PROTECTED BAT SPECIES SURVEY REPORT

Northern Long-eared Bat Research Project
Eastern North Carolina
Survey Phase 1, Sessions 1 & 2: Fall 2015 and Winter 2016

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DIGITAL ENCLOSURES

OVERALL:

GIS data of acoustic sites, mist-net sites, NLEB captures, and NLEB roosts (Shapefiles)

ORGANIZED IN FOLDERS BY PROJECT LOCATION:

Acoustic Data Files – All (Analook)
Acoustic Data Files – Labeled by Autoclassifiers as MYSE (Analook)
BCID Output Tables (Microsoft Excel)
EchoClass© Output Tables (Microsoft Excel)
Digital Photographs of Captured Bats (JPEGS)
Relevant Temperature Data (Microsoft Excel)

1.0 PROJECT DESCRIPTION

The North Carolina Department of Transportation (NCDOT) requested Ecological Engineering, LLP and its subcontractors Ecological Solutions, Inc. and Third Rock Consulting, Inc. (project team) to assist in conducting portions of a research study of the northern long-eared bat (*Myotis septentrionalis,* NLEB, or MYSE) in eastern North Carolina. Counties with NLEB capture records, counties with reliable acoustic-only records (no captures), and counties near recent NLEB captures in Washington, Currituck and Camden counties were prioritized for initial monitoring. The objectives of the study are as follows:

- Utilizing acoustic monitoring and mist-net sampling, determine the distribution of NLEB in eastern North Carolina, determine where and if presence is year-round and where it is limited to the maternity season, and develop a basic understanding of NLEB habitat and temporal (year-round) activity patterns;
- Use current records and the results of the acoustic surveys to conduct mist-netting and radio telemetry on NLEBs to locate and characterize day roosts, especially winter roosts; and,
- Swab clinically infected bats in winter to determine presence/absence of *Pseudogymnoascus destructans* (Pd), the fungus that causes white nose syndrome (WNS).

This report includes results of the initial phase of the project, designated "Phase 1." Phase 1 consisted of two sessions; Session 1 surveys occurred during the fall of 2015 and Session 2 surveys during the winter of 2016. Specifically, session 1 began November 4, 2015 and ended December 21, 2015. Session 2 began and ended on February 29, 2016.

During Session 1, the project team sampled nine pre-determined locations with acoustic equipment, four of which were also surveyed with mist-nets during the session (Figure 1). The nine locations surveyed with acoustics are listed below. Locations surveyed with mist-netting are marked with an asterisk. During Session 2, the project team conducted mist-netting and acoustic surveys at a single location, North River Game Land, for one night.

1. Bladen Lakes State Forest, Bladen County
2. Chowan Swamp Game Land, Hertford County
3. CP&L Game Land, Lee and Chatham County
4. Great Dismal Swamp National Wildlife Refuge, Gates, Camden and Pasquotank Counties*
5. Murrayville Mitigation Site, New Hanover County
6. North River Game Land, Currituck and Camden Counties*
7. Old Waynesborough Park, Wayne County
8. Palmetto-Peartree Preserve, Tyrell County*
9. Pocosin Lakes National Wildlife Refuge, Hyde, Tyrrell, and Washington Counties*

All surveys were conducted within suitable roosting and foraging habitat for NLEB. All surveys were conducted by qualified bat biologists currently permitted by the US Fish and Wildlife Service (USFWS) and NC Wildlife Resources Commission (NCWRC). Acoustic survey results were reviewed daily. Mist-netting at the above-referenced project locations was conducted with the goal of catching NLEB. Captured NLEB were fitted with transmitters, and telemetry was utilized to find roost locations. Emergence counts were performed at roost locations.

2.0 METHODOLOGY

This section describes the methods used to perform acoustic surveys. Survey methodology followed procedures and protocols set forth by the NCDOT project scope dated September 25, 2015 and in the Standardization for NLEB Acoustic Research document dated November 16, 2015 (NCDOT 2015). Surveys adhered to the protocols stipulated in the USFWS National White Nose Syndrome Decontamination Protocol (USFWS 2012), North Carolina's White-nose Syndrome Surveillance and Response Plan (NCWRC 2013), and the NCDOT WNS Decontamination Protocol for North Carolina (NCDOT 2014).

2.1 Habitat Assessments

Prior to performing field surveys, a desktop-GIS assessment using the most recent available color aerials of the study areas was performed to determine availability of potentially suitable habitat for NLEB. This information was utilized to guide placement of acoustic detectors and mist-net sites. Field assessments were performed to verify the presence of suitable habitat and finalize detector and mist-net site placement. Field assessments included extensive pedestrian reconnaissance of the study areas.

Habitat at each detector site, each mist-net site where NLEB were captured, and each NLEB roost site was characterized by community type as described in The Guide to the Natural Communities of North Carolina, Third Approximation (Schafale 1990) and scored as:

1) pine/hardwood/mixed;
2) upland/bottomland;
3) managed (thinned, burned, or pine plantation)/unmanaged;
4) cutover/immature forest/mature forest;
5) more open/more cluttered; and,
6) natural (>50% wooded), rural (>50% agricultural land)/mixed (primary land use is not wooded or agricultural).

Based on guidance provided in the Standardization for NLEB Acoustic Research document (NCDOT 2015), basal area and canopy coverage were not assessed during this survey phase. This detailed habitat data will be collected in the growing season to provide a better idea of how much clutter is around when bats are most active.

2.2 Acoustic Surveys

A total of 108 acoustic detector nights were sampled during the fall session, and one acoustic detector night was sampled during the winter session. Bat detector locations were selected by the permitted biologists based on high quality NLEB foraging and roosting habitat within each project location. Where possible, a variety of available community types were selected for sampling. Please refer to the accompanying digital submittal for raw acoustic files collected during Phase 1.

Acoustic surveys utilized Anabat SD-2 detectors running software version 4062g. Audio division ratio was set to 16, data division ratio was set to 8, and sensitivity was set at 6 or 7 for all recording sessions. High frequency (green), directional microphones were attached to each unit by cable. Microphones were placed at angles such that the cone of detection projected upward at an angle between 0 and 45 degrees from horizontal. The deflection of sound waves off the microphone housing required the U-shaped housing be directed downward at an angle between 0 and 45 degrees. Microphones were

elevated at least 10 feet from the ground, and placed at least five feet in any direction from vegetation or other obstructions. Weatherproofing of the SD-2 units was provided by placing the units into a plastic toolbox, and placing the toolbox into a garbage bag. Start and end recording times were programmed with the CF card to begin ½ hour before sunset and end ½ hour after sunrise. Proper functioning and cone of detection were determined using finger rubs at the time of deployment by placing the SD-2 into manual record mode. Deployment sites and detector orientation were chosen to optimize recorded call quality and minimize clutter to the maximum extent possible, while also targeting the NLEB, a species which typically forages in and around forested areas and along forest edges. Each deployment site was photographed, and a GPS point was taken. Figures 2 through 10 depict the locations of acoustic sampling sites at each of the nine sampled locations. During the early part of data collection, acoustic monitoring was not conducted on nights for which the forecast temperature was lower than 46 degrees Fahrenheit. A revision to the Standardization for NLEB Acoustic Research document (NCDOT 2015) later allowed for acoustic detection on nights with temperatures lower than 46 degrees Fahrenheit during this survey phase. Lascar Electronics model EL-USB-1-LCD temperature data loggers provided by NCDOT were deployed at each site. Please refer to the accompanying digital submittal for relevant temperature data for each acoustic site. Acoustic data collection was documented utilizing the NCDOT Acoustic Data Sheet.

During the course of the research project, acoustic sites which met the minimum criterion of having three or more high frequency call sequences recorded over the course of a night were designated as permanent acoustic sites. Following detailed acoustic analysis, it was determined that more than four acoustic sites meeting this criterion were present at some locations. Due to this finding, at the discretion of the permitted biologists, an additional level of discrimination was introduced for these project locations which limited permanent sites to those with the most high frequency (>40 kHz) or *Myotis* species calls recorded. Every effort will be made in future survey phases to resample these permanent acoustic sites. Resampling at the same sites will help identify whether high frequency bats (including NLEB) may use the same habitat through varying seasons.

2.3 Acoustic Analysis – Autoclassifier

All recorded call files were processed with EchoClass© version 3.1 and BCID East version 2.7c, both USFWS approved automated identification programs. Processing with EchoClass© utilized species set 1, the accepted species set for the eastern United States. Processing with BCID East© utilized a species set chosen to mirror the species set utilized by EchoClass©. Maximum likelihood estimates (MLE), identifications by file, and identifications by night were output by both programs.

2.4 Acoustic Analysis – Qualitative

All identifications made by autoclassifiers were reviewed at the level of the individual call file. Any call files identified as NLEB by either program were qualitatively reviewed by trained and experienced team members, as were any call files recorded within five minutes before and after the call file. For each file tentatively identified as NLEB by either program or by qualitative means, team members provided manual identification of the species suspected of making the call, as well as the rationale for the identification. The same rationale may be used for a number of call files with similar characteristics on any given recording night. Representative sonograms of each call file qualitatively determined to belong to a NLEB were prepared to illustrate call characteristics, including pulse spacing, characteristic frequency, slope, and changes over time through the call file. In addition, a representative sonogram for each rationale used to qualitatively justify files as *not* belonging to NLEB for each survey night was also prepared. Sonograms were prepared in AnalookW©, version 4.1t. Two screen shots of each file are shown, the first at the F6 time scale, uncompressed, in the “frequency only” view and the second at the

F8 time scale, compressed, in the "frequency and slope" view. The majority of F6/uncompressed screen shots are shown with filtering turned off. The F8/compressed screen shots are shown after filtering (filters used are listed in the caption under each screen shot) and selected manual cleaning in order to isolate the most representative pulses for measuring. A scan was then run on the measures in the F8/compressed view in order to output characteristics of the pulses shown. These parameters are provided as a third screen shot for each file.

2.5 Mist-net Surveys

Mist-net surveys were performed with the goal of capturing NLEB. Net deployments were individually tailored to flight corridors within the highest quality foraging/roosting habitat available within each survey location. Configurations utilized combinations of nets sized between four and twelve meters in length, stacked between one net panel (single high), two net panels (double high), and three net panels (triple high) in height. Between three and five net set-ups were deployed at each netting site per calendar night of sampling. Each mist-net site was photographed, and a GPS point was taken. Clutter at mist net sites was characterized visually as an average percent cover of all strata for the forested area surrounding the netted corridor. Clutter was ranked from 1 to 4 based on a classification system modified from O'Keefe (2009) and Law (2002). Please refer to Table 10 for a description of clutter at mist-net sites. Figures 5, 7, 9, and 10 depict the locations of mist-net sites at each of the four sampled project locations; Great Dismal Swamp National Wildlife Refuge, North River Game Land, Palmetto Peartree Preserve, and Pocosin Lakes National Wildlife Refuge. During the early part of data collection, mist-netting was not conducted on nights for which the forecast temperature was lower than 50 degrees Fahrenheit. A revision to the Standardization for NLEB Acoustic Research document (NCDOT 2015) later allowed for conditional mist-netting on nights with temperatures lower than 50 degrees Fahrenheit. Lascar Electronics model EL-USB-1-LCD temperature data loggers provided by NCDOT were deployed at each site. Please refer to the accompanying digital submittal for relevant temperature data collected during Phase 1 for each mist-net site. Mist-net captures were documented utilizing data sheets designed to capture the same information as that contained in the USFWS Sample Data Sheet for Indiana Bat Surveys (USFWS 2015).

2.6 Radio Tracking, Roost Documentation, and Emergence Surveys

During Session 1, captured NLEB were fitted with 21-day radio transmitters (Holohill Systems, Ltd., model LB-2X). Transmitter attachment adhered to methodology described in the 2015 Range-wide Indiana Bat Summer Survey Guidelines (USFWS 2015). Bats were tracked daily until the roost was located, or for a maximum of eight hours. Radio tracking was performed primarily by pedestrian means using a handheld three or five-element antenna. In the event a transmitter signal was lost, methods used to relocate the signal included expanded pedestrian transects and vehicular transects using an elevated, pole-mounted five-element antenna. At the suggestion of the USFWS, and with the assistance of USFWS staff, a plane was also used to relocate a lost signal from the air once during this survey session. Radio tracking efforts continued for NLEBs at North River Game Land for the entire 21 day period. NCDOT and the USFWS exercised the option to discontinue radio tracking for NLEBs at Great Dismal Swamp National Wildlife Refuge after seven days, on December 19th, in consideration of the number of NLEB already captured and tracked, and of the upcoming holiday season. At the discretion of NCDOT and USFWS, radio tracking was not performed for captured NLEB during Session 2.

Roost documentation was conducted utilizing the USFWS Indiana Bat Roost Data Sheet (USFWS 2015). Each roost was photographed, and a GPS point was taken. Figures 5h and 7e depict the locations of roosts at each of the two project locations where NLEB were captured. Emergence counts were

performed at each roost according to the scope, with the following exceptions and modifications:

- The scoped emergence count duration is from one half hour before dusk to one hour after dusk. Duration of emergence counts was shortened in some instances due to lack of visibility caused by dense swamp with a high canopy, and high water combined with cold temperatures;
- Additional emergence counts were performed during Session 1 at some roosts in an attempt to adequately document activity and movement patterns, a primary goal of the project. In addition, difficult survey conditions required that observers optimize the method of detection (naked eye observation, night vision, thermal imaging, acoustics, telemetry), which required additional emergence surveys.
- Emergence counts were not performed at every roost for every bat due to roost inaccessibility; and,
- Emergence counts were omitted for Session 2 at the discretion of NCDOT and USFWS.

3.0 FINDINGS

This section describes the results of habitat assessments, acoustic monitoring and analysis, mist-net captures, tracking efforts, roost documentation, and emergence surveys during Phase 1.

3.1 Acoustic Site Habitat Descriptions

The acoustic sites monitored were chosen based on available flight corridors within and in proximity to foraging areas and high quality NLEB habitat as well as USFWS and NCDOT protocols. Acoustic sites are described below. An asterisk***** denotes sites which have been identified as permanent acoustic monitoring stations for this research project. Additional acoustic site data are presented in Tables 1 through 9. Please refer to the Figures accompanying this report for the locations of acoustic sites.

3.1.1 – Bladen Lakes State Forest

Acoustic Site 1***** is located in the western portion of the forest approximately one mile east of Salters Lake. The acoustic site is situated at the edge of an open canopy food plot surrounded by Mesic Pine Flatwoods. This community type consists of a canopy of longleaf pine (*Pinus palustris*). The understory is open with the exception of grass stage longleaf pines, few turkey oak (*Quercus laevis*), and sporadic clumps of wiregrass (*Aristida stricta*). Pine straw is harvested in this area.

Acoustic Site 2***** is located in the northern portion of the forest. The acoustic site is situated at the edge of an open canopy flooded field/pond surrounded by managed loblolly pine (*Pinus taeda*). This community type consists of a canopy of loblolly pine. The dense understory contains species typical of peatland communities, such as fetterbush (*Lyonia lucida*), gallberry (*Ilex coriacea*), and wax myrtle (*Morella cerifera*). Had this area been left in its natural state, it would likely have been classified as Pond Pine Woodland.

Acoustic Site 3***** is located in the eastern portion of the forest. The acoustic site is situated at the edge of an open canopy gap created by dirt roads surrounded by Mesic Pine Flatwoods. This community type consists of a canopy of relatively closely spaced longleaf pine. The sparse, fire-maintained understory contains turkey oak, and wiregrass.

Acoustic Site 4a is located in the southern portion of the forest. The acoustic site is situated at the edge of an open canopy gap created by recent tree clearing surrounded by mixed pine/hardwood forest. In its natural state, the surrounding community type would likely be Pond Pine Woodland, but the area has been converted primarily to loblolly pine. The dense, approximately 15-foot tall understory contains loblolly bay (*Gordonia lasianthus*), sweet bay (*Magnolia virginiana*), gallberry, fetterbush, and swamp bay (*Persea palustris*). Several dead snags and hollow trees were observed in the vicinity of this acoustic site.

Acoustic Site 4b is located in the southern portion of the forest. The acoustic site is situated at the edge of a small, open canopy borrow pit pool surrounded by Coastal Plain Bottomland Hardwood Forest. The canopy contains swamp chestnut oak (*Quercus michauxii*), American sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), American elm (*Ulmus americana*), and hickory species (*Carya* sp.). The understory is relatively sparse. A small stream corridor is located immediately south of the acoustic site.

3.1.2 – Chowan Swamp Game Land

Acoustic Site 1a***** is located in the southeastern portion of the game land. The acoustic site is situated at the edge of an open canopy gap created by a clearing at the end of a dirt road, on the bank of the Wiccacon River (Hoggard Swamp), surrounded by Mesic Mixed Hardwood Forest. The immediate area surrounding the site consists of a canopy dominated by water oak (*Quercus nigra*), loblolly pine, tulip poplar (*Liriodendron tulipifera*), and sweet gum (*Liquidambar styraciflua*). The understory is moderately dense, and contains American holly (*Ilex opaca*), inkberry (*Ilex glabra*), titi (*Cyrilla racemiflora*), and wax myrtle. Vines are common, and include yellow jessamine (*Gelsemium sempervirens*) and roundleaf greenbrier (*Smilax rotundifolia*). American beech trees (*Fagus grandifolia*) are located along the riverbank, and resurrection fern (*Pleopeltis polypodioides*) covers larger tree limbs. The overall area greater than 300 feet from the acoustic site consists of cypress-gum swamp.

Acoustic Site 1b***** is located in the northwestern portion of the game land, approximately 0.23 miles from the Meherrin River. The acoustic site is situated at the edge of an open canopy gap created by a field, surrounded by Mesic Mixed Hardwood Forest. The immediate area surrounding the site consists of a canopy dominated by water oak, loblolly pine, tulip poplar, and sweet gum. The understory is moderately dense, and contains American holly, highbush blueberry (*Vaccinium corymbosum*), giant cane (*Arundinaria gigantea*), and sapling water oaks. Vines are common, and include yellow jessamine and roundleaf greenbrier.

Acoustic Site 2a is located in the southeastern portion of the game land. The acoustic site is situated at the edge of an open canopy gap created by a clearing and boat launching area at the end of a dirt road, on the bank of the Wiccacon River (Hoggard Swamp), surrounded by Coastal Plain Bottomland Hardwoods. The surrounding forest canopy consists of swamp chestnut oak, tulip poplar, and few bald cypress (*Taxodium distichum*). The understory is relatively sparse, and contains American holly, wax myrtle, and swamp bay. Vines are infrequent, and include roundleaf greenbrier. Mistletoe (*Phoradendron leucarpum*) clumps are common in larger trees along the riverbank.

Acoustic Site 2b is located in the northwestern portion of the game land. The acoustic site is situated at the edge of a sluggish creek/swamp surrounded by Coastal Plain Bottomland Hardwoods. The canopy consists of swamp chestnut oak, tulip poplar, American sycamore, bald cypress, and sweet gum. The understory is relatively sparse, and includes American holly, ironwood (*Carpinus caroliniana*), and few

possumhaw (*Viburnum nudum*) in wetter areas. Vines are common, and include Japanese honeysuckle (*Lonicera japonica*), crossvine (*Bignonia capreolata*), and roundleaf greenbrier. Although data was collected during the fall, some herbaceous species were evident, including water horehound (*Lycopus americana*), grape fern (*Botrychium* sp.), and southern lady fern (*Athyrium filix-femina*). Immediately up-slope from the acoustic site is mesic mixed hardwood forest with many large American beech trees in the canopy.

Acoustic Site 3a***** is located in the southeastern portion of the game land. The acoustic site is situated at the edge of an open canopy gap created by a dirt road, surrounded by Coastal Plain Bottomland Hardwoods. The canopy consists of swamp tupelo (*Nyssa biflora*), bald cypress, tulip poplar, and southern red oak (*Quercus falcata*). The understory is relatively sparse, and contains American holly and swamp bay. Vines are common, and include Japanese honeysuckle and crossvine. Although data was collected during the fall, one herbaceous species, Christmas fern (*Polystichum acrostichoides*), was evident. Immediately up-slope from the acoustic site is Mesic Mixed Hardwood Forest with many large American beech trees in the canopy, white oak (*Quercus alba*), northern red oak (*Quercus rubra*), and a few sourwood (*Oxydendrum arboreum*).

Acoustic Site 3b***** is located in the northwestern portion of the game land. The acoustic site is situated on the bank of Potecasi Creek at the edge of an open canopy gap created by a dirt road, surrounded by Mesic Mixed Hardwood Forest. The immediate area surrounding the site consists of a canopy dominated by American beech, loblolly pine, sweet gum, tulip poplar, and water oak, with few post oak (*Quercus stellata*) and turkey oak. The understory is moderately dense, and contains loblolly bay, titi, giant cane, highbush blueberry, and American holly. Vines include roundleaf greenbrier. The overall surrounding area also includes young, planted loblolly pine stands and Cypress-gum Swamp.

Acoustic Site 4a***** is located in the southeastern portion of the game land approximately 0.25 miles from the Chowan River. The acoustic site is situated within a flight corridor created by a dirt road, surrounded by mature, managed loblolly pine forest. The canopy is dominated by loblolly pine, and the relatively sparse understory includes hardwood saplings including sweet gum, red maple, and water oak, as well as shrubs such as wax myrtle and winged sumac. The herb layer includes tall herbaceous species such as broomsedge bluestem (*Andropogon virginicus*) and woolgrass (*Scirpus cyperinus*). Vines include laurel-leaf greenbrier (*Smilax laurifolia*) and yellow jessamine.

Acoustic Site 4b***** is located in the northwestern portion of the game land approximately 0.05 miles from Potecasi Creek. The acoustic site is situated within a flight corridor created by a wide, grassed road, surrounded by Coastal Plain Bottomland Hardwoods to the south and a very dense, young stand of managed loblolly pine to the north. The canopy within the Coastal Plain Bottomland Hardwoods community includes bald cypress, red maple, water oak, loblolly pine, and a few specimens of tulip poplar. The understory includes American holly, highbush blueberry, and titi. Herbaceous species in evidence at the time of data collection include coastal doghobble (*Leucothoe axillaris*) and partridgeberry (*Mitchella repens*). Vines include roundleaf greenbrier. Shallow, standing water was observed within this community type.

3.1.3 – CP&L Game Land

Acoustic Site 1***** is located in the southeastern portion of the game land approximately 0.05 miles from the Cape Fear River. The acoustic site is situated within a clearing in a dirt road surrounded by a monoculture of densely planted, young, managed loblolly pine.

Acoustic Site 2***** is located in the southeastern portion of the game land approximately 0.35 miles from the Cape Fear River. The acoustic site is situated at the edge of an open canopy created by a clear-cut within the past two years. Surrounding forest consists of moderately dense loblolly pine approximately 20 years old. The understory is moderately dense, and includes American holly, highbush blueberry, and sapling hardwoods including sweet gum, water oak, willow oak (*Quercus phellos*), flowering dogwood (*Cornus florida*), and post oak. Herbaceous species in evidence at the time of data collection include Christmas fern. Vines include roundleaf greenbrier, Japanese honeysuckle, and yellow jessamine.

Acoustic Site 3***** is located in the northwestern portion of the game land. The acoustic site is situated at the edge of a canopy gap created by an open water slough and wetland surrounded by relatively densely spaced managed loblolly pine. The understory in the vicinity of the acoustic site includes black willow (*Salix nigra*), red maple, arrowwood (*Viburnum* sp.), giant cane, and river birch (*Betula nigra*). Roundleaf greenbrier and crossvine are common.

Acoustic Site 4a is located in the northwestern portion of the game land. The acoustic site is situated at the edge of a canopy gap created by a very recently clear-cut managed pine stand surrounded by managed loblolly pine over 30 years old. Hardwood species appearing in the understory include tulip poplar, sweet gum, American holly, and American beech. Japanese honeysuckle is common.

Acoustic Site 4b is located in the northwestern portion of the game land. The acoustic site is situated at the edge of a canopy gap created by a wide, grassed right-of-way between stands of managed loblolly pine over 30 years old. Hardwood species appearing in the understory include tulip poplar, sweet gum, American holly, and American beech. Japanese honeysuckle is common.

3.1.4 – Great Dismal Swamp National Wildlife Refuge

Acoustic Site 1***** is located in the northwest-central region of the North Carolina portion of the refuge, at the intersection of Sherrill Ditch and Hamburg Ditch (Cross Canal). The acoustic site is situated at the edge of a flight corridor created by the ditches and gravel/dirt roads which parallel the ditches, surrounded by Cypress-gum Swamp. The canopy is dominated by water tupelo (*Nyssa aquatica*), with numerous bald cypress and red maple, and several sweet gum. The understory includes titi, coastal sweet pepperbush (*Clethra alnifolia*), sapling sweet gum, and few specimens of American holly. Common vines include roundleaf greenbrier and crossvine. Acoustic site 1 is the same location as mist-net site 2.

Acoustic Site 2***** is located in the east-central region of the North Carolina portion of the refuge, at the intersection of Forest Line Road and Bull Boulevard. The acoustic site is situated at the edge of a flight corridor created by ditches and gravel roads parallel to the ditches, surrounded by Nonriverine Swamp Forest. The canopy on three sides of the intersection is dominated by red maple, with few bald cypress. The understory includes swamp bay, American holly, coastal sweet pepperbush, highbush blueberry, and fetterbush. Vines including roundleaf greenbrier, laurel-leaf greenbrier, and yellow jessamine create dense tangles. Mistletoe clumps are common in larger trees. The northwest quadrant of the intersection has an open canopy, and appears to be regenerating from disturbance. This area is very wet, and consists primarily of very dense tangles of laurel-leaf greenbrier. Specimens of Atlantic white cedar (*Chamaecyparis thyoides*), Devil's walking stick (*Aralia spinosa*), swamp bay, and sapling red maple are emerging above the vines.

Acoustic Site 3a***** is located in the southeastern region of the North Carolina portion of the refuge, at the intersection of County Line Ditch and Insurance Ditch. The acoustic site is situated at the edge of a flight corridor created by ditches and gravel roads parallel to the ditches, surrounded by Nonriverine Swamp Forest. The canopy is dominated by red maple, with few bald cypress and tulip poplar. The understory includes swamp bay, American holly, coastal sweet pepperbush, highbush blueberry, Devil's walking stick, titi, and fetterbush. Vines are common, and include roundleaf greenbrier, laurel-leaf greenbrier, and yellow jessamine. Mistletoe clumps are common in larger trees.

Acoustic Site 3b***** is located in the northern region of the North Carolina portion of the refuge, at the intersection of Corapeake Ditch and Sherrill Ditch. The acoustic site is situated at the edge of a flight corridor created by ditches and gravel roads parallel to the ditches, surrounded by Nonriverine Swamp Forest. The canopy is dominated by red maple, with few bald cypress and tulip poplar. The understory includes swamp bay, American holly, coastal sweet pepperbush, highbush blueberry, Devil's walking stick, titi, and fetterbush. Vines are common, and include roundleaf greenbrier, laurel-leaf greenbrier, and yellow jessamine.

Acoustic Site 4 is located in the southern region of the North Carolina portion of the refuge, along Weyerhaeuser Ditch. The acoustic site is situated at the edge of a flight corridor created by the ditch and the gravel road parallel to the ditch, surrounded by Nonriverine Swamp Forest. The canopy is dominated by red maple, with few bald cypress, loblolly pine, and tulip poplar. The understory includes swamp bay, American holly, coastal sweet pepperbush, highbush blueberry, Devil's walking stick, titi, and fetterbush. Vines are common, and include roundleaf greenbrier, laurel-leaf greenbrier, and yellow jessamine.

3.1.5 – Murrayville Mitigation Site

Acoustic Site 1***** is located in the southwestern portion of the site. The acoustic site is situated at the edge of a flight corridor created by a wide, dirt road surrounded by Pond Pine Woodland. The canopy is dominated by mature pond pine. The dense, approximately 15-foot tall understory contains titi, gallberry, inkberry, fetterbush, giant cane, wax myrtle, and loblolly bay. Laurel-leaf greenbrier is common.

Acoustic Site 2 is located in the south-central portion of the site. The acoustic site is situated at the edge of a flight corridor created by a man-made clearing surrounded by High Pocosin. Vegetation consists of wax myrtle, swamp bay, loblolly bay, gallberry, and creeping blueberry (*Vaccinium crassifolium*), with few taller pond pines and sapling red maple emerging above the dense shrub layer. Herbaceous species within the man-made clearing include purple pitcher plant (*Sarracenia purpurea*), yellow pitcher plant (*Sarracenia flava*), Venus' flytrap (*Dionaea muscipula*), bracken fern (*Pteridium aquilinum*), and yellow-eyed grass (*Xyris* sp.).

Acoustic Site 3a is located in the northeastern portion of the site. The acoustic site is situated at the edge of an open area created by a manmade pond, surrounded by Bay Forest. The dominant canopy species are loblolly bay, red maple, and swamp tupelo, and the understory contains gallberry, fetterbush, and coastal sweet pepperbush.

Acoustic Site 3b is located in the southwestern portion of the site. The acoustic site is situated at the edge of a flight corridor created by a dirt road surrounded by Pond Pine Woodland. The canopy is dominated by mature pond pine. The dense, approximately 15-foot tall understory contains titi,

gallberry, inkberry, fetterbush, giant cane, wax myrtle, and loblolly bay. Laurel-leaf greenbrier is common.

Acoustic Site 4***** is located in the northwestern portion of the site. The acoustic site is situated at the edge of a flight corridor created by a wide, dirt road surrounded by Pond Pine Woodland. The canopy is dominated by mature pond pine. The dense, approximately 15-foot tall understory contains titi, gallberry, inkberry, fetterbush, giant cane, wax myrtle, and loblolly bay. Laurel-leaf greenbrier is common.

3.1.6 – North River Game Land

Acoustic Site 1***** is located in the south-central portion of the game land near an open waterfowl impoundment. The acoustic site is situated at the edge of a flight corridor created by a dirt road surrounded by managed loblolly pine. The canopy is dominated by loblolly pine over 20 years old. The moderately dense understory consists primarily of wax myrtle and dense vines including roundleaf greenbrier and yellow jessamine.

Acoustic Site 2a***** is located in the south-central portion of the site. The acoustic site is situated at the edge of a flight corridor created by a dirt road surrounded by managed loblolly pine. The flight corridor provides access between an open field to the north and an open waterfowl impoundment to the south. The canopy is dominated by loblolly pine over 20 years old. The moderately dense understory consists primarily of wax myrtle, and also includes sapling red maple, swamp bay, sweet gum, and tag alder (*Alnus serrulata*) in wetter areas. Vines include roundleaf greenbrier.

Acoustic Site 2b is located in the south-central portion of the game land. The acoustic site is situated at the edge of a flight corridor created by a dirt road surrounded by Nonriverine Wet Hardwood Forest. The canopy includes red maple, swamp tupelo, sweet gum, and overcup oak (*Quercus lyrata*). The understory includes American holly, tag alder, highbush blueberry, fetterbush, sweet gum, and giant cane. Shallow, standing water was observed within this community type. Acoustic site 2b met the criteria to be identified as a permanent acoustic site; however, its location is in close proximity to another long-term acoustic monitoring site operated by the University of North Carolina, Greensboro.

Acoustic Site 3***** is located in the northern portion of the game land. The acoustic site is situated at the edge of an open wetland surrounded by Mesic Mixed Hardwood Forest. Canopy species include sweet gum, loblolly pine, water oak, red maple, and tulip poplar. The moderately dense understory contains wax myrtle, swamp bay, and American holly. Vines include roundleaf greenbrier.

Acoustic Site 4a***** is located in the north-central portion of the game land. The acoustic site is situated at the edge of a flight corridor created by a dirt road surrounded by Mesic Mixed Hardwood Forest. The canopy consists of water oak, swamp chestnut oak, sweet gum, loblolly pine, tulip poplar, and American beech. The relatively sparse understory consists of saplings of the canopy species, as well as ironwood, American holly, swamp bay, and giant cane. Coastal doghobble is also present in parts of this community type. The overall surrounding area also includes open agricultural fields and an extensive cypress-gum swamp. Acoustic site 4a is the same location as mist-net site 1.

3.1.7 – Old Waynesborough Park

Acoustic Site 1***** is located in the south-central portion of the park, approximately 0.09 miles from the Neuse River. The acoustic site is situated at the edge of a maintained grass field surrounded by a disturbed example of Coastal Plain Bottomland Hardwoods. The canopy consists of willow oak, water oak, green ash, red maple, American elm, and red mulberry (*Morus rubra*). The dense understory primarily consists of Chinese privet (*Ligustrum sinense*) and possumhaw (*Ilex decidua*). Vines include roundleaf greenbrier and poison ivy (*Toxicodendron radicans*). Several abandoned wooden buildings are located in the vicinity of this acoustic site.

Acoustic Site 2***** is located in the central portion of the park, approximately 0.15 miles from the Neuse River. The acoustic site is situated at the edge of a flight corridor created by a maintained trail surrounded by Coastal Plain Bottomland Hardwoods. The canopy consists of willow oak, water oak, overcup oak, green ash, red maple, American elm, and southern hackberry (*Celtis laevigata*). The moderately dense understory primarily consists of Chinese privet, winged elm (*Ulmus alata*), red maple, and sweet gum. Vines include roundleaf greenbrier, poison ivy, and multiflora rose (*Rosa multiflora*). Immediately down-slope from this acoustic site is a more mature, less disturbed example of this community type.

Acoustic Site 3***** is located in the north-central portion of the park, approximately 0.10 miles from the Neuse River. The acoustic site is situated at the edge of a flight corridor created by a maintained trail surrounded by Coastal Plain Bottomland Hardwoods. The canopy consists of willow oak, water oak, overcup oak, green ash, red maple, American elm, and southern hackberry. The moderately dense understory primarily consists of Chinese privet, winged elm, red maple, and sweet gum. Vines include roundleaf greenbrier and poison ivy.

Acoustic Site 4***** is located in the northern portion of the park, on the bank of the Little River approximately 0.20 air miles from its confluence with the Neuse River. The acoustic site is situated at the edge of a flight corridor created by a maintained trail surrounded by Coastal Plain Levee Forest. The canopy consists of willow oak, water oak, river birch, American sycamore, overcup oak, red maple, and southern hackberry. The moderately dense understory primarily consists of red maple and sweet gum. Vines include saw greenbrier (*Smilax bona-nox*), roundleaf greenbrier, and poison ivy. Bald cypress and river birch are also canopy species found in the floodplain of the Little River in the surrounding area.

3.1.8 – Palmetto Peartree Preserve

Acoustic Site 1***** is located in the northwestern portion of the preserve, approximately 0.35 miles from the Albemarle Sound. The acoustic site is situated at the edge of a flight corridor created by a dirt road and canal surrounded by Nonriverine Swamp Forest. The community is less mature than comparative examples at Great Dismal Swamp NWR, and appears to be regenerating from disturbance. Many standing, dead snags are evident, and the majority of vegetation consists of saplings. The few larger trees are mostly loblolly pine. Additional tree species indicative of the regenerating community type include swamp chestnut oak, water oak, willow oak, sweet gum, and red maple. Shrub species include wax myrtle and swamp bay. Giant cane is common in the understory, and roundleaf greenbrier is a common vine.

Acoustic Site 2a is located in the north-central portion of the preserve, approximately 1.03 miles from the Albemarle Sound. The acoustic site is situated at the edge of a flight corridor created by the

intersection of dirt roads and canals surrounded by Nonriverine Swamp Forest. The community is less mature than comparative examples at Great Dismal Swamp NWR, and appears to be regenerating from disturbance. Many standing, dead snags are evident, and the majority of vegetation consists of saplings. The larger trees are mostly loblolly pine. Additional tree species indicative of the regenerating community type include swamp chestnut oak, laurel oak (*Quercus laurifolia*), water oak, willow oak, sweet gum, and red maple. Shrub species include wax myrtle and swamp bay. Giant cane is common in the understory.

Acoustic Site 2b is located in the north-central portion of the preserve, approximately 0.85 miles from the Albemarle Sound. The acoustic site is situated at the edge of a flight corridor created by a dirt road and canal surrounded by Nonriverine Swamp Forest. The community is less mature than comparative examples at Great Dismal Swamp NWR, and appears to be regenerating from disturbance. The majority of vegetation consists of saplings. The larger trees are mostly loblolly pine. Additional tree species indicative of the regenerating community type include swamp chestnut oak, laurel oak, water oak, willow oak, sweet gum, and red maple. Shrub species include wax myrtle and swamp bay. Giant cane is common in the understory.

Acoustic Site 3a is located in the north-central portion of the preserve, approximately 0.26 miles from the Albemarle Sound. The acoustic site is situated at the edge of a flight corridor created by a dirt road and canal surrounded by Nonriverine Swamp Forest. The community is less mature than comparative examples at Great Dismal Swamp NWR, and appears to be regenerating from disturbance. Many standing, dead snags are evident, and the majority of vegetation consists of shrubs and saplings. The larger trees are mostly loblolly pine. Additional tree species indicative of the regenerating community type include swamp chestnut oak, laurel oak, water oak, willow oak, sweet gum, and red maple. Shrub species include wax myrtle and swamp bay. Giant cane is common in the understory. Immediately to the west of this acoustic site, the community type transitions into Tidal Freshwater Marsh (Shrub Subtype) (Schafale, 2012).

Acoustic Site 3b***** is located in the northeastern portion of the preserve, approximately 0.43 miles from the Albemarle Sound. The acoustic site is situated at the edge of a flight corridor created by a dirt road surrounded by Nonriverine Wet Hardwood Forest. Canopy species include water oak, cherrybark oak (*Quercus pagoda*), and laurel oak, with loblolly pine common near the upland road bed. The tall, relatively dense understory includes sapling red maple, swamp bay, wax myrtle, and sweet gum. Vines include yellow jessamine.

Acoustic Site 4***** is located in the eastern portion of the preserve, approximately 0.71 miles from the Albemarle Sound. The acoustic site is situated at the edge of a flight corridor created by a dirt road surrounded by Tidal Freshwater Marsh (Shrub Subtype). The canopy in this area appears to have been removed by disturbance, and many standing, dead snags are evident. Vegetation in this flooded community type consists almost entirely of shrubs, with wax myrtle the dominant species. Swamp bay and sapling red maple are also common, and broadleaf cattail (*Typha latifolia*) is a common herb.

3.1.9 – Pocosin Lakes National Wildlife Refuge

Acoustic Site 1a is located in the northern portion of the refuge, approximately 0.20 miles from the Scuppernong River. The acoustic site is situated at the edge of a flight corridor created by a dirt road and canal, surrounded by Nonriverine Swamp Forest. The canopy consists predominantly of red maple and bald cypress, and also includes loblolly pine, sweet gum, and Atlantic white cedar. The understory

includes titi, coastal sweet pepperbush, American holly, swamp bay, and wax myrtle. Laurel-leaf greenbrier is common.

Acoustic Site 1b***** is located in the north-central portion of the refuge. The acoustic site is situated at the edge of a flight corridor created by a dirt road and canal, surrounded by Nonriverine Swamp Forest. The canopy consists predominantly of red maple and bald cypress, and also includes water tupelo and loblolly pine. The understory consists of young saplings of the canopy species as well as coastal sweet pepperbush.

Acoustic Site 2a***** is located in the north-central portion of the refuge. The acoustic site is situated at the edge of a flight corridor created by a dirt road and canal, surrounded by Pond Pine Woodland. The canopy consists predominantly of pond pine. The understory is dense, and includes red maple, black willow, swamp bay, inkberry, and swamp rose (*Rosa palustris*). Herbaceous species observed in this wet community type include royal fern, and cinnamon fern. Clumps of mistletoe are common.

Acoustic Site 2b is located in the north-central portion of the refuge. The acoustic site is situated at the edge of a flight corridor created by a dirt road and canal, surrounded by Pond Pine Woodland. The canopy consists predominantly of pond pine. The understory is dense, and includes red maple, black willow, swamp bay, inkberry, and swamp rose (*Rosa palustris*). Herbaceous species observed in this wet community type include royal fern, and cinnamon fern. Clumps of mistletoe are common.

Acoustic Site 3a***** is located in the west-central portion of the refuge. The acoustic site is situated at the edge of a flight corridor created by a dirt road and canal, surrounded by High Pocosin. Vegetation consists of dense, approximately 15-foot tall peatland community shrubs, vines, and saplings including swamp bay, black willow, red maple, wax myrtle, and laurel-leaf greenbrier. Standing water covered with duckweed (*Lemna* sp.) or a similar aquatic species exists within this community type.

Acoustic Site 3b is located in the west-central portion of the refuge. The acoustic site is situated at the edge of a flight corridor created by a dirt road and canal, surrounded by High Pocosin. Vegetation consists of dense, approximately 15-foot tall peatland community shrubs, vines, and saplings including swamp bay, black willow, red maple, fetterbush, wax myrtle, climbing hempvine (*Mikania scandens*) and laurel-leaf greenbrier. Few loblolly pines also occur near the upland road bed. Herbaceous species observed include Virginia chain fern (*Woodwardia virginiana*) and woolgrass. Standing water exists within this community type.

Acoustic Site 4a***** is located in the western portion of the refuge. The acoustic site is situated at the edge of a flight corridor created by the intersection of dirt roads and canals, surrounded by High Pocosin. Vegetation consists of dense, approximately 15-foot tall peatland community shrubs and vines including swamp bay, inkberry, black willow, wax myrtle, fetterbush, Japanese honeysuckle, and laurel-leaf greenbrier. Standing water exists in portions of this community type.

Acoustic Site 4b is located in the western portion of the refuge. The acoustic site is situated at the edge of a flight corridor created by a manmade clearing, surrounded by High Pocosin. Vegetation consists of dense, approximately 15-foot tall peatland community shrubs, saplings, and vines including swamp bay, inkberry, red maple, sweet gum, fetterbush, wax myrtle, blue huckleberry (*Gaylussacia frondosa*), and laurel-leaf greenbrier. The clearing is dominated by bracken fern. The acoustic site is at the border between high pocosin and pond pine woodland, and is in proximity to Pungo Lake.

3.2 NLEB Capture Site Habitat Descriptions

The mist-net sites monitored were chosen by the permitted biologists based on available flight corridors within and in proximity to foraging areas and the highest quality NLEB habitat. NLEB were captured at two localities, Great Dismal Swamp National Wildlife Refuge and North River Game Land. NLEB capture sites are described below. Additional mist-net capture data are presented in Table 10. Please refer to the Figures accompanying this report for the locations of mist-net sites. Community type descriptions are not herein provided for mist-net sites where no NLEB were captured, but can be made available upon request. General habitat descriptions for all mist-net sites are provided in the mist-net data sheets, Appendix H.

3.2.1 – Great Dismal Swamp National Wildlife Refuge

Mist-net Site 2 is located in the northwest-central region of the North Carolina portion of the refuge, at the intersection of Sherrill Ditch and Hamburg Ditch (Cross Canal). The mist-net site is situated at the edge of a flight corridor created by the ditches and gravel/dirt roads which parallel the ditches, surrounded by Cypress-gum swamp. The canopy is dominated by water tupelo, with numerous bald cypress and red maple, and several sweet gum. The understory includes titi, coastal sweet pepperbush, sapling sweet gum, and few specimens of American holly. Common vines include roundleaf greenbrier and crossvine. Standing water approximately 15 inches deep is present in the majority of this community type. Mist-net site 2 is the same location as acoustic site 1. On December 12, 2015, one male NLEB was captured in Net E, one female NLEB was captured in Net E, and one male NLEB was captured in Net A.

3.2.2 – North River Game Land

Mist-net Site 1 is located in the north-central portion of the game land. The mist-net site is situated at the edge of a flight corridor created by a dirt road surrounded by Mesic Mixed Hardwood Forest. The canopy consists of water oak, swamp chestnut oak, sweet gum, loblolly pine, tulip poplar, and American beech. The relatively sparse understory consists of saplings of the canopy species, as well as ironwood, American holly, swamp bay, and giant cane. Coastal doghobble is also present in parts of this community type. The overall surrounding area also includes open agricultural fields and an extensive Cypress-gum Swamp. Mist-net site 1 is the same location as acoustic site 4. On November 16, 2015, one male NLEB was captured in Net C. On November 17, 2015, one female NLEB was captured in Net A. On November 26, 2015, one female NLEB was captured in Net A, and one male NLEB was captured in Net C. On November 27, 2015, one male NLEB was captured in Net A. On February 29, 2016, one male NLEB was captured in Net C.

3.3 NLEB Roost Site Habitat Descriptions

All of the NLEB tracked at both Great Dismal Swamp National Wildlife Refuge and North River Game Land were observed to roost in the most mature examples of cypress-gum swamp available at each locality. Community types at NLEB roost sites are described below. Additional roost data are presented in Table 11. Please refer to the Figures accompanying this report for the locations of NLEB roosts.

3.3.1 – Great Dismal Swamp National Wildlife Refuge

The three NLEB were captured at this locality at mist-net site 2. One was not able to be located, but the other two were tracked to a total of three roosts. All roosts were located within the cypress-gum swamp community type. Please refer to the description of mist-net site 2 in section 4.2.1 for a description of the habitat at all roost sites at this locality. Trees species utilized as roosts included water tupelo and red

maple.

3.3.2 – North River Game Land

The five NLEB captured at this locality at mist-net site 1 during session 1 were tracked to a total of 21 roosts. The one NLEB captured during session 2 was not tracked. All roosts were located within the cypress-gum swamp community type. The canopy is dominated by large, mature bald cypress, with numerous water tupelo and frequent red maple, sweet gum, and laurel oak. The understory is generally sparse, and includes few specimens of highbush blueberry. Standing water between 1 inch and approximately 30 inches deep is present in the majority of this community type. Trees utilized as roosts included water tupelo, red maple, sweet gum, bald cypress, and oak (not speciated).

3.4 Summary of Findings – Acoustic Surveys and Analysis

The acoustic sites monitored were chosen by the permitted biologists based on available flight corridors within and in proximity to foraging areas and the highest quality NLEB habitat. Tables 1-9 below provide a summary of acoustic site locations, community types, general weather conditions and temperatures, NLEB files preliminarily identified by the autoclassifiers, and NLEB files verified qualitatively. Sites identified as permanent monitoring sites per the parameters defined in the Standardization for NLEB Acoustic Research document (NCDOT 2015) and the best judgement of the biologists are marked with an asterisk*. Please refer to Appendix A for photographs of acoustic sites, and Appendix G for acoustic data sheets. Please refer to the Figures accompanying this report for the locations of acoustic sites.

3.4.1 NLEB Identified – Autoclassifiers

EchoClass© and BCID were used to process all collected acoustic files. Acoustic recording nights for which either program labeled a file as MYSE are shown in Tables 1-9. Please refer to Appendix B for a list of individual call files labeled by either program as MYSE. Please refer to the digital enclosures accompanying this report for output tables from both programs and for all raw data files collected, including those labeled by either program as MYSE.

