Form

NCDOT Bridges

Observers: M. Frazer, H. Slye, N. Howell
Date/Time: 5/23/17 1:45 pm
County: Caswell
Waterbody: UT to South Country Line Creek

TIP or DOT project number: _____
Road Name/SR Number: Mary Jane Bigelow Rd
Bridge Number: _____

% Surrounding habitat w/in 1 mi. of project footprint (approx)
Urban/commercial _____ Suburban/residential 5
Natural/rural 80 Agricultural 15

Any trees >3" DBH within project footprint? yes no
Any shaggy trees or snags >5" DBH? yes no
If yes to shag/snag, how much sunlight do they receive during the day? 1-3 hours 4-6 hours 7+ hours
If yes to shag/snag, list species of habitat trees >5" dbh _____

If snags >5" DBH are present in sunlit areas, provide photos and location.
If large hollow trees are present, provide photos and location.

Presence of: In project footprint In vicinity (0.5 mi)
Caves yes no yes no
Abandoned mines yes no yes no
If 'yes' to any of the above, provide photos, description, and location.

Major water source in project footprint: river stream/creek pond lake swamp
Suitable drinking habitat in the form of non-stagnant, smooth or slack water? yes no

Guard rails none concrete timber metal
Deck type concrete metal timber open grid
Beam type none concrete steel timber
End/back wall type concrete timber masonry
Creosote evidence yes no
Shallow vertical **top sealed** crevices (1/2 - 1 1/4" wide, 4-12" deep) yes no
Deep vertical **unsealed** crevices (1/2 - 1 1/4" wide, 12+" deep) yes no

Max height of bridge deck above ground/water (ft): 12

Night roost habitat protected yes no
Bridge alignment: N/S E/W NW/SE NE/SW
Hours of sun exposure to bridge 0-1 2-3 >3
Human disturbance under bridge high low none

Emergence count performed? (If yes, complete form next page) yes no
Evidence of bats using bird nests, if present? yes no barn swallow nests
Evidence of bats using bridge? (photos needed) yes no
Bat species present: _____

Additional Comments: 36. 346 5 39
79. 28 28 54



Bat Habitat Assessment Form

mapped as bridge survey #3

NCDOT Bridges

Observers: Mary Frazer, Nathan Howell, Hannah Slyce TIP or DOT project number: _____
 Date/Time: 05/23/2017 1pm Road Name/SR Number: US 158 / 86 N
 County: Caswell Bridge Number: _____
 Waterbody: Country Line Creek

% Surrounding habitat w/in 1 mi. of project footprint (approx)
 Urban/commercial _____ Suburban/residential _____
 Natural/rural 75 Agricultural 25

Any trees >3" DBH within project footprint? yes no
 Any shaggy trees or snags >5" DBH? yes no
 If yes to shag/snag, how much sunlight do they receive during the day? 1-3 hours 4-6 hours 7+ hours
 If yes to shag/snag, list species of habitat trees >5" dbh _____

If snags >5" DBH are present in sunlit areas, provide photos and location.
If large hollow trees are present, provide photos and location.

Presence of:

	In project footprint	In vicinity (0.5 mi)
Caves	yes <u>no</u>	yes <u>no</u>
Abandoned mines	yes <u>no</u>	yes <u>no</u>

If 'yes' to any of the above, provide photos, description, and location.

Major water source in project footprint: river stream/creek pond lake swamp
 Suitable drinking habitat in the form of non-stagnant, smooth or slack water? yes no

Guard rails	none <u>concrete</u> timber	metal <u>old school guard rails by crevices too wide</u>
Deck type	<u>concrete</u> metal timber	open grid
Beam type	none concrete <u>steel</u>	timber
End/back wall type	<u>concrete</u> timber masonry	
Creosote evidence		yes <u>no</u>
Shallow vertical top sealed crevices (1/2 - 1 1/4" wide, 4-12" deep)		<u>yes</u> <u>exp. joint in deck</u> no
Deep vertical unsealed crevices (1/2 - 1 1/4" wide, 12+" deep)		yes <u>no</u>

Max height of bridge deck above ground/water (ft): 20

Night roost habitat protected yes no
 Bridge alignment: N/S E/W NW/SE NE/SW
 Hours of sun exposure to bridge 0-1 2-3 >3
 Human disturbance under bridge high low none
 Emergence count performed? (If yes, complete form next page) yes no
 Evidence of bats using bird nests, if present? yes no
 Evidence of bats using bridge? (photos needed) yes no

Bat species present: _____

Additional Comments:
36.40 4965
-79.29 8577