3.4.2 NLEB Identified – Qualitative

Qualitative analysis was performed by trained and experienced Ecological Solutions and Third Rock Consultants staff. Most files identified by the autoclassifiers as MYSE were qualitatively determined to belong to other species, including EPFU, LABO, LANO, MYAU, and PESU (please refer to Table 10 for corresponding common names). Other files were qualitatively determined to lack sufficient quality and/or a sufficient number of pulses for an accurate identification, and were assigned NO ID. A total of 19 MYSE identifications were qualitatively verified at three project locations: Chowan Swamp Game Land (five MYSE), Great Dismal Swamp National Wildlife Refuge (three MYSE), and North River Game Land (11 MYSE). Please refer to the qualitative acoustic analysis tables provided in Appendix B and the Figures accompanying this report for the sites where MYSE recordings were verified. Sonograms and call parameters of all qualitatively verified NLEB files are provided in Appendix F, as are representative sonograms for each rationale used to identify files as non-MYSE bats or insufficient quality files.

Table 1 – Acoustic Site Summary – Bladen Lakes State Forest

Loc.	Site	Lat, Long	Community Type (per Schafale 1990 unless otherwise noted)	Dates (2015)	Start/End Times	Survey Hours	Weather Conditions	No. Files Autoclassifier MYSE, (program name)	No. Files Qualitatively MYSE
Bladen Lakes State Forest	1*	34.68345, -78.631117	Mesic Pine Flatwoods	11/11	16:40, 07:10	14.50	Clear, calm, 42.5-60.5 F	0	0
				11/12	16:40, 07:10	14.50	Clear, calm, 45.5-73 F	10 (Echo)	0
				11/16	16:40, 07:10	14.50	Clear, calm, 33.5-54.5 F	0	0
	2*	34.772667, -78.568117	Managed Loblolly Pine (Managed Community)	11/11	16:40, 07:10	14.50	Clear, calm, 42.5-60.5F	0	0
				11/12	16:40, 07:10	14.50	Clear, calm, 45.5-73F	0	0
				11/16	16:40, 07:10	14.50	Clear, calm, 33.5-54.5 F	0	0
	3*	34.688267, -78.473267	Mesic Pine Flatwoods	11/11	16:40, 07:10	14.50	Clear, calm, 42.5-60.5F	0	0
				11/12	16:40, 07:10	14.50	Clear, calm, 45.5-73F	1 (Echo)	0
				11/16	16:40, 07:10	14.50	Clear, calm, 33.5-54.5 F	0	0
	4a	34.576983, -78.480467	Pond Pine Woodland	11/11	16:40, 07:10	14.50	Clear, calm, 42.5-60.5F	0	0
				11/12	16:40, 07:10	14.50	Clear, calm, 45.5-73F	0	0
	4b	34.573483, -78.480467	Coastal Plain Bottomland Hardwoods	11/16	16:40, 07:10	14.50	Clear, calm, 33.5-54.5 F	0	0

* = Permanent acoustic site

Table 2 – Acoustic Site Summary – Chowan Swamp Game Land

Loc.	Site	Lat, Long	Community Type (per Schafale 1990 unless otherwise noted)	Dates (2015)	Start, End Times	Hours	Weather Conditions	No. Files Autoclassifier MYSE, (program name)	No. Files Qualitatively MYSE
Chowan Swamp Game Land	1a*	36.32452, -76.78201	Mesic Mixed Hardwood Forest	11/25	16:15, 07:15	15.00	Clear, calm, low 40s to low 50sF	10 (Echo)	0
				11/26	16:15, 07:15	15.00	Clear, calm, some fog, 45-68F	3 (Echo)	0
	1b*	36.45492, -76.99815	Mesic Mixed Hardwood Forest	11/27	16:15, 07:15	15.00	Clear, calm, low 40.5-62.5F	5 (both programs) + 13 (BCID only) + 12 (Echo only) = 30 total	**5**
	2a	36.33747, -76.77377	Coastal Plain Bottomland Hardwoods	11/25	16:15, 07:15	15.00	Clear, calm, low 40s to low 50sF	0	0
				11/26	16:15, 07:15	15.00	Clear, calm, some fog, 45-68F	2 (Echo)	0
	2b	36.4253, -77.01057	Coastal Plain Bottomland Hardwoods	11/27	16:15, 07:15	15.00	Clear, calm, low 40.5-62.5F	3 (Echo)	0
	3a*	36.32784, -76.75735	Coastal Plain Bottomland Hardwoods	11/25	16:15, 07:15	15.00	Clear, calm, low 40s to low 50sF	0	0
				11/26	16:15, 07:15	15.00	Clear, calm, some fog, 45-68F	1 (both programs) + 15 (Echo only) = 16 total	0
	3b*	36.42596, -76.98265	Mesic Mixed Hardwood Forest	11/27	16:15, 07:15	15.00	Clear, calm, low 40.5-62.5F	2 (Echo)	0
	4a*	36.32124, -76.74524	Managed Loblolly Pine (Managed Community)	11/25	16:15, 07:15	15.00	Clear, calm, low 40s to low 50sF	2 (Echo)	0
				11/26	16:15, 07:15	15.00	Clear, calm, some fog, 45-68F	4 (Echo)	0
	4b*	36.43135, -76.96623	Coastal Plain Bottomland Hardwoods	11/27	16:15, 07:15	15.00	Clear, calm, low 40.5-62.5F	0	0

* = Permanent acoustic site

Yellow highlighted cells = qualitative MYSE identifications.

Table 3 – Acoustic Site Summary – CP&L Game Land

Loc.	Site	Lat, Long	Community Type (per Schafale 1990 unless otherwise noted)	Dates (2015)	Start, End Times	Hours	Weather Conditions	No. Files Autoclassifier MYSE, (program name)	No. Files Qualitatively MYSE
CP&L Game Land	1*	35.545948, -79.026186	Managed Loblolly Pine (Managed Community)	11/18 (rainout)	16:30, 07:20	14.83	Rain, calm to light wind, 65.5-82F	1(BCID)	0
				11/19	16:30, 07:20	14.83	Clear, calm to light wind, 40.5-72F	0	0
				11/20	16:30, 07:20	14.83	Clear, calm, 31.5-55F	0	0
				11/21	16:30, 07:20	14.83	Clear, calm, 45-55F	0	0
	2*	35.545496, -79.030282	Managed Loblolly Pine (Managed Community)	11/18 (rainout)	16:30, 07:20	14.83	Rain, calm to light wind, 65.5-82F	0	0
				11/19	16:30, 07:20	14.83	Clear, calm to light wind, 40.5-72F	0	0
				11/20	16:30, 07:20	14.83	Clear, calm, 31.5-55F	0	0
				11/21	16:30, 07:20	14.83	Clear, calm, 45-55F	0	0
	3*	35.561004, -79.054143	Managed Loblolly Pine (Managed Community)	11/18 (rainout)	16:30, 07:20	14.83	Rain, calm to light wind, 65.5-82F	0	0
				11/19	16:30, 07:20	14.83	Clear, calm to light wind, 40.5-72F	0	0
				11/20	16:30, 07:20	14.83	Clear, calm, 31.5-55F	0	0
				11/21	16:30, 07:20	14.83	Clear, calm, 45-55F	0	0
	4a	35.566212, -79.052955	Managed Loblolly Pine (Managed Community)	11/18 (rainout)	16:30, 07:20	14.83	Rain, calm to light wind, 65.5-82F	0	0
				11/19	16:30, 07:20	14.83	Clear, calm to light wind, 40.5-72F	0	0
				11/20	16:30, 07:20	14.83	Clear, calm, 31.5-55F	0	0
	4b	35.566506, -79.051548	Managed Loblolly Pine (Managed Community)	11/21	16:30, 07:20	14.83	Clear, calm, 45-55F	0	0

* = Permanent acoustic site

Shaded cells = data was collected, but the survey night was repeated due to weather conditions or lack of calls.

Table 4 – Acoustic Site Summary – Great Dismal Swamp National Wildlife Refuge

Loc.	Site	Lat, Long	Community Type (per Schafale 1990 unless otherwise noted)	Dates (2015)	Start, End Times	Hours	Weather Conditions	No. Files Autoclassifier MYSE, (program name)	No. Files Qualitatively MYSE
Great Dismal Swamp National Wildlife Refuge	1*	36.51204, -76.52354	Cypress-Gum Swamp	11/16	16:15, 07:15	15.00	Clear, calm, 39-65.5F	1 (Echo)	0
				11/17	16:20, 07:20	15.00	Clear, calm, 48.5-61.5F	3 (Echo)	0
				11/28	16:15, 07:15	15.00	Clear, calm, 40F	1 (Echo)	0
	2*	36.51481, -76.46775	Nonriverine Swamp Forest	11/16	16:15, 07:15	15.00	Clear, calm, 39-65.5F	0	0
				11/17	16:20, 07:20	15.00	Clear, calm, 48.5-61.5F	0	0
				11/28	16:15, 07:15	15.00	Clear, calm, 40F	2 (Echo)	**1**
	3a*	36.47639, -76.45253	Nonriverine Swamp Forest	11/17	16:20, 07:20	15.00	Clear, calm, 48.5-61.5F	3 (Echo)	0
				11/28	16:15, 07:15	15.00	Clear, calm, 40F	26 (Echo)	0
	3b*	36.54666, -76.52563	Nonriverine Swamp Forest	12/12	16:15, 07:15	15.00	Clear, calm to light winds, 47.5-68F	1 (both programs) + 26 (Echo only) + 1 (BCID only) = 28 total	**2**
	4	36.43975, -76.49689	Nonriverine Swamp Forest	11/16	16:15, 07:15	15.00	Clear, calm, 39-65.5F	0	0
				11/17	16:20, 07:20	15.00	Clear, calm, 48.5-61.5F	0	0
				11/28	16:15, 07:15	15.00	Clear, calm, 40F	0	0

* = Permanent acoustic site

Yellow highlighted cells = qualitative MYSE identifications.

Table 5 – Acoustic Site Summary – Murrayville Mitigation Site

Loc.	Site	Lat, Long	Community Type (per Schafale 1990 unless otherwise noted)	Dates (2015)	Start, End Times	Hours	Weather Conditions	No. Files Autoclassifier MYSE, (program name)	No. Files Qualitatively MYSE
Murrayville Mitigation Site	1*	34.31165, -77.852683	Pond Pine Woodland	11/5	16:45, 07:05	14.33	Overcast, calm, high 64.5-84.5F	0	0
				11/6	16:45, 07:05	14.33	Overcast, calm to light wind, 65.5-74F	0	0
				11/7 (rainout)	16:45, 07:05	14.33	Rainout, 53.5-75F	0	0
				11/10	16:45, 07:05	14.33	Clear, light wind, high to 49-62F	0	0
	2	34.3076, -77.810683	High Pocosin	11/5	16:45, 07:05	14.33	Overcast, calm, high 64.5-84.5F	0	0
				11/6	16:45, 07:05	14.33	Overcast, calm to light wind, 65.5-74F	0	0
				11/7 (rainout)	16:45, 07:05	14.33	Rainout, 53.5-75F	0	0
				11/10	16:45, 07:05	14.33	Clear, light wind, high to 49-62F	0	0
	3a	34.306117, -77.791417	Bay Forest	11/10	16:40, 07:10	14.50	Clear, light wind, high to 49-62F	0	0
				11/11	16:40, 07:10	14.50	Clear, calm, 55-78.5F	0	0
	3b	34.31315, -77.85065	High Pocosin	11/12	16:40, 07:10	14.50	Clear, light wind, 51-68.5F	0	0
	4*	34.3251, -77.854717	Pond Pine Woodland	11/5	16:45, 07:05	14.33	Overcast, calm, high 64.5-84.5F	0	0
				11/6	16:45, 07:05	14.33	Overcast, calm to light wind, 65.5-74F	0	0
				11/7 (rainout)	16:45, 07:05	14.33	Rainout, 53.5-75F	1 (Echo)	0
				11/10	16:40, 07:10	14.50	Clear, light wind, high to 49-62F	0	0

* = Permanent acoustic site

Shaded cells = data was collected, but the survey night was repeated due to weather conditions or lack of calls.

Table 6 – Acoustic Site Summary – North River Game Land[+]

Loc.	Site	Lat, Long	Community Type (per Schafale 1990 unless otherwise noted)	Dates	Start, End Times	Hours	Weather Conditions	No. Files Autoclassifier MYSE, (program name)	No. Files Qualitatively MYSE
North River Game Land	1*	36.28582, -75.98373	Managed Loblolly Pine (Managed Community)	11/17/15	13:25, 09:40	20.33	Partly cloudy, light wind, 58.5-64F	8 (Echo)	**1**
				11/18/15	16:15, 07:15	15.00	Partly cloudy, light wind, 62.5-75F	3 (both programs) + 4 (BCID only) + 13 (Echo only) = 20 total	**7**
				11/20/15	16:20, 07:20	15.00	Clear, calm, 41-57.5F	0	0
	2a*	36.28909, -75.97963	Managed Loblolly Pine (Managed Community)	11/16/15	16:20, 07:15	14.92	Clear, calm, 43-63F	2 (Echo)	0
				11/17/15	16:15, 07:15	15.00	Partly cloudy, light wind, 58.5-64F	3 (Echo)	0
	2b	36.27949, -75.99554	Nonriverine Wet Hardwood Forest	11/18/15	16:15, 07:15	15.00	Partly cloudy, light wind, 62.5-75F	1 (Echo)	0
	3*	36.39648, -76.02155	Mesic Mixed Hardwoods	11/16/15	16:20, 07:15	14.92	Clear, calm, 43-63F	0	0
				11/17/15	16:15, 07:15	15.00	Partly cloudy, light wind, 58.5-64F	0	0
				11/20/15	16:20, 07:20	15.00	Clear, calm, 41-57.5F	0	0
	4a* (1)	36.38181, -76.00674	Mesic Mixed Hardwoods	11/16/15	16:20, 07:15	14.92	Clear, calm, 43-63F	1 (both programs) + 1 (Echo only) = 2 total	**1**
				11/17/15	16:15, 07:15	15.00	Partly cloudy, light wind, 58.5-64F	1 (both programs) + 2 (Echo only) = 3 total	**1**
				12/12/15	16:15, 07:15	15.00	Clear, light breeze, 56-69.5F	1 (Echo)	**1**
	4a* (2)	36.38181, -76.00674	Mesic Mixed Hardwoods	02/29/16	16:15, 07:15	15.00	Clear to overcast, light wind, 48.5-66.5F	0	0

* = Permanent acoustic site Yellow highlighted cells = qualitative MYSE identifications.

\+ = Acoustic site 4c was also sampled with acoustics during roost documentation and emergence surveys for NLEB F662 only, but was not incorporated into presence/absence surveys and is not shown here.

Table 7 – Acoustic Site Summary – Old Waynesborough Park

Loc.	Site	Lat, Long	Community Type (per Schafale 1990 unless otherwise noted)	Dates (2015)	Start, End Times	Hours	Weather Conditions	No. Files Autoclassifier MYSE, (program name)	No. Files Qualitatively MYSE
Old Waynesborough Park	1*	35.372169, -78.016008	Coastal Plain Bottomland Hardwoods	11/17	16:30, 07:20	14.83	Clear to cloudy, light wind, 43-67F	0	0
				11/18 (rainout)	16:30, 07:20	14.83	Rainout, 63.5-68.5F	0	0
				11/20	16:30, 07:20	14.83	Clear, light wind, 37-59.5F	0	0
				11/21 (rainout)	16:30, 07:20	14.83	Rainout, 49.5-58F	0	0
				11/22	16:30, 07:20	14.83	Clear, light wind, 32.5-47.5F	0	0
	2*	35.37343, -78.018639	Coastal Plain Bottomland Hardwoods	11/17	16:30, 07:20	14.83	Clear to cloudy, light wind, 43-67F	0	0
				11/18 (rainout)	16:30, 07:20	14.83	Rainout, 63.5-68.5F	0	0
				11/20	16:30, 07:20	14.83	Clear, light wind, 37-59.5F	0	0
				11/21 (rainout)	16:30, 07:20	14.83	Rainout, 49.5-58F	0	0
				11/22	16:30, 07:20	14.83	Clear, light wind, 32.5-47.5F	0	0
	3*	35.375555, -78.019832	Coastal Plain Bottomland Hardwoods	11/17	16:30, 07:20	14.83	Clear to cloudy, light wind, 43-67F	1 (Echo)	0
				11/18 (rainout)	16:30, 07:20	14.83	Rainout, 63.5-68.5F	0	0
				11/20	16:30, 07:20	14.83	Clear, light wind, 37-59.5F	0	0
				11/21 (rainout)	16:30, 07:20	14.83	Rainout, 49.5-58F	1 (Echo)	0
				11/22	16:30, 07:20	14.83	Clear, light wind, 32.5-47.5F	0	0
	4*	35.379012, -78.022829	Coastal Plain Levee Forest	11/17	16:30, 07:20	14.83	Clear to cloudy, light wind, 43-67F	0	0
				11/18 (rainout)	16:30, 07:20	14.83	Rainout, 63.5-68.5F	0	0
				11/20	16:30, 07:20	14.83	Clear, light wind, 37-59.5F	0	0
				11/21 (rainout)	16:30, 07:20	14.83	Rainout, 49.5-58F	0	
				11/22	16:30, 07:20	14.83	Clear, light wind, 32.5-47.5F	0	

* = Permanent acoustic site

Shaded cells = data was collected, but the survey night was repeated due to weather conditions or lack of calls.

Table 8 – Acoustic Site Summary – Palmetto Peartree Preserve

Loc.	Site	Lat, Long	Community Type (per Schafale 1990 unless otherwise noted)	Dates (2015)	Start, End Times	Hours	Weather Conditions	No. Files Autoclassifier MYSE, (program name)	No. Files Qualitatively MYSE
Palmetto Peartree Preserve	1*	35.98809, -76.14512	Nonriverine Swamp Forest	11/10	16:30, 07:00	14.50	Clear, light wind, 55-68F	1 (Echo)	0
				11/11	16:30, 07:00	14.50	Clear, light wind, 52-62.5F	0	0
				11/12	16:30, 07:00	14.50	Clear, light wind, low 70sF	0	0
	2a	35.97542, -76.09099	Nonriverine Swamp Forest	11/10	16:30, 07:00	14.50	Clear, light wind, 55-68F	0	0
				11/11	16:30, 07:00	14.50	Clear, light wind, 52-62.5F	0	0
	2b	35.97687, -76.08543	Nonriverine Swamp Forest	11/12	16:30, 07:00	14.50	Clear, light wind, low 70sF	0	0
	3a*	35.98618, -76.07333	Nonriverine Swamp Forest	11/10	16:30, 07:00	14.50	Clear, light wind, 55-68F	0	0
				11/11	16:30, 07:00	14.50	Clear, light wind, 52-62.5F	0	0
	3b*	35.98375, -76.06473	Nonriverine Wet Hardwood Forest	11/12	16:30, 07:00	14.50	Clear, light wind, low 70sF	0	0
	4*	35.96914, -76.0461	Tidal Freshwater Marsh, Shrub Subtype (Schafale 2012)	11/10	16:30, 07:00	14.50	Clear, light wind, 55-68F	0	0
				11/11	16:30, 07:00	14.50	Clear, light wind, 52-62.5F	0	0
				11/12	16:30, 07:00	14.50	Clear, light wind, low 70sF	1 (both programs)	0

* = Permanent acoustic site

Table 9 – Acoustic Site Summary – Pocosin Lakes National Wildlife Refuge

Loc.	Site	Lat, Long	Community Type (per Schafale 1990 unless otherwise noted)	Dates (2015)	Start, End Times	Hours	Weather Conditions	No. Files Autoclassifier MYSE, (program name)	No. Files Qualitatively MYSE
Pocosin Lakes National Wildlife Refuge	1a	35.88393, -76.31371	Nonriverine Swamp Forest	11/5	16:30, 07:00	14.50	Partly cloudy, light wind, 66.5-77.5F	0	0
				11/6	16:30, 07:00	14.50	Partly cloudy, light wind, 69-74F	0	0
	1b*	35.80384, -76.26884	Nonriverine Swamp Forest	11/8 (no calls)	16:30, 07:00	14.50	Partly cloudy to clear, light wind, 57-58.5F	N/A – repeated due to very few calls	0
				11/10	16:30, 07:00	14.50	Clear, light wind, 51-69F	0	0
	2a*	35.77504, -76.24677	Pond Pine Woodland	11/5	16:30, 07:00	14.50	Partly cloudy, light wind, 66.5-77.5F	0	0
				11/6	16:30, 07:00	14.50	Partly cloudy, light wind, 69-74F	0	0
	2b	35.77367, -76.23139	Pond Pine Woodland	11/8 (no calls)	16:30, 07:00	14.50	Partly cloudy to clear, light wind, 57-58.5F	N/A – repeated due to very few calls	0
				12/11	16:15, 07:15	150	Clear, light wind, 45-72.5F	0	0
	3a*	35.71428, -76.44784	High Pocosin	11/5	16:30, 07:00	14.50	Partly cloudy, light wind, 66.5-77.5F	0	0
				11/6	16:30, 07:00	14.50	Partly cloudy, light wind, 69-74F	0	0
	3b	35.715, -76.46226	High Pocosin	11/8 (no calls)	16:30, 07:00	14.50	Partly cloudy to clear, light wind, 57-58.5F	N/A – repeated due to very few calls	0
				12/11	16:15, 07:15	15.00	Clear, light wind, 45-72.5F	0	0
	4a*	35.74699, -76.52778	High Pocosin	11/5	16:30, 07:00	14.50	Partly cloudy, light wind, 66.5-77.5F	0	0
				11/6	16:30, 07:00	14.50	Partly cloudy, light wind, 69-74F	0	0
	4b	35.7341, -76.53812	High Pocosin	11/8(no calls)	16:30, 07:00	14.50	Partly cloudy to clear, light wind, 57-58.5F	0	0
				11/10	16:30, 07:00	14.50	Clear, light wind, 51-69F	0	0

* = Permanent acoustic site

3.5 Summary of Findings – Mist-net Captures

Mist-net sites were chosen by permitted biologists based on optimal habitat and flight corridors. A total of 60 bats were captured, including nine NLEB, the target species.

Eight NLEB were captured during Session 1 at two of the four project locations where mist-netting was conducted; in Currituck County at the North River Game Land and in Gates County at the Great Dismal Swamp National Wildlife Refuge. Although NLEB have been captured in the northeastern Coastal Plain (Morris et. al. 2009) including Currituck County, NC and the Virginia portion of the Great Dismal Swamp National Wildlife Refuge, during the summer (Tim Divoll, pers. comm., Yates et. al. 2011), they had not previously been captured in fall at either location, or within Gates County, NC during any season.

Winter mist-netting during Session 2 focused on North River Game Land with the goal of capturing NLEB in order to demonstrate that the species overwinters in the area. One NLEB was captured at North River Game Land during the first night of the netting effort in Session 2; therefore, further surveys were not necessary.

Table 10 provides a summary of all bat species captured during Phase 1 mist-netting. Please refer to the Figures accompanying this report for the locations of mist-net sites. Please refer to Appendix C for mist-net site photographs, Appendix E for photographs of captured bats including NLEB, and Appendix H for mist-net data sheets.

Table 10 – Mist-net Capture Summary

Loc.	Site No.	Lat, Long	Clutter+	Community Type	Night	Date	CORA	EPFU	LABO	LACI	LANO	LASE	MYAU	MYSE	NYHU	PESU	TOTAL	NOTES
Palmetto Peartree Preserve	1	35.98428, -76.07234	3	Nonriverine Swamp Forest	Night 1	11/5/2015		2	1								3	
					Night 2	11/6/2015	1										1	
					Night 3	11/8/2015			1								1	
	2	35.97164, -76.05251	4	Nonriverine Swamp Forest	Night 1	11/10/2015		1	1			1					3	
					Night 2	11/11/2015											0	
	3	35.98367, -76.14516	4	Nonriverine Swamp Forest	Night 1	11/12/2015		1	1							1	3	Temp. data logger #4 failed.
Pocosin Lakes NWR	1	35.87189, -76.30796	4	Nonriverine Swamp Forest	Night 1	11/5/2015											0	
					Night 2	11/6/2015											0	
	2	35.80297, -76.27808	4	Nonriverine Swamp Forest	Night 1	11/8/2015											0	
					Night 2	11/12/2015		1							1	2	4	
					Night 3	11/25/2015											0	
	3	35.71423, -76.447747	2	High Pocosin	Night 1	11/10/2015											0	Shut down due to wind.
					Night 2	11/11/2015			1								1	LABO ID, but escaped. Shut down due to temp. below 50F (prior to latest guidance).
					Night 3	12/11/2015											0	
Dismal Swamp NWR	1	36.51429, -76.49741	4	Nonriverine Swamp Forest	Night 1	11/16/2015			1				1				2	
					Night 2	11/17/2015	1		2		2						5	
					Night 3	11/28/2015							2		1		3	
	2	36.51211, -76.52334	4	Cypress-gum Swamp	Night 1	11/18/2015							1		2		3	
					Night 2	11/29/2015		1		1			6		1		9	Temp. data logger failed.
					Night 3	12/1/2015							1				1	Closed early due to heavy fog 21:41pm.
					Night 4	12/12/2015	1*						4	3	4		11	MYSE female Adult NR 17:50pm, 58.5°F, wt. 7g, wing score 0P, NCWRC A3195, transmitter 172.603 MYSE male Adult NR 17:51pm, 58.5°F, wt. 7.5g, wing score 0P, NCWRC A3175, transmitter 172.541 MYSE male Adult NR 18:59pm, 55.5°F, wt. 7.5g, wing score 0P, NCWRC A3125, transmitter 172.423
North River Game Land	1	36.3835, -76.00794	4	Mesic Mixed Hardwood Forest	Night 1	11/16/2015								1			1	MYSE male Adult NR 17:30pm, 55°F, wt. 8g, wing score 0, NCWRC A3129, transmitter 172.259
					Night 2	11/17/2015								1			1	MYSE female Adult NR 20:00pm, 59°F, wt.8.5g, wing score 0, NCWRC A3128, transmitter 172.662
					Night 3	11/18/2015											0	
					Night 4	11/26/2015								2			2	MYSE female Adult NR 17:48pm, 59°F, wt.7.75g, wing score 0P, NCWRC A3126, transmitter 172.722 MYSE male Adult NR 18:32pm, 58°F, wt. 7.75g, wing score 0P, NCWRC A3111, transmitter 172.842
					Night 5	11/27/2015							3	1	1		5	MYSE male Adult NR 20:55pm, 57.5°F, wt. 7.25g, wing score 0, NCWRC A3182, transmitter 172.781
	2	36.28532, -75.98422	4	Managed Loblolly Pine	Night 1	11/21/2015											0	
	1 (Session 2)	36.3835, -76.00794	4	Mesic Mixed Hardwood Forest	Night 1	02/29/2016								1			1	MYSE female Adult NR 22:30pm, 51°F, wt. 7g, wing score 0P, NCWRC A3300, no transmitter attached
						TOTAL	**2**	**6**	**8**	**1**	**2**	**1**	**18**	**9**	**10**	**3**	**60**	

CORA = *Corynorhinus rafinesquii*, Rafinesque's Big-eared Bat; **EPFU** = *Eptesicus fuscus*, Big Brown Bat; **LABO** = *Lasiurus borealis*, Red Bat; **LACI** = *Lasiurus cinereus*, Hoary Bat; **LANO** = *Lasionycteris noctivagans*, Silver-haired Bat; **LASE** = *Lasiurus seminolus*, Seminole Bat;
MYAU = *Myotis austroriparius*, Southeastern Myotis; **MYSE** = *Myotis septentrionalis*, Northern Long-eared Bat; **NYHU** = *Nycticeius humeralis*, Evening Bat; **PESU** = *Perimyotis subflavus*, Tricolored Bat

* = CORA was a recapture from Site 1 Night 2 + = Clutter visually evaluated for surrounding forest: 1 = <10% cover, 2 = 10-39% cover, 3 = 40-75% cover, 4 = >75% cover. Shaded cells = data was collected, but the survey night was repeated due to weather conditions. Yellow highlighted cells = MYSE captures.

3.6 Radio Tracking, Roosts, and Emergence Surveys

As previously mentioned, radio tracking was conducted for all eight NLEB captured during Session 1. Seven were tracked to roost sites, and one (Dismal M423) was unable to be located. Figure 5i depicts the area within which tracking efforts were focused in the attempt to locate Dismal M423, and these efforts are detailed in section 3.6.

All seven NLEB tracked to roosts at both localities roosted in trees within mature cypress-gum swamp habitat. Most bats were observed to stay in the same general area (within an approximately 103-meter radius at Great Dismal Swamp National Wildlife Refuge and within an approximately 216-meter radius at North River Game Land) for several days before moving out of transmitter range. North River F662 was able to be triangulated from the ground on 12/5/2015 after a movement of approximately 1,100 meters, and was subsequently tracked using a plane to a new location approximately 1,880 meters from the center of the primary roosting area on 12/8/2015 (Figure 7e). Long distance movements of other bats were not able to be tracked during this survey session due to inaccessibility and logistical constraints. Several bats (e.g. North River M259) chose different roost trees every night or two, while others remained in the same roost tree for several days at a time. Two bats (North River M259 and F722) were observed to return to a previous roost tree after roosting in one or more other roost trees. Roost trees varied greatly in age, condition, DBH, height, and observable crevices available for roosting, and various tree species were used as roosts. Table 11 provides a summary of radio tracking dates, roosts documented, and emergence surveys performed. Detailed roost habitat descriptions are provided in Section 4.3. Please refer to Appendix D for roost photographs, Appendix I for roost data sheets, and Appendix J for emergence survey data sheets.

Table 11 – NLEB Tracking, Roost, & Emergence Summary

Site	MYSE Sex/Freq.	NCWRC Band No.	Dates Tracked (2015)	General Habitat	Tree Species	Roost No.	Lat, Long	Roost Dates (2015)	Emergence Surveys		Notes
									Date (2015)	Observed Emerging?	
North River Game Land	M259	A3129	11/16-12/15; 29 days (intensive tracking stopped after 21 days); apparent move out of range	Cypress-gum swamp	*Nyssa aquatica*	1	36.38227, -76.01043	11/17	11/17	Yes	11/18 2nd emergence count performed although M259 not still in this roost
									11/18	No	
					Nyssa aquatica	2	36.38291, -76.00970	11/18-11/19	11/18	Yes	
					Nyssa aquatica	3	36.38264, -76.01033	11/20-11/21	11/21	Yes	
					Liquidambar styraciflua	4	36.38263, -76.01028	11/22-11/26, 12/2-12/9 (or later)	11/25	No	Returned to roost after leaving.
									11/26	Yes	
									12/2	Yes	
									12/6	No	
									12/9	No	
					Nyssa aquatica	5	36.38237, -76.01047	11/27	11/27	Yes	
					Acer rubrum	6	36.38222, -76.00931	11/28-12/1	11/28	No	
	F662	A3128	11/17-12/8; Intermittent tracking over 21 day period; not tracked after 21 days	Cypress-gum swamp	*Taxodium distichum*	1	36.38081, -76.01275	11/20-11/26	11/21	No	
									11/25	No	
									11/26	No	
					Unknown	2	36.374371, -76.018721	Unknown date to 12/5 to Unknown date	N/A	N/A	Roost inaccessible, location triangulated
					Unknown	3	36.379841, -76.03231	Unknown date to 12/8 to Unknown date	N/A	N/A	Roost inaccessible, located by plane
	F722	A3126	11/26-12/15; 19 days; apparent move out of range	Cypress-gum swamp	*Taxodium distichum*	1	36.38401, -76.01202	11/27	11/27	Yes	
					Taxodium distichum	2	36.38419, -76.01254	11/28-12/2	11/28	Yes, +2 other bats	
									11/29	No, 1 other bat	
									12/1	No	
									12/2	No	
					Acer rubrum	3	36.38401, -76.01217	12/3-12/8	12/3	No	
									12/6	No	
					Acer rubrum	4	36.38402, -76.01233	12/9, 12/13	12/9	No	Returned to roost after leaving.
									12/13	No	
					Quercus sp.	5	36.38166, -76.01225	12/10-12/12	12/10	No	
									12/11	No	
									12/12	No	
	M842	A3111	11/26-12/11; 15 days; apparent transmitter died	Cypress-gum swamp	*Taxodium distichum*	1	36.38346, -76.01000	11/27	11/27	Yes	
					Nyssa aquatica	2	36.38353, -76.00993	11/28	11/29	No	
					Liquidambar styraciflua	3	36.3818, -76.01073	11/30	12/1	No	
					Nyssa aquatica	4	36.38175, -76.01081	12/2	12/2	No, 1 other bat	
									12/3	No	
									12/6	No	
									12/9	No	
	M781	A3182	11/27-12/16; 19 days; apparent move out of range	Cypress-gum swamp	*Acer rubrum*	1	36.38245, -76.01081	11/28	11/28	Yes	
					Quercus sp.	2	36.38088, -76.01134	11/29-12/9	11/29	Yes	
									12/1	No	
									12/2	No	
									12/3	No	
									12/6	No	
									12/9	Yes	
					Taxodium distichum	3	36.38149, -76.01168	12/10-12/16	12/10	No	
									12/11	No	
									12/12	No	
									12/15	No	
									12/16	No	
	Incidental emergence	N/A	N/A	Cypress-gum swamp	*Liquidambar styraciflua*	1	36.38266, -76.0105	11/26	11/28	3 non-telemetered bats	3 non-telemetered bats emerged from undocumented roost while doing emergence count on M259 roost 4 nearby
Great Dismal Swamp NWR	M541	A3175	12/12-12/18; 6 days; apparent move out of range, not tracked after 7 days.	Cypress-gum swamp	*Nyssa aquatica*	1	36.51260, -76.52312	12/13-12/15	12/13	No	
									12/15	Yes	
					Nyssa aquatica	2	36.51244, -76.52301	12/16-12/18	12/16	No	
	F603	A3195	12/12-12/18; 6 days; apparent move out of range, not tracked after 7 days.	Cypress-gum swamp	*Acer rubrum*	1	36.51201, -76.52528	12/13-12/18	12/13	Yes	F603 left roost to forage, then returned to roost
									12/15	Yes	
	M423	A3125	12/12, not found thereafter	N/A	N/A	N/A	N/A	N/A	N/A		No roosts found after multiple tracking attempts with no signal.

4.0 DISCUSSION

For some bats species, during the transition period from the summer to winter habitat, male and female bats, typically separated during summer months, will congregate (swarm) in an area where they will mate and actively forage to increase fat stores before hibernation. These locations are often separate from summer habitat and from the hibernation location, and are used year after year. Swarming behavior is typically observed in late fall before hibernation (fall swarming) and in early spring after hibernation (spring staging), usually in the same locations.

Based on observations of NLEB behavior, time of the year, distance from roost trees to capture site, numbers captured at the same site, and the sudden dispersal (within 48 hours) of all bats with still active transmitters, the area where NLEB were captured in the North River Game Land during fall 2015 could potentially be a swarming area.

The two bats successfully tracked at Great Dismal Swamp National Wildlife Refuge were not observed for a long enough period to assess behavior or to determine if they were migrating or swarming. Transmitter signals on the two bats tracked were stable and active, and these bats also dispersed within a few days of the bats at North River Game Land.

Very little is known about the behavior and activity of the coastal NLEB population. Even if these bats are periodically active throughout the winter, as highly social animals, they will still swarm to mate and prepare for winter. Additional data collection is needed in order to more fully describe the behavior and activity of the coastal NLEB population.

Surveys during Phase 1 of the research project have made headway toward realizing the three primary project objectives; determining NLEB distribution and year-round presence, characterizing roosts, and determining presence/absence of Pd. Acoustic evidence and mist-net captures of NLEB in northeastern North Carolina in late fall (November and December) and a mist-net capture in winter (late February) provide strong evidence that the species does indeed overwinter in the North Carolina Coastal Plain. Roosting habitat use in late fall has also been preliminarily described based on these surveys. Although no captured bats, including NLEB, showed clinical signs of infection by Pd, and therefore none were swabbed for the fungus, this in itself constitutes preliminary data which may point to a potentially healthy overwintering population of NLEB. Additional surveys in this area of the state during winter are needed in order to fully assess presence or absence of Pd in tree-roosting coastal North Carolina bat populations, including coastal NLEB. Additional NLEB surveys in coastal NC, including surveys during the maternity season, would be helpful in order to continue to delineate the range of the species.

6.0 REFERENCES CITED

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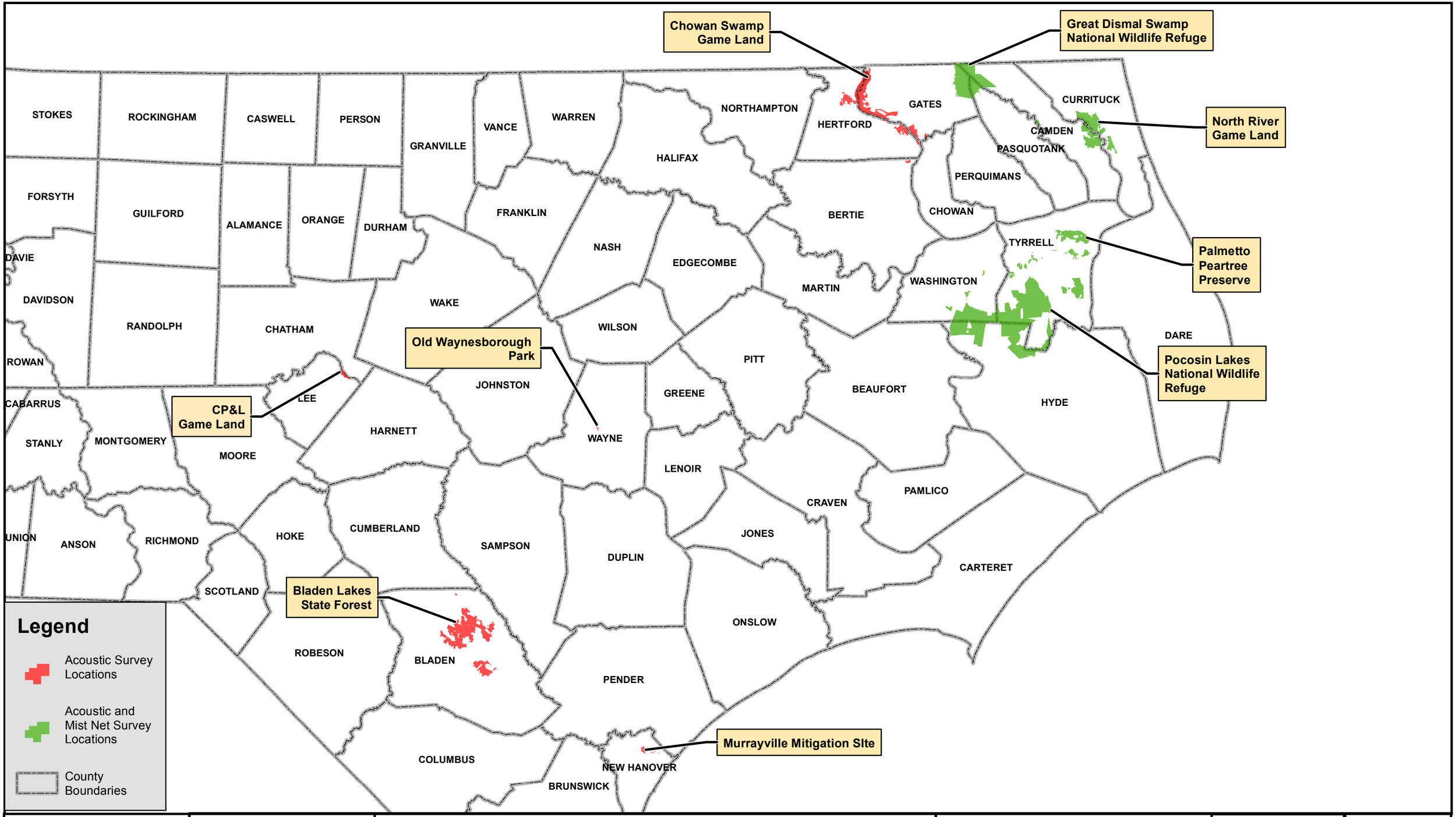
Figures



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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Eastern NLEB Research Project Areas

NCDOT Eastern NLEB Research Project Survey Phase 1, Session 1, Fall 2015

Source: NCOneMap Managed Areas

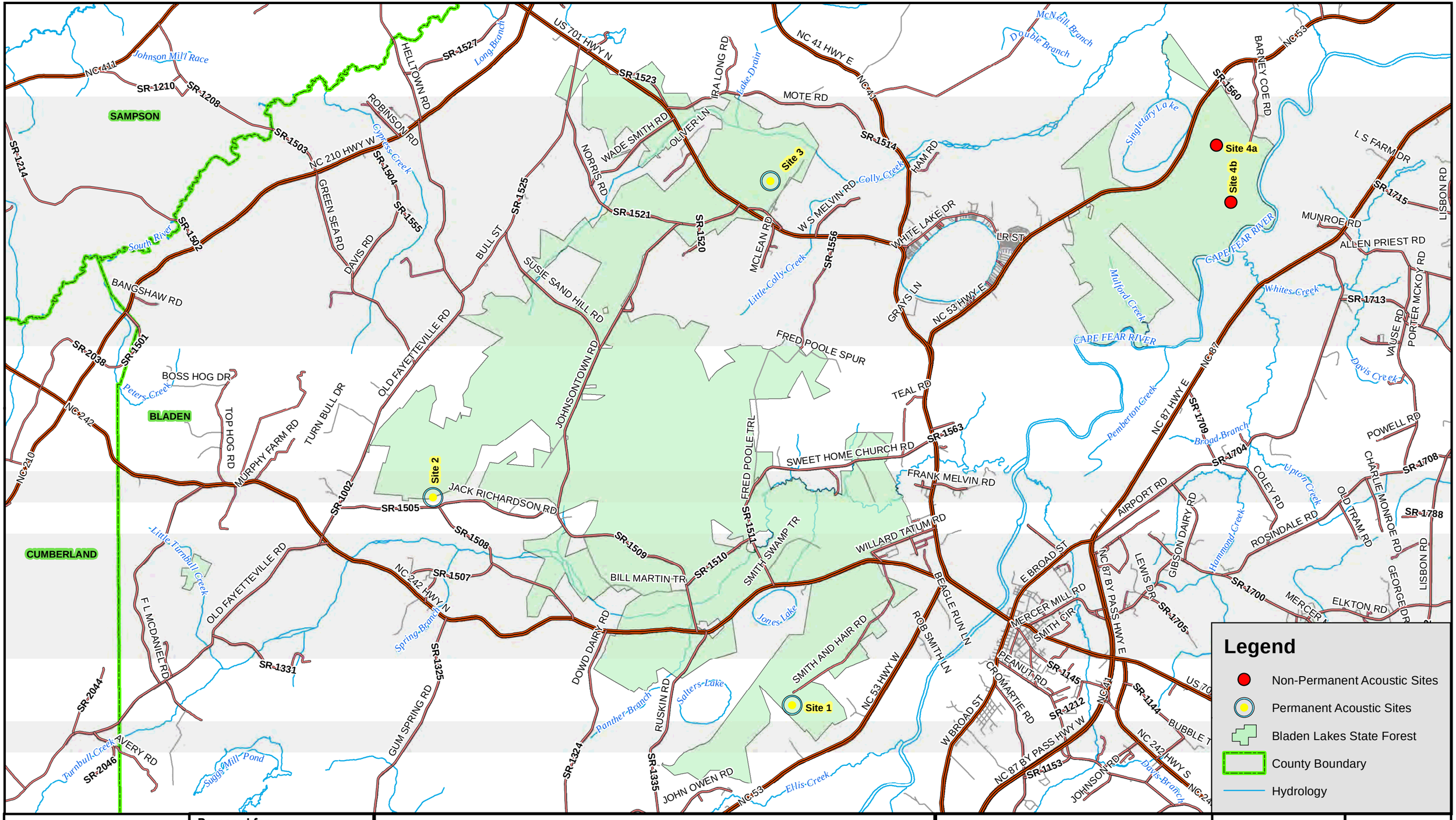
The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 1

N W E S

0 10 20

1" = 20 Miles



Legend

- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites
- Bladen Lakes State Forest
- County Boundary
- Hydrology

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Bladen Lakes State Forest Project Area - Overall Acoustic Sites

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Bladen County, North Carolina

Source: NCOneMap Managed Areas, Bladen County GIS, NCDOT GIS

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FIGURE 2a

N E S W

0 4,000 8,000

1" = 8,000'

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Bladen Lakes State Forest Project Area - Acoustic Site 1

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Bladen County, North Carolina

Source: NCOneMap Managed Areas & 2013 Aerials, Bladen County GIS, NCDOT GIS

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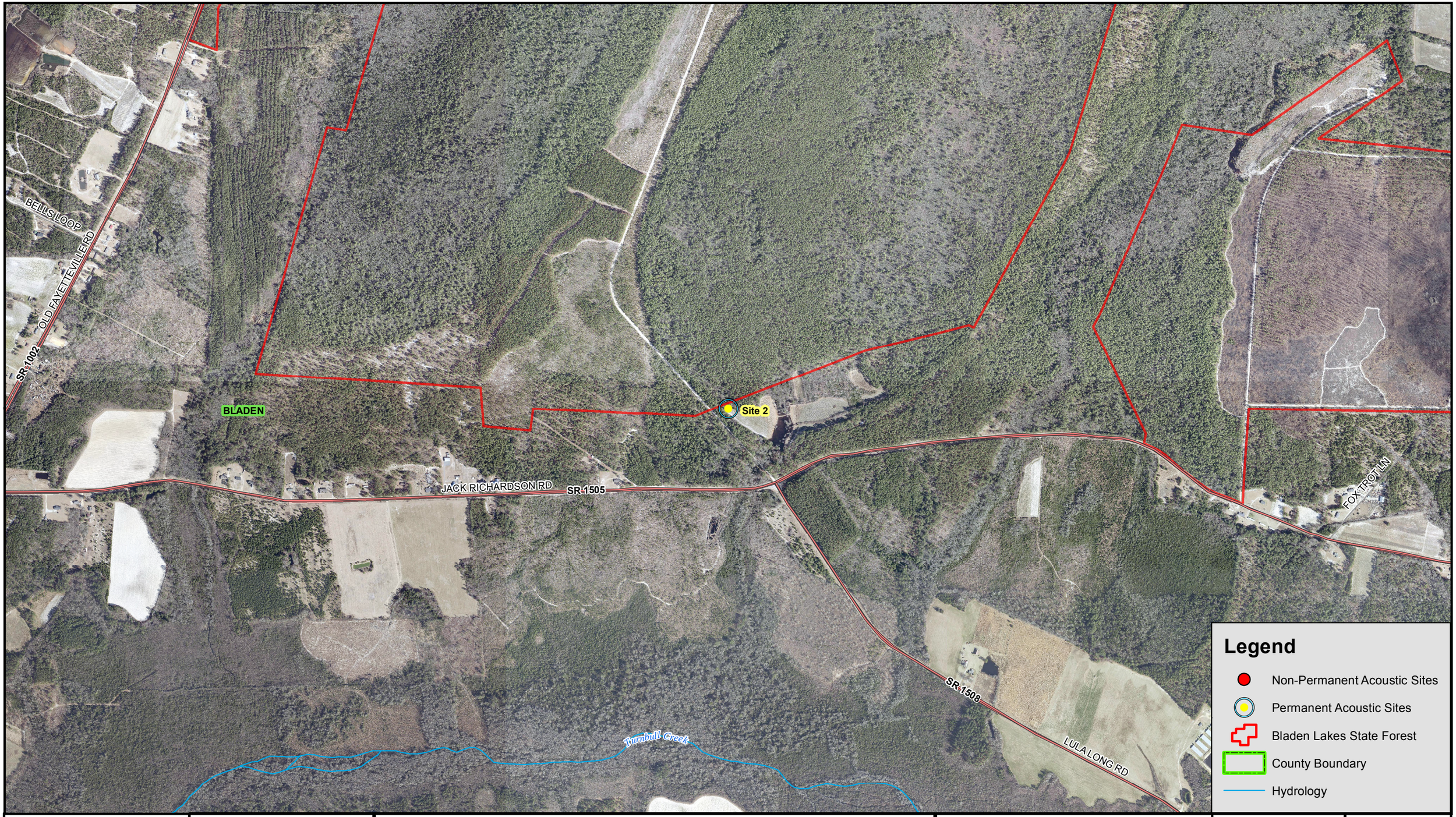
FIGURE 2b



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Bladen Lakes State Forest Project Area - Acoustic Site 2

NCDOT Eastern NLEB Research Project

Survey Phase 1, Session 1, Fall 2015

Bladen County, North Carolina

Source: NCOneMap Managed Areas & 2013 Aerials, Bladen County GIS, NCDOT GIS

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FIGURE 2c

N W E S

0 500 1,000

1" = 1,000'

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Bladen Lakes State Forest Project Area - Acoustic Site 3

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Bladen County, North Carolina

Source: NCOneMap Managed Areas & 2013 Aerials, Bladen County GIS, NCDOT GIS

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FIGURE 2d

N W E S

0 500 1,000

1" = 1,000'

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Bladen Lakes State Forest Project Area - Acoustic Sites 4a & 4b

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Bladen County, North Carolina

Source: NCOneMap Managed Areas & 2013 Aerials, Bladen County GIS, NCDOT GIS

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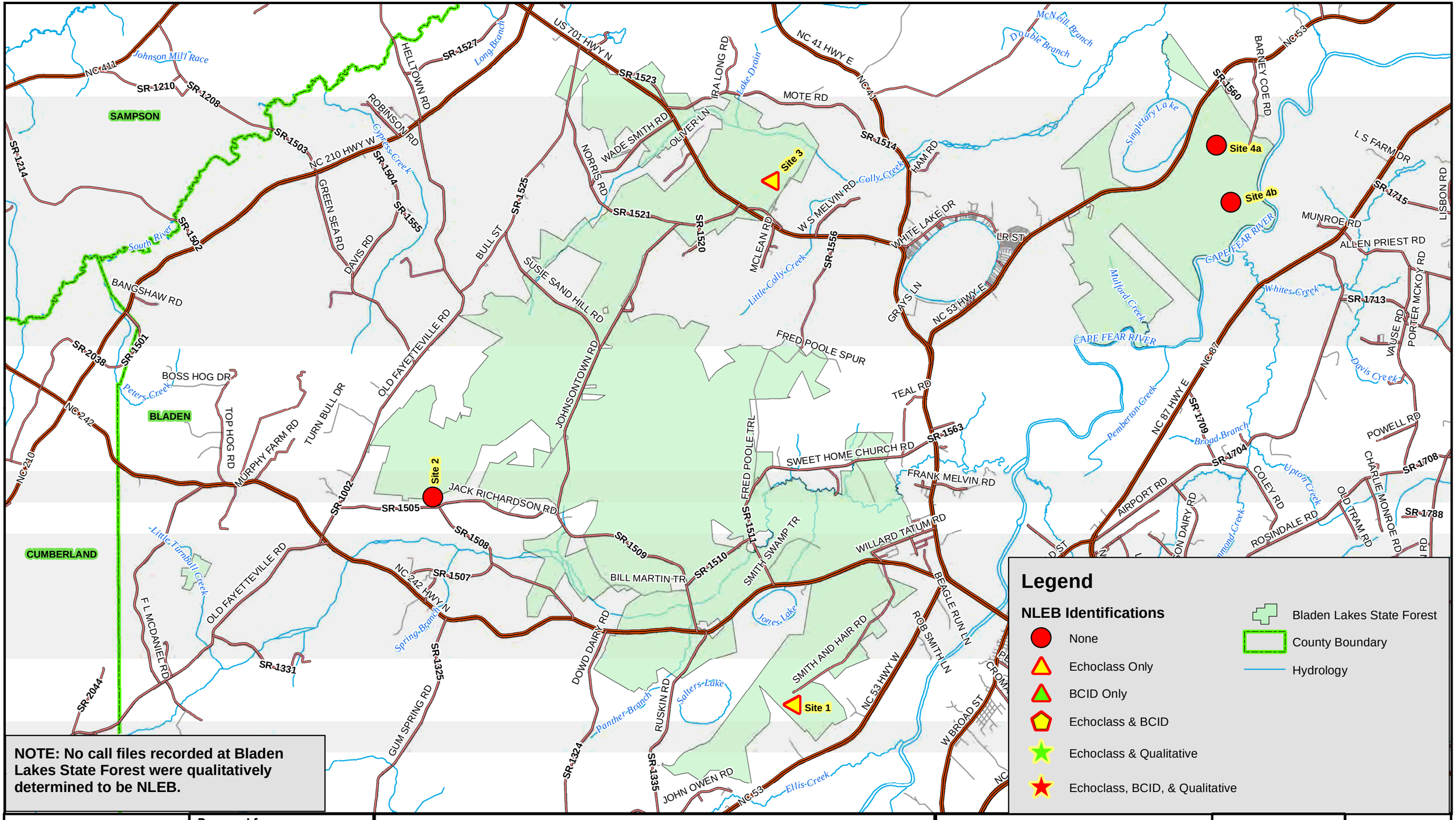
FIGURE 2e



NOTE: No call files recorded at Bladen Lakes State Forest were qualitatively determined to be NLEB.

Legend

NLEB Identifications

- None
- Echoclass Only
- BCID Only
- Echoclass & BCID
- Echoclass & Qualitative
- Echoclass, BCID, & Qualitative

- Bladen Lakes State Forest
- County Boundary
- Hydrology

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Bladen Lakes State Forest Project Area - NLEB Acoustic Identifications

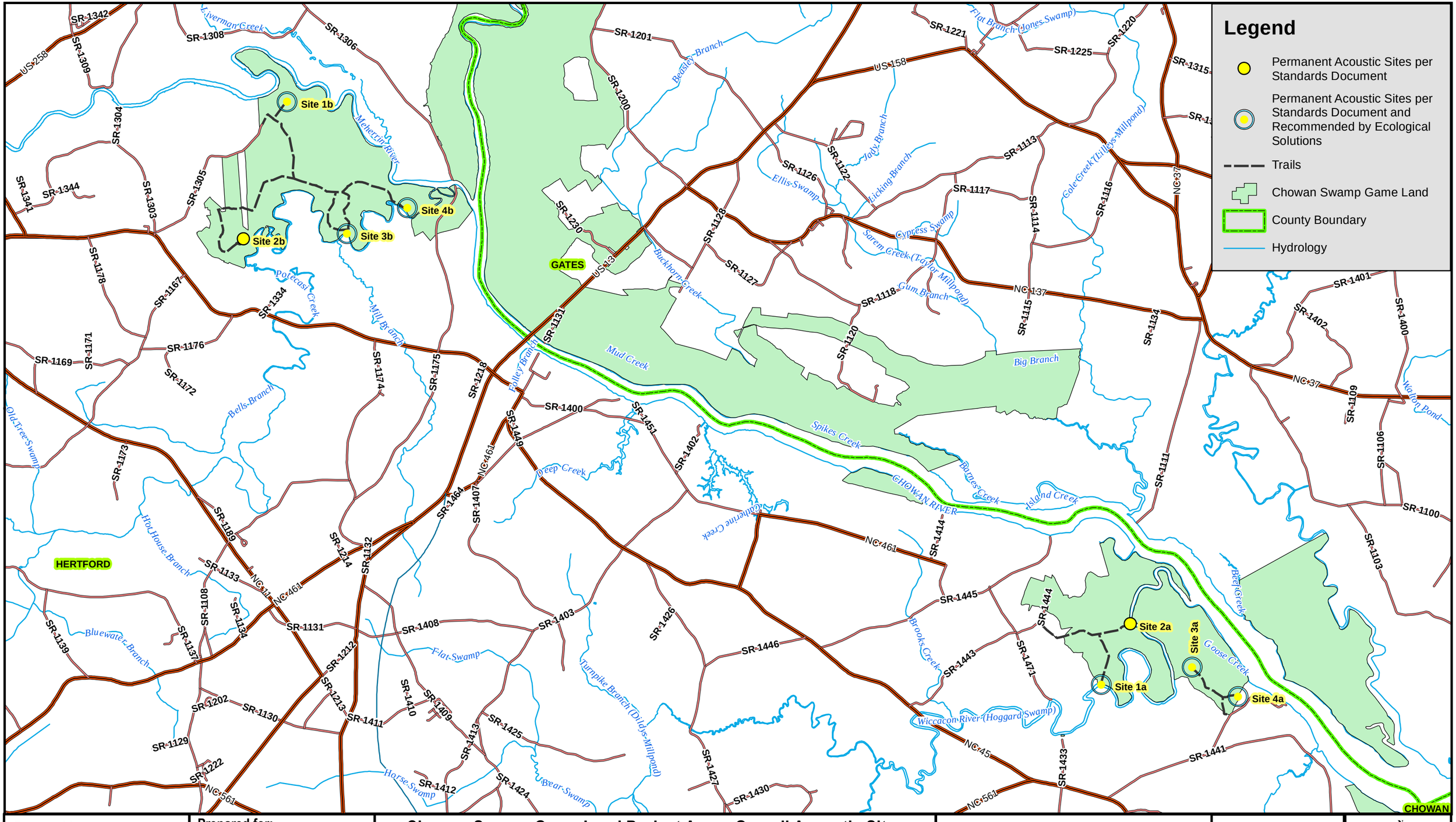
NCDOT Eastern NLEB Research Project
Survey Session 1, Fall/Winter Season 2015
Bladen County, North Carolina
Source: NCOneMap Managed Areas, Bladen County GIS, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 2f

N E S W

0 4,000 8,000
1" = 8,000'


Legend
Permanent Acoustic Sites per Standards Document
Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
Trails
Chowan Swamp Game Land
County Boundary
Hydrology
Site 1b
Site 2b
Site 3b
Site 4b
Site 2a
Site 3a
Site 1a
Site 4a
GATES
HERTFORD
CHOWAN
Meherrin River
Yeopim River
Perquimans River
Yeopim River
Yeopim River (Flat Branch)
Yeopim River (Jones Swamp)
Yeopim River (Lilleys Millpond)
Yeopim River (Taylor Millpond)
Yeopim River (Hoggard Swamp)
Yeopim River (Dildys Millpond)
Yeopim River (Flat Swamp)
Yeopim River (Bear Swamp)
Yeopim River (Horse Swamp)
Yeopim River (Bluewater Branch)
Yeopim River (Hot House Branch)
Yeopim River (Old Tree Swamp)
Yeopim River (Bells Branch)
Yeopim River (Mill Branch)
Yeopim River (Forecast Creek)
Yeopim River (Buckhorn Creek)
Yeopim River (Mud Creek)
Yeopim River (Folley Branch)
Yeopim River (Deep Creek)
Yeopim River (Gutherine Creek)
Yeopim River (Spikes Creek)
Yeopim River (Big Branch)
Yeopim River (Gum Branch)
Yeopim River (Cypress Swamp)
Yeopim River (Ellis-Swamp)
Yeopim River (Licking Branch)
Yeopim River (Jady Branch)
Yeopim River (Bedsley Branch)
Yeopim River (Gale Creek)
Yeopim River (Goose Creek)
Yeopim River (Beaks Creek)
Yeopim River (Brooks Creek)
Yeopim River (Turnpike Branch)
Yeopim River (Island Creek)
Yeopim River (Barnes Creek)
Yeopim River (Walton Pond)
CHOWAN RIVER
Wiccacon River
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Chowan Swamp Game Land Project Area - Overall Acoustic Sites
NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Bertie, Gates, & Hertford Counties, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS
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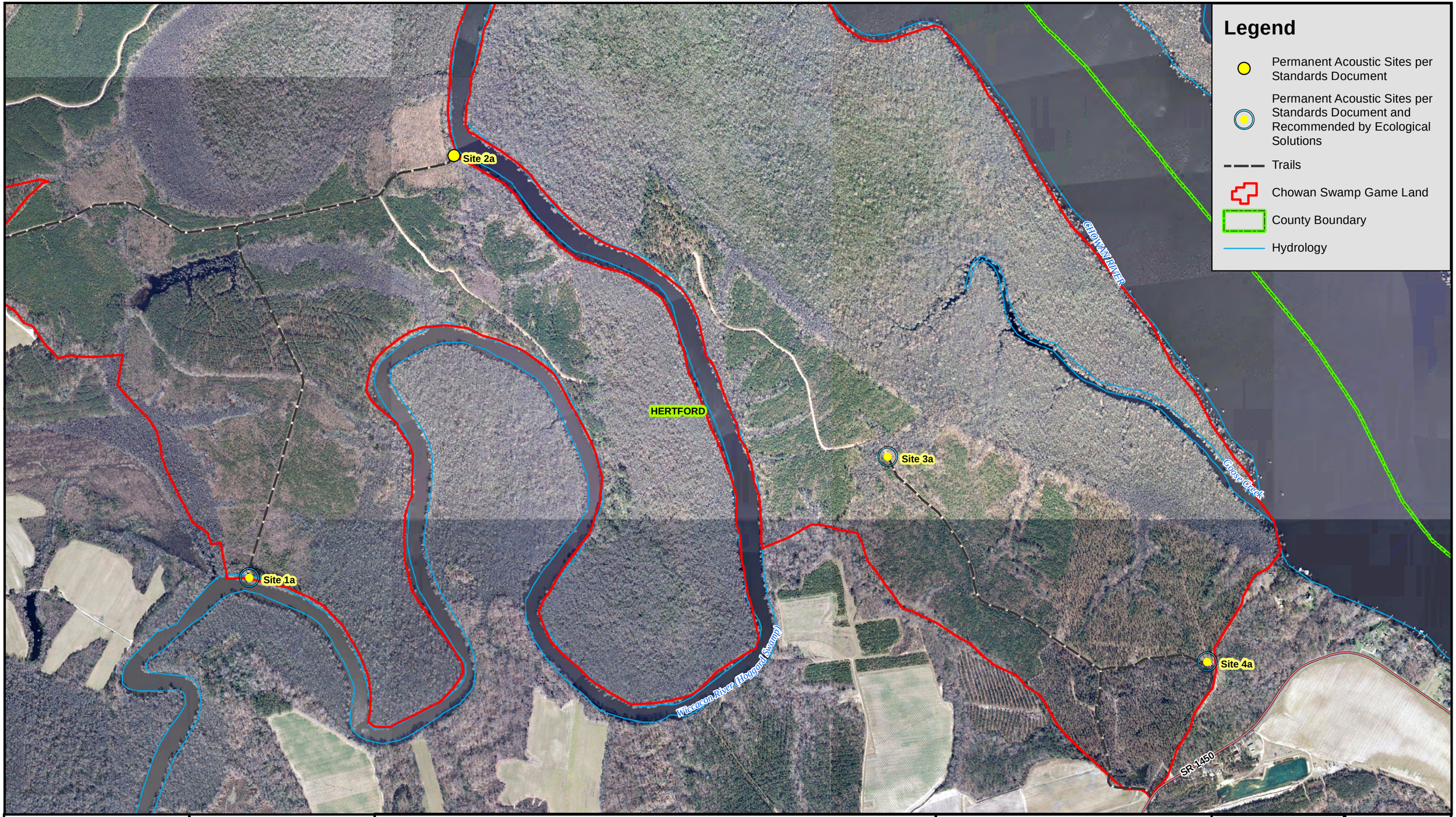
FIGURE 3a
N
W
E
S
0
3,500
7,000
1" = 7,000'



Legend

- Permanent Acoustic Sites per Standards Document
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- Chowan Swamp Game Land
- County Boundary
- Hydrology

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Chowan Swamp Game Land Project Area - Acoustic Sites 1a, 2a, 3a, & 4a

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Bertie, Gates, & Hertford Counties, North Carolina
Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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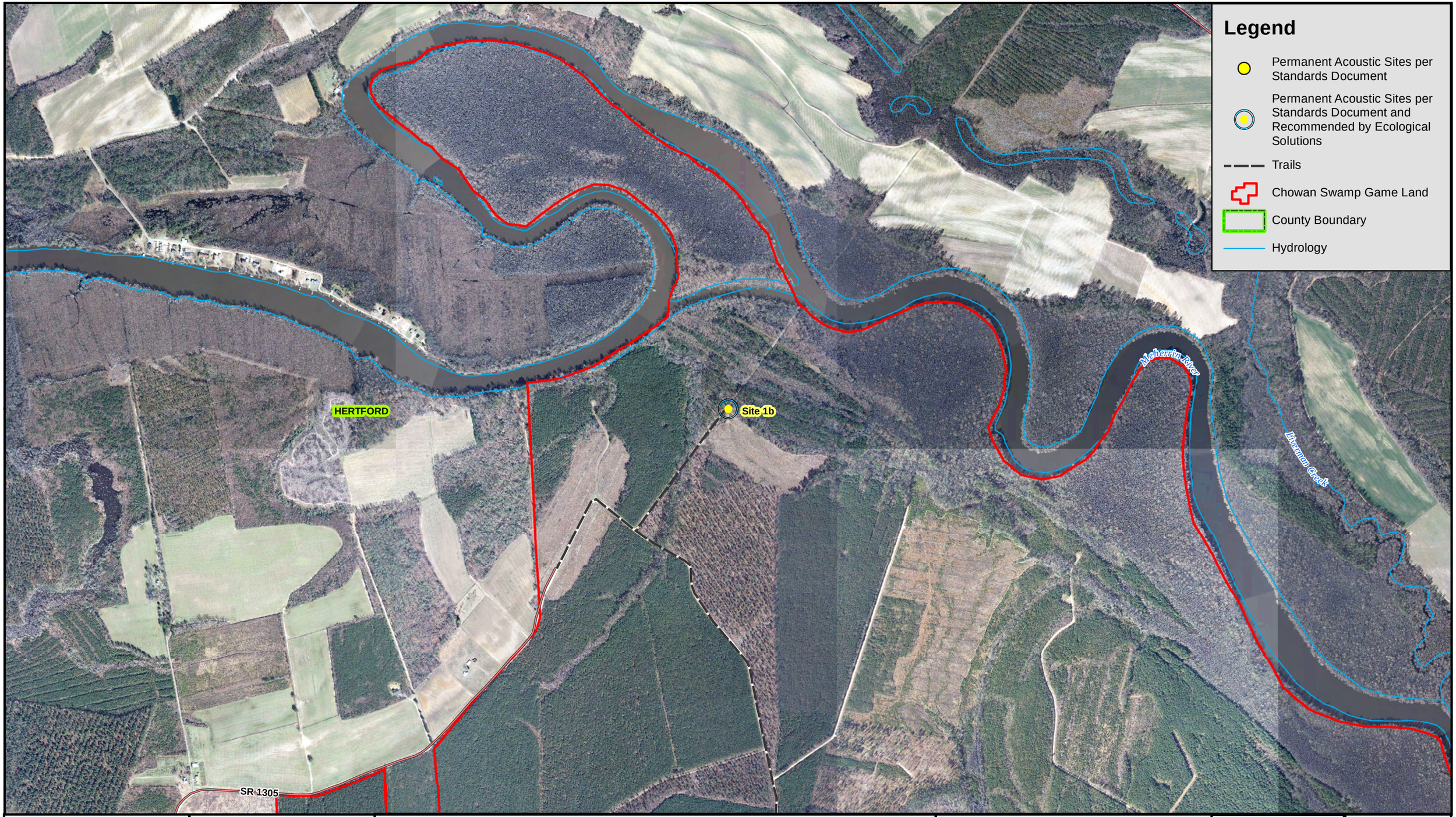
FIGURE 3b

N W E S

0 500 1,000

1" = 1,000'



Legend

- Permanent Acoustic Sites per Standards Document
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- Chowan Swamp Game Land
- County Boundary
- Hydrology

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Chowan Swamp Game Land Project Area - Acoustic Site 1b

NCDOT Eastern NLEB Research Project

Survey Phase 1, Session 1, Fall 2015

Bertie, Gates, & Hertford Counties, North Carolina

Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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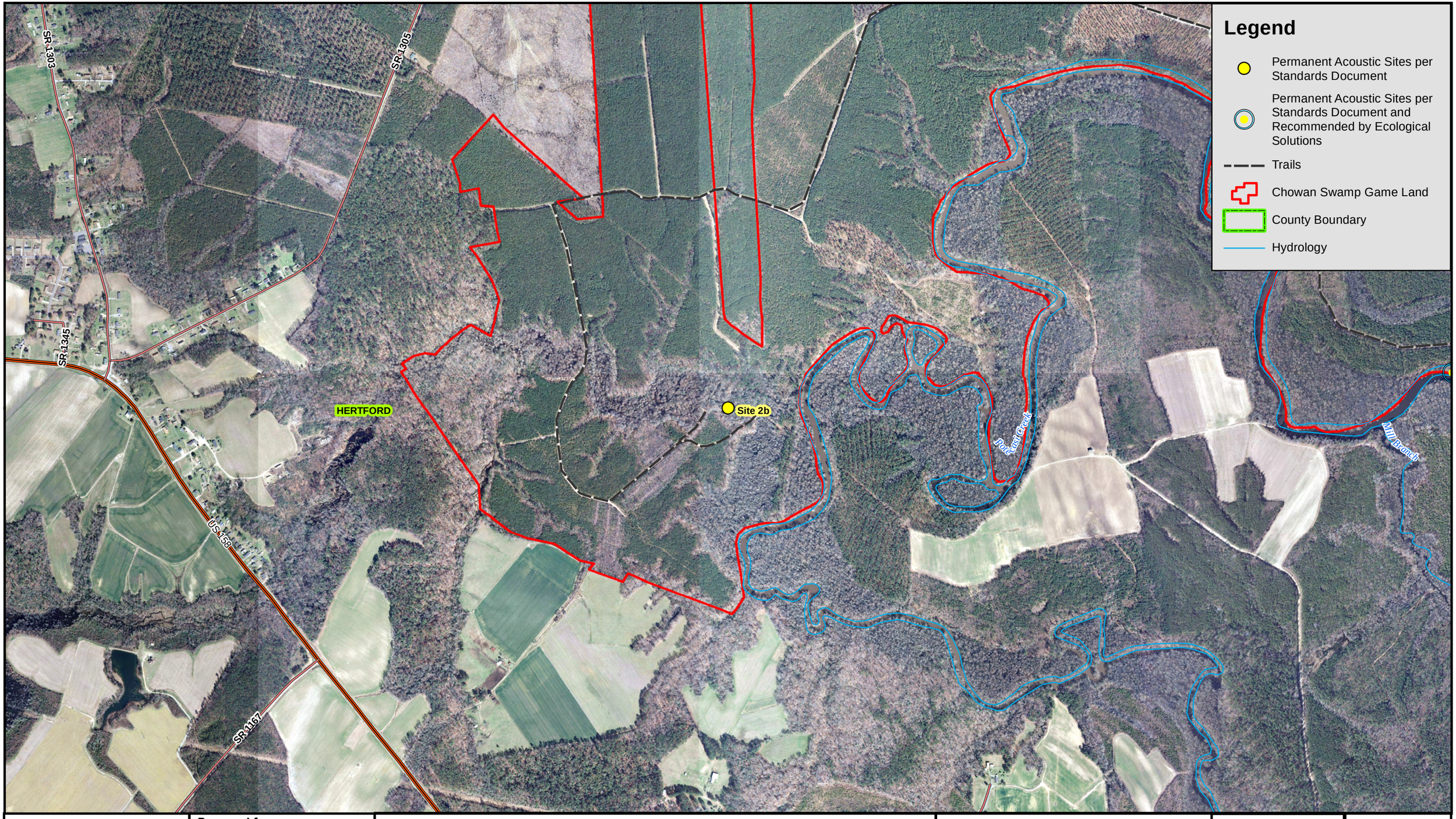
FIGURE 3c

N W E S

0 500 1,000

1" = 1,000'



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Chowan Swamp Game Land Project Area - Acoustic Site 2b

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Bertie, Gates, & Hertford Counties, North Carolina
Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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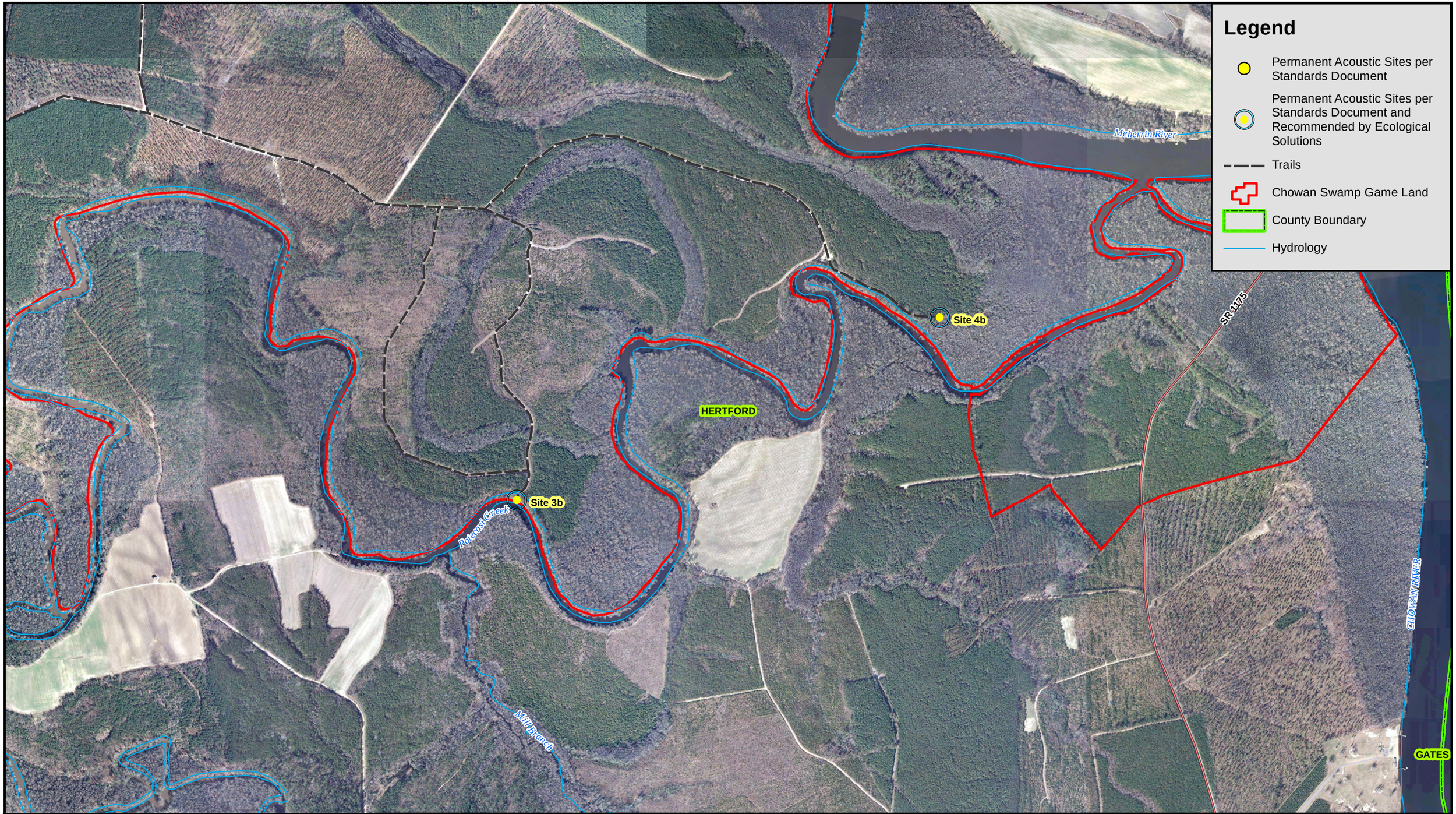
FIGURE 3d

N W E S

0 500 1,000
1" = 1,000'



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Prepared for:

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Chowan Swamp Game Land Project Area - Acoustic Sites 3b & 4b

NCDOT Eastern NLEB Research Project

Survey Phase 1, Session 1, Fall 2015

Bertie, Gates, & Hertford Counties, North Carolina

Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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FIGURE 3e

N W E S

0 500 1,000

1" = 1,000'

Legend

NLEB Identifications

- None
- Echoclass Only
- BCID Only
- Echoclass & BCID
- Echoclass & Qualitative
- Echoclass, BCID, & Qualitative

- Trails
- Chowan Swamp Game Land
- County Boundary
- Hydrology

NOTE: Five call files recorded at Chowan Swamp Game Land Site 1b were qualitatively determined to be NLEB.

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Chowan Swamp Game Land Project Area - Sites with NLEB Recordings

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Bertie, Gates, & Hertford Counties, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

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FIGURE 3f

N W E S

0 4,000 8,000
1" = 8,000'

Legend

- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites
- CP&L Game Land
- County Boundary
- Hydrology

CHATHAM

LEE

Site 1

Site 2

Site 3

Site 4a

Site 4b

NC-42

SR-1916

SR-1923

SR-1539

SR-1537

SR-1500

SR-1505

Gulf Creek

Gulf Creek

Bush Creek

Lick Creek

Little Shaddox Creek

CAPE FEAR RIVER

CAPE FEAR RIVER

CAPE FEAR RIVER

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Prepared for:

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

CP&L Game Land Project Area - Overall Acoustic Sites

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Lee and Chatham Counties, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 4a

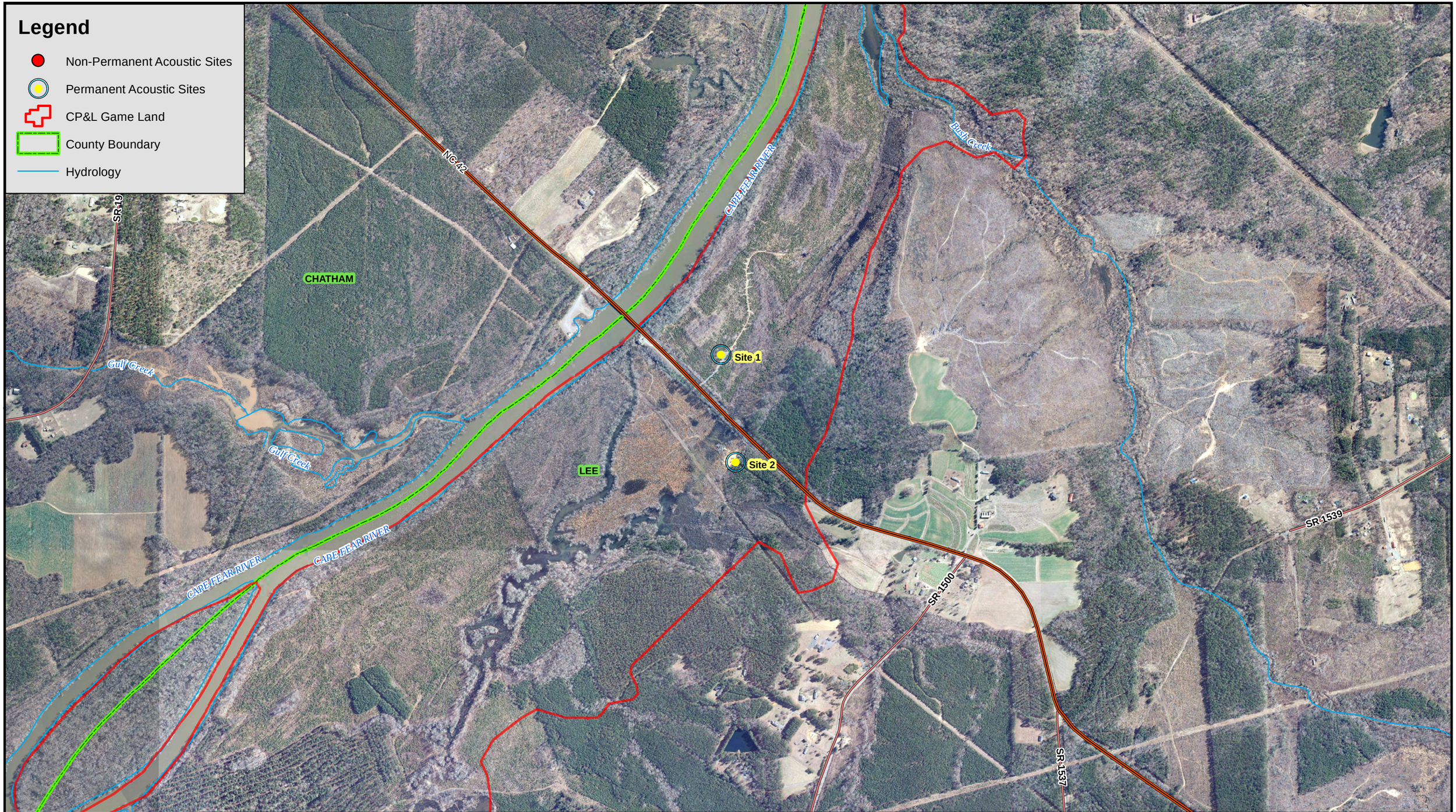
N E S W

0 750 1,500

1" = 1,500'

Legend

- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites
- CP&L Game Land
- County Boundary
- Hydrology



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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

CP&L Game Land Project Area - Acoustic Sites 1 & 2

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Lee and Chatham Counties, North Carolina
Source: NCOneMap Managed Areas & 2013 Aerials, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 4b

N W E S

0 500 1,000
1" = 1,000'

Legend

- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites
- CP&L Game Land
- County Boundary
- Hydrology

CHATHAM

CAPE FEAR RIVER

LEE

Little Shaddox Creek

Site 4b

Site 4a

Site 3

Rick Creek

Hughes Creek

SR-1500

SR-1505

SR-1504

SR-1425

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Prepared for:

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CP&L Game Land Project Area - Acoustic Sites 3, 4a, & 4b

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Lee and Chatham Counties, North Carolina
Source: NCOneMap Managed Areas & 2013 Aerials, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 4c

N E S W

0 500 1,000
1" = 1,000'

Legend

NLEB Identifications

- None
- Echoclass Only
- BCID Only
- Echoclass & BCID
- Echoclass & Qualitative
- Echoclass, BCID, & Qualitative

- CP&L Game Land
- County Boundary
- Hydrology

CHATHAM
LEE
NC-42
SR-1916
SR-1923
SR-1539
SR-1537
SR-1500
SR-1505
Gulf Creek
Gulf Creek
Bush Creek
CAPE FEAR RIVER
CAPE FEAR RIVER
CAPE FEAR RIVER
Lick Creek
Little Shaddox Creek
Site 1
Site 2
Site 3
Site 4a
Site 4b

NOTE: No call files recorded at CP&L Game Land were qualitatively determined to be NLEB.

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

CP&L Game Land Project Area - NLEB Acoustic Identifications

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Lee and Chatham Counties, North Carolina
Source: NCOneMap Managed Areas & 2013 Aerials, NCDOT GIS

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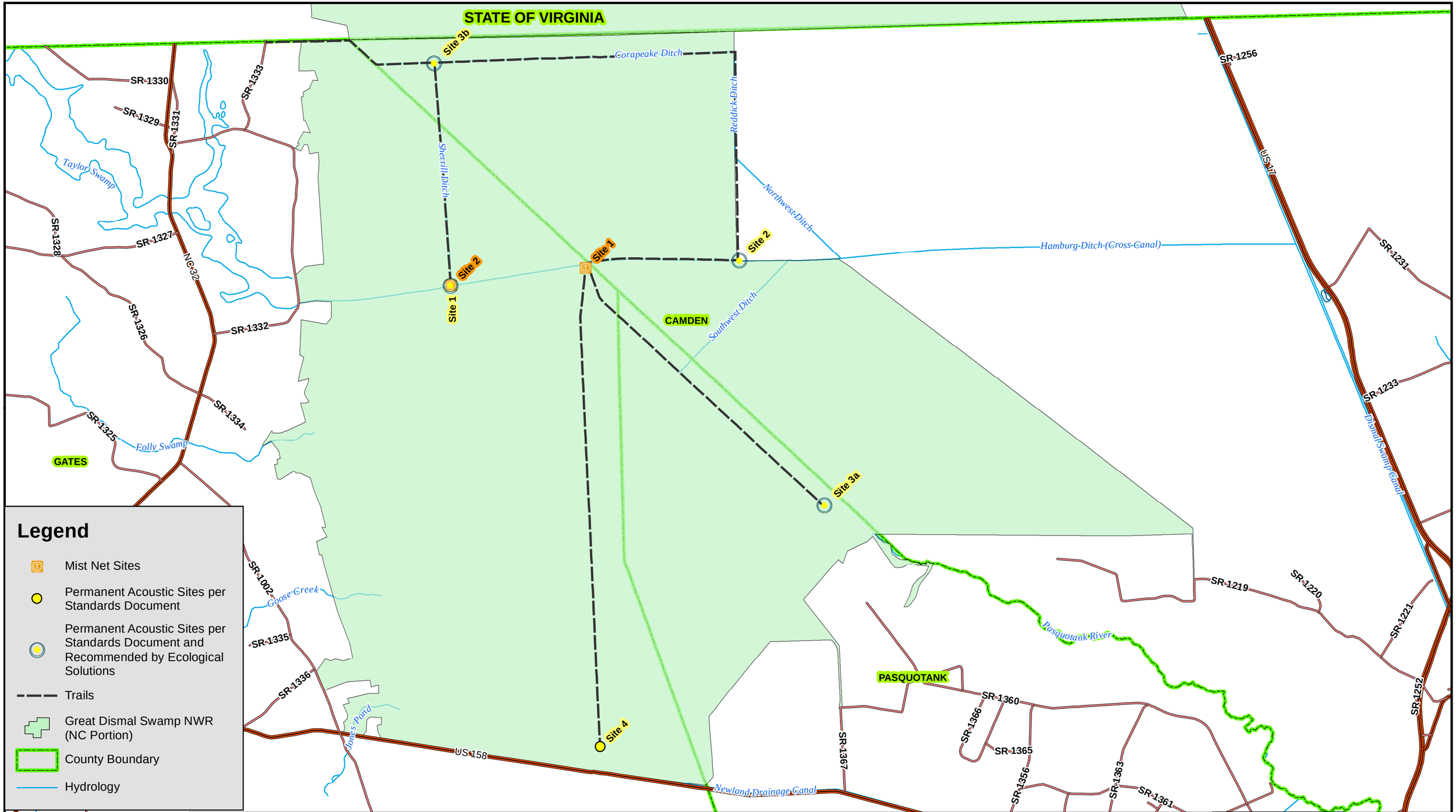
FIGURE 4d

N E S W

0 750 1,500

1" = 1,500'



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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Great Dismal Swamp NWR Project Area - Overall Acoustic & Mist Net Sites

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Camden, Gates, & Pasquotank Counties, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

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FIGURE 5a

N W E S

0 2,500 5,000

1" = 5,000'

Legend

- Permanent Acoustic Sites per Standards Document
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Mist Net Sites
- Trails
- Great Dismal Swamp NWR (NC Portion)
- County Boundary
- Hydrology

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Great Dismal Swamp NWR - Acoustic Site 1, Mist Net Sites 1 & 2

NCDOT Eastern NLEB Research Project

Survey Phase 1, Session 1, Fall 2015

Camden, Gates, & Pasquotank Counties, North Carolina

Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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FIGURE 5b

N W E S

0 500 1,000

1" = 1,000'

CAMDEN

Hamburg Ditch (Cross Canal)

Site 2

Northwest Ditch

Southwest Ditch

Legend

- Permanent Acoustic Sites per Standards Document
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Mist Net Sites
- Trails
- Great Dismal Swamp NWR (NC Portion)
- County Boundary
- Hydrology

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Great Dismal Swamp NWR - Acoustic Site 2

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Camden, Gates, & Pasquotank Counties, North Carolina
Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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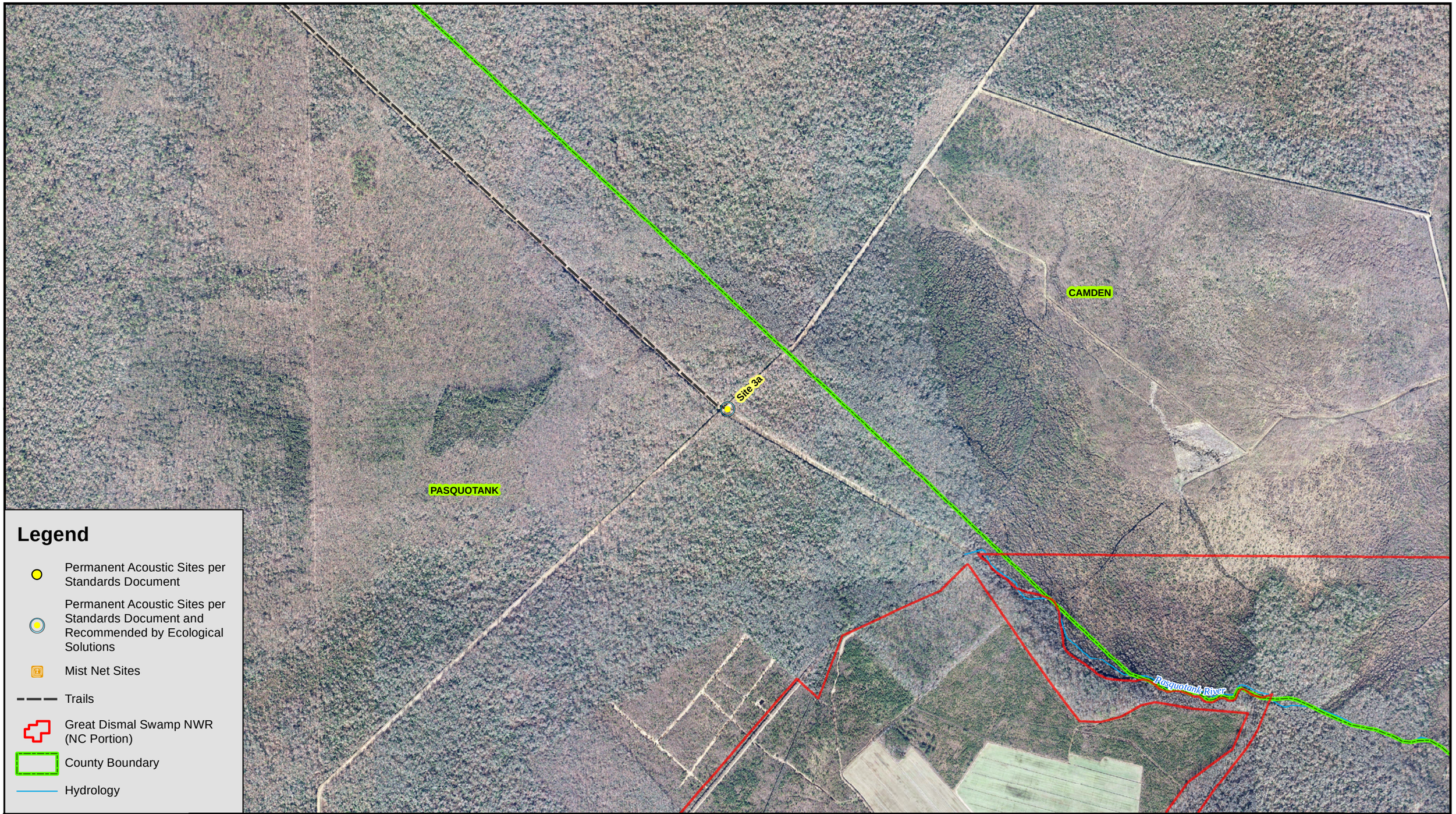
FIGURE 5c

N
W E
S

0 500 1,000
1" = 1,000'



Legend

- Permanent Acoustic Sites per Standards Document
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Mist Net Sites
- Trails
- Great Dismal Swamp NWR (NC Portion)
- County Boundary
- Hydrology

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Great Dismal Swamp NWR - Acoustic Site 3a

NCDOT Eastern NLEB Research Project

Survey Phase 1, Session 1, Fall 2015

Camden, Gates, & Pasquotank Counties, North Carolina

Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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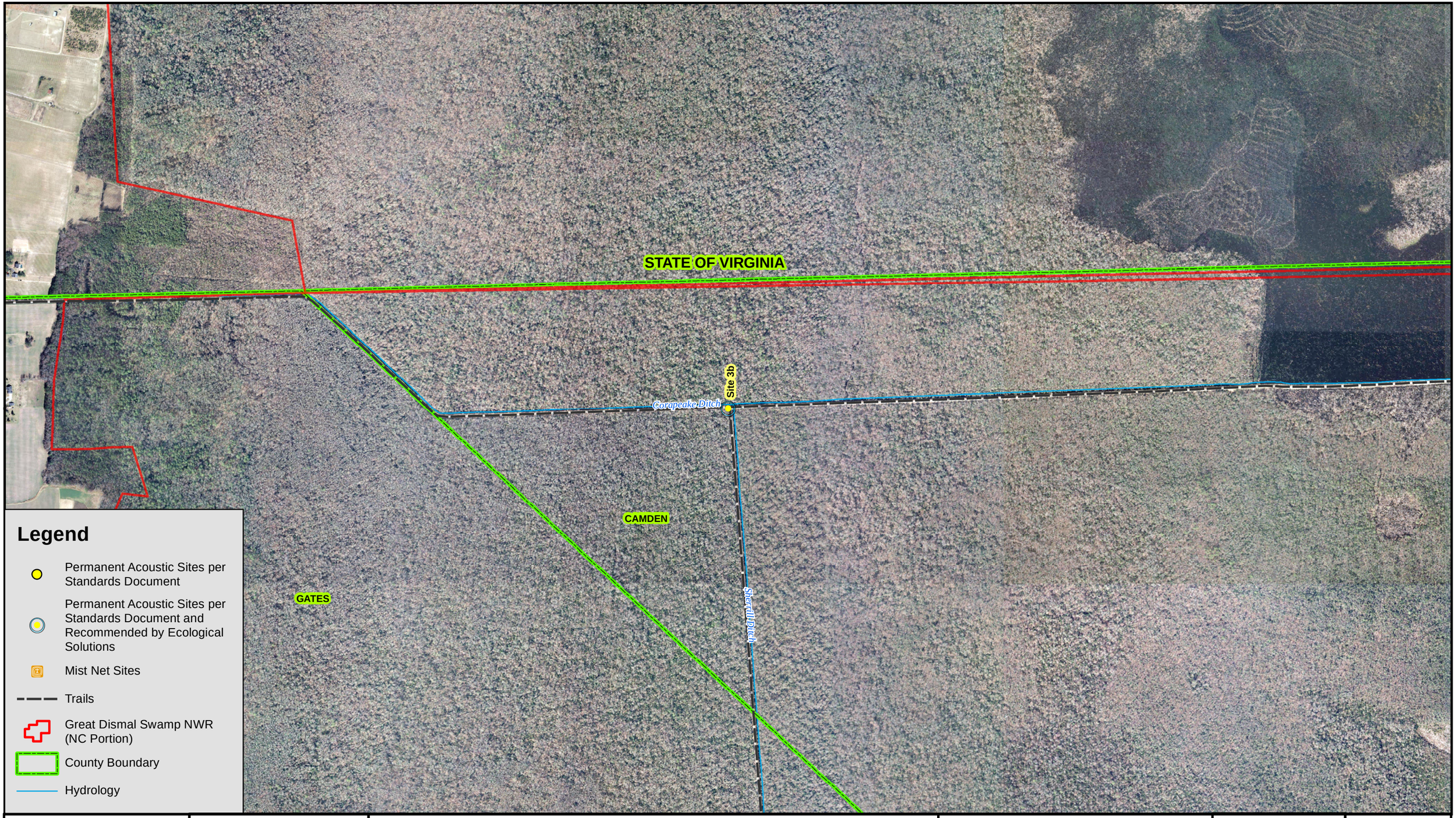
FIGURE 5d

N W E S

0 500 1,000

1" = 1,000'



Legend

- Permanent Acoustic Sites per Standards Document
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Mist Net Sites
- Trails
- Great Dismal Swamp NWR (NC Portion)
- County Boundary
- Hydrology

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Great Dismal Swamp NWR - Acoustic Site 3b

NCDOT Eastern NLEB Research Project

Survey Phase 1, Session 1, Fall 2015

Camden, Gates, & Pasquotank Counties, North Carolina

Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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FIGURE 5e

N W E S

0 500 1,000

1" = 1,000'

Legend

- Permanent Acoustic Sites per Standards Document
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Mist Net Sites
- Trails
- Great Dismal Swamp NWR (NC Portion)
- County Boundary
- Hydrology

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Great Dismal Swamp NWR - Acoustic Site 4

NCDOT Eastern NLEB Research Project

Survey Phase 1, Session 1, Fall 2015

Camden, Gates, & Pasquotank Counties, North Carolina

Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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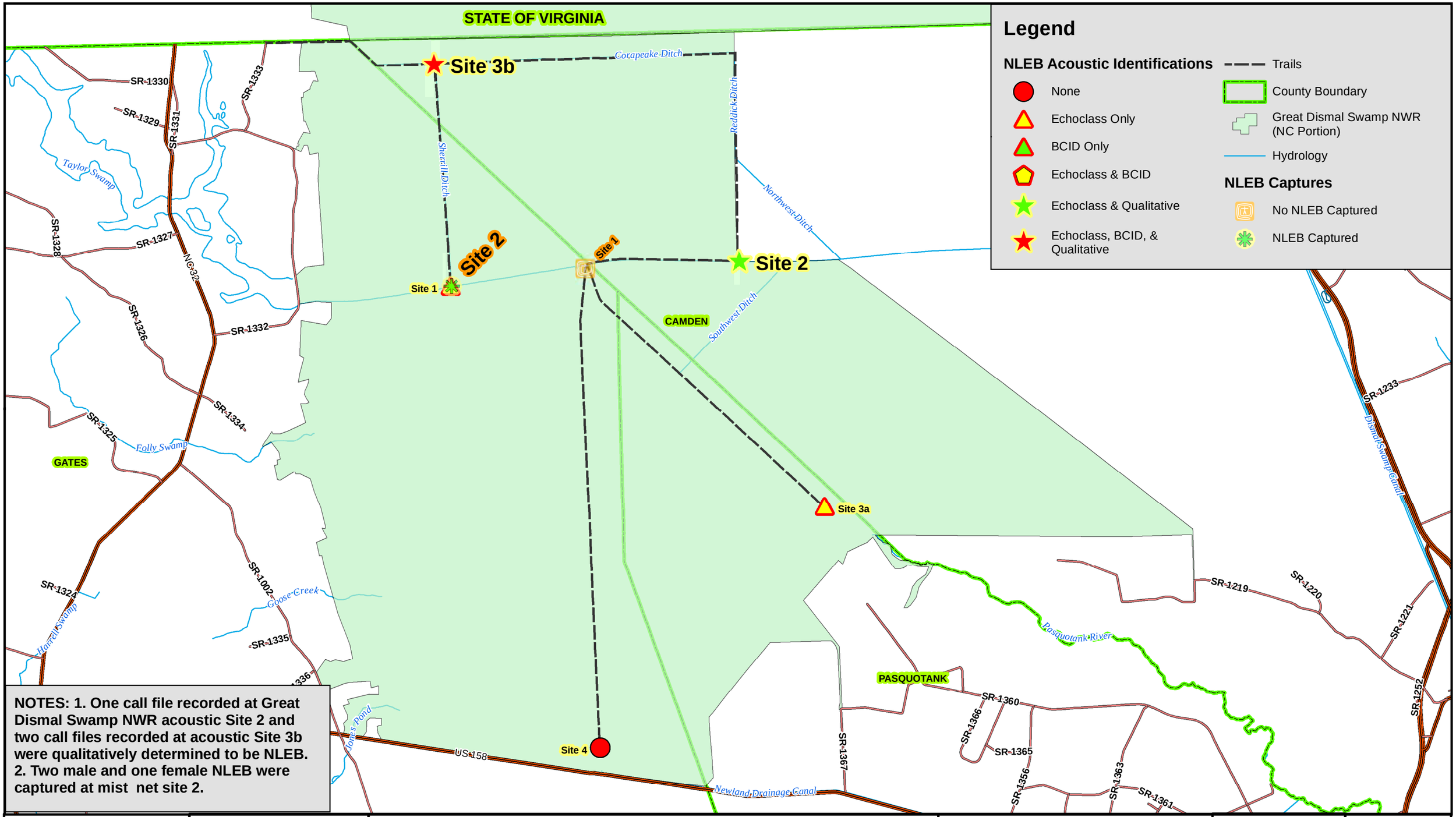
FIGURE 5f

N W E S

0 500 1,000

1" = 1,000'



Legend

NLEB Acoustic Identifications

- None
- Echoclass Only
- BCID Only
- Echoclass & BCID
- Echoclass & Qualitative
- Echoclass, BCID, & Qualitative

- Trails
- County Boundary
- Great Dismal Swamp NWR (NC Portion)
- Hydrology

NLEB Captures

- No NLEB Captured
- NLEB Captured

NOTES: 1. One call file recorded at Great Dismal Swamp NWR acoustic Site 2 and two call files recorded at acoustic Site 3b were qualitatively determined to be NLEB. 2. Two male and one female NLEB were captured at mist net site 2.

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Great Dismal Swamp NWR - NLEB Acoustic Identifications & Mist Net Captures

NCDOT Eastern NLEB Research Project

Survey Phase 1, Session 1, Fall 2015

Camden, Gates, & Pasquotank Counties, North Carolina

Source: NCOneMap Managed Areas, NCDOT GIS

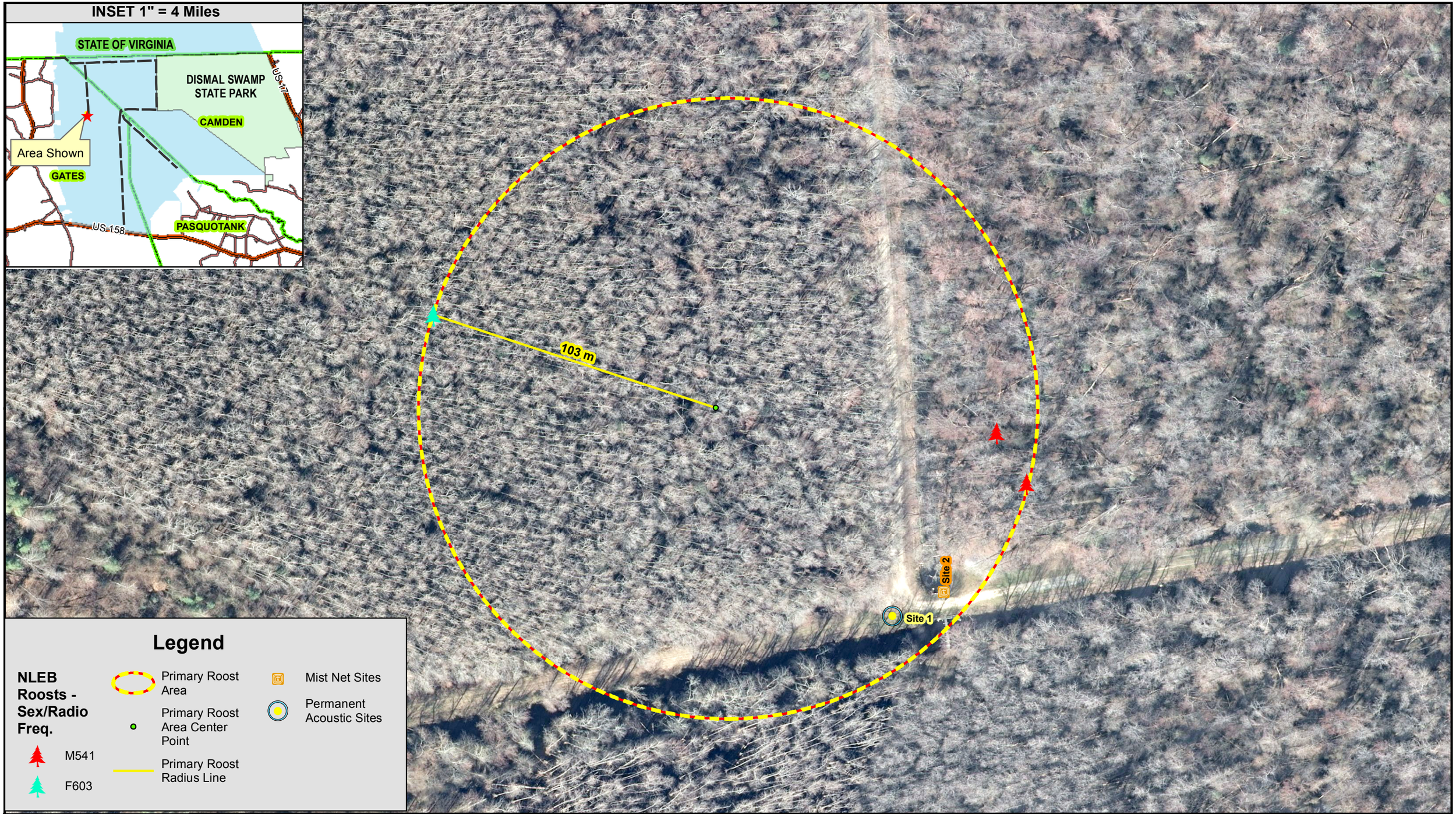
The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 5g

N W E S

0 2,500 5,000

1" = 5,000'



Legend

NLEB Roosts - Sex/Radio Freq.

- M541
- F603

- Primary Roost Area
- Primary Roost Area Center Point
- Primary Roost Radius Line
- Mist Net Sites
- Permanent Acoustic Sites

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Great Dismal Swamp NWR Project Area - NLEB Roost Sites

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Camden, Gates, & Pasquotank Counties, North Carolina
Source: 2012 Aerial from NCOneMap.com

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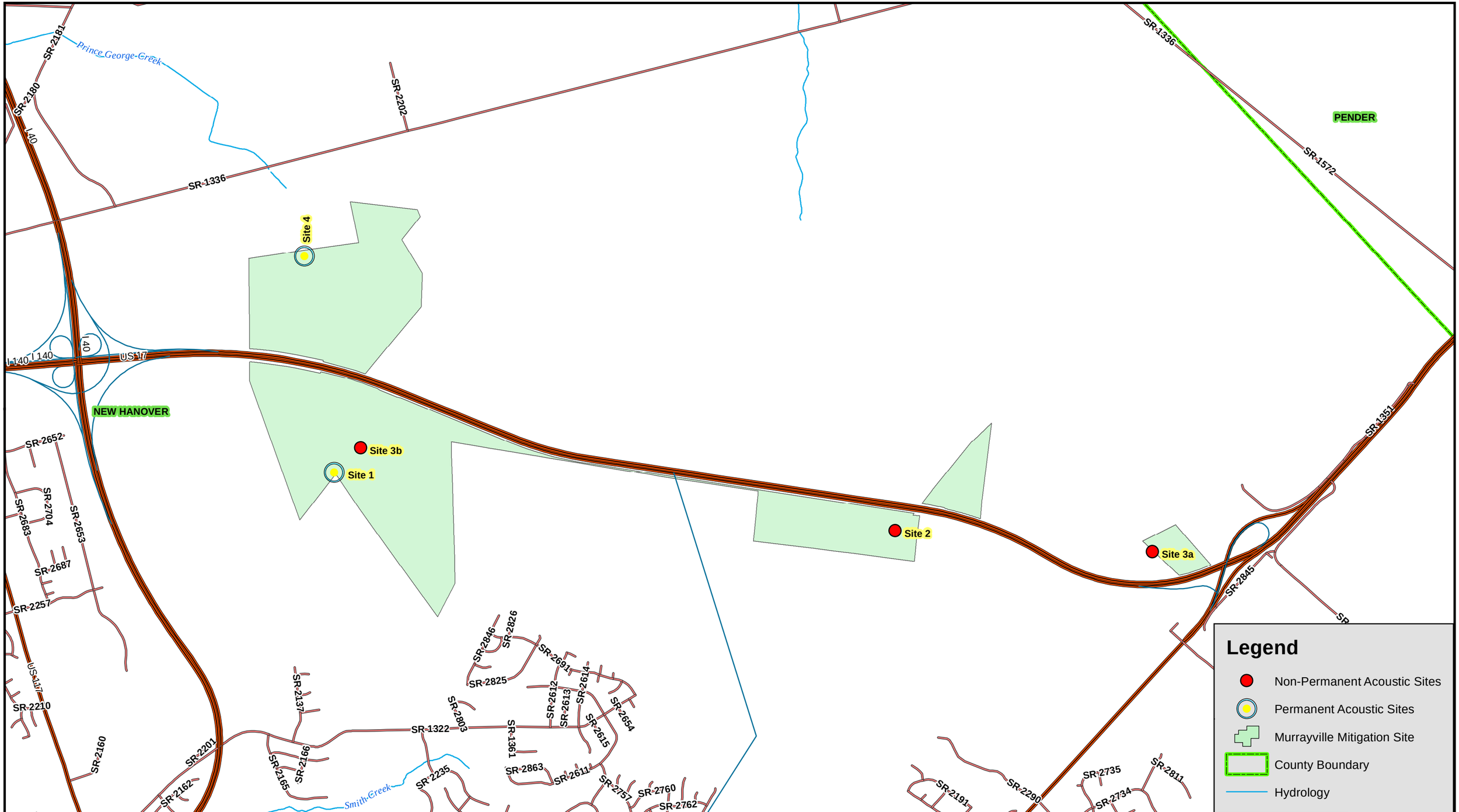
FIGURE 5h

N W E S

0 50 100
1" = 100'



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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Murrayville Mitigation Site Project Area - Overall Acoustic Sites

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
New Hanover County, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 6a

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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Murrayville Mitigation Site Project Area - Acoustic Sites 1, 3b, & 4

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
New Hanover County, North Carolina
Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 6b

N W E S

0 500 1,000

1" = 1,000'

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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Murrayville Mitigation Site Project Area - Acoustic Sites 2 & 3a

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
New Hanover County, North Carolina
Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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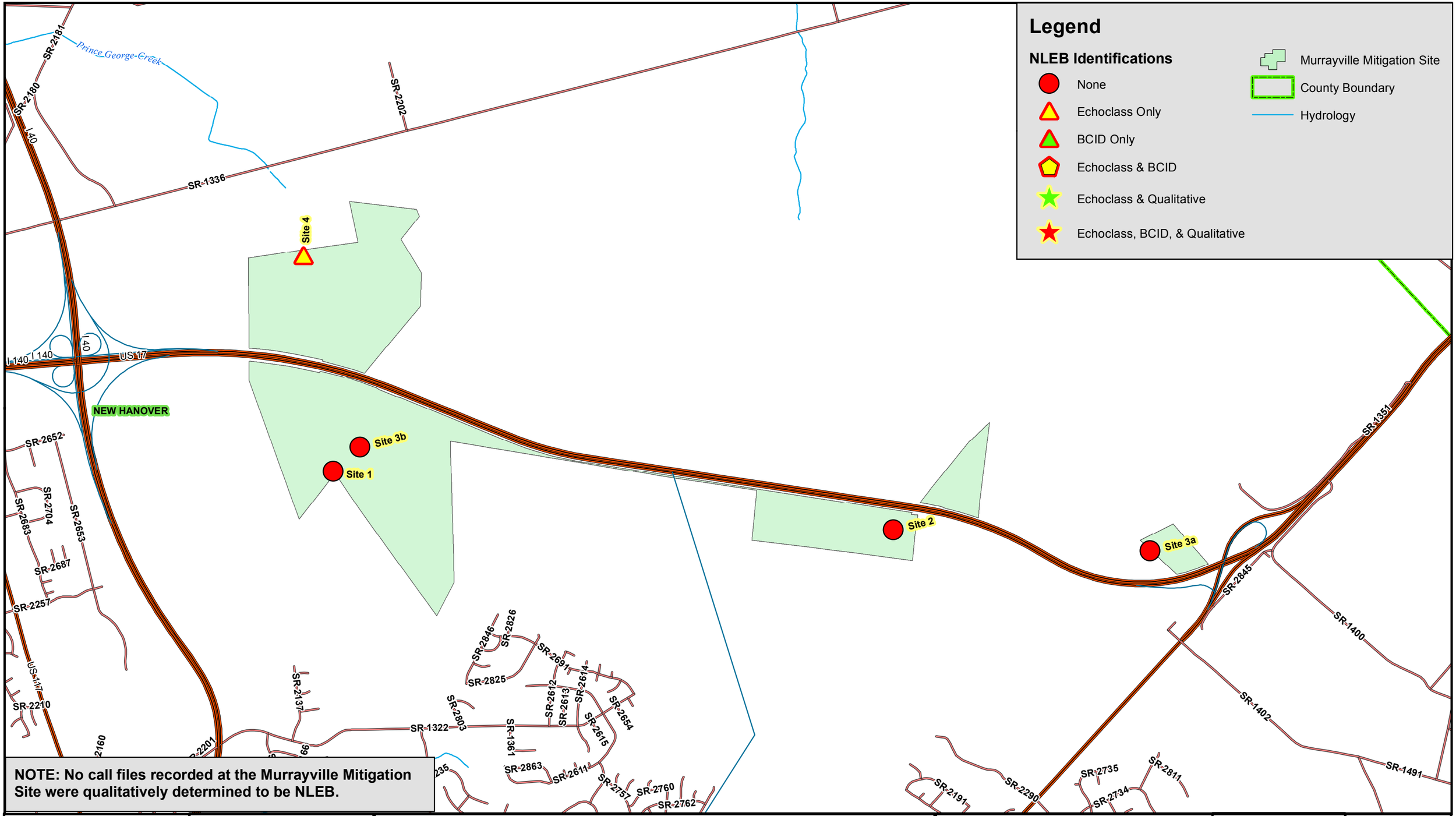
FIGURE 6c

N W E S

0 500 1,000
1" = 1,000'



NOTE: No call files recorded at the Murrayville Mitigation Site were qualitatively determined to be NLEB.

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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Murrayville Mitigation Site Project Area - NLEB Acoustic Identifications

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
New Hanover County, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 6d

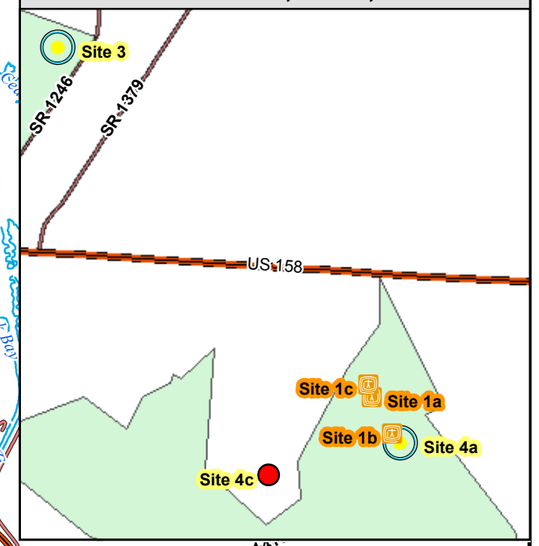
N W E S

0 1,000 2,000
1" = 2,000'

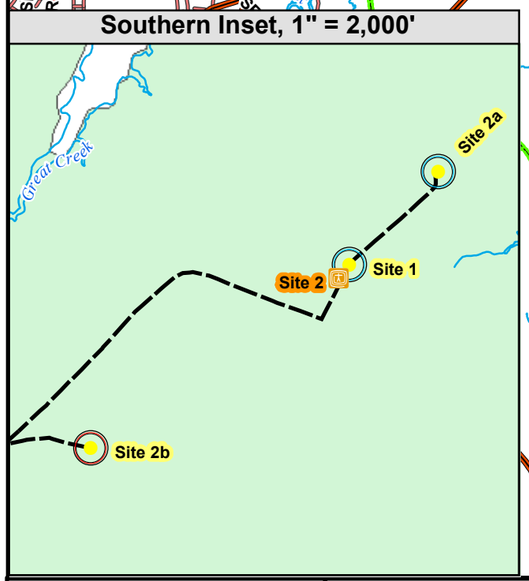
Legend

- Mist Net Sites
- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites per Standards Document and Ecological Solutions, but Near UNCG Acoustic Site
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- North River Game Land
- County Boundary
- Hydrology

Northern Inset, 1" = 2,000'



Southern Inset, 1" = 2,000'



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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

North River Game Land Project Area - Overall Acoustic & Mist Net Sites

NCDOT Eastern NLEB Research Project
Survey Phase 1, Sessions 1 & 2, Fall & Winter 2015
Camden & Currituck Counties, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

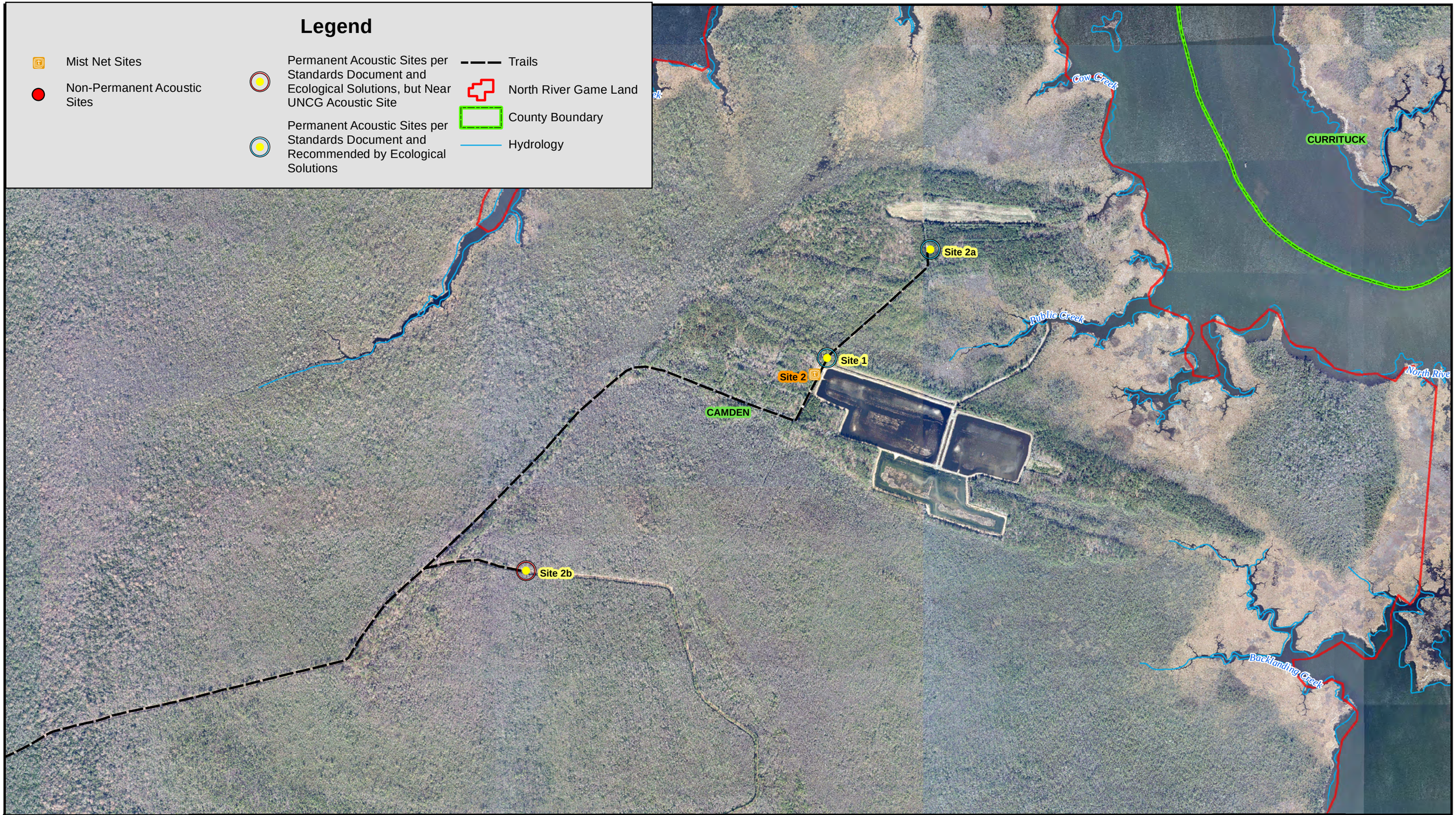
FIGURE 7a

N W E S

0 3,500 7,000
1" = 7,000'

Legend

- Mist Net Sites
- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites per Standards Document and Ecological Solutions, but Near UNCG Acoustic Site
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- North River Game Land
- County Boundary
- Hydrology



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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

North River Game Land - Acoustic Sites 1, 2a, & 2b, Mist Net Site 2

NCDOT Eastern NLEB Research Project

Survey Phase 1, Sessions 1 & 2, Fall & Winter 2015

Camden & Currituck Counties, North Carolina

Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 7b

N W E S

0 500 1,000

1" = 1,000'

Legend

- Mist Net Sites
- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites per Standards Document and Ecological Solutions, but Near UNCG Acoustic Site
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- North River Game Land
- County Boundary
- Hydrology

Site 3
Site 1c
Site 1a
Site 1b
Site 4a
Site 4c
SR 1379
SR 1246
US 158
SR 1247
SR 1146
CURRITUCK
East Creek

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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

North River Game Land - Acoustic Sites 3, 4a, & 4c, Mist Net Site 1

NCDOT Eastern NLEB Research Project
Survey Phase 1, Sessions 1 & 2, Fall & Winter 2015
Camden & Currituck Counties, North Carolina
Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 7c

N W E S

0 500 1,000

1" = 1,000'

Legend

NLEB Acoustic Identifications

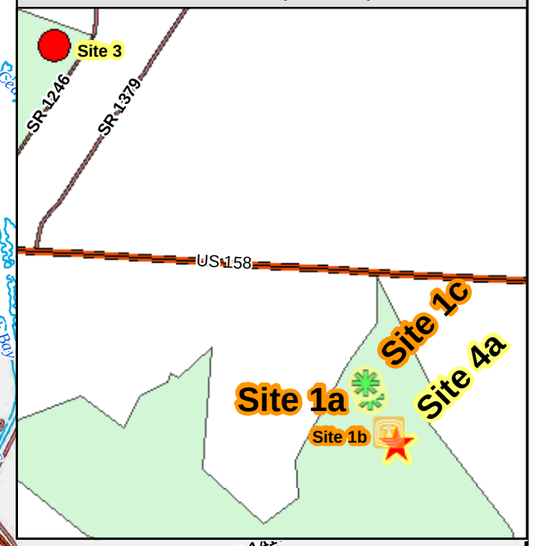
- None
- Echoclass Only
- BCID Only
- Echoclass & BCID
- Echoclass & Qualitative
- Echoclass, BCID, & Qualitative

- Trails
- North River Game Land
- County Boundary
- Hydrology

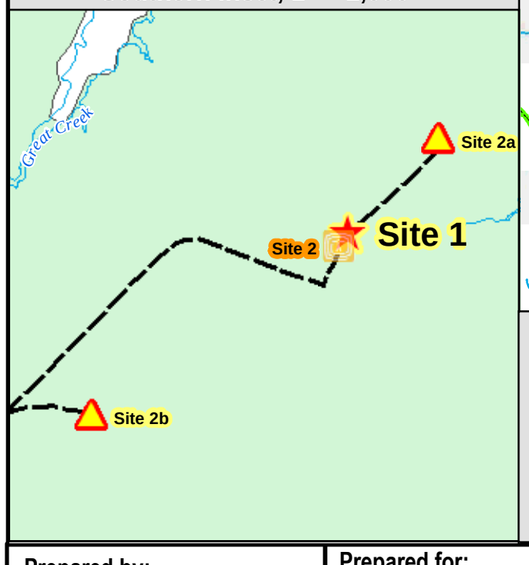
NLEB Captures

- No NLEB Captured
- NLEB Captured

Northern Inset, 1" = 2,000'



Southern Inset, 1" = 2,000'



NOTES:
1. During Session 1, eight call files recorded at North River Game Land acoustic Site 1 and three call files recorded at acoustic Site 4a were qualitatively determined to be NLEB.
2. During Session 1, three male and two female NLEB were captured at mist net site 1, nets A and C.
3. During Session 2, one male NLEB was captured at mist net site 1, net C.

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STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

North River Game Land - NLEB Acoustic Identifications & Mist Net Captures

NCDOT Eastern NLEB Research Project
Survey Phase 1, Sessions 1 & 2, Fall & Winter 2015
Camden & Currituck Counties, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 7d

N W E S
0 3,500 7,000
1" = 7,000'

Legend

NLEB Roosts - Sex/Radio Freq.

- M259
- F662
- F722
- M781
- M842
- Other Roost

- Primary Roost Area
- Primary Roost Area Center Point
- Primary Roost Radius & Longest Distance Roost Lines
- North River Game Land

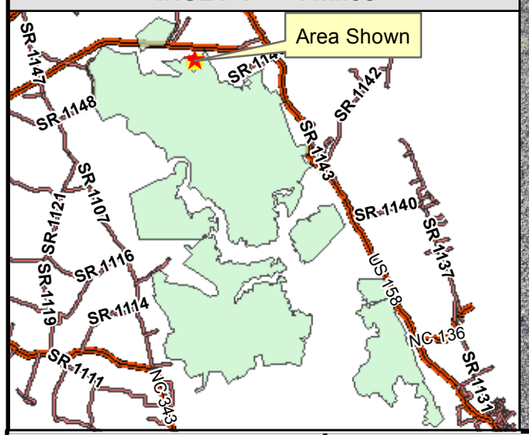
1880 m

216 m

F662 Roost 3, located by USFWS plane

F662 Roost 2, location triangulated

INSET 1" = 4 Miles



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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

North River Game Land Project Area - NLEB Roost Sites

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Camden & Currituck Counties, North Carolina
Source: 2012 Aerial from NCOneMap.com

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 7e

N W E S

0 250 500
1" = 500'

Legend

- Permanent Acoustic Sites
- Trails
- Old Waynesborough Park
- County Boundary
- Hydrology

SR-2052

US-13

US-13

Site 1

Site 2

Site 3

Site 4

WAYNE

Big Ditch

NEUSE RIVER

Little River

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Prepared for:

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

Old Waynesborough Park Project Area - Overall Acoustic Sites

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Wayne County, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 8a

N E S W

0 250 500
1" = 500'

Legend

- Permanent Acoustic Sites
- Trails
- Old Waynesborough Park
- County Boundary
- Hydrology

SR-2052
US-13
US-13
Site 1
Big Ditch
Site 2
WAYNE
Site 3
NEUSE RIVER
Site 4
Little River

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Prepared for:

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

Old Waynesborough Park Project Area - Acoustic Sites 1, 2, 3, & 4

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Wayne County, North Carolina
Source: NCOneMap Managed Areas & 2013 Aerials, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 8b

N E S W

0 250 500
1" = 500'

Legend

NLEB Acoustic Identifications

- None
- Echoclass Only
- BCID Only
- Echoclass & BCID
- Echoclass & Qualitative
- Echoclass, BCID, & Qualitative

- Trails
- Old Waynesborough Park
- County Boundary
- Hydrology

US-13

Site 1

Site 2

Site 3

Site 4

WAYNE

Big Ditch

NEUSE RIVER

Little River

NOTE: No call files recorded at Old Waynesborough Park were qualitatively determined to be NLEB.

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STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

Old Waynesborough Park Project Area - NLEB Acoustic Identifications

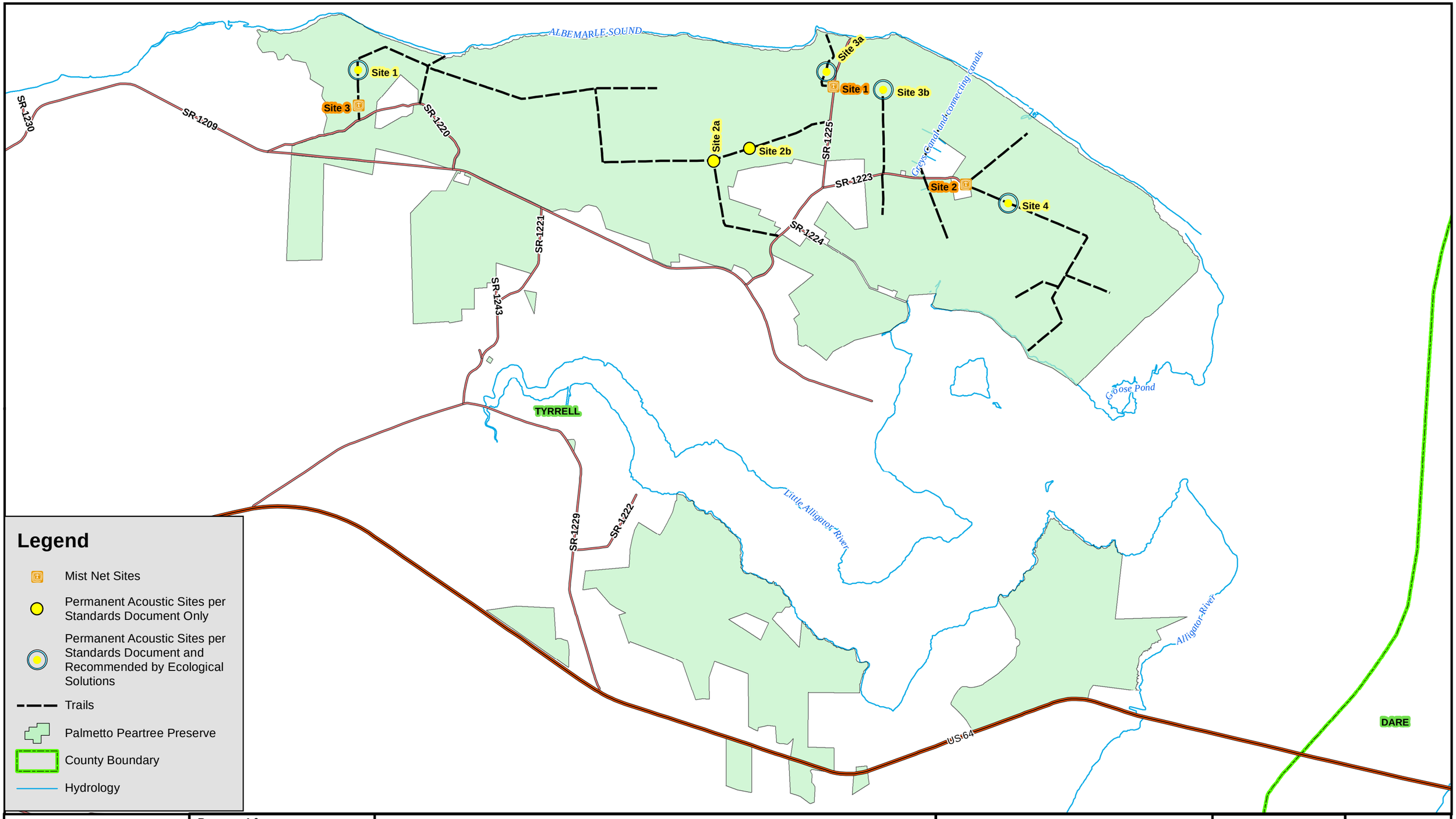
NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Wayne County, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 8c

N W E S

0 250 500
1" = 500'



Legend

- Mist Net Sites
- Permanent Acoustic Sites per Standards Document Only
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- Palmetto Peartree Preserve
- County Boundary
- Hydrology

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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Palmetto Peartree Preserve - Overall Acoustic & Mist Net Sites

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Tyrrell County, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 9a

N W E S

0 2,000 4,000

1" = 4,000'

ALBEMARLE SOUND

TYRRELL

Site 1

Site 3

SR 1220

SR 1209

Legend

- Mist Net Sites
- Permanent Acoustic Sites per Standards Document Only
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- Palmetto Peartree Preserve
- County Boundary
- Hydrology

Prepared by:

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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Palmetto Peartree Preserve - Acoustic Site 1, Mist Net Site 3

NCDOT Eastern NLEB Research Project

Survey Phase 1, Session 1, Fall 2015

Tyrrell County, North Carolina

Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 9b

N
W E
S

0 500 1,000

1" = 1,000'

Legend

- Mist Net Sites
- Permanent Acoustic Sites per Standards Document Only
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- Palmetto Peartree Preserve
- County Boundary
- Hydrology

Site 3a
Site 1
Site 3b
Site 2b
Site 2a
Site 2
Site 4
TYRRELL
ALBEMARLE SOUND
Grays Canal and connecting canals
SR-1225
SR-1223
SR-1224

Prepared by:

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1151 SE Cary Parkway, Suite 101 • Cary NC 27518

Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Palmetto Peartree Preserve - Acoustic Sites 2a, 2b, 3a, 3b, & 4, Mist Net Sites 1 & 2
NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Tyrrell County, North Carolina
Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

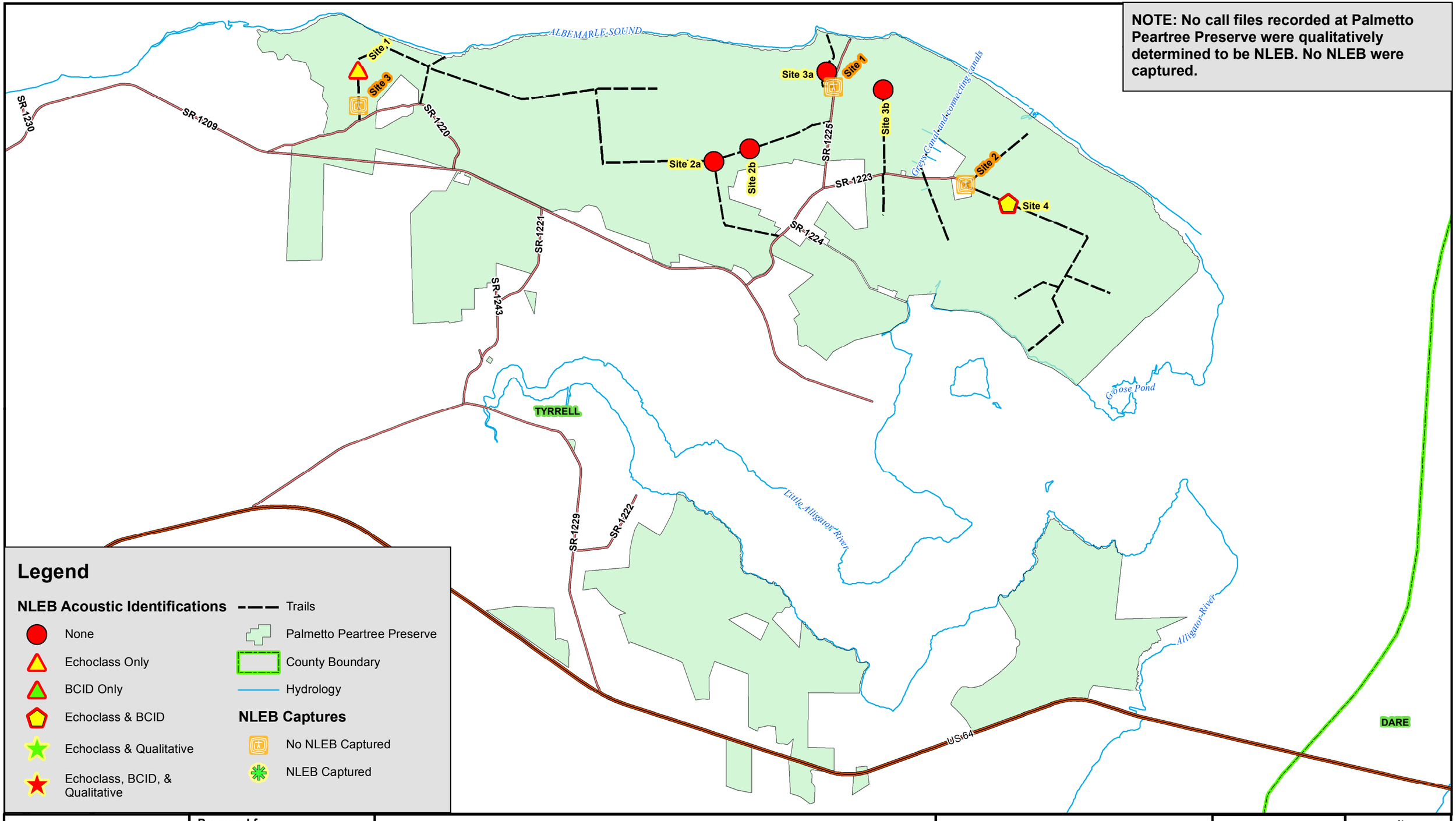
The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 9c

N W E S

0 500 1,000
1" = 1,000'

NOTE: No call files recorded at Palmetto Peartree Preserve were qualitatively determined to be NLEB. No NLEB were captured.



Legend

NLEB Acoustic Identifications

- None
- Echoclass Only
- BCID Only
- Echoclass & BCID
- Echoclass & Qualitative
- Echoclass, BCID, & Qualitative

- Trails
- Palmetto Peartree Preserve
- County Boundary
- Hydrology

NLEB Captures

- No NLEB Captured
- NLEB Captured

Prepared by:

ECOLOGICAL ENGINEERING
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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Palmetto Peartree Preserve - NLEB Acoustic Identifications & Mist Net Captures
NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Tyrrell County, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

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FIGURE 9d

N W E S

0 2,000 4,000

1" = 4,000'

Legend

- Mist Net Sites
- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites per Standards Document Only
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- Pocosin Lakes National Wildlife Refuge
- Pungo Unit (Off Limits)
- County Boundary
- Hydrology

Site 1a
Site 1
Site 1b
Site 2
Site 2a
Site 2b
Site 3
Site 3a
Site 3b
Site 4a
Site 4b

WASHINGTON
TYRRELL
DARE
HYDE
BEAUFORT

Bull Bay
Deep Creek
Scuppernong River
Little Alligator River
Alligator River
Second Creek
Milltail Creek
Goose Creek
The Frying Pan
The Straits
Basnight Canal
Juniper Creek
Northwest Fork Alligator River
Southwest Fork Alligator River
Dunbar Canal
New Lake
New Lake Fork
Georgia Bay
Wynn Bay
Intracoastal Waterway (Pungo River-Alligator River Canal)
Old State Canal
Boundary Canal (West, North, and East Sides)
Jarvis Canal
Phelps Lake
Ten Foot Canal
Thirty Foot Canal
Old Canal
Bonarva Canal
Bee Tree Canal and connecting Canals
Skinner
Canal A
Canal B
Canal C
Canal D
Pungo River Canal
Oregon Canal
Pungo Lake
Pungo Lake Canal
Pungo River
Pantego Creek
Broad Creek Canal
White Cypress Tributary
Third Tributary
Lake Canal
Huntinghouse Canal

SR-1302, SR-1308, SR-1200, SR-1201, SR-1304, SR-1310, SR-1116, SR-1115, SR-1113, SR-1110, SR-1209, SR-1300, SR-1104, SR-1301, SR-1303, SR-1229, SR-1102, SR-1103, NC-94, SR-1219, SR-1158, SR-1108, SR-1143, SR-1146, SR-1150, SR-1142, SR-1122, SR-1105, SR-1306, SR-1307, SR-1308, SR-1309, SR-1310, SR-1314, SR-1313, SR-1321, SR-1320, SR-1311, SR-1155, SR-1160, SR-1149, SR-1164, SR-1156, SR-1165, SR-1166, SR-1118, SR-1183, SR-1126, SR-1112, SR-1115, SR-1118, SR-1180, SR-1127, NC-32, NC-45, SR-1626, SR-1627, SR-1621, SR-1623, SR-1625, NC-99, SR-1700, SR-1348, SR-1338, SR-1340, SR-1303, SR-1302, US-264

Prepared by:
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Prepared for:
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Pocosin Lakes NWR Project Area - Overall Acoustic & Mist Net Sites

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Hyde, Tyrrell, & Washington Counties, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 10a

N W E S
0 7,500 15,000
1" = 15,000'

Legend

- Mist Net Sites
- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites per Standards Document Only
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- Pocosin Lakes National Wildlife Refuge
- Pungo Unit (Off Limits)
- County Boundary
- Hydrology

Scuppernong River
Site 1a
TYRRELL
Site 1
SR 1109
SR 1105
SR 1108
SR 1125

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Prepared for:

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Pocosin Lakes NWR Project Area - Acoustic Site 1a, Mist Net Site 1

NCDOT Eastern NLEB Research Project

Survey Phase 1, Session 1, Fall 2015

Hyde, Tyrrell, & Washington Counties, North Carolina

Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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FIGURE 10b

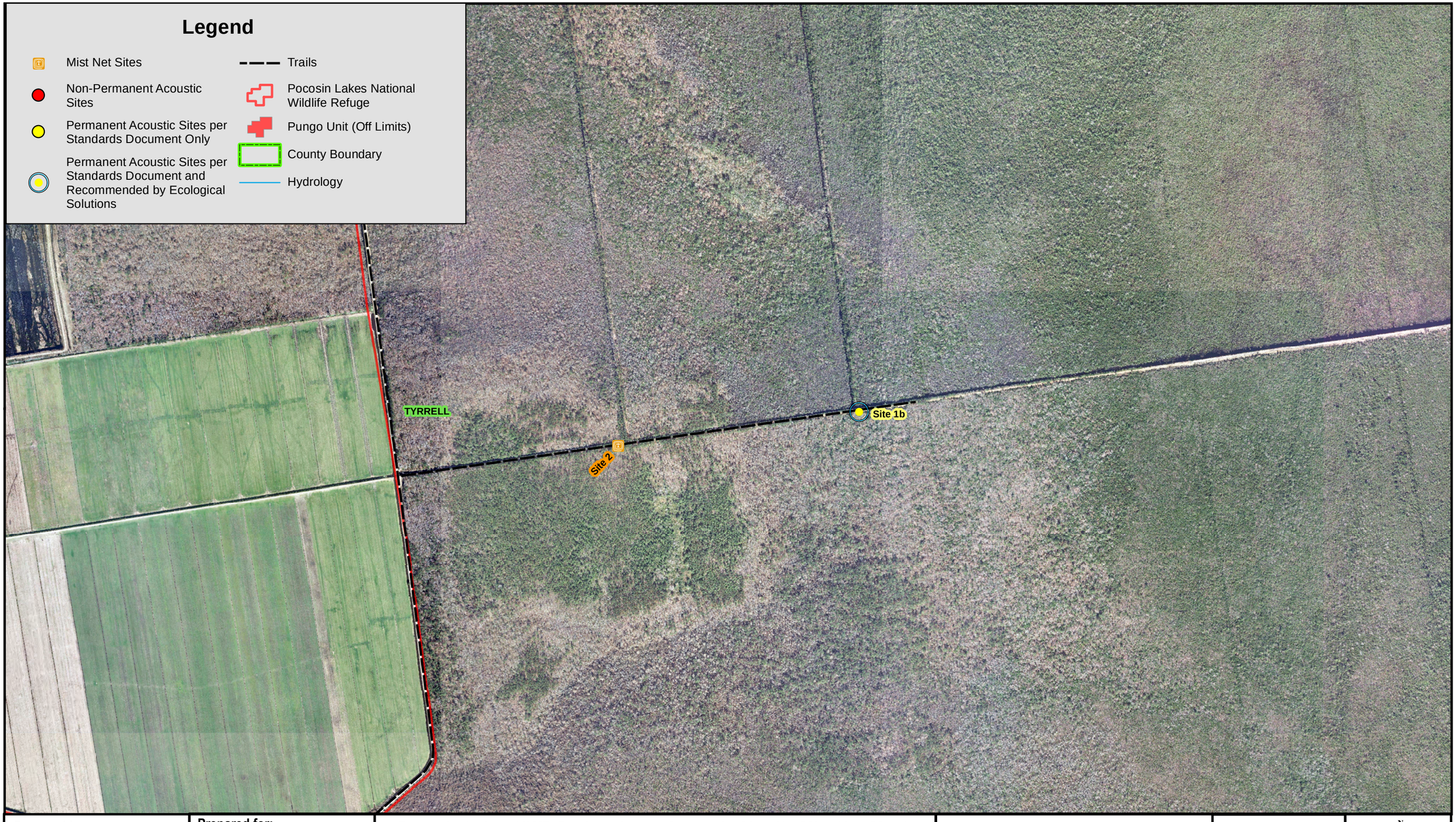
N W E S

0 500 1,000

1" = 1,000'

Legend

- Mist Net Sites
- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites per Standards Document Only
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- Pocosin Lakes National Wildlife Refuge
- Pungo Unit (Off Limits)
- County Boundary
- Hydrology



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Pocosin Lakes NWR Project Area - Acoustic Site 1b, Mist Net Site 2
NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Hyde, Tyrrell, & Washington Counties, North Carolina
Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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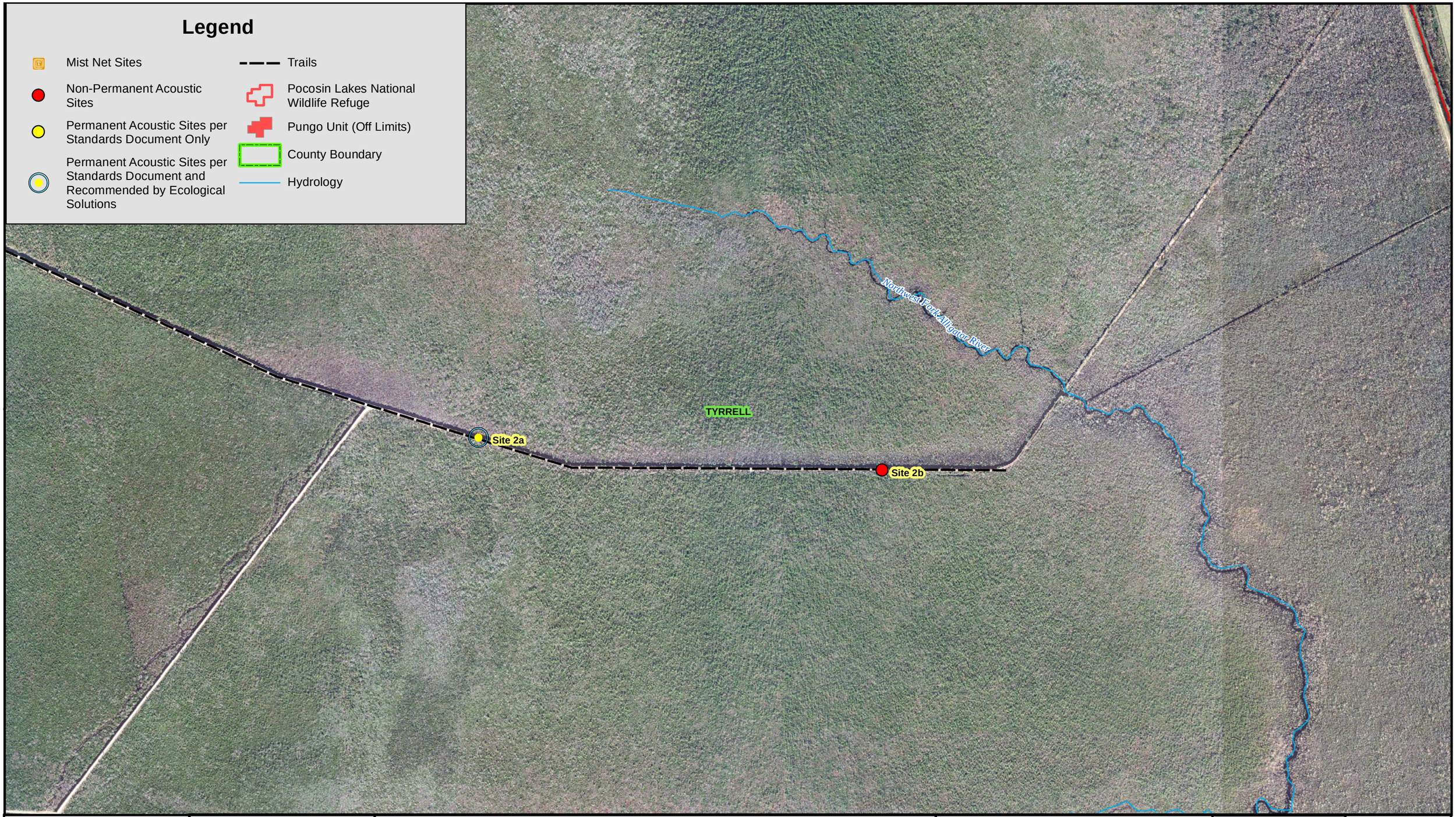
FIGURE 10c

N W E S

0 500 1,000
1" = 1,000'

Legend

- Mist Net Sites
- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites per Standards Document Only
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- Pocosin Lakes National Wildlife Refuge
- Pungo Unit (Off Limits)
- County Boundary
- Hydrology



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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Pocosin Lakes NWR Project Area - Acoustic Sites 2a & 2b
NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Hyde, Tyrrell, & Washington Counties, North Carolina
Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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FIGURE 10d

N W E S

0 500 1,000
1" = 1,000'

Legend

- Mist Net Sites
- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites per Standards Document Only
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- Pocosin Lakes National Wildlife Refuge
- Pungo Unit (Off Limits)
- County Boundary
- Hydrology

Prepared by:

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Prepared for:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

Pocosin Lakes NWR Project Area - Acoustic Sites 3a & 3b, Mist Net Site 3
NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Hyde, Tyrrell, & Washington Counties, North Carolina
Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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FIGURE 10e

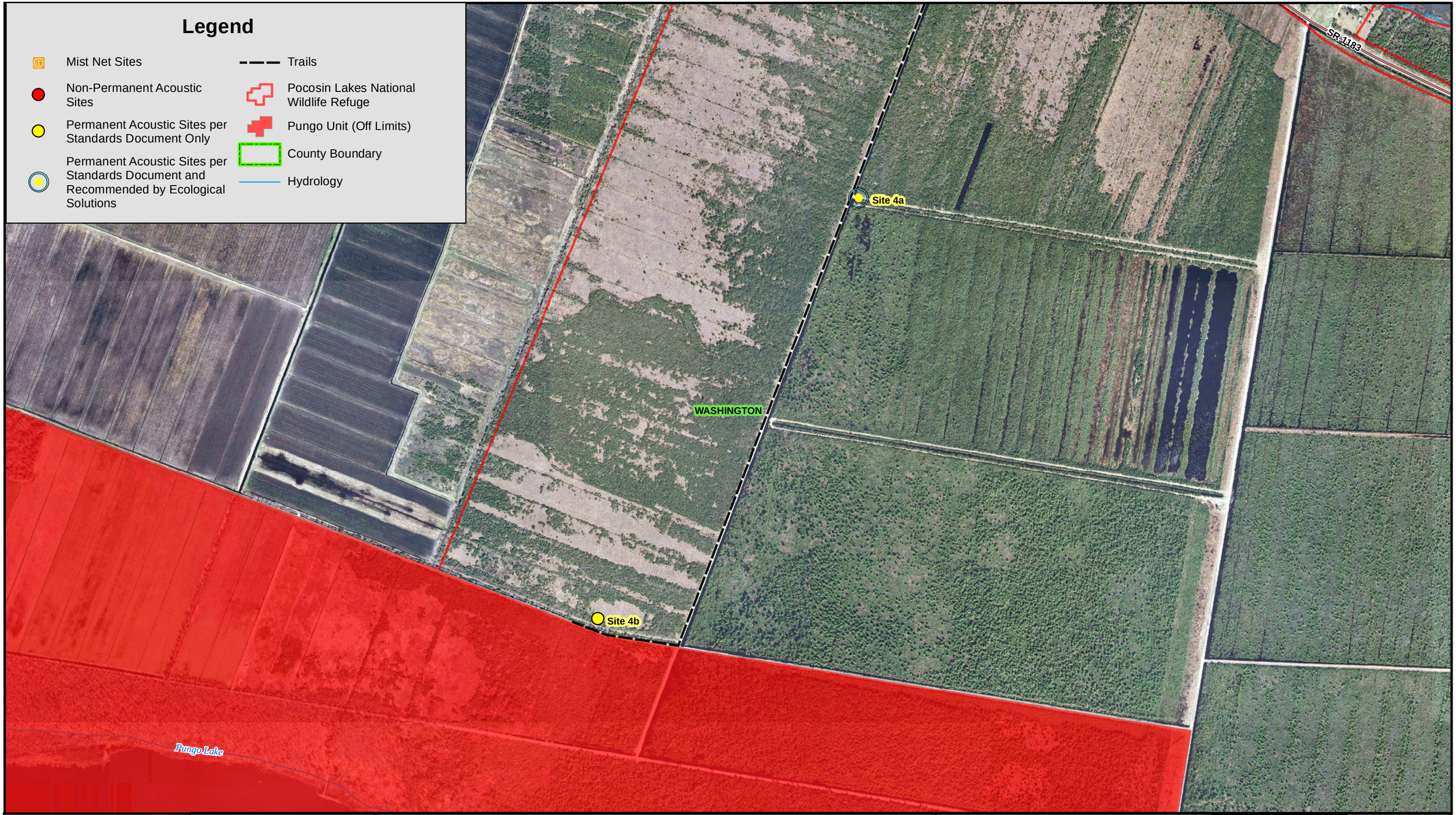
N W E S

0 500 1,000

1" = 1,000'

Legend

- Mist Net Sites
- Non-Permanent Acoustic Sites
- Permanent Acoustic Sites per Standards Document Only
- Permanent Acoustic Sites per Standards Document and Recommended by Ecological Solutions
- Trails
- Pocosin Lakes National Wildlife Refuge
- Pungo Unit (Off Limits)
- County Boundary
- Hydrology



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Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Pocosin Lakes NWR Project Area - Acoustic Sites 4a & 4b
NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Hyde, Tyrrell, & Washington Counties, North Carolina
Source: NCOneMap Managed Areas & 2012 Aerials, NCDOT GIS

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FIGURE 10f

N W E S

0 500 1,000
1" = 1,000'

Legend

NLEB Acoustic Identifications

- None
- Echoclass Only
- BCID Only
- Echoclass & BCID
- Echoclass & Qualitative
- Echoclass, BCID, & Qualitative

- Trails
- Pocosin Lakes National Wildlife Refuge
- Pungo Unit (Off Limits)
- County Boundary
- Hydrology

NLEB Captures

- No NLEB Captured
- NLEB Captured

NOTE: No call files recorded at Pocosin Lakes NWR were either autoclassifier or qualitatively determined to be NLEB. No NLEB were captured.

Prepared by:

ECOLOGICAL ENGINEERING
1151 SE Cary Parkway, Suite 101 • Cary NC 27518

Prepared for:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Pocosin Lakes NWR - NLEB Acoustic Identifications & Mist Net Captures

NCDOT Eastern NLEB Research Project
Survey Phase 1, Session 1, Fall 2015
Hyde, Tyrrell, & Washington Counties, North Carolina
Source: NCOneMap Managed Areas, NCDOT GIS

The information depicted on this figure is for informational purposes only and was not prepared for, nor is it suitable for, legal or engineering purposes.

FIGURE 10g

N W E S

0 7,500 15,000
1" = 15,000'

Appendix A

Acoustic Site Photographs

Photo 1 – Acoustic Site 1

Photo 2 – Acoustic Site 2

Photo 3 – Acoustic Site 3

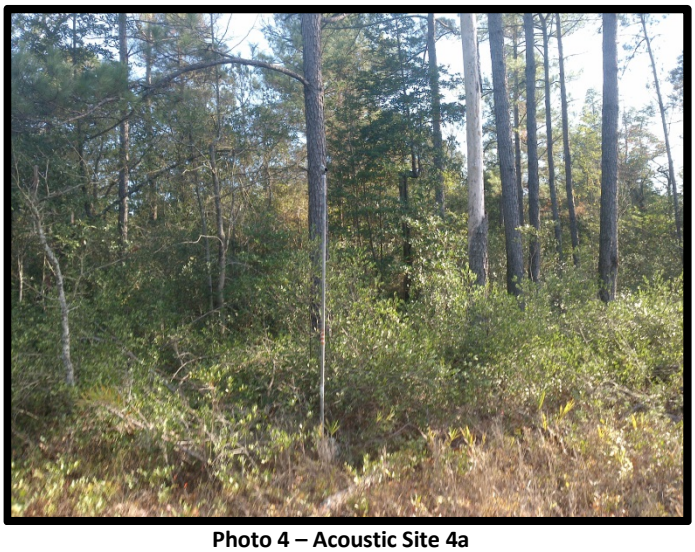


Photo 4 – Acoustic Site 4a

Photo 5 – Acoustic Site 4b

Photo 1 – Acoustic Site 1a

Photo 2 – Acoustic Site 1b

Photo 3 – Acoustic Site 2a

Photo 4 – Acoustic Site 2b

Photo 5 – Acoustic Site 3a

Photo 6 – Acoustic Site 3b

Photo 7 – Acoustic Site 4a

Photo 8 – Acoustic Site 4b

Photo 1 – Acoustic Site 1

Photo 2 – Acoustic Site 2

Photo 3 – Acoustic Site 3

Photo 4 – Acoustic Site 4a

Photo 5 – Acoustic Site 4b

Photo 1 – Acoustic Site 1

Photo 2 – Acoustic Site 2

Photo 3 – Acoustic Site 3a

Photo 4 – Acoustic Site3b

Photo 5 – Acoustic Site 4

Photo 1 – Acoustic Site 1

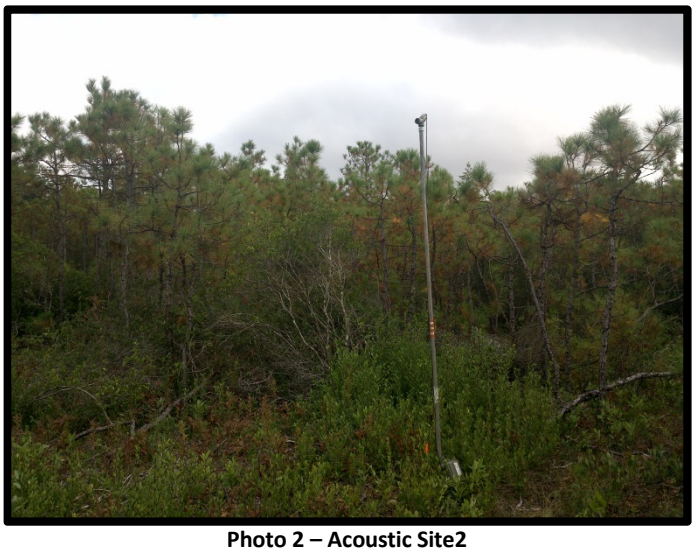


Photo 2 – Acoustic Site2

Photo 3 – Acoustic Site 3a

Photo 4 – Acoustic Site3b

Photo 5 – Acoustic Site 4

Photo 1 – Acoustic Site 1

Photo 2 – Acoustic Site2a

Photo 3 – Acoustic Site 2b

Photo 4 – Acoustic Site 3

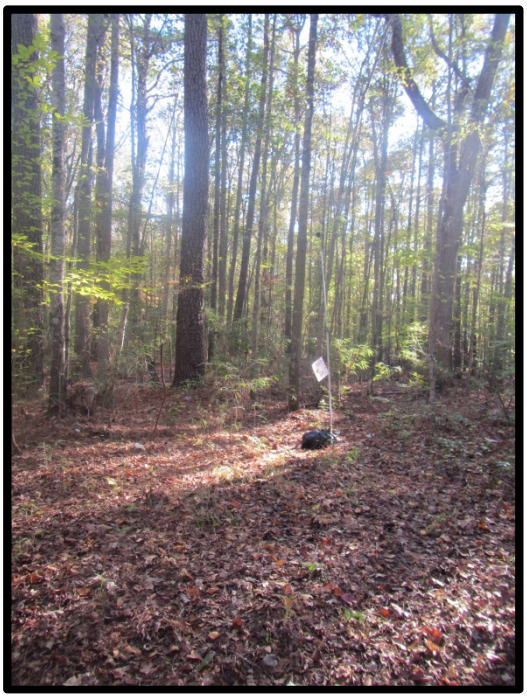


Photo 5 – Acoustic Site 4a

Photo 1 – Acoustic Site 1

Photo 2 – Acoustic Site2

Photo 3 – Acoustic Site 3

Photo 4 – Acoustic Site4

Photo 1 – Acoustic Site 1

Photo 2 – Acoustic Site2a

Photo 3 – Acoustic Site 2b

Photo 4 – Acoustic Site3a

Photo 5 – Acoustic Site 3b

Photo 6 – Acoustic Site4

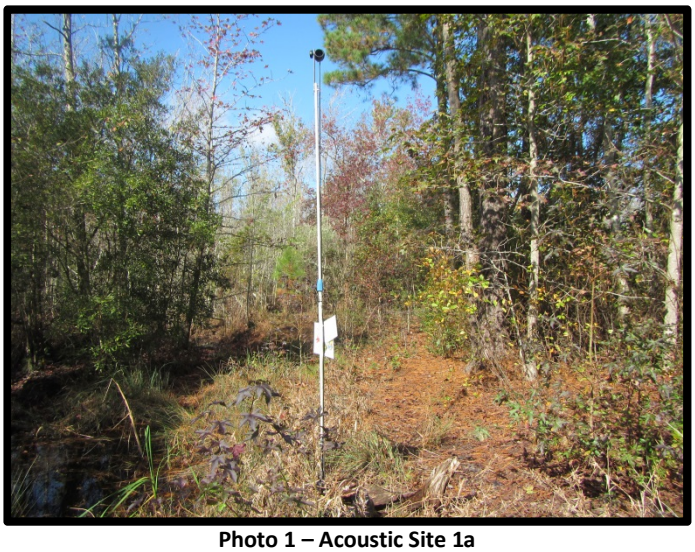


Photo 1 – Acoustic Site 1a

Photo 2 – Acoustic Site1b

Photo 3 – Acoustic Site 2a

Photo 4 – Acoustic Site2b

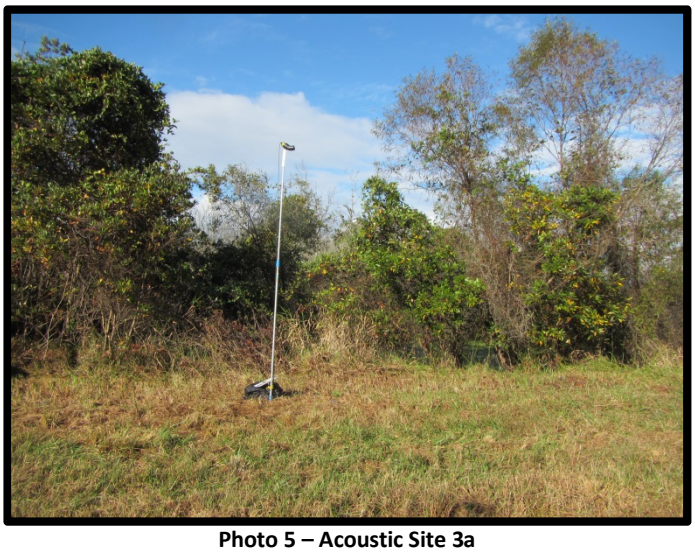


Photo 5 – Acoustic Site 3a

Photo 6 – Acoustic Site3b

Photo 7 – Acoustic Site 4a

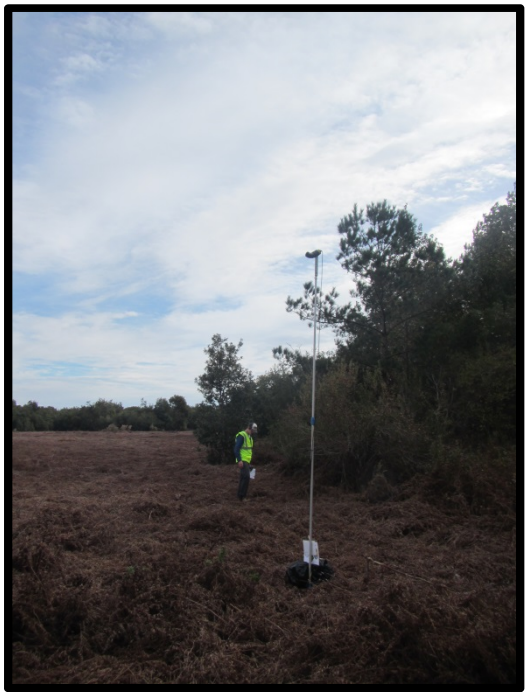


Photo 8 – Acoustic Site4b

Appendix B

Qualitative Acoustic Analysis Tables

Bladen Lakes State Forest

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By James Storm	Rationale for Qualitative ID
Site 1	Night 1	N/A	11/11/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	PB121815.11#	11/12/2015	MYSE	NO ID	NO ID	Pulse lengths are too short to identifiy. Slopes appear to be too shallow to be MYSE. Similar calls are present within files 5 minutes before and after this file. None contain MYSE calls.
		PB121826.41#	11/12/2015	MYSE	NO ID	NO ID	
		PB121839.18#	11/12/2015	UNK and MYSE	LANO	LANO and NO ID	Call file contains pulses from LANO and poor quality pulses of a higher frequency. Slopes of high frequency pulses too shallow to be MYSE. Similar calls are present within files 5 minutes before and after this file. None contain MYSE calls.
		PB121841.14#	11/12/2015	MYSE	NO ID	NO ID	Pulse lengths are too short to identifiy. Slopes appear to be too shallow to be MYSE. Similar calls are present within files 5 minutes before and after this file.
		PB121843.59#	11/12/2015	MYSE	NO ID	NO ID	
		PB121844.56#	11/12/2015	UNK and MYSE	LANO	LANO and NO ID	Call file contains pulses from LANO and poor quality pulses of a higher frequency. Quality of high frequency pulses are too poor to ID. Similar calls are present within files 5 minutes before and after this file.
		PB121848.24#	11/12/2015	MYSE	NO ID	NO ID	Quality too poor to ID. Quality of high frequency pulses within 5 minutes of this file are too poor to ID
		PB121848.37#	11/12/2015	MYSE	NO ID	NO ID	Pulse lengths are too short to identifiy. Slopes appear to be too shallow to be MYSE. Quality of high frequency pulses within 5 minutes of this file are too poor to ID
		PB121852.40#	11/12/2015	MYSE	NO ID	NO ID	
		PB121853.07#	11/12/2015	MYSE	NO ID	NO ID	
	Night 3	N/A	11/16/2015	NO MYSE LABELED THIS NIGHT			
Site 2	Night 1	N/A	11/11/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/12/2015	NO MYSE LABELED THIS NIGHT			
	Night 3	N/A	11/16/2015	NO MYSE LABELED THIS NIGHT			
Site 3	Night 1	N/A	11/11/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	PB121809.19#	11/12/2015	UNK and MYSE	EPFU	EPFU	High clutter search-phase call of EPFU. Similar calls are present within files 5 minutes before and after this file. None contain MYSE calls.
	Night 3	N/A	11/16/2015	NO MYSE LABELED THIS NIGHT			
Site 4a	Night 1	N/A	11/11/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/12/2015	NO MYSE LABELED THIS NIGHT			
Site 4b	Night 3	N/A	11/16/2015	NO MYSE LABELED THIS NIGHT			

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By Kim Romano	Qualitative Species ID - By Ryan Malloy	Rationale for Qualitative ID - Romano	Rationale for Qualitative ID - Malloy
Site 1a	Night 1	PB251738.30#	11/25/2015	MYSE	NO ID	MYAU	MYAU	Some files within 5 min of these files shared MYAU characteristics. These files have right slope (< 200) for MYAU, not MYSE (> 200)	Many sigmoidal pulses in call file with slope value < 200 OPS; Similar calls within 5 min
		PB251748.17#	11/25/2015	MYSE	NO ID	MYAU	MYAU		
		PB251754.21#	11/25/2015	MYSE	NO ID	MYAU	MYAU		
		PB251755.45#	11/25/2015	MYSE	NO ID	MYAU	MYAU		
		PB251755.56#	11/25/2015	MYSE	NO ID	MYAU	MYAU		
		PB251759.20#	11/25/2015	MYSE	NO ID	MYAU	MYAU		
		PB251742.15#	11/25/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; Slope values < 200 OPS; short pulse length;Fc ~ 42 kHz
		PB251755.21#	11/25/2015	MYSE	NO ID	NO ID	NO ID		
		PB251759.59#	11/25/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; Too few to identify
	Night 2	PB261724.18#	11/26/2015	MYSE	NO ID	MYAU	MYAU	Some files within 5 min of these files shared MYAU characteristics. These files have right slope (< 200) for MYAU, not MYSE (> 200)	Many sigmoidal pulses in call file with slope value < 200 OPS; Similar calls within 5 min
		PB261739.13#	11/26/2015	MYSE	NO ID	MYAU	MYAU		
		PB261742.44#	11/26/2015	MYSE	NO ID	MYAU	MYAU		
Site 1b	Night 3	PB271725.08#	11/27/2015	LABO	MYSE	MYAU	MYAU	Some files within 5 min of these files shared MYAU characteristics. These files have right slope (< 200) for MYAU, not MYSE (> 200)	Many sigmoidal pulses in call file with slope value < 200 OPS; Similar calls within 5 min
		PB271732.42#	11/27/2015	UNKN	MYSE	MYAU	MYAU		
		PB271733.36#	11/27/2015	LABO	MYSE	MYAU	MYAU		
		PB271739.37#	11/27/2015	MYSO	MYSE	MYAU	MYAU		
		PB271858.46#	11/27/2015	MYSO	MYSE	MYAU	MYAU		
		PB271900.21#	11/27/2015	MYSE	NO ID	MYAU	MYAU		
		PB271958.12#	11/27/2015	MYSE	NO ID	MYAU	MYAU	Some files within 5 min of these files shared MYAU characteristics. These files have right slope (< 200) for MYAU, not MYSE (> 200)	Many sigmoidal pulses in call file with slope value < 200 OPS; Similar calls within 5 min
		PB271958.21#	11/27/2015	MYSE	NO ID	MYAU	MYAU		
		PB272002.21#	11/27/2015	MYSE	NO ID	MYAU	MYAU		
		PB272002.29#	11/27/2015	MYSE	NO ID	MYAU	MYAU		
		PB272003.14#	11/27/2015	MYSE	NO ID	MYAU	MYAU		

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By Kim Romano	Qualitative Species ID - By Ryan Malloy	Rationale for Qualitative ID - Romano	Rationale for Qualitative ID - Malloy
Site 1b (cont'd.)	Night 3 (cont'd.)	PB272003.22#	11/27/2015	LABO	MYSE	MYAU	MYAU	Some files within 5 min of these files shared MYAU characteristics. These files have right slope (< 200) for MYAU, not MYSE (> 200)	Many sigmoidal pulses in call file with slope value < 200 OPS; Similar calls within 5 min
		PB272003.49#	11/27/2015	LABO	MYSE	MYAU	MYAU		
		PB272111.24#	11/27/2015	MYSE	NO ID	MYAU	MYAU		
		PB272112.39#	11/27/2015	LABO	MYSE	MYSE	MYSE	These files have no change at the knee and are really straight which is more characteristic of MYSE	Many steep pulses > 200 OPS; Fc > 40 kHz; Consistent parameter values, shape, and structure to calls produced by MYSE
		PB272112.57#	11/27/2015	MYSE	MYSE	MYAU	MYAU	Some files within 5 min of these files shared MYAU characteristics. These files have right slope (< 200) for MYAU, not MYSE (> 200)	Many sigmoidal pulses in call file with slope value < 200 OPS; Similar calls within 5 min
		PB272114.34#	11/27/2015	MYSE	NO ID	MYAU	MYAU		
		PB272114.46#	11/27/2015	MYSE	MYSE	MYAU	MYAU		
		PB272115.09#	11/27/2015	LABO	MYSE	MYAU	MYAU		
		PB272116.16#	11/27/2015	UNKN	MYSE	MYAU	MYAU		
		PB272119.55#	11/27/2015	UNKN	MYSE	MYAU	MYAU		
		PB272151.23#	11/27/2015	LABO	MYSE	MYAU	MYAU		
		PB272233.20#	11/27/2015	MYSE	NO ID	MYAU	MYAU		
		PB272003.17#	11/27/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short pulse length;Fc ~ 40 kHz; Too few quality pulses to identify
		PB272113.01#	11/27/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; Fc ~ 40 kHz; Too few quality pulses to identify
		PB272318.28#	11/27/2015	MYSE	NO ID	NO ID	NO ID		
		PB271754.24#	11/27/2015	MYSE	MYSE	MYSE	MYSE	This file has really steep slopes (> 200) and no change at the knee	Many steep pulses > 200 OPS; Fc ~ 40 kHz; Consistent parameter values, shape, and structure to calls produced by MYSE
		PB271912.52#	11/27/2015	LABO	MYSE	MYSE	MYSE	These files have no change at the knee and are really straight which is more characteristic of MYSE	Many steep pulses > 200 OPS; Fc ~ 45 kHz; Consistent parameter values, shape, and structure to calls produced by MYSE
		PB271959.56#	11/27/2015	MYSE	MYSE	MYSE	MYSE		
		PB272019.25#	11/27/2015	MYSE	MYSE	MYSE	MYSE		
Site 2a	Night 1	N/A	11/25/2015	NO MYSE LABELED THIS NIGHT					
	Night 2	PB261845.28#	11/26/2015	MYSE	NO ID	MYAU	MYAU	call had < 200 slope and was sigmoidal which is more characteristic of MYAU	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB261913.17#	11/26/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short pulse length;Fc ~ 40 kHz; Too few quality pulses to identify

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By Kim Romano	Qualitative Species ID - By Ryan Malloy	Rationale for Qualitative ID - Romano	Rationale for Qualitative ID - Malloy
Site 2b	Night 3	PB271737.37#	11/27/2015	MYSE	MYSO	MYAU	MYAU	Some files within 5 min of these files shared MYAU characteristics. These files have right slope (< 200) for MYAU, not MYSE (> 200)	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB271904.00#	11/27/2015	MYSE	NO ID	MYAU	MYAU		
		PB272245.14#	11/27/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; Fc ~ 43 kHz; Too few quality pulses to identify
Site 3a	Night 1	N/A	11/25/2015	NO MYSE LABELED THIS NIGHT					
	Night 2	PB261720.49#	11/26/2015	MYSE	NO ID	MYAU	MYAU	Some files within 5 min of these files shared MYAU characteristics. These files have right slope (< 200) for MYAU, not MYSE (> 200)	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB261913.30#	11/26/2015	MYSE	NO ID	MYAU	MYAU		
		PB262049.04#	11/26/2015	MYSE	MYSE	MYAU	MYAU		
		PB262115.13#	11/26/2015	MYSE	NO ID	MYAU	MYAU		
		PB262122.53#	11/26/2015	MYSE	NO ID	MYAU	MYAU		
		PB262139.00#	11/26/2015	MYSE	NO ID	MYAU	MYAU		
		PB262143.58#	11/26/2015	MYSE	NO ID	MYAU	MYAU		
		PB270223.21#	11/26/2015	MYSE	NO ID	MYAU	MYAU	Some files within 5 min of these files shared MYAU characteristics. These files have right slope (< 200) for MYAU, not MYSE (> 200)	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB270226.22#	11/26/2015	MYSE	NO ID	MYAU	MYAU		
		PB261918.59#	11/26/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; Fc ~ 43 kHz; Too few quality pulses to identify
		PB262047.17#	11/26/2015	MYSE	NO ID	NO ID	NO ID		
		PB261932.44#	11/26/2015	MYSE	NO ID	NO ID	NO ID		
		PB262047.36#	11/26/2015	MYSE	NO ID	NO ID	NO ID		
		PB262054.11#	11/26/2015	MYSE	NO ID	NO ID	NO ID		
		PB262023.31#	11/26/2015	MYSE	NO ID	NO ID	NO ID		
		PB261738.53#	11/26/2015	MYSE	NO ID	PESU	PESU	Calls 5 min before & after have j shaped curve (PESU charc) & this file has it at the beginning of call	Fc ~ 45 kHz; Strong heel/toe on most pulses in call file, which is consistent with PESU and not consistent with MYSE
Site 3b	Night 3	PB271735.35#	11/27/2015	MYSE	NO ID	MYAU	MYAU	Some files within 5 min of these files shared MYAU characteristics. These files have right slope (< 200) for MYAU, not MYSE (> 200)	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB271852.54#	11/27/2015	MYSE	NO ID	MYAU	MYAU		

Chowan Swamp Game Land

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By Kim Romano	Qualitative Species ID - By Ryan Malloy	Rationale for Qualitative ID - Romano	Rationale for Qualitative ID - Malloy
Site 4a	Night 1	PB251817.23#	11/25/2015	MYSE	NO ID	MYAU	MYAU	This file has < 200 slope and is sigmoidal which is more characteristic of MYAU	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB251729.56#	11/25/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Some poor quality pulses; Fc ~ 45 kHz; Too few quality pulses to identify
	Night 2	PB261748.54#	11/26/2015	MYSE	NO ID	MYAU	MYAU	These files has < 200 slope and is sigmoidal which is more characteristic of MYAU	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB261842.44#	11/26/2015	MYSE	NO ID	MYAU	MYAU		
		PB262142.29#	11/26/2015	MYSE	NO ID	MYAU	MYAU		
		PB262207.04#	11/26/2015	MYSE	NO ID	MYAU	MYAU		
Site 4b	Night 3	N/A	11/27/2015	NO MYSE LABELED THIS NIGHT					

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By James Storm	Rationale for Qualitative ID
Site 1	Night 1	N/A	11/19/2015	NO MYSE LABELED THIS NIGHT			
	Night 1 Rainout	PB181741.47#	11/18/2015	LABO	MYSE	LABO	File appears to contain search, approach, and buzz calls of LABO. Pulses are steep but close together, indicating "high clutter" call of LABO which are often misidentified as Myotis. Files within 5 minutes do not contain MYSE calls
	Night 2	N/A	11/20/2015	NO MYSE LABELED THIS NIGHT			
	Night 3	N/A	11/21/2015	NO MYSE LABELED THIS NIGHT			
Site 2	Night 1	N/A	11/19/2015	NO MYSE LABELED THIS NIGHT			
	Night 1 Rainout	N/A	11/18/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/20/2015	NO MYSE LABELED THIS NIGHT			
	Night 3	N/A	11/21/2015	NO MYSE LABELED THIS NIGHT			
Site 3	Night 1	N/A	11/19/2015	NO MYSE LABELED THIS NIGHT			
	Night 1 Rainout	N/A	11/18/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/20/2015	NO MYSE LABELED THIS NIGHT			
	Night 3	N/A	11/21/2015	NO MYSE LABELED THIS NIGHT			
Site 4a	Night 1	N/A	11/19/2015	NO MYSE LABELED THIS NIGHT			
	Night 1 Rainout	N/A	11/18/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/20/2015	NO MYSE LABELED THIS NIGHT			
Site 4b	Night 3	N/A	11/21/2015	NO MYSE LABELED THIS NIGHT			

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By Kim Romano	Qualitative Species ID - By Ryan Malloy	Rationale for Qualitative ID - Romano	Rationale for Qualitative ID - Malloy
Site 1	Night 1	PB161757.09#	11/16/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length; 40k bat; MYAU, LABO, and PESU ID within 5 min
	Night 2	PB171739.49#	11/17/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length; 40k bat; Slope values less than those typically produced by MYSE; MYLU, LABO, and PESU ID within 5 min
		PB171917.31#	11/17/2015	MYSE	MYLU	MYAU	MYAU	call had < 200 slope and was sigmoidal which is more characteristic of MYAU	Poor quality pulses; short length; 40k bat; Slope values less than those typically produced by MYSE; MYLU, NYHU, and PESU ID within 5 min
		PB172317.01#	11/17/2015	MYSE	MYSO	LABO	LABO	File has J shape which is characteristic of LABO and the call is highly variable throughout the sequence	Slope less than typical MYSE/MYSO; Tail prominent on pulses, not typical of Myotis calls; LABO, NYHU, and PESU ID within 5 min
	Night 3	PB282022.10#	11/28/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length; Fc ~ 45k; No other calls within 5 min
Site 2	Night 1	N/A	11/16/2015	NO MYSE LABELED THIS NIGHT					
	Night 2	N/A	11/17/2015	NO MYSE LABELED THIS NIGHT					
	Night 3	PB281810.11#	11/28/2015	MYSE	MYAU	MYSE	MYSE	call had ~ 200 slope and was consistent and steep which is more characteristic of MYSE	Many steep pulses ~ 200 OPS; long pulse length;Fc ~ 40k; Consistent parameter values, shape, and structure to calls produced by MYSE
		PB282108.43#	11/28/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length;Fc ~ 42k; LACI calls within 5 min
Site 3a	Night 1	N/A	11/17/2015	NO MYSE LABELED THIS NIGHT					
	Night 2	PB281740.32#	11/28/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length;Fc ~ 45k
		PB281800.03#	11/28/2015	MYSE	NO ID	NO ID	NO ID	noise file	noise file
		PB281832.14#	11/28/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length;Fc ~ 40k
		PB281841.51#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB281846.40#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB281915.07#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB282029.09#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290006.24#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290057.04#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290116.46#	11/28/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length;Fc ~ 40k
		PB290220.53#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290226.31#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290317.08#	11/28/2015	MYSE	NO ID	NO ID	NO ID		

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By Kim Romano	Qualitative Species ID - By Ryan Malloy	Rationale for Qualitative ID - Romano	Rationale for Qualitative ID - Malloy
Site 3a (cont'd.)	Night 2 (cont'd.)	PB290349.58#	11/28/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length;Fc ~ 40k
		PB290353.09#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290400.53#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290403.14#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290435.14#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290446.25#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290449.01#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290520.54#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290524.16#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290539.32#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290551.58#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
		PB290602.26#	11/28/2015	MYSE	NO ID	NO ID	NO ID		
Site 3b	Night 3	PC121731.20#	12/12/2015	UNKN	MYSE	MYSE	MYSE	These files have a steep slope and is in the 40 kHz range, typical MYSE characteristic	Many steep pulses ~ 200 OPS; long pulse length;Fc ~ 40k; Consistent parameter values, shape, and structure to calls produced by MYSE
		PC122236.53#	12/12/2015	MYSE	MYSE	MYSE	MYSE		
		PC121739.17#	12/12/2015	MYSE	MYAU	MYAU	MYAU	calls had < 200 slope and was sigmoidal which is more characteristic of MYAU	Many sigmoidal pulses in call file with slope value < 200 OPS
		PC122040.29#	12/12/2015	MYSE	MYSO	MYAU	MYAU		
		PC122040.39#	12/12/2015	MYSE	MYSO	MYAU	MYAU		
		PC122040.50#	12/12/2015	MYSE	MYSO	MYAU	MYAU		
		PC122041.00#	12/12/2015	MYSE	MYSO	MYAU	MYAU		
		PC122041.11#	12/12/2015	MYSE	MYSO	MYAU	MYAU		
		PC130443.24#	12/12/2015	MYSE	NO ID	MYAU	MYAU		
		PC122159.52#	12/12/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length;Fc ~ 40k
		PC130107.49#	12/12/2015	MYSE	NO ID	NO ID	NO ID		

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By Kim Romano	Qualitative Species ID - By Ryan Malloy	Rationale for Qualitative ID - Romano	Rationale for Qualitative ID - Malloy
Site 3b (cont'd.)	Night 3 (cont'd.)	PC130108.10#	12/12/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length;Fc ~ 40k
		PC130116.01#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
		PC130116.17#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
		PC130119.53#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
		PC130120.53#	12/12/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length;Fc ~ 40k
		PC130135.52#	12/12/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; Fc ~ 45k
		PC130153.27#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
		PC130156.50#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
		PC130206.40#	12/12/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; Fc ~ 40k
		PC130212.03#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
		PC130411.50#	12/12/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; Fc ~ 45k
		PC130412.38#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
		PC130413.40#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
		PC130417.45#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
		PC130421.31#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
		PC130442.38#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
		PC130443.50#	12/12/2015	MYSE	NO ID	NO ID	NO ID		
Site 4	Night 1	N/A	11/16/2015	NO MYSE LABELED THIS NIGHT					
	Night 2	N/A	11/17/2015	NO MYSE LABELED THIS NIGHT					
	Night 3	N/A	11/28/2015	NO MYSE LABELED THIS NIGHT					

Murrayville Mitigation Site

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By James Storm	Rationale for Qualitative ID
Site 1	Night 1	N/A	11/5/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/6/2015	NO MYSE LABELED THIS NIGHT			
	Night 3 Rainout	N/A	11/7/2015	NO MYSE LABELED THIS NIGHT			
	Night 3	N/A	11/10/2015	NO MYSE LABELED THIS NIGHT			
Site 2	Night 1	N/A	11/5/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/6/2015	NO MYSE LABELED THIS NIGHT			
	Night 3 Rainout	N/A	11/7/2015	NO MYSE LABELED THIS NIGHT			
	Night 3	N/A	11/10/2015	NO MYSE LABELED THIS NIGHT			
Site 3a	Night 1	N/A	11/10/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/11/2015	NO MYSE LABELED THIS NIGHT			
Site 3b	Night 3	N/A	11/12/2015	NO MYSE LABELED THIS NIGHT			
Site 4	Night 1	N/A	11/5/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/6/2015	NO MYSE LABELED THIS NIGHT			
	Night 3 Rainout	PB072309.44#	11/7/2015	MYSE	LABO	LABO	File appears to contain search, approach, and buzz calls of LABO. Pulses are steep but close together, indicating "high clutter" call of LABO which are often misidentified as Myotis. There were no calls recorded within 5 minutes of this file.
	Night 3	N/A	11/10/2015	NO MYSE LABELED THIS NIGHT			

North River Game Land

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By Kim Romano	Qualitative Species ID - By Ryan Malloy	Rationale for Qualitative ID-Romano	Rationale for Qualitative ID - Malloy
Site 1	Night 1	PB171815.21#	11/17/2015	MYSE	MYSO	MYAU	MYAU	looked at calls 5 min before and after and most were labeled PESU or MYSO. Some files within the 5 min of these files shared MYAU characteristics. These files have the right slope (< 200) for MYAU, not MYSE (which is > 200)	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB171848.03#	11/17/2015	MYSE	MYSO	MYAU	MYAU		
		PB171900.54#	11/17/2015	MYSE	NO ID	MYAU	MYAU		
		PB171947.46#	11/17/2015	MYSE	NO ID	MYAU	MYAU		
		PB180329.33#	11/17/2015	MYSE	NO ID	MYAU	MYAU		
		PB180419.57#	11/17/2015	MYSE	MYSO	MYAU	MYAU		
		PB180523.53#	11/17/2015	MYSE	NO ID	MYAU	MYAU	calls 5 min before are NYHU, nothing after, shares MYAU slope characteristics	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB171844.25#	11/17/2015	MYSE	NO ID	MYSE	MYSE	This call has many steep pulses, but no real definitive slope. Starts to lose shape at the end of the call file	Many steep pulses ~ 200 OPS; long pulse length;Fc > 44 kHz; Consistent parameter values, shape, & structure to MYSE calls
	Night 2	PB181819.26#	11/18/2015	LABO	MYSE	MYSE	MYSE	looked at calls 5 min before and after and a few high F were labeled. These files have really steep slopes (> 200) and no change at the knee	Many steep pulses ~ 200 OPS; long pulse length;Fc > 40 kHz; Consistent parameter values, shape, and structure to calls produced by MYSE
		PB181821.50#	11/18/2015	MYSE	NYHU	MYSE	MYSE		
		PB181842.46#	11/18/2015	MYSE	MYSE	MYSE	MYSE		
		PB182310.20#	11/18/2015	MYSE	MYSE	MYSE	MYSE		
		PB182312.09#	11/18/2015	LABO	MYSE	MYSE	MYSE	looked at calls 5 min before and after and a few high F were labeled. These files have really steep slopes (> 200) and no change at the knee	Many steep pulses ~ 200 OPS; long pulse length;Fc > 40 kHz; Consistent parameter values, shape, and structure to calls produced by MYSE
		PB190452.22#	11/18/2015	MYSE	MYSE	MYSE	MYSE		
		PB181911.55#	11/18/2015	LABO	MYSE	MYSE	MYSE		
		PB190406.39#	11/18/2015	LABO	MYSE	MYAU	MYAU	Some files within 5 min of these files shared MYAU characteristics. These files have right slope (< 200) for MYAU, not MYSE (> 200)	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB181959.30#	11/18/2015	MYSE	MYSO	MYAU	MYAU		
		PB182000.31#	11/18/2015	MYSE	MYSO	MYAU	MYAU		
		PB182001.33#	11/18/2015	MYSE	NO ID	MYAU	MYAU		
		PB182001.41#	11/18/2015	MYSE	MYSO	MYAU	MYAU		
		PB182001.46#	11/18/2015	MYSE	NO ID	MYAU	MYAU		

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By Kim Romano	Qualitative Species ID - By Ryan Malloy	Rationale for Qualitative ID-Romano	Rationale for Qualitative ID - Malloy
Site 1 (cont'd.)	Night 2 (cont'd.)	PB182000.05#	11/18/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Poor quality pulses; short length; Fc ~ 45 kHz
		PB190514.44#	11/18/2015	MYSE	NO ID	NO ID	NO ID		
		PB181821.54#	11/18/2015	MYSE	NO ID	NO ID	NO ID		
		PB181942.42#	11/18/2015	MYSE	NO ID	NO ID	NO ID		
		PB182307.24#	11/18/2015	MYSE	NO ID	NO ID	NO ID		
		PB190451.04#	11/18/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Most pulses poor quality; Fc ~ 40 kHz
		PB190534.37#	11/18/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Most pulses poor quality; short length; Fc ~ 45 kHz
	Night 3	N/A	11/20/2015	NO MYSE LABELED THIS NIGHT					
Site 2a	Night 1	PB161942.11#	11/16/2015	MYSE	NO ID	NO ID	NO ID	not long enough with poor quality pulses to determine species	Most pulses poor quality; short length;Fc ~ 45 kHz
		PB162012.51#	11/16/2015	MYSE	NO ID	MYAU	MYAU	call had < 200 slope and was sigmoidal which is more characteristic of MYAU	Many sigmoidal pulses in call file with slope value < 200 OPS
	Night 2	PB172226.48#	11/15/2015	MYSE	NO ID	MYAU	MYAU	call had < 200 slope and was sigmoidal which is more characteristic of MYAU, but overall poor quality pulses	Many sigmoidal pulses in call file, very short and poor with slope value < 200 OPS
		PB180042.52#	11/16/2015	MYSE	NO ID	MYAU	MYAU		
		PB180327.50#	11/17/2015	MYSE	NO ID	MYAU	MYAU		
Site 2b	Night 3	PB190506.28#	11/18/2015	MYSE	NO ID	MYAU	MYAU	call had < 200 slope and was sigmoidal which is more characteristic of MYAU	Many sigmoidal pulses in call file with slope value < 200 OPS
Site 3	Night 1	N/A	11/16/2015	NO MYSE LABELED THIS NIGHT					
	Night 2	N/A	11/17/2015	NO MYSE LABELED THIS NIGHT					
	Night 3	N/A	11/20/2015	NO MYSE LABELED THIS NIGHT					
Site 4	Night 1	PB161729.08#	11/16/2015	MYSE	MYSO	MYAU	MYAU	call had < 200 slope and was sigmoidal which is more characteristic of MYAU	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB161732.19#	11/16/2015	MYSE	MYSE	MYSE	MYSE	This file had a really steep slope (> 200) and no change at the knee	Many steep pulses > 200 OPS; long pulse length;Fc > 40 kHz; Consistent parameter values, shape, and structure to MYSE calls
	Night 2	PB171724.39#	11/17/2015	MYSE	NO ID	MYAU	MYAU	call had < 200 slope and was sigmoidal which is more characteristic of MYAU	Many sigmoidal pulses in call file with slope value < 200 OPS
		PB172051.48#	11/17/2015	MYSE	MYSE	MYSE	MYSE	This file had a really steep slope (> 200) and no change at the knee	Many steep pulses > 200 OPS; long pulse length;Fc > 43 kHz; Consistent parameter values, shape, and structure to MYSE calls
		PB172052.07#	11/17/2015	MYSE	NO ID	NO ID	NO ID	not a long enough and poor call quality to determine species	Most pulses poor quality; short length; Fc ~ 40 - 45 kHz
	Night 3	PC122052.56#	12/12/2015	MYSE	MYLU	MYSE	MYSE	This file has a steep slope and is in the 35 kHz range, typical MYSE characteristic	A few sigmoidal pulses in call file with slope value 200 OPS

North River Game Land

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 2, Winter 2016									
Site No.	**Night**	**File**	**Date**	**EchoClass © Species ID**	**BCID © Species ID**	**Qualitative Species ID - By Kim Romano**	**Qualitative Species ID - By Ryan Malloy**	**Rationale for Qualitative ID-Romano**	**Rationale for Qualitative ID - Malloy**
Site 4	1	N/A	2/29/2016	NO MYSE LABELED THIS NIGHT					

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By James Storm	Rationale for Qualitative ID
Site 1	Night 1	N/A	11/17/2015	NO MYSE LABELED THIS NIGHT			
	Night 2 Rainout	N/A	11/18/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/20/2015	NO MYSE LABELED THIS NIGHT			
	Night 3 Rainout	N/A	11/21/2015	NO MYSE LABELED THIS NIGHT			
	Night 3	N/A	11/22/2015	NO MYSE LABELED THIS NIGHT			
Site 2	Night 1	N/A	11/17/2015	NO MYSE LABELED THIS NIGHT			
	Night 2 Rainout	N/A	11/18/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/20/2015	NO MYSE LABELED THIS NIGHT			
	Night 3 Rainout	N/A	11/21/2015	NO MYSE LABELED THIS NIGHT			
	Night 3	N/A	11/22/2015	NO MYSE LABELED THIS NIGHT			
Site 3	Night 1	PB171750.24#	11/17/2015	MYSE	MYSO	UNK - LABO/PESU	Likely a search, approach, and feeding buzz of LABO or PESU. Files within 5 minutes of this file do not contain MYSE calls.
	Night 2 Rainout	N/A	11/18/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/20/2015	NO MYSE LABELED THIS NIGHT			
	Night 3 Rainout	N/A	11/21/2015	NO MYSE LABELED THIS NIGHT			
	Night 3	N/A	11/22/2015	NO MYSE LABELED THIS NIGHT			
Site 4	Night 1	N/A	11/17/2015	NO MYSE LABELED THIS NIGHT			
	Night 2 Rainout	N/A	11/18/2015	NO MYSE LABELED THIS NIGHT			
	Night 2	N/A	11/20/2015	NO MYSE LABELED THIS NIGHT			
	Night 3 Rainout	N/A	11/21/2015	NO MYSE LABELED THIS NIGHT			
	Night 3	N/A	11/22/2015	NO MYSE LABELED THIS NIGHT			

Palmetto Peartree Preserve

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By Kim Romano	Qualitative Species ID - By Ryan Malloy	Rationale for Qualitative ID - Romano	Rationale for Qualitative ID - Malloy
Site 1	Night 1	PB102143.41#	11/10/2015	MYSE	NO ID	PESU	PESU	Calls within 5 min labeled PESU. Slope characteristics of PESU more than MYSE. Freq. 45K vs. MYSE, which are around 35-40K.	Slope consistent with PESU; not steep enough for MYSE; feeding buzz at end of call file likely led to MYSE ID; PESU ID within 5 min
	Night 2	N/A	11/11/2015	NO MYSE LABELED THIS NIGHT					
	Night 3	N/A	11/12/2015	NO MYSE LABELED THIS NIGHT					
Site 2a	Night 1	N/A	11/10/2015	NO MYSE LABELED THIS NIGHT					
	Night 2	N/A	11/11/2015	NO MYSE LABELED THIS NIGHT					
Site 2b	Night 3	N/A	11/12/2015	NO MYSE LABELED THIS NIGHT					
Site 3a	Night 1	N/A	11/10/2015	NO MYSE LABELED THIS NIGHT					
	Night 2	N/A	11/11/2015	NO MYSE LABELED THIS NIGHT					
Site 3b	Night 3	N/A	11/12/2015	NO MYSE LABELED THIS NIGHT					
Site 4	Night 1	N/A	11/10/2015	NO MYSE LABELED THIS NIGHT					
	Night 2	N/A	11/11/2015	NO MYSE LABELED THIS NIGHT					
	Night 3	PB121827.59#	11/12/2015	MYSE	MYSE	PESU	PESU	Most calls 5 min before and after labeled PESU. It had PESU call characteristics at the beginning and end of call file	Slope consistent with PESU; not steep enough for MYSE; feeding buzz at end of call file likely led to MYSE ID; PESU ID within 5 min

Pocosin Lakes National Wildlife Refuge

Autoclassifier or Qualitatively Identified MYSE Call Files - Survey Phase 1, Session 1, Fall 2015

Site No.	Night	File	Date	EchoClass © Species ID	BCID © Species ID	Qualitative Species ID - By Kim Romano	Qualitative Species ID - By Ryan Malloy	Rationale for Qualitative ID - Romano	Rationale for Qualitative ID - Malloy
Site 1a	Night 1	N/A	11/5/2015	NO MYSE LABELED AT ANY SITES, ANY NIGHTS AT THIS LOCATION					
	Night 2	N/A	11/6/2015						
Site 1b	Night 3 (few calls)	N/A	11/8/2015 (few calls)						
	Night 4	N/A	11/10/2015						
Site 2a	Night 1	N/A	11/5/2015						
	Night 2	N/A	11/6/2015						
Site 2b	Night 3 (few calls)	N/A	11/8/2015 (few calls)						
	Night 4	N/A	12/11/2015						
Site 3a	Night 1	N/A	11/5/2015						
	Night 2	N/A	11/6/2015						
Site 3b	Night 3 (few calls)	N/A	11/8/2015 (few calls)						
	Night 4	N/A	12/11/2015						
Site 4a	Night 1	N/A	11/5/2015						
	Night 2	N/A	11/6/2015						
Site 4b	Night 3 (few calls)	N/A	11/8/2015 (few calls)						
	Night 4	N/A	11/10/2015						

Appendix C

Mist Net Site Photographs

Photo 1 – Mist Net Site 1, Net A

Photo 2 – Mist Net Site 1, Net B

Photo 3 – Mist Net Site 1, Net C

Photo 4 – Mist Net Site 1, Net D

Photo 5 – Mist Net Site 2, Net A (+)

Photo 6 – Mist Net Site 2, Net B

Photo 7 – Mist Net Site 2, Net C

Photo 8 – Mist Net Site 2, Net D

Photo 9 – Mist Net Site 2, Net E (+)

Photo 1 – Mist Net Site 1, Net A (+)

Photo 3 – Mist Net Site 1, Net C (+)

Photo 2 – Mist Net Site 1, Net B

Photo 4 – Mist Net Site 1, Net D

Photo 5 – Mist Net Site 2, Net A

Photo 6 – Mist Net Site 2, Net B

Photo 7 – Mist Net Site 2, Net C

Photo 8 – Mist Net Site 2, Net D

Photo 1 – Mist Net Site 1, Net A

Photo 2 – Mist Net Site 1, Net B

Photo 3 – Mist Net Site 1, Net C

Photo 4 – Mist Net Site 2, Net A

Photo 5 – Mist Net Site 2, Net B

Photo 6 – Mist Net Site 2, Net C

Photo 7 – Mist Net Site 2, Net D

Photo 8 – Mist Net Site 3, Net A

Photo 9 – Mist Net Site 3, Net B

Photo 10 – Mist Net Site 3, Net C

Photo 1 – Mist Net Site 1, Net A

Photo 2 – Mist Net Site 1, Net B

Photo 3 – Mist Net Site 1, Net C

Photo 4 – Mist Net Site 2, Net A

Photo 5 – Mist Net Site 2, Net B

Photo 6 – Mist Net Site 2, Net C

Photo 7 – Mist Net Site 2, Net D

Photo 8 – Mist Net Site 3, Net A

Photo 9 – Mist Net Site 3, Net B

Photo 10 – Mist Net Site 3, Net C

Appendix D

NLEB Roost Site Photographs

Great Dismal Swamp National Wildlife Refuge
Roost Photographs – December 2015

NLEB M541, Roost 1, Photo 1

NLEB M541, Roost 1, Photo 2

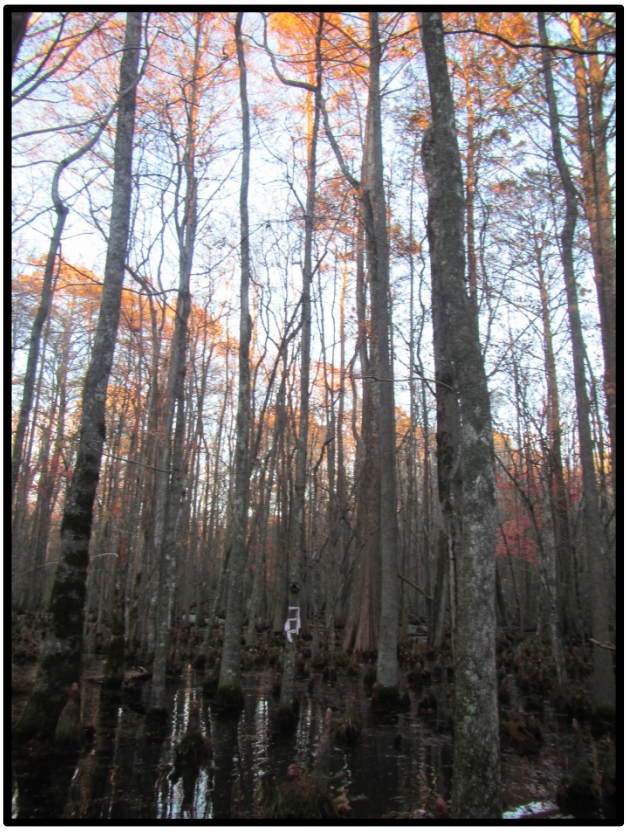
NLEB M541, Roost 2, Photo 1

NLEB M541, Roost 2, Photo 2

NLEB F603, Roost 1, Photo 1

NLEB F603, Roost 1, Photo 2

NLEB M259, Roost 1



NLEB M259, Roost 2

NLEB M259, Roost 3

NLEB M259, Roost 4

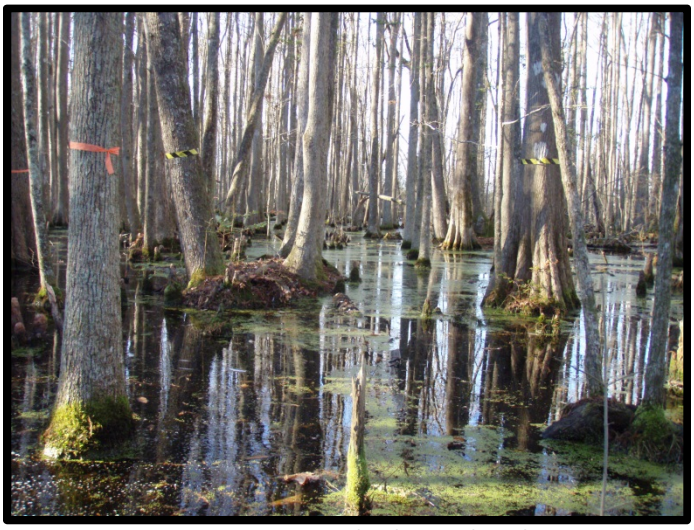
NLEB M259, Roost 5

NLEB M259, Roost 6

NLEB F662, Roost 1

NLEB F722, Roost 1

NLEB F722, Roost 2



NLEB F722, Roosts 3 (left) and 1 (right)

NLEB F722, Roost 5, Photo 1

NLEB F722, Roost 5, Photo 2

NLEB M781, Roost 1

NLEB M781, Roost 2

NLEB M781, Roost 3, Photo 1

NLEB M781, Roost 3, Photo 2

NLEB M842, Roost 1, Photo 1

NLEB M842, Roost 1, Photo 2

NLEB M842, Roost 2

NLEB M842, Roost 3, Photo 1

NLEB M842, Roost 3, Photo 2

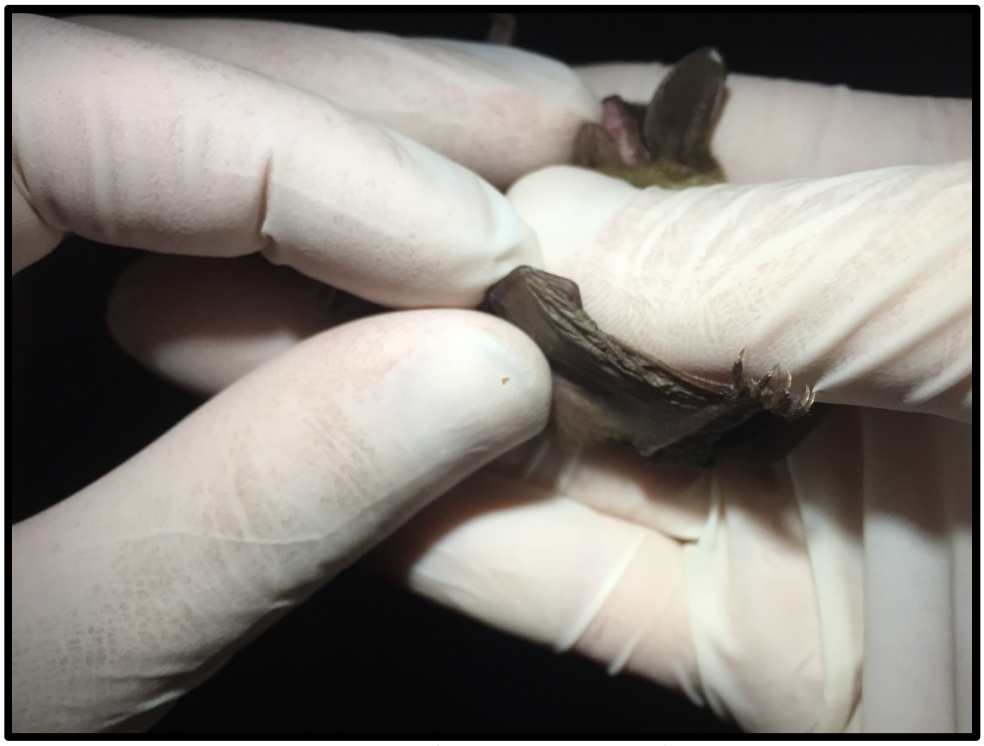
NLEB M842, Roost 4, Photo 1

NLEB M842, Roost 4, Photo 2

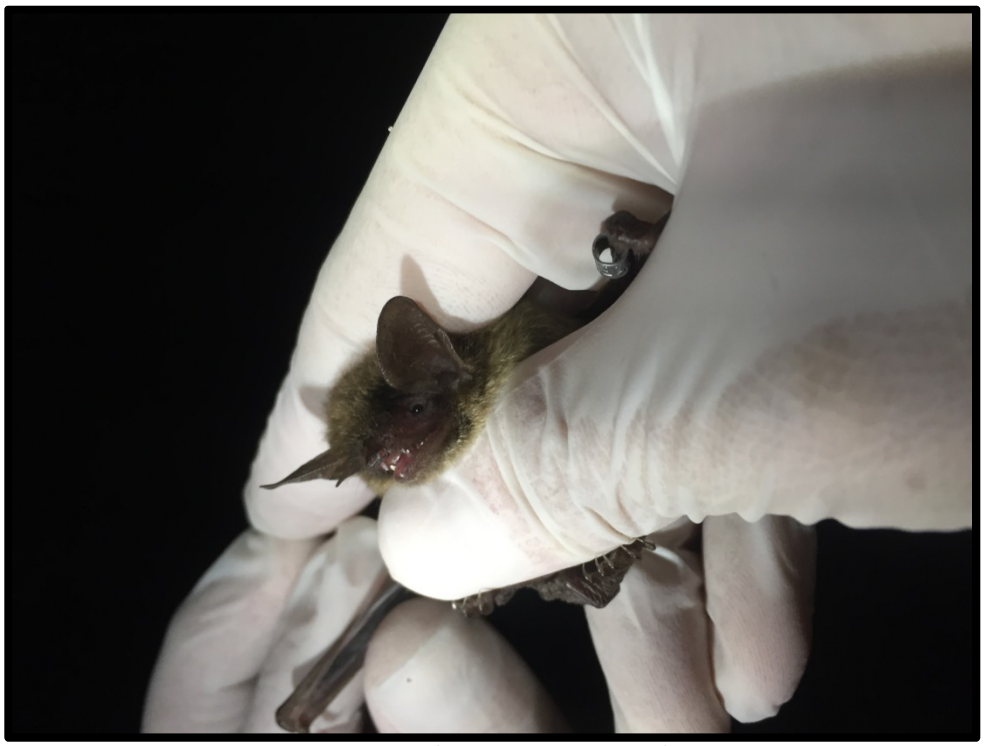
Appendix E

Representative Captured Bat Species Photographs

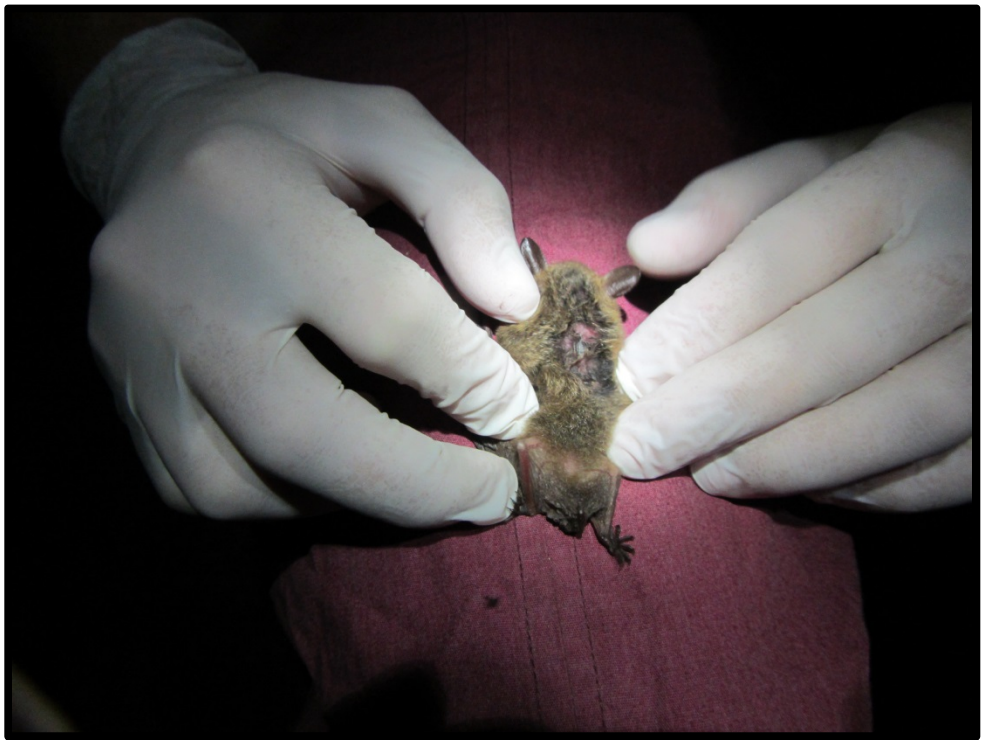
NOTE: The single big brown bat (*Eptesicus fuscus*) captured at Great Dismal Swamp NWR was not photographed.



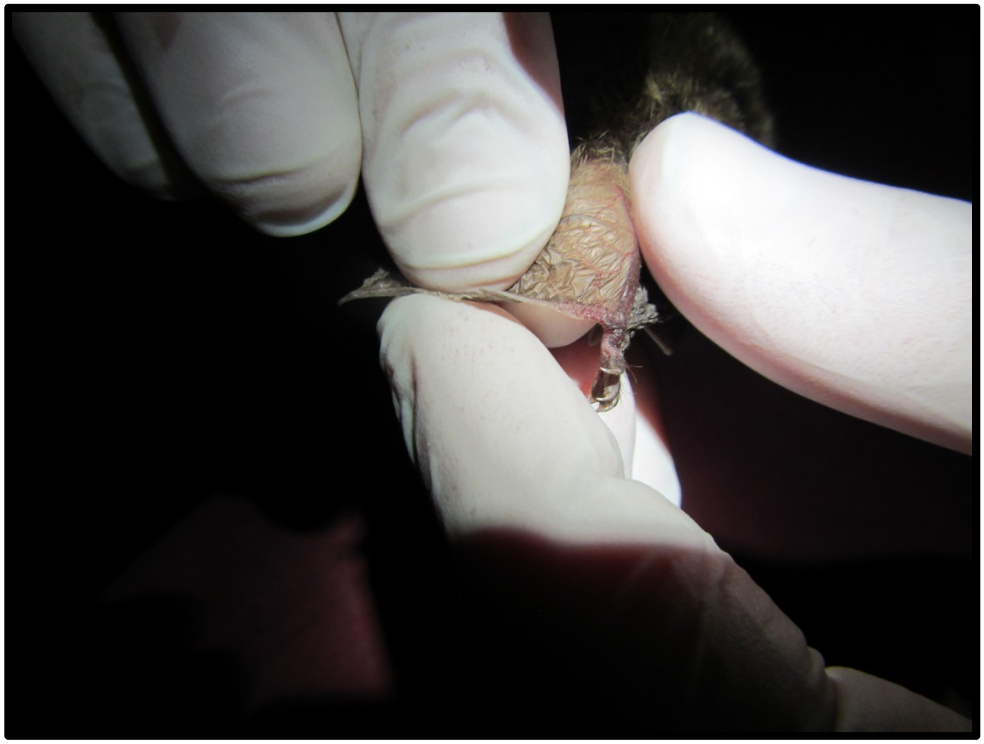
Site 2 – Northern long-eared bat (*Myotis septentrionalis*) Female 603, photo 1



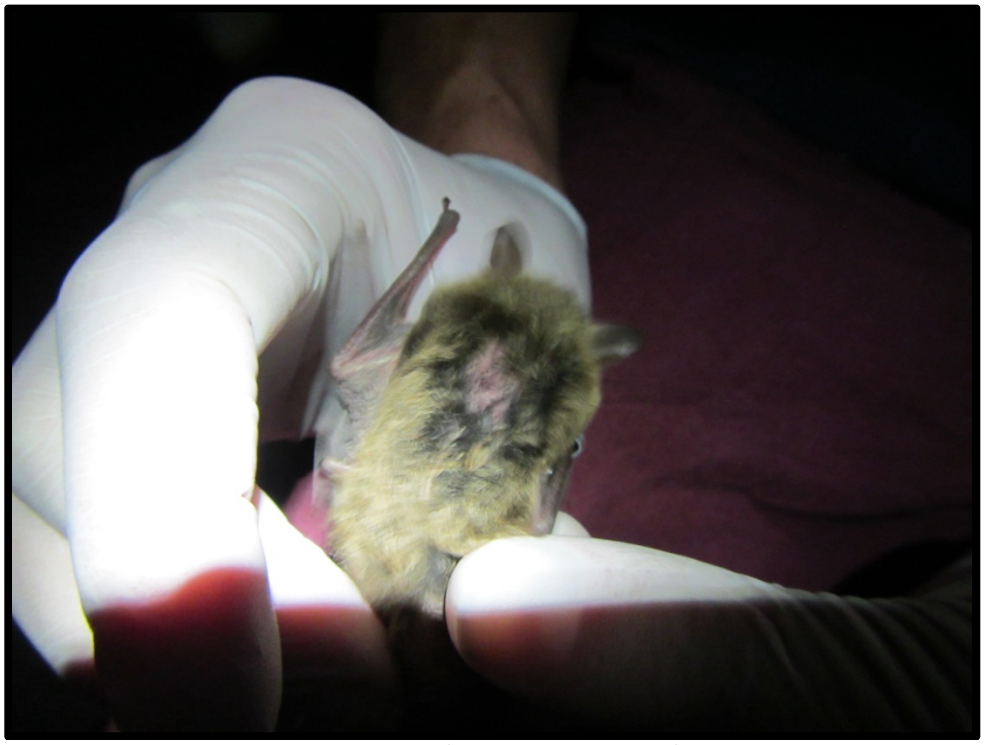
Site 2 – Northern long-eared bat (*Myotis septentrionalis*) Female 603, photo 2



Site 2 – Northern long-eared bat (*Myotis septentrionalis*) Female 603, photo 3

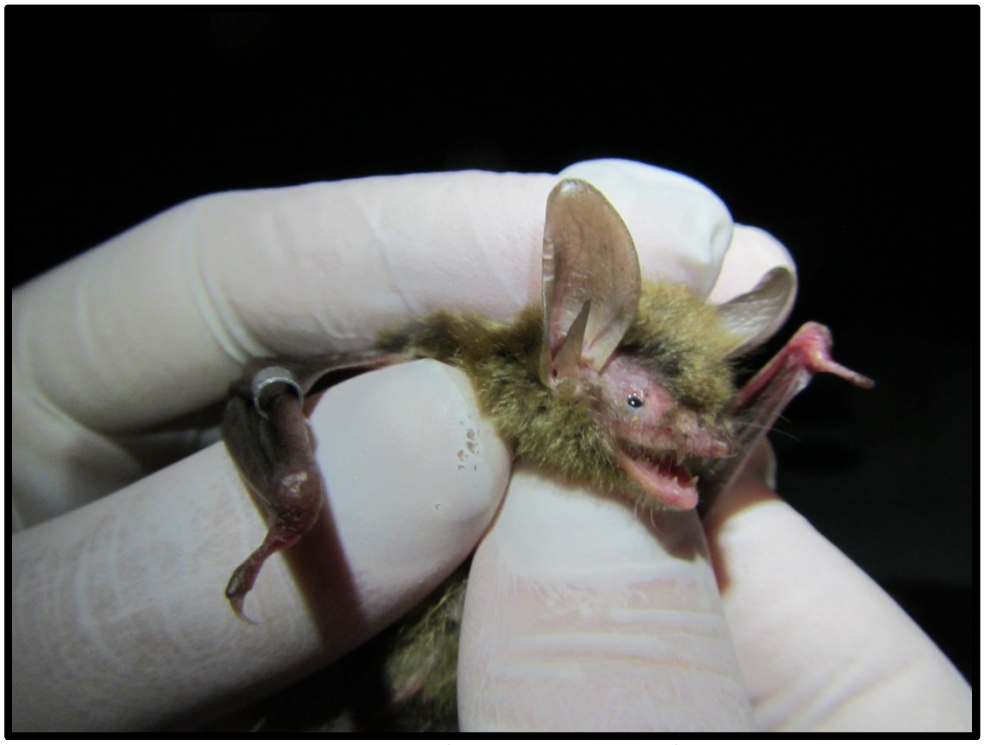


Site 2 – Northern long-eared bat (*Myotis septentrionalis*) Male 541, photo 1

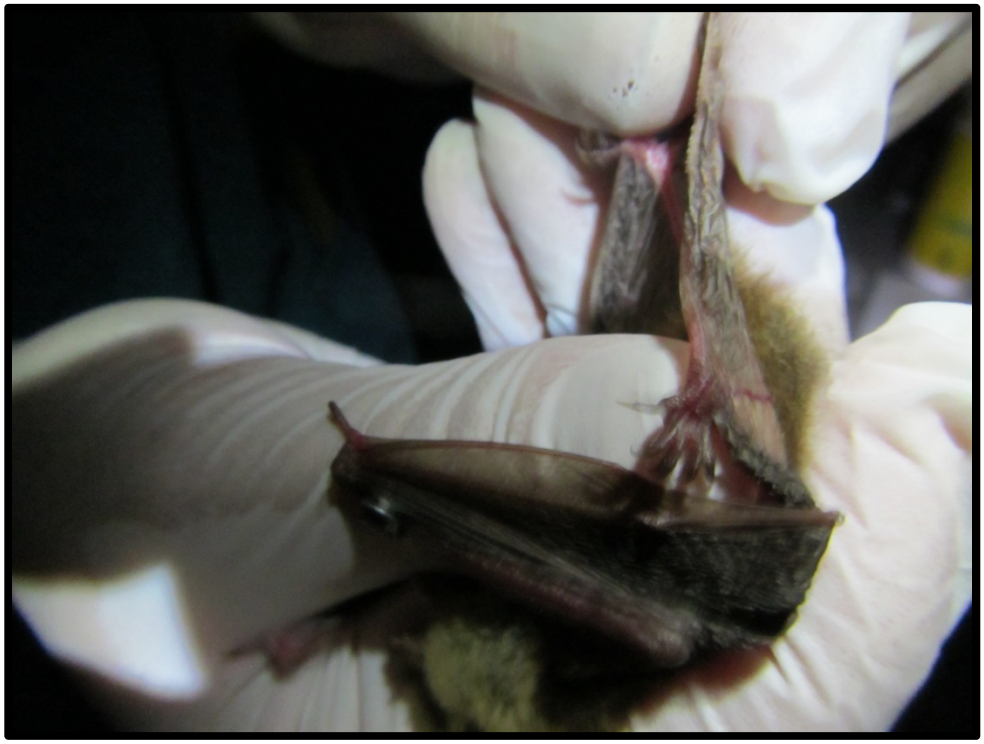


Site 2 – Northern long-eared bat (*Myotis septentrionalis*) Male 541, photo 2

Site 2 – Northern long-eared bat (*Myotis septentrionalis*) Male 541, photo 3



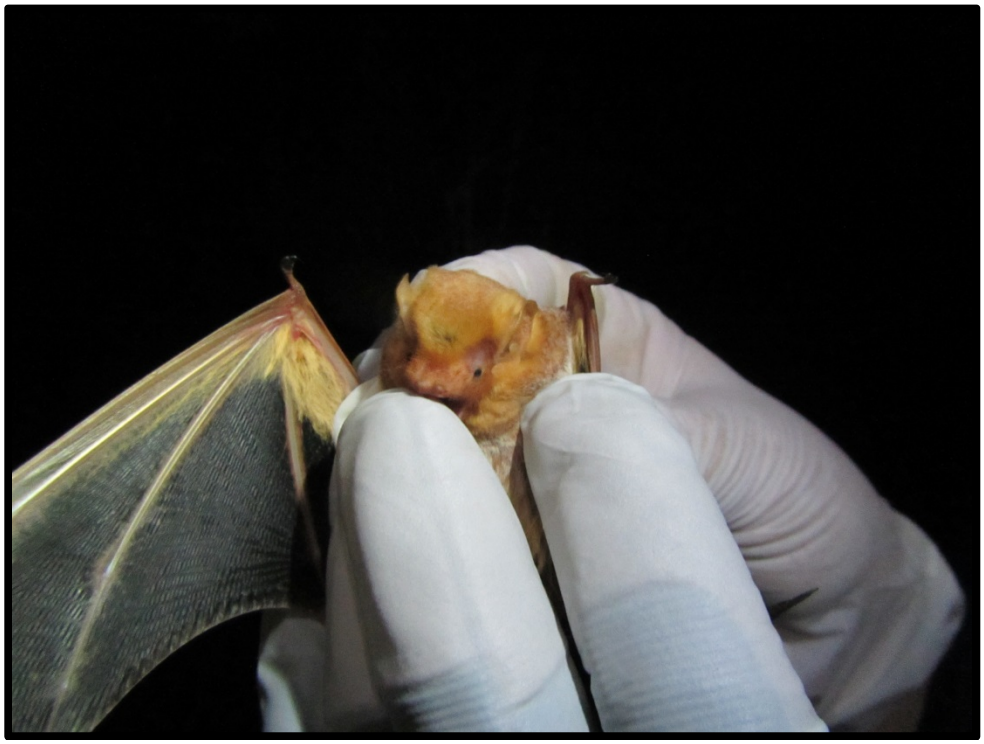
Site 2 – Northern long-eared bat (*Myotis septentrionalis*) Male 423, photo 1



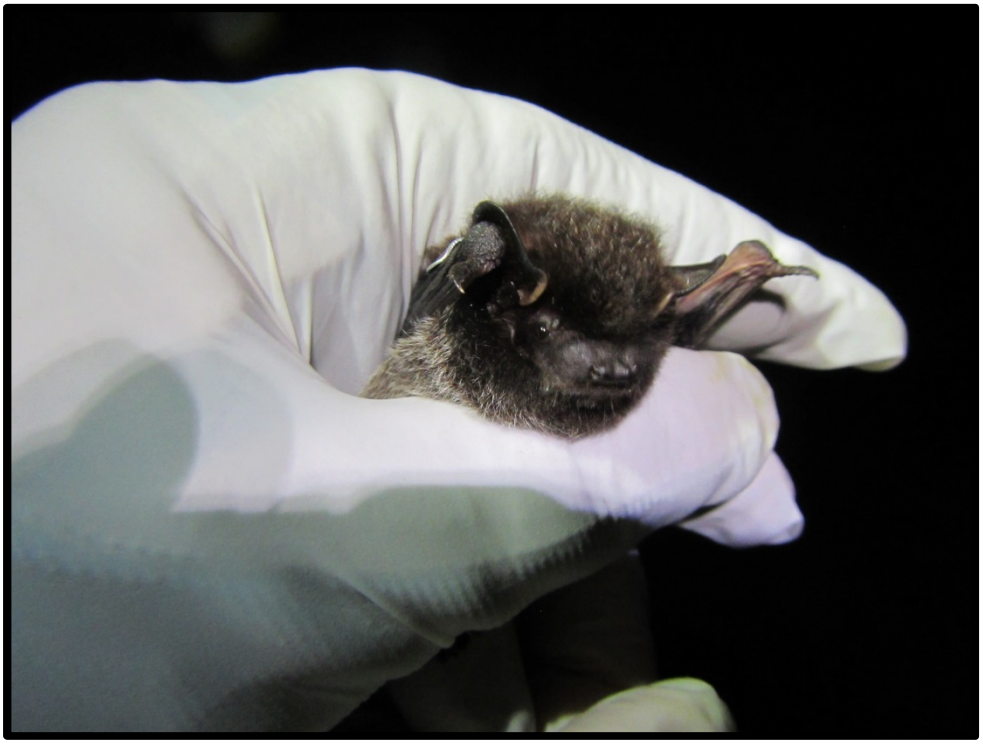
Site 2 – Northern long-eared bat (*Myotis septentrionalis*) Male 423, photo 2

Site 1 - Southeastern Myotis (*Myotis austroriparius*)

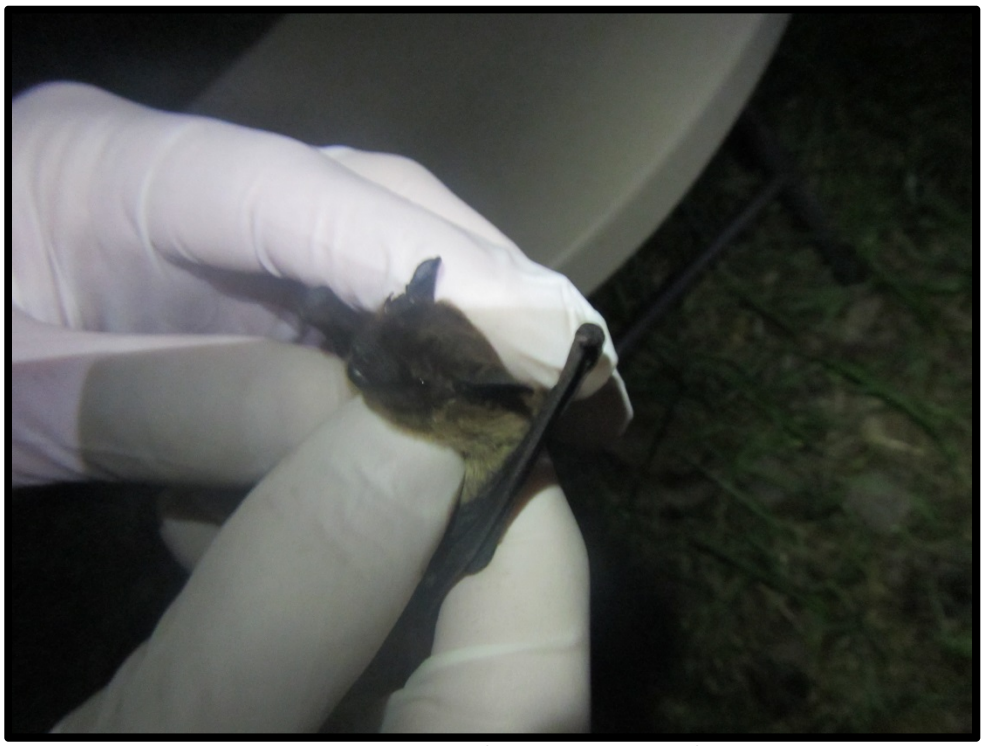
Site 1 & Site 2 (recapture) - Rafinesque's big-eared bat (*Corynorhinus rafinesquii*)



Site 1 – Eastern red bat (*Lasiurus borealis*)



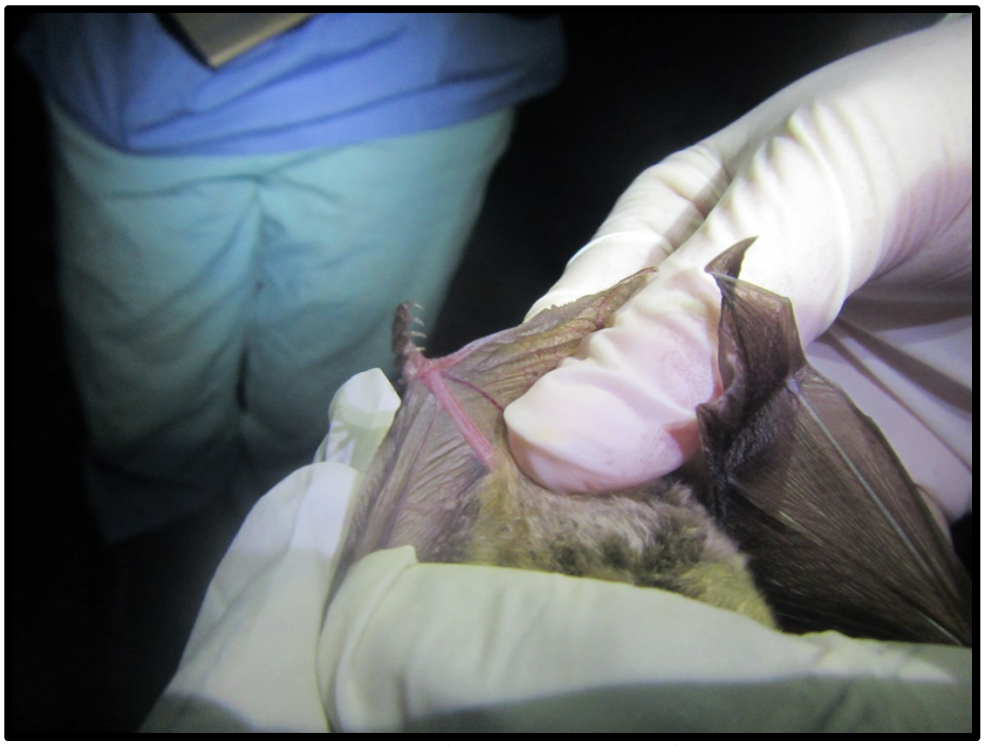
Site 1 – Silver-haired bat (*Lasionycteris noctivagans*)



Site 1 – Evening bat (*Nycticeius humeralis*)

Site 1 - Hoary bat (*Lasiurus cinereus*)

Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Male 259, photo 1

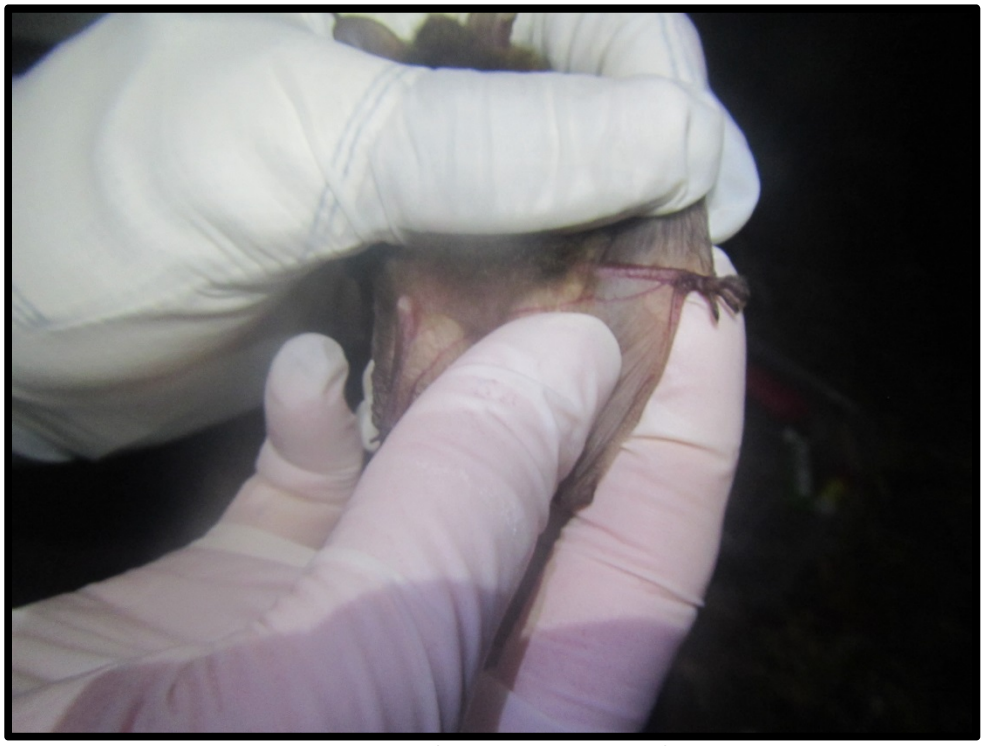


Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Male 259, photo 2

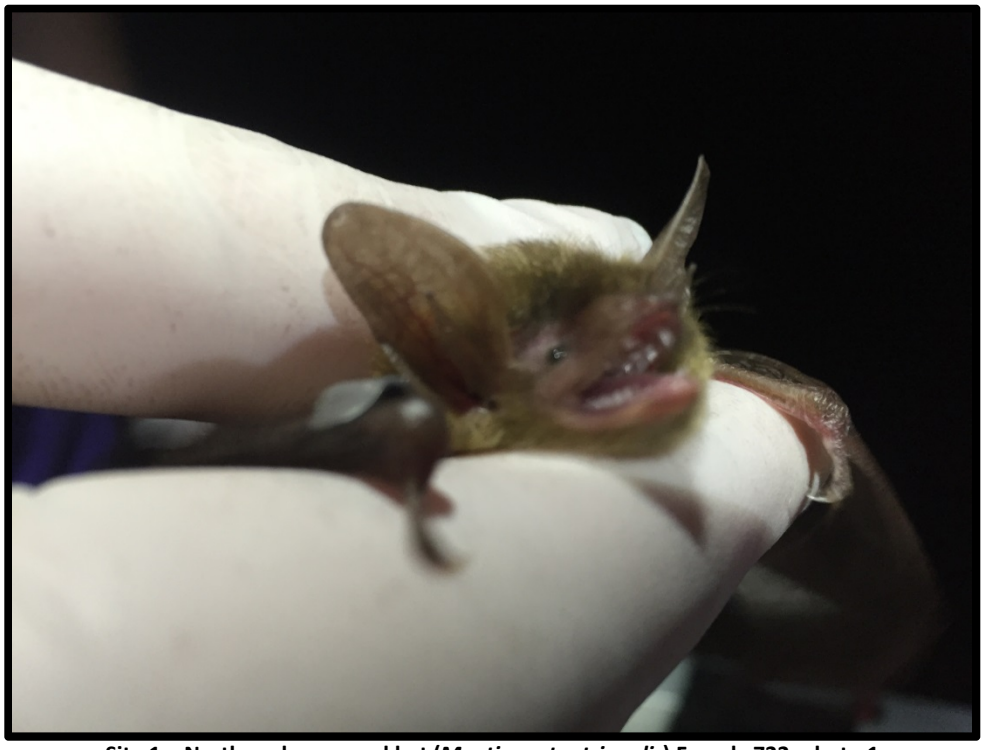
Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Male 259, photo 3

Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Female 662, photo 1

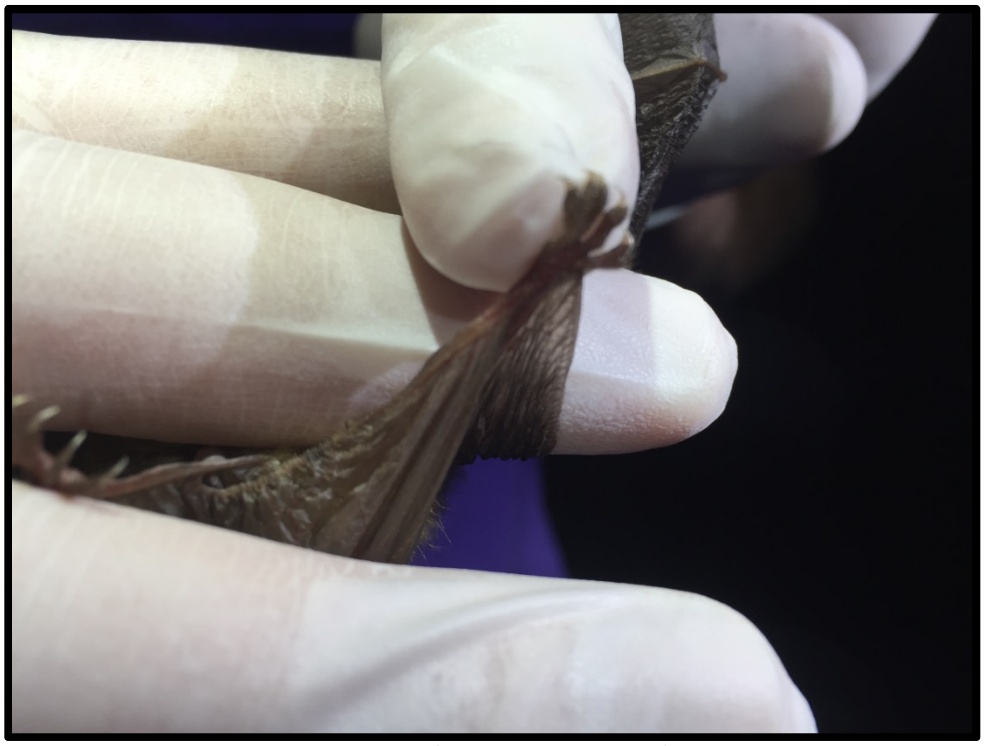
Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Female 662, photo 2



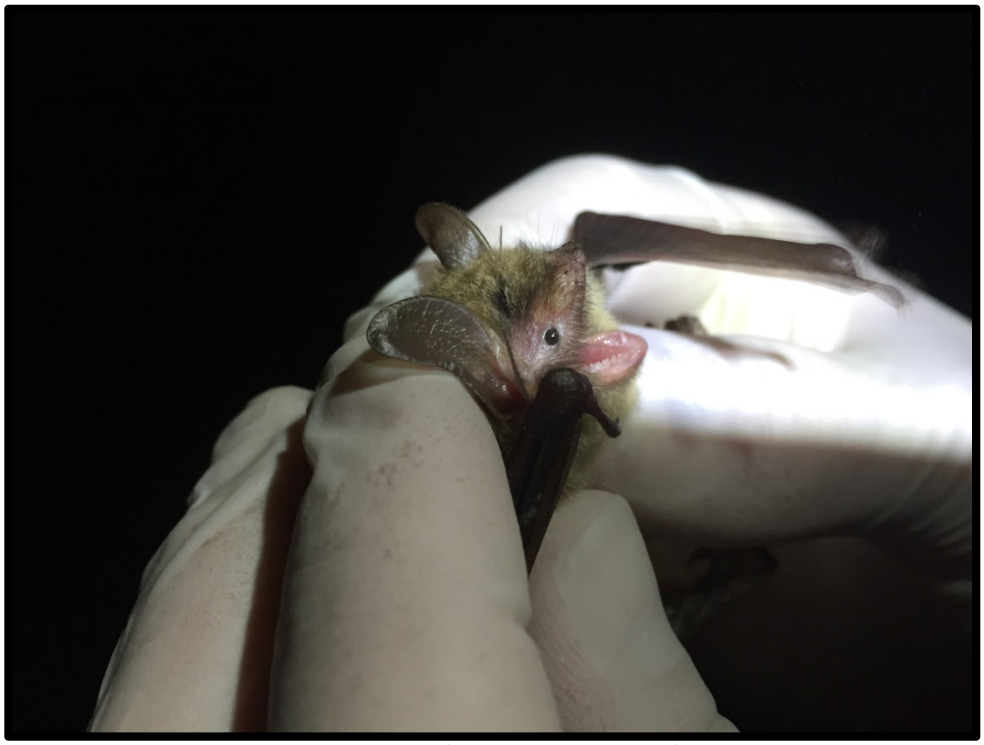
Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Female 662, photo 3



Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Female 722, photo 1



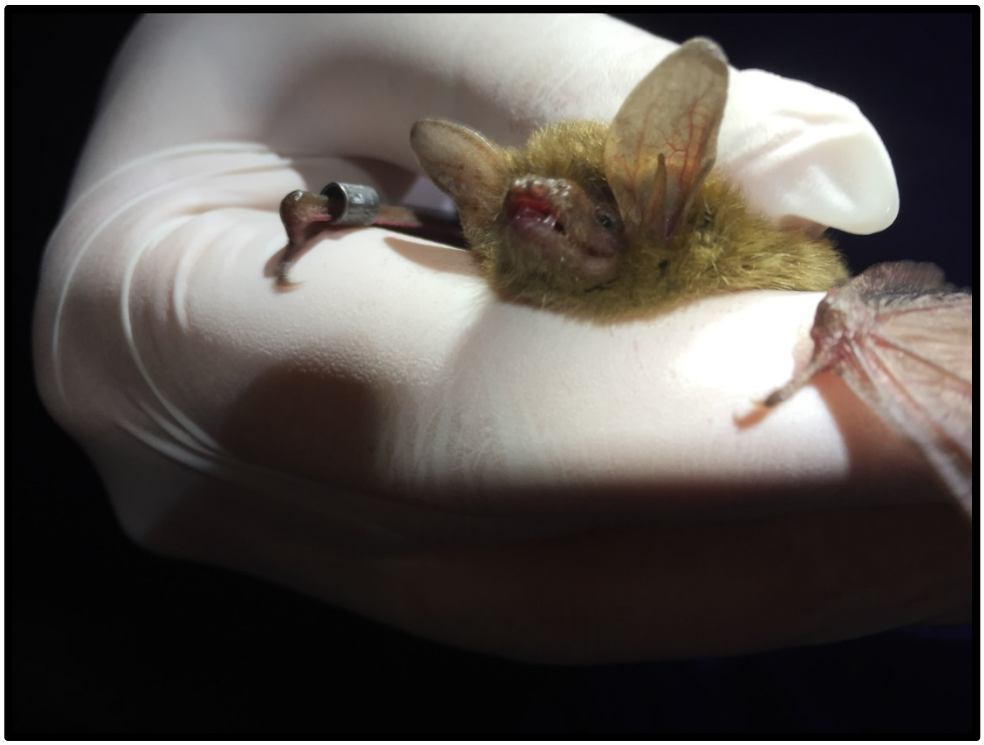
Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Female 722, photo 2



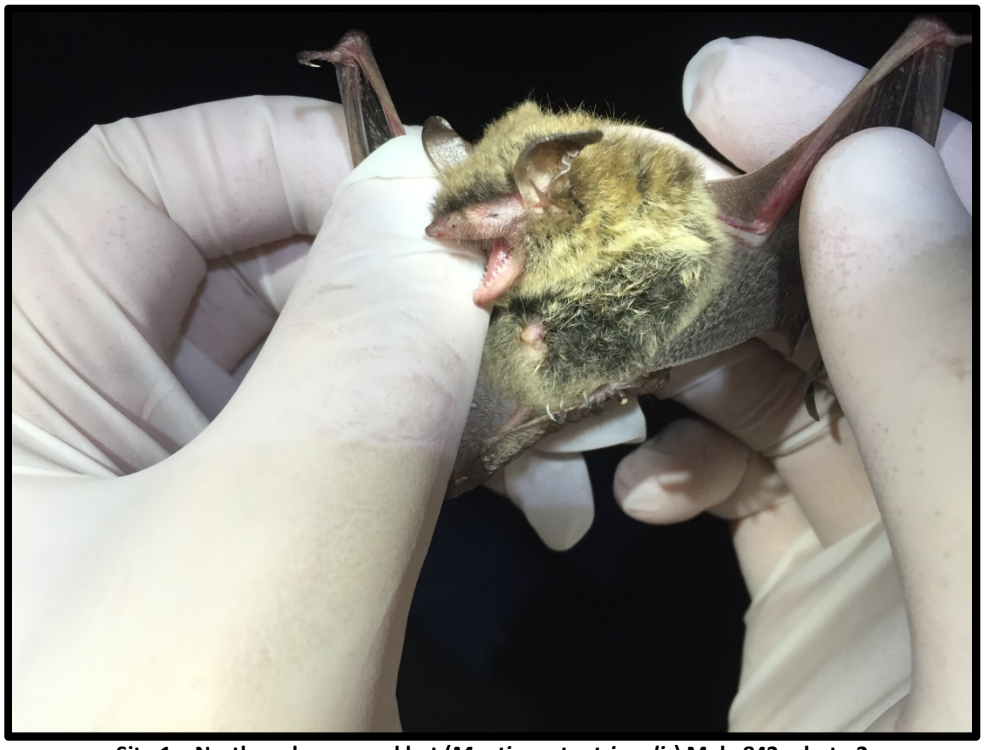
Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Male 781, photo 1

Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Male 781, photo 2

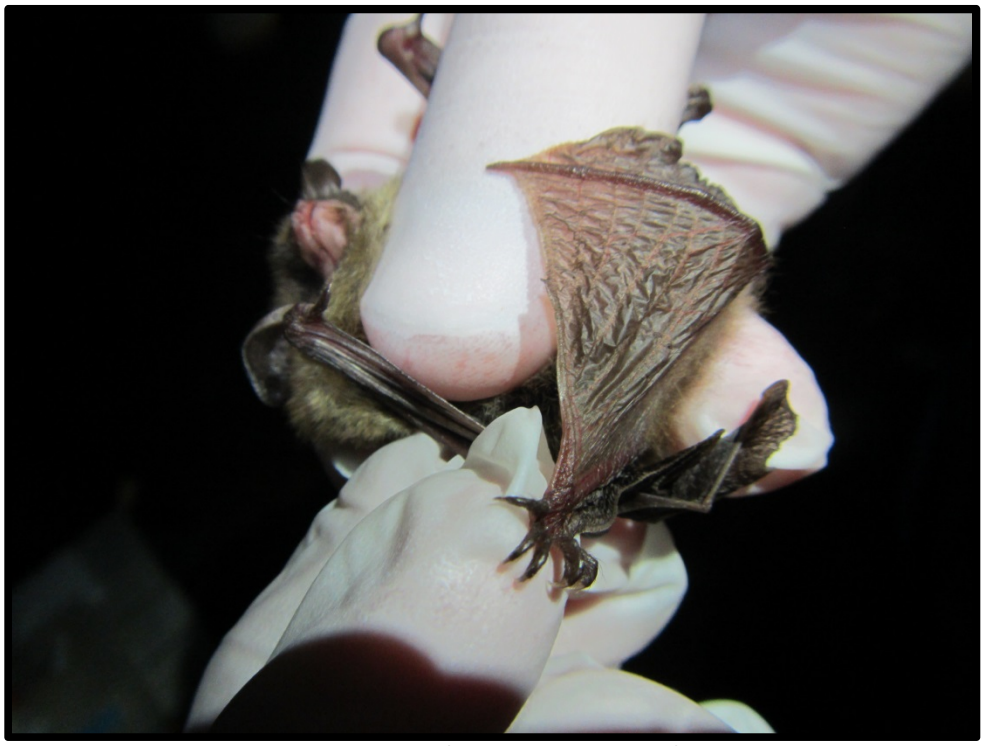
Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Male 781, photo 3



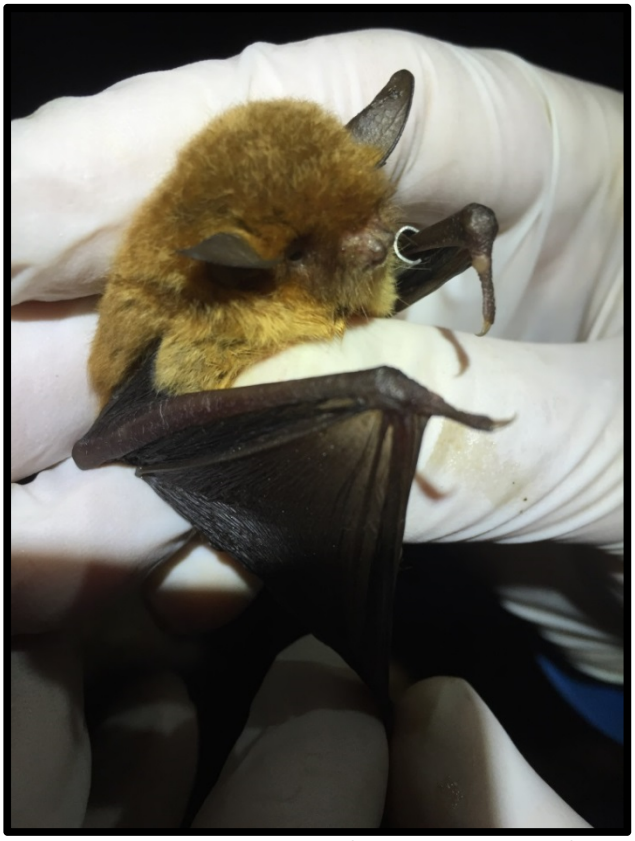
Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Male 842, photo 1



Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Male 842, photo 2



Site 1 – Northern long-eared bat (*Myotis septentrionalis*) Male 842, photo 3



Site 1 – Southeastern myotis (*Myotis austroriparius*)

Site 1 – Evening bat (*Nycticeius humeralis*)

Site 1 – Northern long-eared bat (*Myotis septentrionalis*)
Female No Transmitter, photo 1

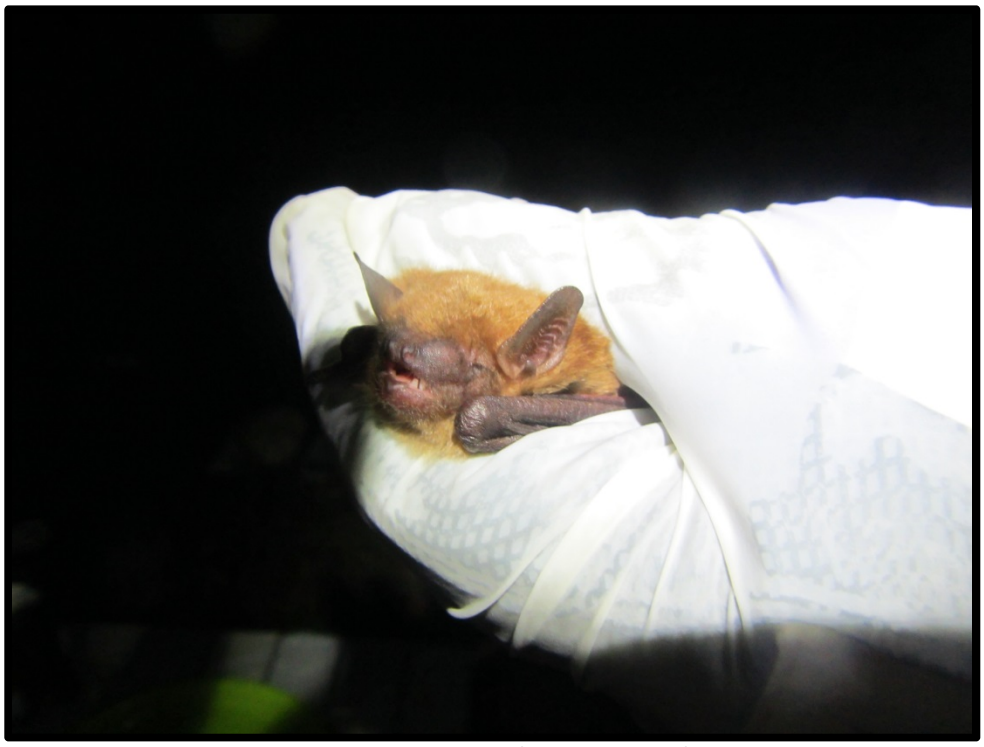
Site 1 – Northern long-eared bat (*Myotis septentrionalis*)
Female No Transmitter, photo 2

Site 1 – Northern long-eared bat (*Myotis septentrionalis*)
Female No Transmitter, photo 3

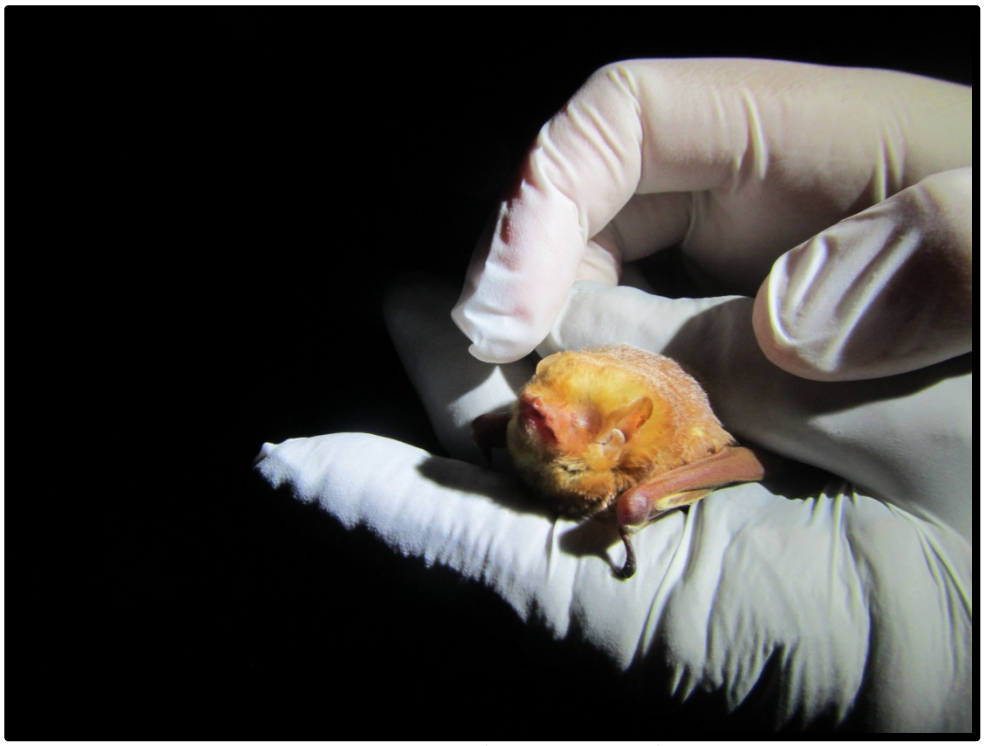
Site 1 – Northern long-eared bat (*Myotis septentrionalis*)
Female No Transmitter, photo 4

Site 1 – Northern long-eared bat (*Myotis septentrionalis*)
Female No Transmitter, photo 5

Site 1 – Northern long-eared bat (*Myotis septentrionalis*)
Female No Transmitter, photo 6



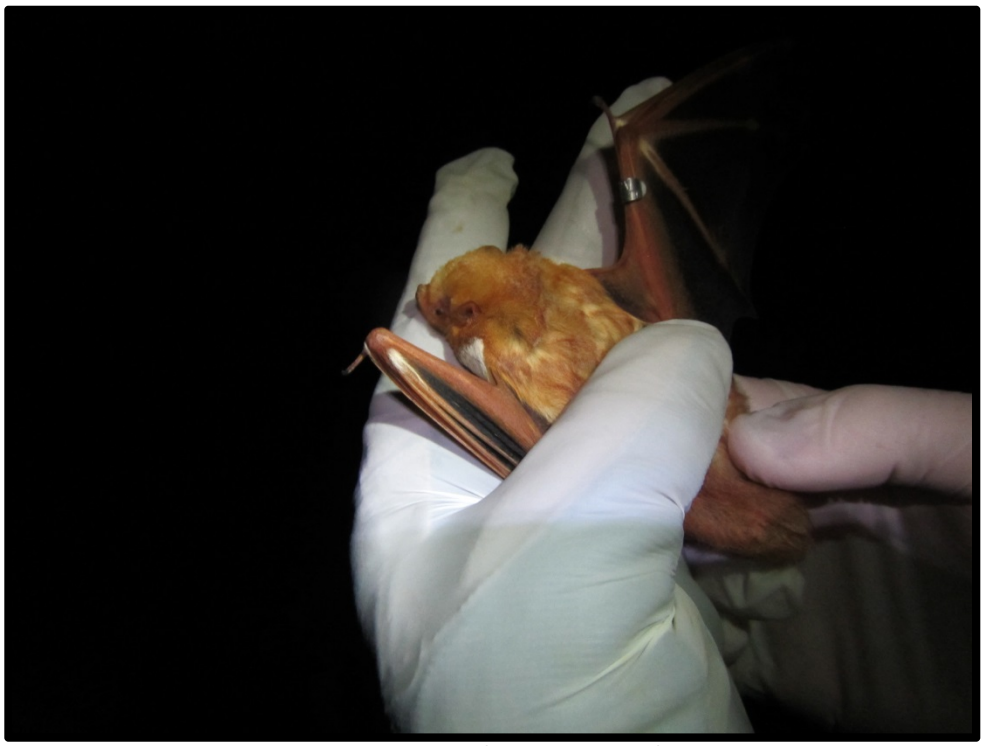
Site 1 – Big brown bat (*Eptesicus fuscus*)



Site 1 – Red bat (*Lasiurus borealis*)

Site 1 – Rafinesque's big-eared bat (*Corynorhinus rafinesquii*)

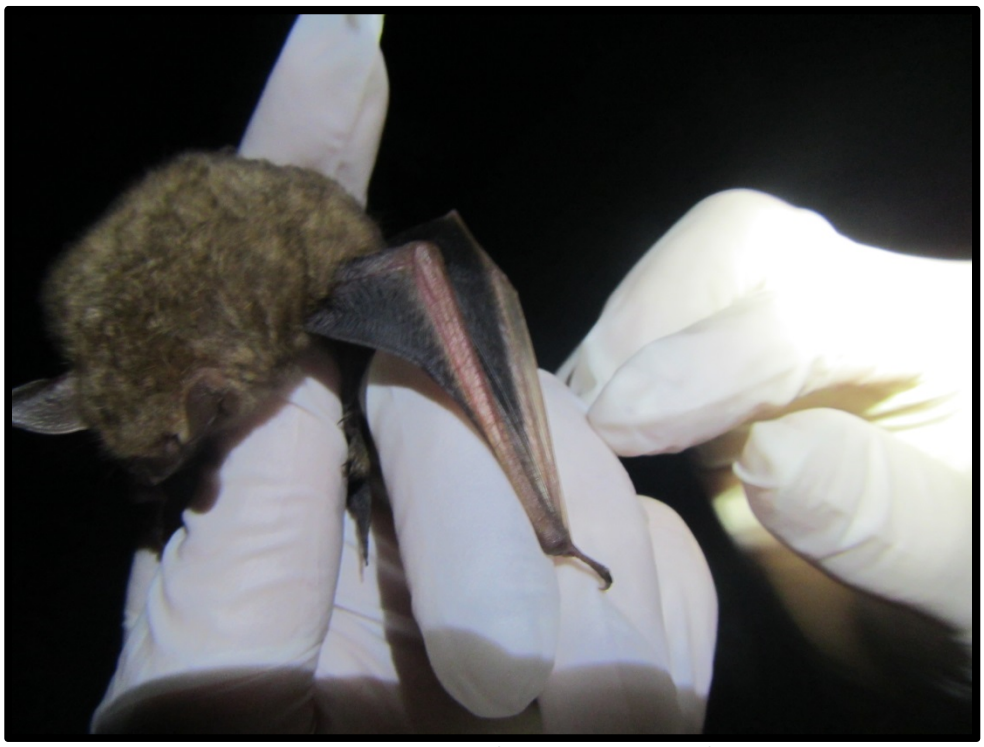
Site 2 – Big brown bat (*Eptesicus fuscus*)



Site 2 – Red bat (*Lasiurus borealis*)

Site 2 – Seminole bat (*Lasiurus seminolus*)

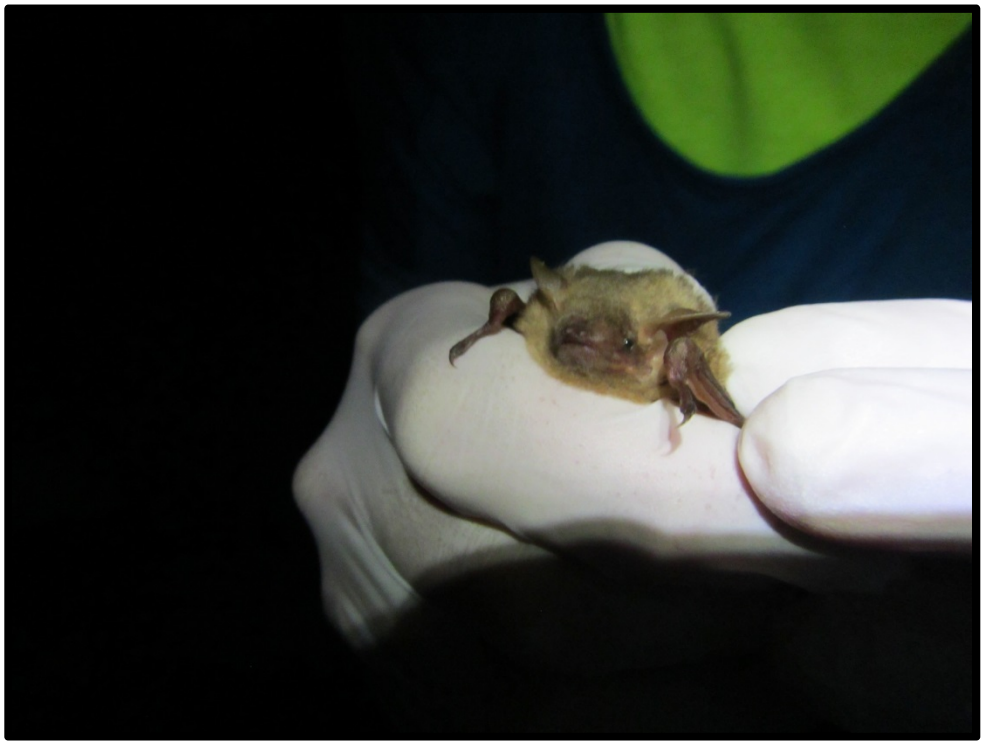
Site 3 – Big brown bat (*Eptesicus fuscus*)



Site 3 – Tricolored bat (*Perimyotis subflavus*)

NOTE: The evening bat (*Nycticeius humeralis*) and the red bat (*Lasiurus borealis*) captured at Pocosin Lakes NWR were not photographed.

Site 2 – Big brown bat (*Eptesicus fuscus*)



Site 2 – Tricolored bat (*Perimyotis subflavus*)

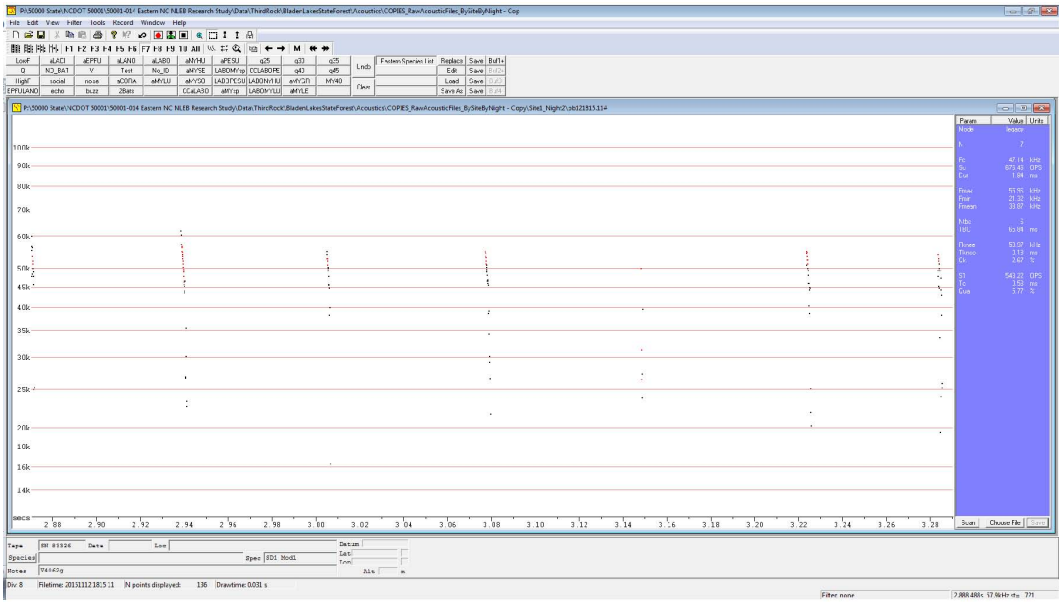
Appendix F

Representative Sonograms and Call Parameters

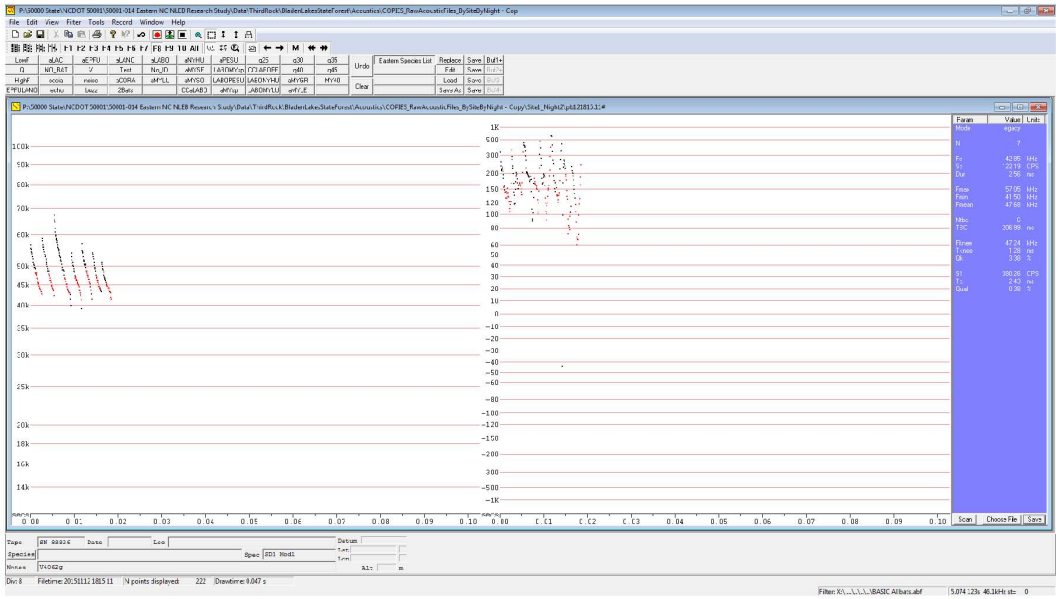
Representative Sonograms & Call Parameters - Bladen Lakes State Forest

Rationale: Pulse lengths too short to identify, slope too shallow for MYSE

Site 1, Night 2, File PB121815.11# – Echo ID: MYSE, BCID ID: NO ID, Third Rock ID: **NO ID**



Typical frequency only view of pulses – F7, uncompressed, unfiltered



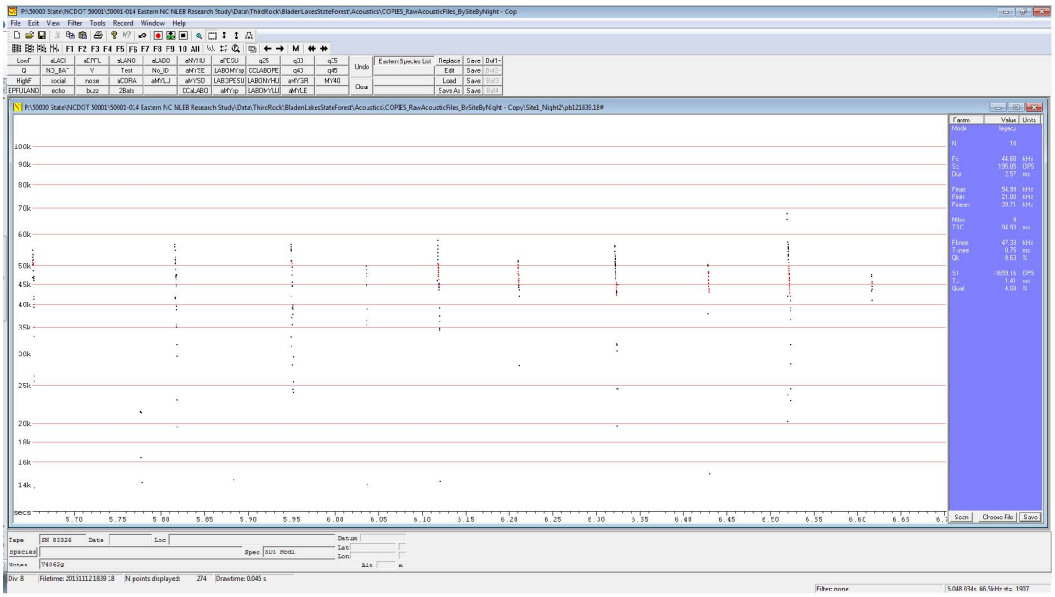
Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb121815.11#	230	2.5	0	255.48	56.74	42.78	47.96	1.09	48.19	3.26	2.5	42.78	421.86	121.37	0.36	32.6
pb121815.11#	318	2.69	255.48	176.42	58.82	42.33	49.14	1.61	47.9	2.4	2.69	42.33	369.42	166.24	0.38	39
pb121815.11#	379	3.83	176.42	334.14	67.23	40	50.2	2.45	46.78	7.69	3.53	43.01	570.15	111.91	0.34	56.3
pb121815.11#	539	2.43	334.14	265.93	54.05	39.22	46.13	0.97	46.78	1.99	2.32	41.24	380.94	134.26	0.43	31.1
pb121815.11#	616	2.25	265.93	2648.76	57.14	41.45	47.91	0.93	48.78	4.01	1.88	45.2	818.13	116.46	0.47	26.4
pb121815.11#	1073	2.04	2648.76	178.63	54.05	43.24	47.06	0.88	47.06	2.47	1.86	43.96	-131.29	100.52	0.42	23
pb121815.11#	1131	2.21	178.63	0	51.28	41.45	45.33	1.01	45.2	1.85	2.21	41.45	232.64	104.57	0.26	23.7

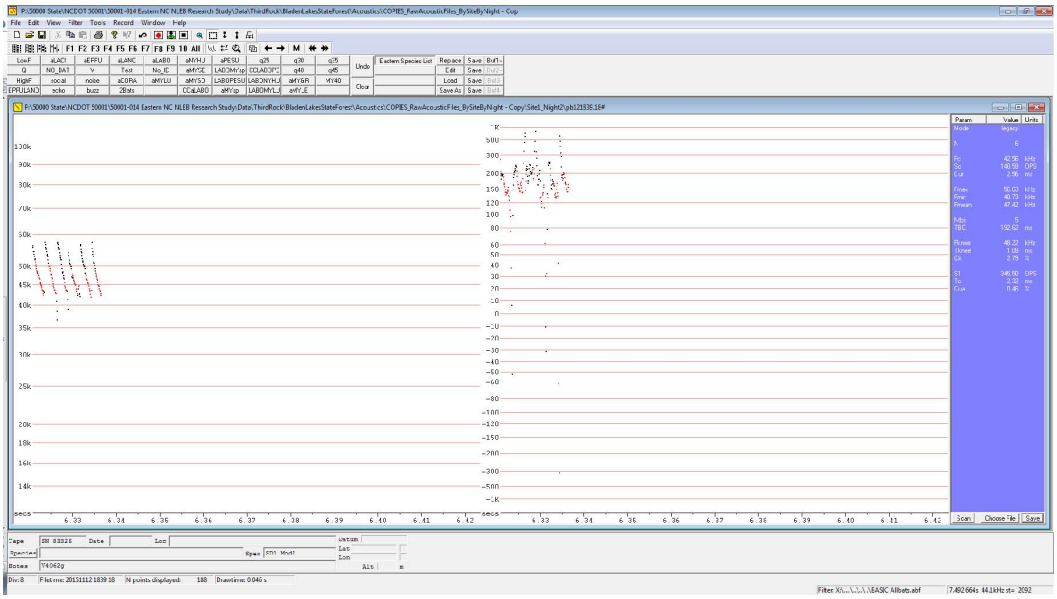
Parameters of all filtered pulses

Rationale: Call file contains pulses from LANO and poor quality pulses of higher frequency. HF pulse quality too poor to ID.

Site 1, Night 2, File PB121839.18# – Echo ID: UNK & MYSE, BCID ID: LANO, Third Rock ID: **LANO & NO ID**



Typical frequency only view of HF pulses – F6, uncompressed, unfiltered



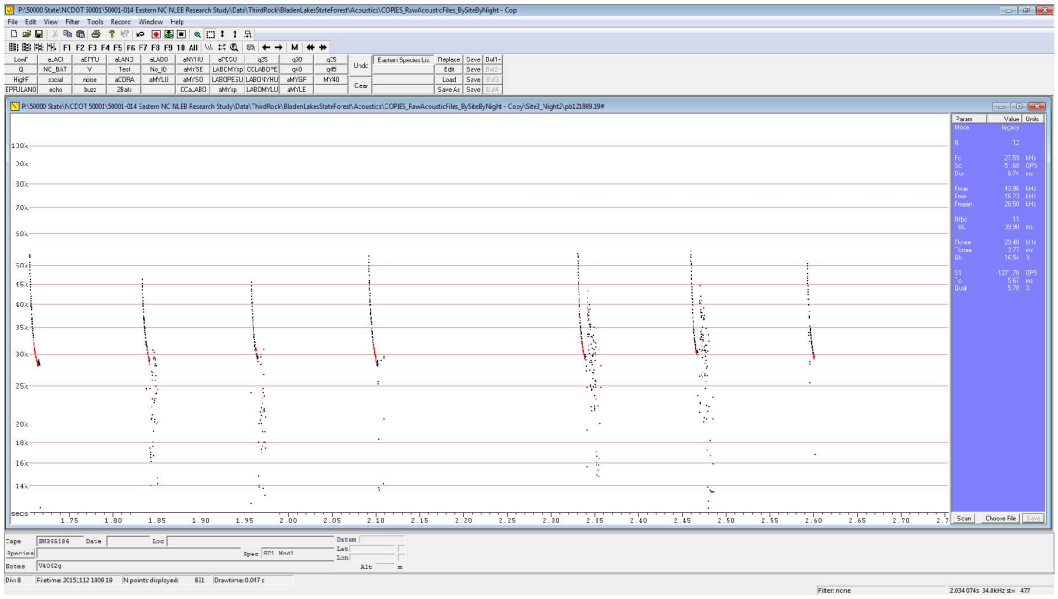
Frequency & slope view of filtered HF pulses – F8, compressed, filtered with "BasicAllBats"

Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb121839.18#	2092	2.77	1049.7	199.05	56.34	42.33	47.6	0.76	50.63	2.47	2.59	42.33	339.63	141.24	0.35	33.1
pb121839.18#	2159	2.87	199.05	185.24	57.55	36.7	47.37	0.9	50	2.79	2.55	42.78	192.16	135.93	0.35	34.5
pb121839.18#	2226	2.4	185.24	363.16	57.55	39.02	48.23	1.74	44.69	2.04	2.11	43.72	192.16	87.11	0.44	31.7
pb121839.18#	2350	2.69	363.16	251.94	54.05	42.11	46.06	0.97	47.9	2.33	2.13	42.33	372.29	152.99	0.76	27.7
pb121839.18#	2454	2.51	251.94	170.34	56.74	41.88	47.79	1.25	47.9	2.47	2.42	41.88	278.33	165.72	0.46	35.5
pb121839.18#	2521	2.11	170.34	0	57.55	42.33	47.44	0.94	48.19	4.63	2.11	42.33	698.41	160.55	0.37	36

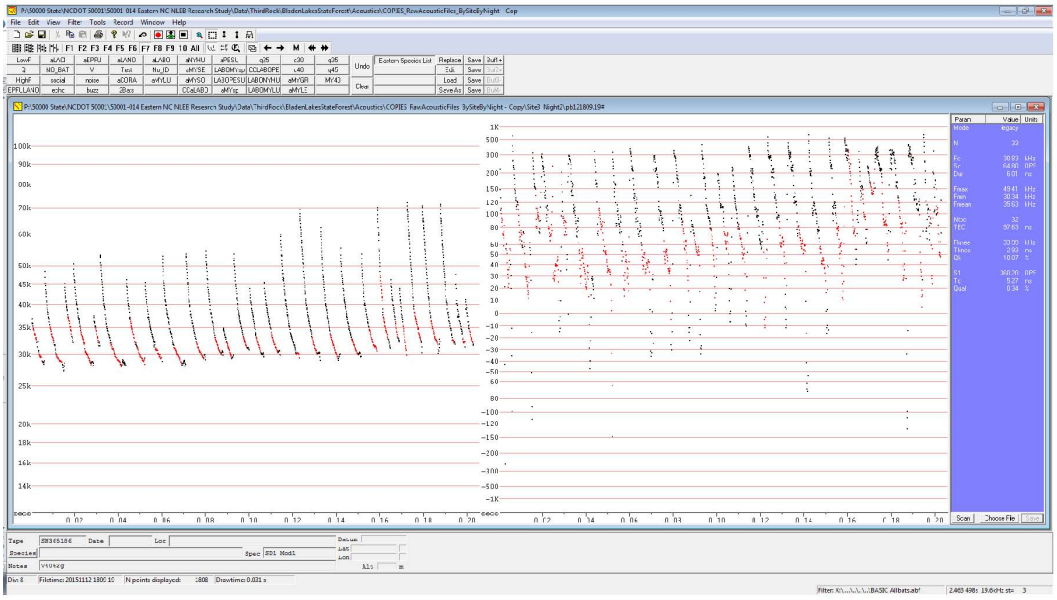
Parameters of all filtered HF pulses

Rationale: High clutter search phase call of EPFU.

Site 3, Night 2, File PB121809.19# – Echo ID: UNK & MYSE, BCID ID: EPFU, Third Rock ID: **EPFU**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



Frequency & slope view of filtered pulses – F8, compressed, filtered with "BasicAllBats"

Site 3, Night 2, File PB121809.19# (continued)

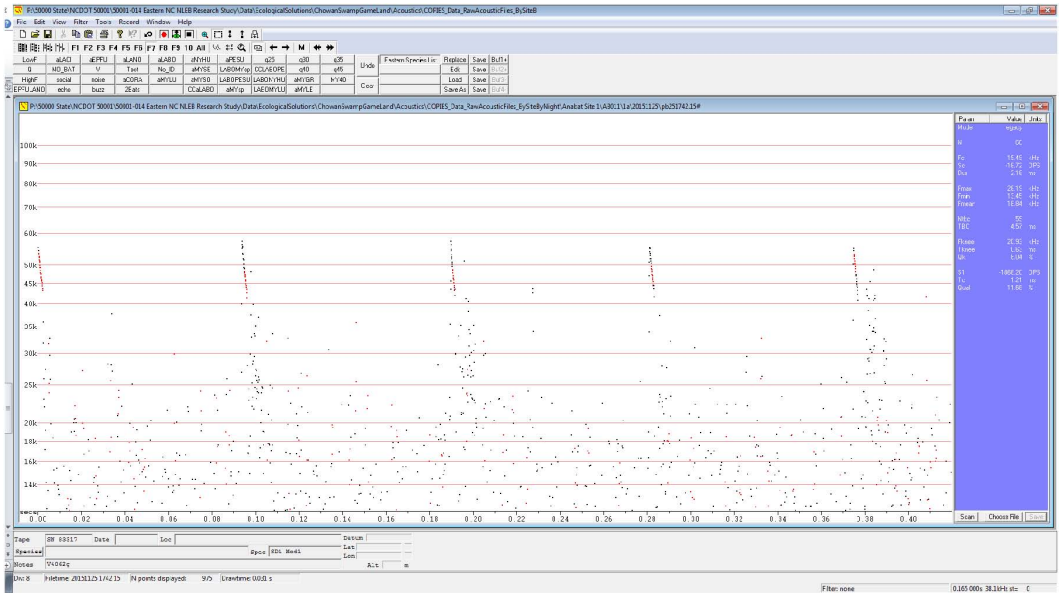
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb121809.19#	54	2.5	0	3.8	36.87	31.37	33.59	0.56	34.93	1.84	2	32.65	293.43	67.9	0.5	12.9
pb121809.19#	79	2.87	3.8	439.91	30.65	28.37	29.31	0.4	29.96	0.04	2.03	28.67	82.39	38.91	0.33	6.9
pb121809.19#	140	4.72	439.91	5.73	48.48	31.5	36.43	2.54	35.09	8.39	4.34	31.75	585.57	80.04	0.37	52.7
pb121809.19#	187	4.42	5.73	226.65	31.01	27.3	28.94	0.53	30.08	1.63	3.14	28.67	84.18	26.36	0.35	8.1
pb121809.19#	230	3.83	226.65	237.3	45.2	32.13	36.59	1.4	37.21	4.29	3.09	33.33	350.44	93.41	0.33	35.6
pb121809.19#	294	5.15	237.3	5.96	50.63	31.01	37.3	3.2	34.48	8.88	5.15	31.01	323.58	78.59	0.41	63.3
pb121809.19#	346	3.98	5.96	127.18	30.53	28.17	29.18	0	30.53	0	2.86	28.27	41.95	38.96	0.22	8
pb121809.19#	399	2.85	127.18	236.91	37.56	31.5	33.65	0.9	34.78	1.08	2.35	31.5	212.05	98.62	0.44	19.2
pb121809.19#	477	11.86	236.91	128.85	53.33	27.97	33.06	4.76	31.62	18.72	9.61	27.97	243.36	36.52	0.28	90.7
pb121809.19#	584	4.55	128.85	5	46.24	31.5	36.07	1.81	37.04	6.43	4.17	31.75	366.42	94.27	0.36	45.7
pb121809.19#	628	3.64	5	119.33	31.37	28.37	29.7	0.13	31.13	0.56	3.51	28.37	87.37	39.63	0.33	10.6
pb121809.19#	717	7.88	119.33	134.48	45.45	28.78	33.52	4.81	30.77	11.18	7.73	29.52	356.28	20.42	0.46	54
pb121809.19#	834	10.6	134.48	238.56	52.98	28.07	33.59	5.41	31.25	17.76	9.06	28.17	363.87	41.09	0.31	88.1
pb121809.19#	948	9.04	238.56	129.11	53.69	29.09	34.94	4.83	32.13	16.38	8.1	29.2	286.73	42.13	0.3	83.9
pb121809.19#	1137	7.96	129.11	136.56	54.42	29.85	35.66	4.22	33.06	15.11	6.78	29.96	388.62	55.51	0.33	81.6
pb121809.19#	1343	4.74	136.56	232	34.93	29.2	31.24	1.44	32.13	1.04	3.79	29.2	108.15	58.71	0.23	19.7
pb121809.19#	1393	7.13	232	145.04	53.69	30.77	36.48	4.34	33.33	13.41	6.23	31.01	496.36	55.41	0.22	73.2
pb121809.19#	1596	6.74	145.04	127.96	43.96	29.52	33.82	3.11	33.2	5.41	5.01	30.3	259.2	69.36	0.21	45.1
pb121809.19#	1682	7.33	127.96	142.26	45.45	29.85	34.37	3.14	34.19	7.6	6.15	30.3	265.73	57.88	0.23	50
pb121809.19#	1895	8.67	142.26	135.65	60.15	29.3	36.91	7.07	29.96	20.35	8.54	29.3	403.2	21.86	0.29	105.3
pb121809.19#	2005	9.38	135.65	129.65	69.57	28.99	38.81	5.62	33.06	23.5	7.91	30.08	629.71	59.47	0.25	131.3
pb121809.19#	2272	9.01	129.65	98.37	62.5	28.99	36.84	4.71	33.61	21.25	8.06	28.99	506.41	63.77	0.22	115.6
pb121809.19#	2437	9.35	98.37	93.07	55.56	29.63	35.52	5.07	32.79	17.32	8.02	29.96	774.92	44.07	0.22	85.4
pb121809.19#	2590	7.04	93.07	85.5	53.69	30.53	36.38	3.56	34.63	15.26	7.04	30.53	535.52	52.31	0.27	75.8
pb121809.19#	2683	2.48	85.5	3.26	70.18	41.03	51.53	1.56	47.34	7.02	2.48	41.03	543.6	223.43	0.55	71.1
pb121809.19#	2719	3.52	3.26	62.34	39.02	31.13	34.06	0.32	37.21	2.18	2.4	32.79	265.51	87.8	0.21	19
pb121809.19#	2773	3.9	62.34	67.74	46.24	32.26	36.91	2	36.2	4.45	3.29	32.92	366.42	106.55	0.26	40.5
pb121809.19#	2827	3.28	67.74	478.94	43.96	29.85	35.38	1.54	35.56	3.63	3.28	29.85	248.91	145.51	0.27	47.3
pb121809.19#	2996	6.97	478.94	128.8	72.07	30.3	42.49	3.35	38.28	18.89	6.09	32.65	298.68	83.95	0.3	120.7
pb121809.19#	3145	8.12	128.8	125.66	70.8	30.19	40.87	4	36.53	21.41	7.36	30.89	320.34	72.03	0.3	129.2
pb121809.19#	3289	6.88	125.66	247.23	71.43	31.87	41.89	5.38	32.52	22.18	6.62	32.26	472.49	9.42	0.35	121.4
pb121809.19#	3654	4.48	247.23	248.62	47.62	31.37	35.71	3.24	32.79	10.84	4.35	32.26	937.26	21.08	0.86	47.6
pb121809.19#	3935	3.66	248.62	0	41.24	31.62	34.94	1.83	34.33	4.22	3.41	32.39	388.13	53.38	0.79	27.3

Parameters of all filtered pulses

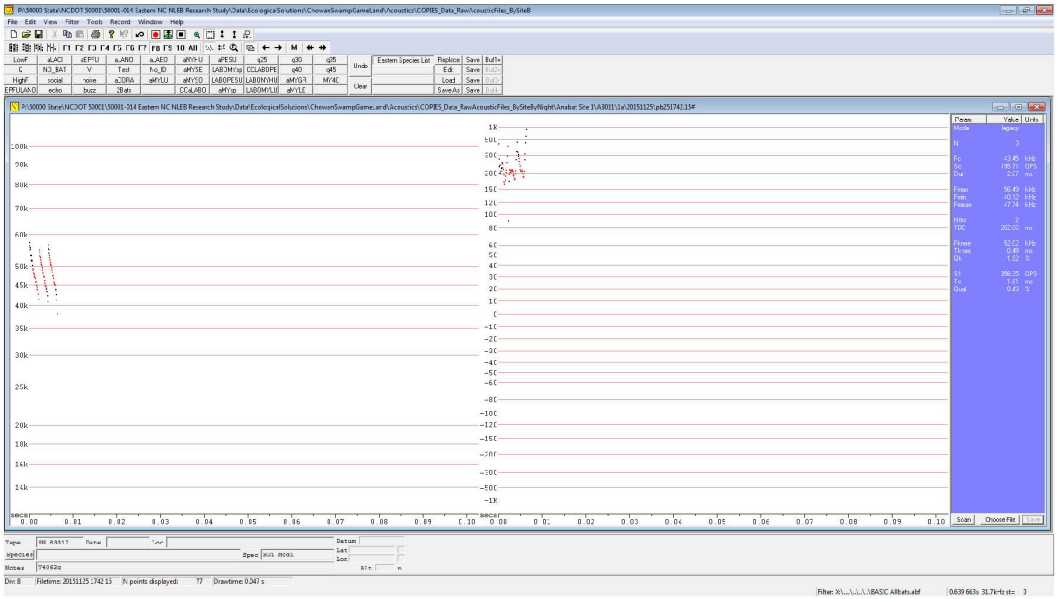
Representative Sonograms & Call Parameters – Chowan Swamp Game Land

Rationale: Call sequence too short, with pulse quality too poor to determine species, slope values too low for MYSE

Site 1a, Night 1, File PB251742.15# – Echo ID: MYSE, BCID ID: NO ID, Ecological Solutions ID: **NO ID**



Typical frequency only view of pulses – F7, uncompressed, unfiltered



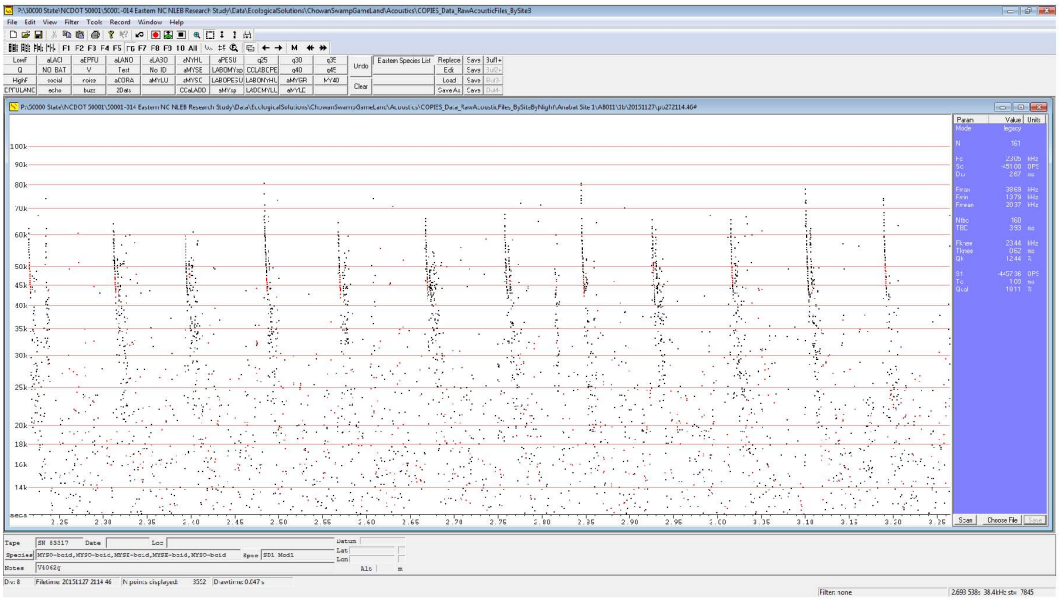
Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb251742.15#	312	2.15	0	280.98	57.55	41.45	48.44	0.91	49.38	1.55	2.15	41.45	427.86	204.04	0.63	38.8
pb251742.15#	1257	2.02	280.98	262.66	55.17	40.82	47.55	0.22	53.33	1.5	1.73	43.96	219.33	185.24	0.3	25.5
pb251742.15#	2184	2.03	262.66	0	56.74	38.1	47.22	0.29	53.33	2.7	1.54	44.94	421.86	197.85	0.37	26.2
pb251742.15#	312	2.15	0	280.98	57.55	41.45	48.44	0.91	49.38	1.55	2.15	41.45	427.86	204.04	0.63	38.8
pb251742.15#	1257	2.02	280.98	262.66	55.17	40.82	47.55	0.22	53.33	1.5	1.73	43.96	219.33	185.24	0.3	25.5
pb251742.15#	2184	2.03	262.66	0	56.74	38.1	47.22	0.29	53.33	2.7	1.54	44.94	421.86	197.85	0.37	26.2

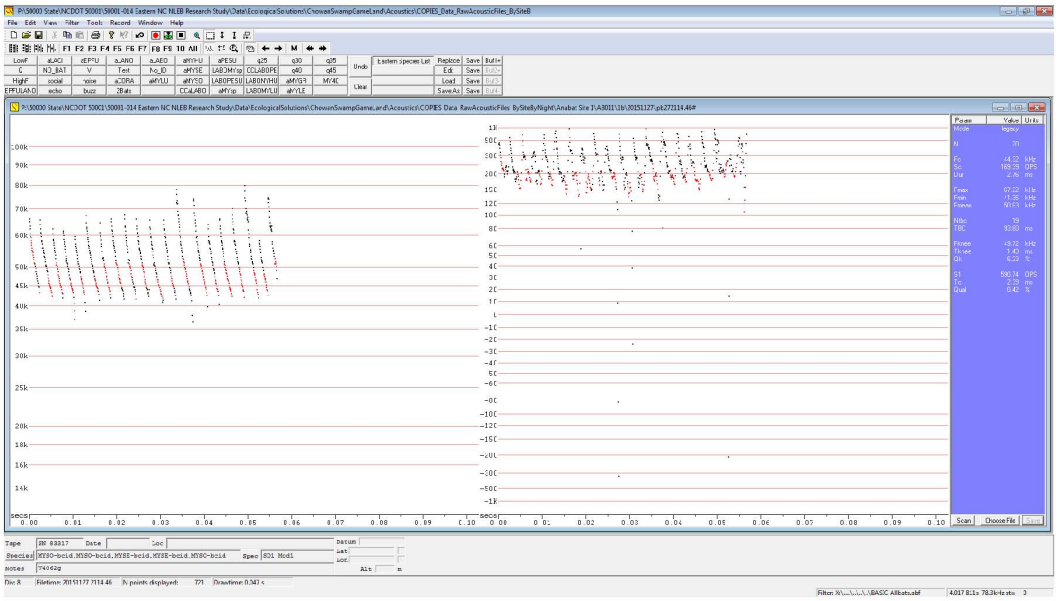
Parameters of all filtered pulses

Rationale: Slope value right for MYAU (<200 OPS), vs. MYSE (>200 OPS), many sigmoidal pulses in file

Site 1b, Night 3, File PB272114.46# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **MYAU**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

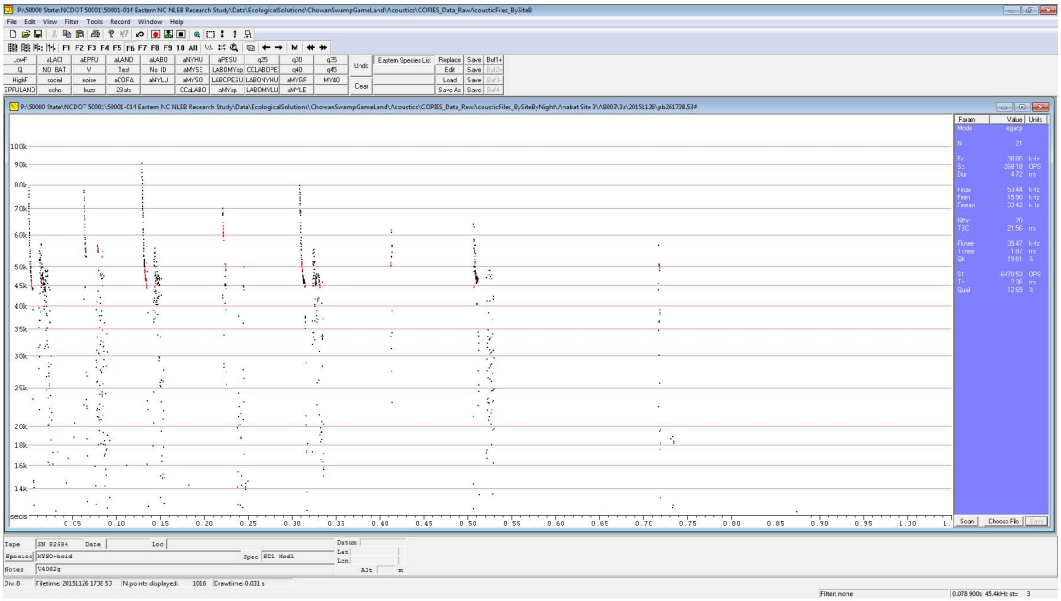
Site 1b, Night 3, File PB272114.46# (continued.)

Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb272114.46#	5873	2.4	0	324.23	66.12	43.24	51.75	0.53	57.55	3.27	1.2	51.28	486.55	248.45	0.28	28.9
pb272114.46#	7173	2.76	324.23	168.84	65.57	42.33	50.65	1.86	47.06	5.86	2.76	42.33	556.3	169.46	0.31	54.9
pb272114.46#	7845	2.35	168.84	96.85	62.5	41.88	49.28	0.8	50.63	5.24	2.16	43.24	652.86	166.74	0.37	44.5
pb272114.46#	8238	2.74	96.85	81.85	61.54	37.04	48.21	1.52	47.06	4.53	2.33	43.24	323.86	151.35	0.37	42.3
pb272114.46#	8587	2.42	81.85	90.34	59.7	38.83	48.03	1.31	47.34	4.24	2.21	42.78	451.38	162.6	0.32	39.6
pb272114.46#	8977	3.01	90.34	83.9	67.23	41.45	50.57	2.01	46.78	7.58	2.81	43.48	927.79	131.32	0.27	54.6
pb272114.46#	9327	2.59	83.9	99.07	64.52	41.88	49.4	1.02	50.96	7.38	2.4	43.48	1182.49	165.42	0.39	48.4
pb272114.46#	9737	2.94	99.07	90.62	66.12	41.67	50.31	1.12	51.28	4.68	2.38	44.44	-387.73	163.85	0.35	48.8
pb272114.46#	10146	2.69	90.62	87.5	67.8	41.67	50.48	1.21	50.96	5.95	1.7	47.34	751.09	215.97	0.44	43.2
pb272114.46#	10551	2.92	87.5	80.22	66.12	42.33	50.65	1.35	50.63	5.24	2.37	44.44	463.62	184.38	0.42	48.8
pb272114.46#	10895	3.19	80.22	89.68	65.57	40.82	48.84	1.81	46.51	7.59	2.81	42.33	919.8	136.25	0.58	54.9
pb272114.46#	11281	2.79	89.68	85.48	65.57	41.67	50.23	1.71	47.62	6.05	2.32	44.69	547.61	149.02	0.29	46.7
pb272114.46#	11654	3.76	85.48	88.66	78.43	36.53	52.11	1.55	52.63	10.56	2.8	44.94	990.31	183.12	0.48	74.5
pb272114.46#	12060	3.27	88.66	85.59	74.07	39.8	52.66	1.69	50.96	9.06	3.16	42.55	510.96	176.73	0.47	74.1
pb272114.46#	12414	2.5	85.59	94.69	64	40.4	49.56	1.59	47.34	5.98	2.21	43.96	748.54	172.17	0.45	45.6
pb272114.46#	12814	2.77	94.69	93.57	66.12	42.33	50.54	1.21	50.96	6.61	2.77	42.33	463.62	171.11	0.26	56.2
pb272114.46#	13200	2.78	93.57	305.9	70.18	42.11	51.72	1.55	50	7.78	2.78	42.11	829.22	201.57	0.42	66.7
pb272114.46#	14398	3.15	305.9	66.38	80	41.88	54.64	2.09	49.08	10.45	2.96	43.24	912.25	209.47	0.6	85
pb272114.46#	14715	2.03	66.38	180.56	58.39	42.55	49.33	1.14	48.19	0.48	1.84	43.96	-228.11	189.65	0.47	32.8
pb272114.46#	15506	2.08	180.56	0	74.77	46.78	57.66	1.44	50.96	6.01	1.91	50.31	712.37	39.1	0.94	48.6

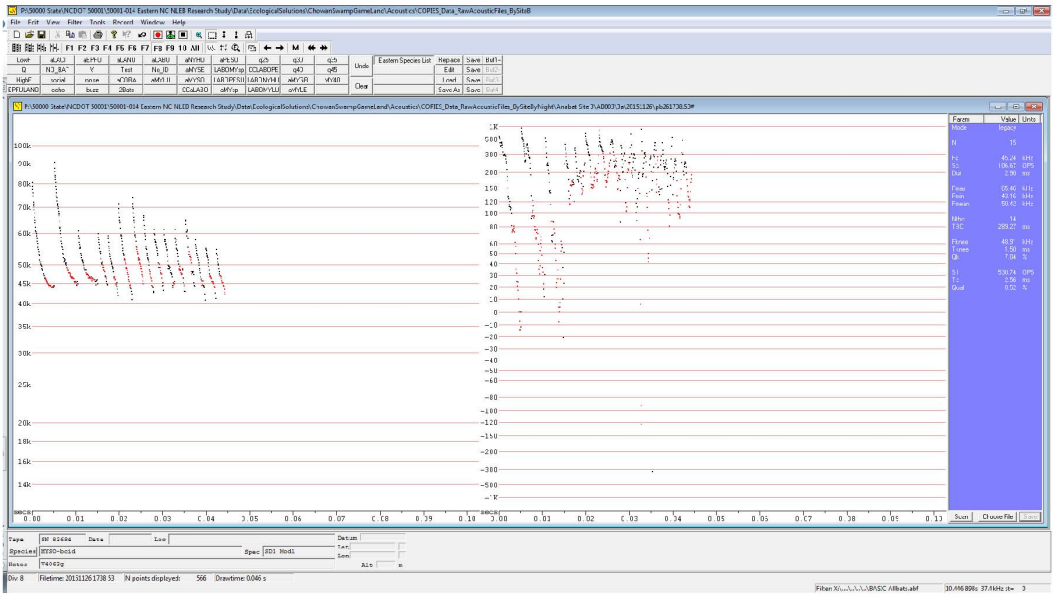
Parameters of all filtered pulses

Rationale: File has J-shaped pulses at beginning of sequence, strong hee/toe on most pulses, consistent with PESU, Fc ~45kHz

Site 3a, Night 2, File PB261738.53# – Echo ID: MYSE, BCID ID: NO ID, Ecological Solutions ID: **PESU**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



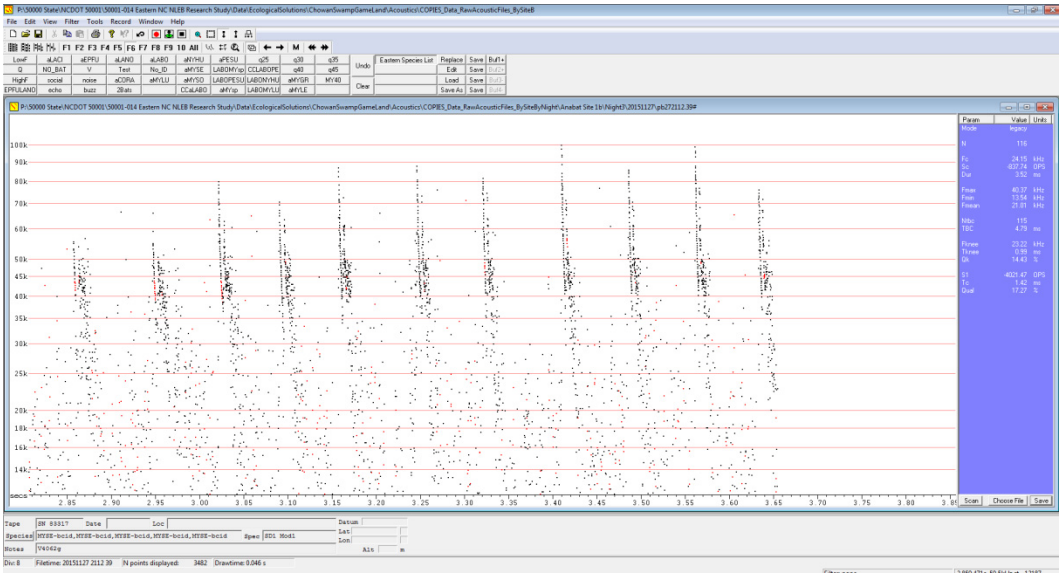
Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb261738.53#	2	5.12	0	129.21	80.81	43.96	51.52	2.97	46.24	20	4.94	43.96	565.78	37.12	0.33	83.8
pb261738.53#	446	5.4	129.21	180.82	90.91	44.44	54.78	2.83	49.38	22.02	5.14	44.44	1051.37	65.8	0.41	104.5
pb261738.53#	846	4.45	180.82	3973.08	61.07	44.69	48.51	1.86	47.9	8.89	3.83	45.98	638.13	29.96	0.4	32.8
pb261738.53#	3424	2.15	3973.08	2352.06	60.15	44.69	50.21	1.13	50	3.39	1.71	46.78	466.38	164.82	0.48	28.6
pb261738.53#	6154	2.38	2352.06	190.33	59.26	42.11	48.74	1.39	46.78	3.27	1.92	44.69	391.77	125.88	0.41	32.6
pb261738.53#	6545	3.1	190.33	143.74	71.43	41.03	51.6	1.3	51.95	9.2	2.72	44.69	657.5	152.51	0.42	59.8
pb261738.53#	6826	2.56	143.74	64.68	74.07	44.94	54.69	0.96	55.94	8.05	2.56	44.94	920.48	197.17	0.44	64.8
pb261738.53#	6938	2.36	64.68	417.74	66.67	42.78	50.76	1.3	48.78	6.34	2.09	44.2	456.43	181.96	0.47	50.8
pb261738.53#	7516	2.21	417.74	51.84	61.54	43.24	50.72	1.26	50.31	1.71	1.94	44.2	506.38	275.76	0.8	39.2
pb261738.53#	7613	2.47	51.84	63.45	61.54	43.96	50.24	2.11	43.96	5.96	2.47	45.45	642.96	-136.62	0.66	35.4
pb261738.53#	7723	2.41	63.45	269.4	61.54	43.01	49.88	1.04	48.78	6.61	1.78	49.08	1065.69	-11.89	0.73	25.4
pb261738.53#	8240	2.15	269.4	2193.83	65.04	44.2	52.19	0.82	54.05	0.17	1.37	48.19	-569.92	301.61	1	35
pb261738.53#	12221	2.25	2193.83	340.74	57.97	40.82	47.91	1.52	45.71	4.67	1.78	45.71	580.6	0	0.56	26.8
pb261738.53#	12809	2.28	340.74	73.52	55.17	41.24	47.37	1.03	46.78	2.96	2.09	43.96	196.29	84.85	0.33	25.5
pb261738.53#	12972	2.12	73.52	0	54.79	42.33	47.17	0.95	47.06	2.42	2.12	42.33	391.25	131.09	0.32	29.5

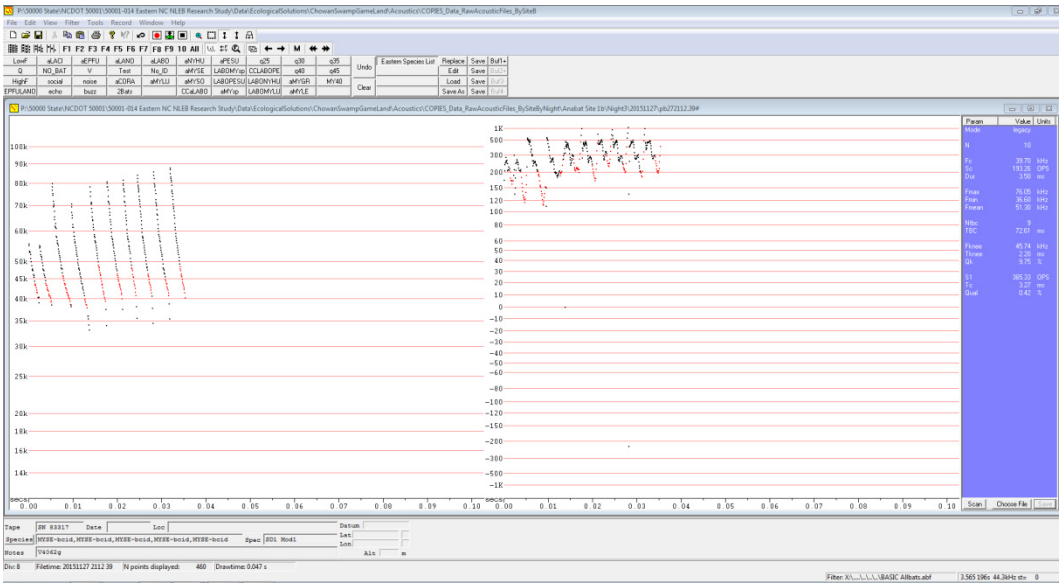
Parameters of all filtered pulses

Rationale: Pulses straight, no change at knee, many steep pulses with slope >200 OPS, Fc and other parameters consistent with MYSE

Site 1b, Night 3, File PB272112.39# – Echo ID: LABO, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

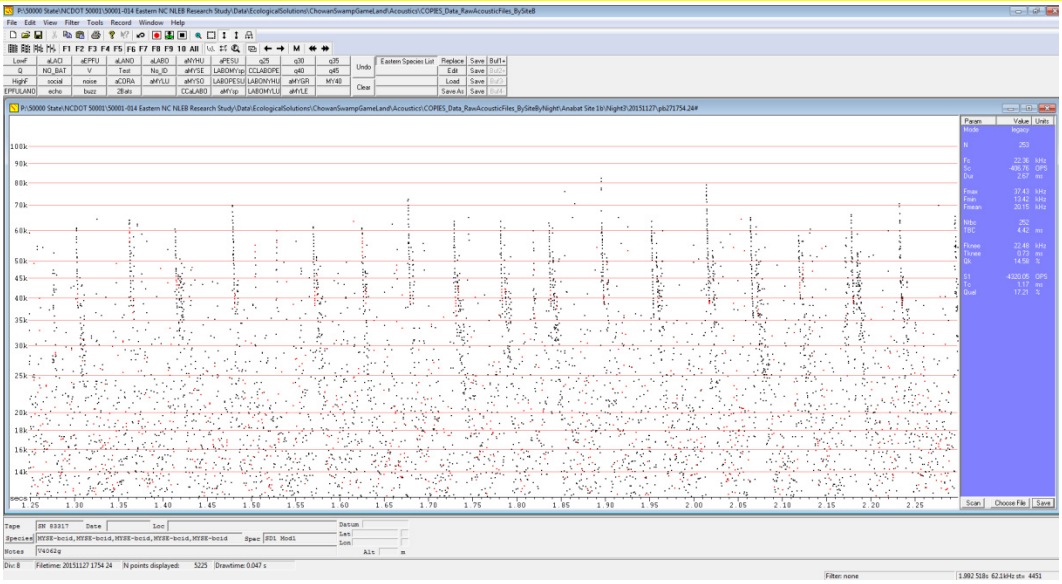


Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

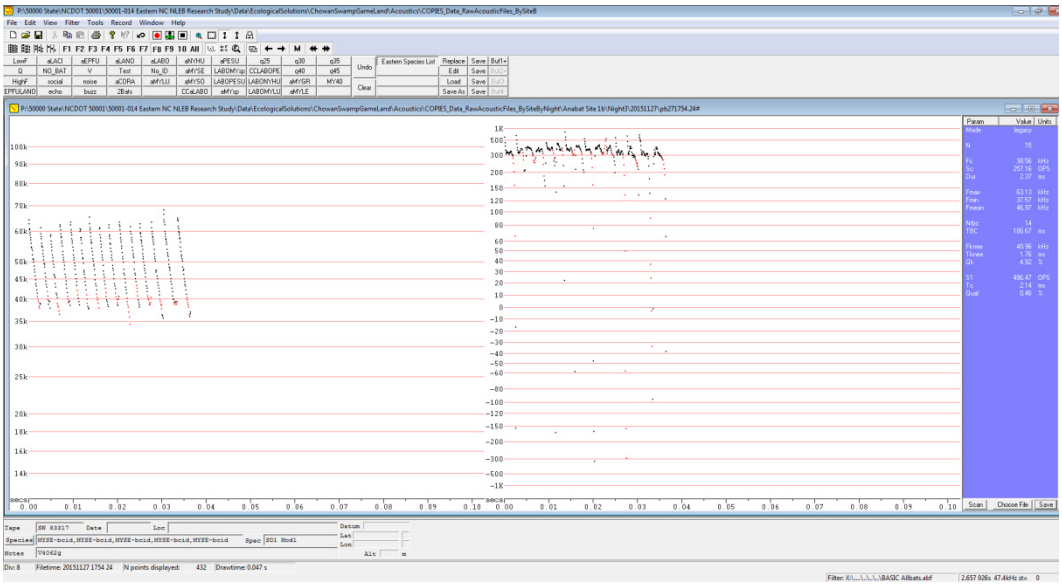
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb272112.39#	12339	2.37	0	89.95	55.56	39.02	45.51	1.4	43.72	2.42	2.07	40.4	326.06	169.89	0.7	37.5
pb272112.39#	12752	2.84	89.95	74.36	55.17	38.46	45.09	1.47	43.96	3.51	2.73	39.22	267.07	130.35	0.31	40.7
pb272112.39#	13141	4.36	74.36	68.78	80	38.1	50.42	2.43	45.98	15.64	4.15	38.65	549.41	145.5	0.53	107
pb272112.39#	13514	4.11	68.78	67.43	70.8	33.2	46.7	3.01	40	10.11	3.64	36.04	627.22	237.48	0.47	96.5
pb272112.39#	13870	3.78	67.43	88.67	78.43	34.04	51.88	1.98	49.08	10.49	3.54	39.41	392.68	202.44	0.44	99
pb272112.39#	14302	3.58	88.67	74.51	80.81	37.56	53.57	2.35	46.51	10.9	3.47	40	422.24	194.1	0.35	102
pb272112.39#	14667	3.19	74.51	89.54	81.63	35.56	53.92	1.97	48.19	10.04	2.96	40.82	582.93	239.67	0.43	100
pb272112.39#	15072	3.55	89.54	75.35	84.21	34.48	54.11	2.39	46.51	11.8	3.22	41.45	613.41	200.72	0.26	103.2
pb272112.39#	15455	3.72	75.35	75.77	86.02	35.4	54.87	2.74	44.94	10.83	3.49	40.82	-667.32	184.32	0.5	110.8
pb272112.39#	15834	3.45	75.77	0	87.91	40.2	56.88	2.26	48.48	11.77	3.45	40.2	539.63	228.1	0.26	118.7

Parameters of all filtered pulses

Site 1b, Night 3, File PB271754.24# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

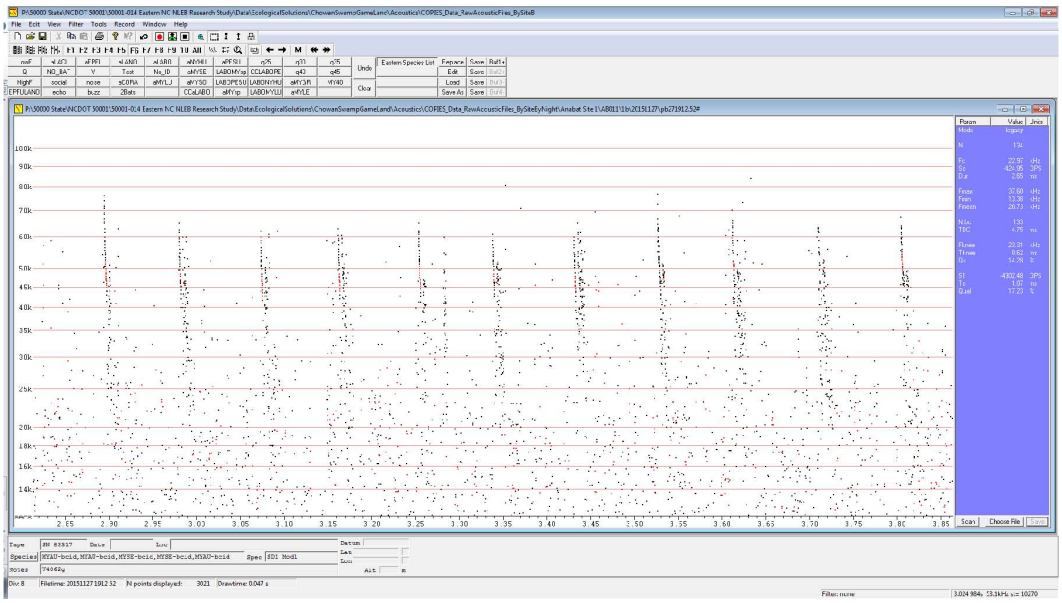


Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

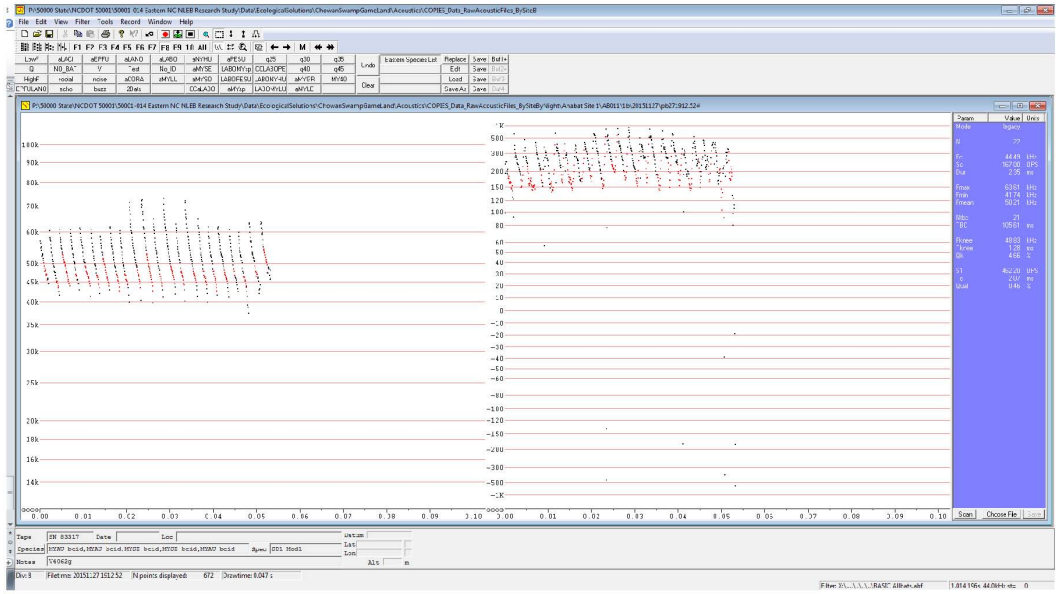
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb271754.24#	2227	2.61	0	198.02	64.52	37.91	47.46	1.99	40.61	5.45	2.41	37.91	604.78	239.25	0.37	70.2
pb271754.24#	2933	2.15	198.02	94.89	61.54	37.91	46.62	1.53	41.88	3.55	1.73	39.8	800.7	366.28	0.49	54.6
pb271754.24#	3272	2.04	94.89	96.36	58.82	36.53	45.01	1.62	39.02	4.85	2.04	36.53	385.34	222.16	0.53	61
pb271754.24#	3638	2.27	96.36	199.53	62.5	38.46	47.47	1.76	40.61	3.35	1.97	39.22	384.08	246.93	0.38	59.4
pb271754.24#	4383	2.08	199.53	104.03	63.49	38.65	48.17	1.57	42.11	3.38	1.77	40.2	508.44	335.52	0.33	57.9
pb271754.24#	4782	2.05	104.03	291.66	61.07	37.74	46.76	1.53	41.03	1.55	1.74	39.02	-336.3	351.95	0.69	56.5
pb271754.24#	5898	2.15	291.66	165.48	65.57	37.91	48.33	1.74	41.24	5.97	2.15	37.91	905.43	294.14	0.35	73
pb271754.24#	6494	2.03	165.48	181.2	61.54	38.28	47.34	1.42	42.78	1.74	1.62	40.61	280.23	381.51	0.42	51.5
pb271754.24#	7204	2.32	181.2	93.54	62.5	38.46	46.57	1.61	41.45	5.38	2.02	38.65	643.11	248.23	0.55	61.7
pb271754.24#	7542	2.42	93.54	187.38	63.49	34.33	46.26	1.77	40.2	4.61	2.42	34.33	377.03	347.42	0.38	84.9
pb271754.24#	8291	2.11	187.38	97.43	62.02	38.1	47.3	1.41	43.48	3.17	1.7	40.82	647.87	314.3	0.39	51.9
pb271754.24#	8692	2.56	97.43	102.24	62.99	38.65	46.97	1.85	40.82	9.27	2.56	40.4	577.64	20.69	0.43	55.9
pb271754.24#	9068	2.71	102.24	98.47	63.49	35.71	45.84	1.95	40	6.28	2.37	37.74	683.15	201.11	0.54	68.3
pb271754.24#	9484	3.02	98.47	93.88	68.38	38.83	47.6	2.52	38.83	11.21	2.93	38.83	676.06	0	0.43	76.1
pb271754.24#	9849	2.99	93.88	0	65.04	36.04	46.87	2.13	40.4	4.05	2.66	36.36	309.48	287.88	0.57	78.9

Parameters of all filtered pulses

Site 1b, Night 3, File PB271912.52# – Echo ID: LABO, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



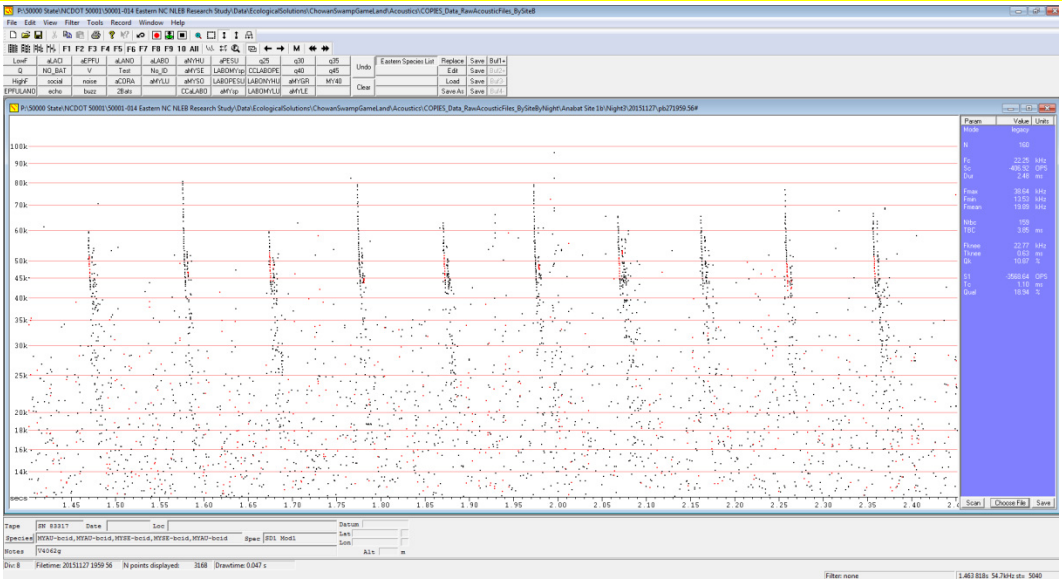
Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

Site 1b, Night 3, File PB271912.52# (continued)

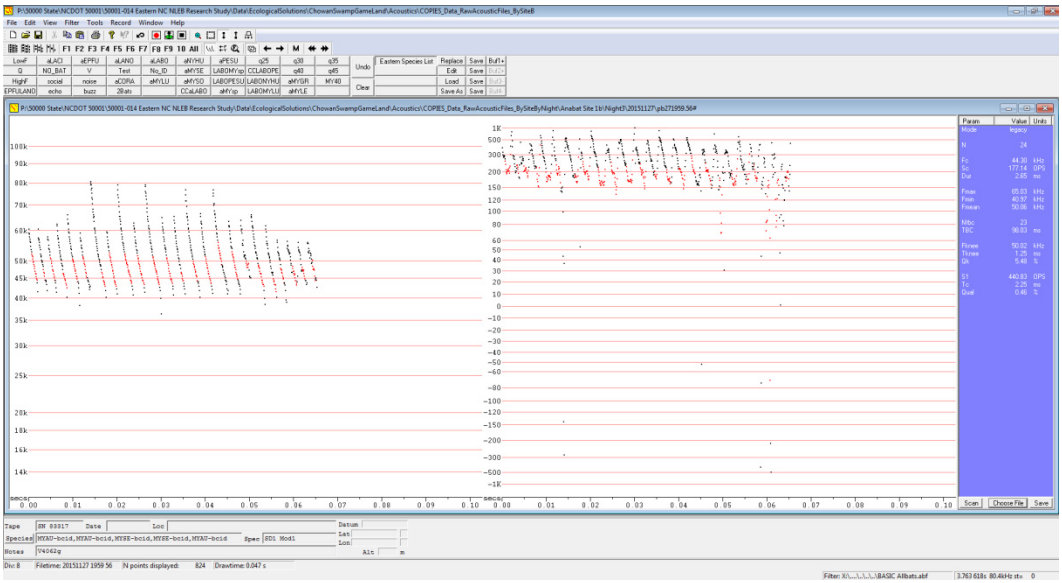
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb271912.52#	3326	2.02	0	332.78	57.14	44.44	49.48	0.83	50.31	1.27	1.67	45.45	281.59	174.67	0.96	25.7
pb271912.52#	4500	2.29	332.78	176.43	60.61	41.67	48.93	1.65	44.94	4.33	2.1	43.48	777.36	106.29	0.45	39.4
pb271912.52#	5171	2.4	176.43	82.56	61.07	43.96	50.1	0.72	52.98	4.24	2.4	43.96	480.38	160.64	0.24	38.9
pb271912.52#	5475	2.01	82.56	97.35	61.07	43.01	49.65	1.3	47.06	3.4	1.56	45.45	487.56	191.73	0.56	34.4
pb271912.52#	5829	2.56	97.35	81.62	61.54	41.45	50.06	1.33	49.38	3.95	2.46	43.96	282.33	149.42	0.41	40
pb271912.52#	6143	2.02	81.62	241.94	61.07	42.11	49.48	1.3	46.78	4.01	1.92	43.48	421.46	170.22	0.51	40.5
pb271912.52#	7100	2.2	241.94	147.37	58.82	43.01	49.18	0.66	51.61	3.26	2.1	43.96	295.19	160.99	0.28	33.8
pb271912.52#	7689	2.24	147.37	167.35	62.02	42.78	50.02	1.53	47.06	4.06	2.24	42.78	427.61	192.85	0.3	45
pb271912.52#	8343	2.14	167.35	144.8	60.61	40	48.58	1.23	47.06	4.66	1.85	44.2	464.71	146.37	0.39	37.1
pb271912.52#	8923	2.69	144.8	65.61	71.43	40.4	52.08	1.8	48.19	8.43	2.58	43.48	657.5	188.72	0.38	64.3
pb271912.52#	9182	2.7	65.61	69.65	72.73	39.8	53.29	1.25	52.98	3.49	2.6	42.78	-460.13	229.36	0.43	70
pb271912.52#	9456	2.31	69.65	92.01	65.04	41.24	50.26	1.49	47.06	6.01	2.11	43.96	721.41	158.72	0.36	48
pb271912.52#	9816	2.73	92.01	86.21	73.39	41.88	52.69	1.69	49.38	10.02	2.45	45.71	896.46	145.57	0.29	60.5
pb271912.52#	10149	2.15	86.21	96.52	62.99	40.2	50.19	1.25	47.9	4.02	1.95	44.2	285.69	166.39	0.46	42.5
pb271912.52#	10526	2.83	96.52	85.43	72.07	41.45	52.24	1.77	48.78	9.06	2.55	44.94	649.14	152.49	0.35	60.4
pb271912.52#	10859	2.32	85.43	93.33	65.04	40	50	1.33	47.9	5.82	2.03	44.2	884.39	165.68	0.47	47.2
pb271912.52#	11233	2.19	93.33	179.85	62.02	41.67	49.36	1.2	47.9	4.59	2.09	42.78	647.87	184.19	0.43	45
pb271912.52#	11942	2.56	179.85	84.65	62.02	41.24	50.08	1.49	48.19	2.85	2.18	45.2	-178.31	134.15	0.28	37.2
pb271912.52#	12273	2.03	84.65	92.99	61.07	42.55	49.33	1.05	48.48	3.31	1.4	46.24	794.7	200.9	0.42	32.1
pb271912.52#	12626	2.38	92.99	96.2	60.15	37.56	47.1	1.24	46.51	4.42	1.77	43.96	472.08	153.25	0.54	36.8
pb271912.52#	13021	2.55	96.2	277.44	63.49	42.11	50.12	1.33	49.38	5.66	1.92	47.06	453.95	117.67	0.68	34.9
pb271912.52#	14113	2.37	277.44	0	64	45.71	52.36	0.75	54.42	1.55	1.61	47.62	425.41	223.75	0.9	34.4

Parameters of all filtered pulses

Site 1b, Night 3, File PB271959.56# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



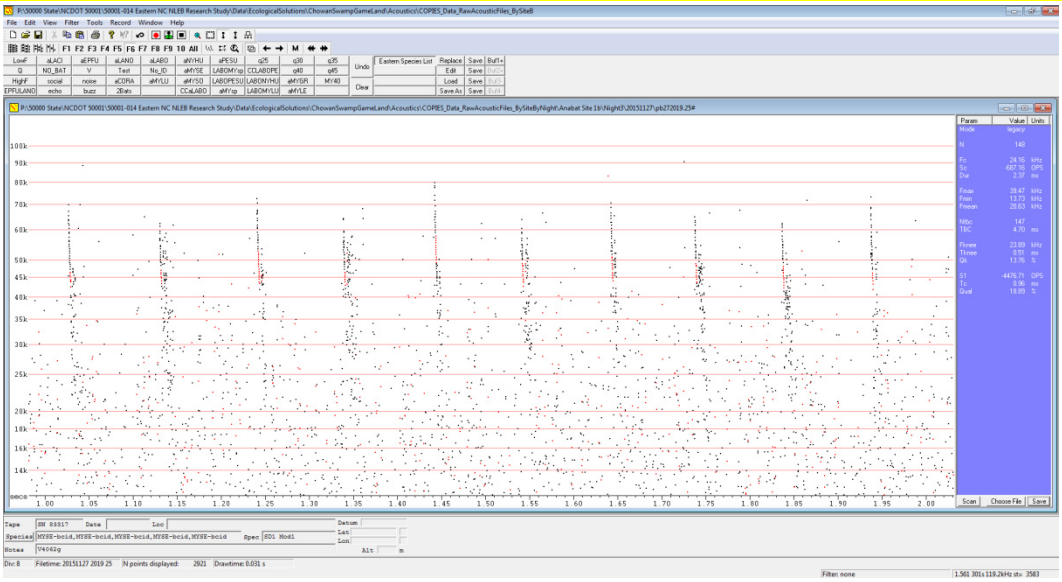
Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

Site 1b, Night 3, File PB271959.56# (continued)

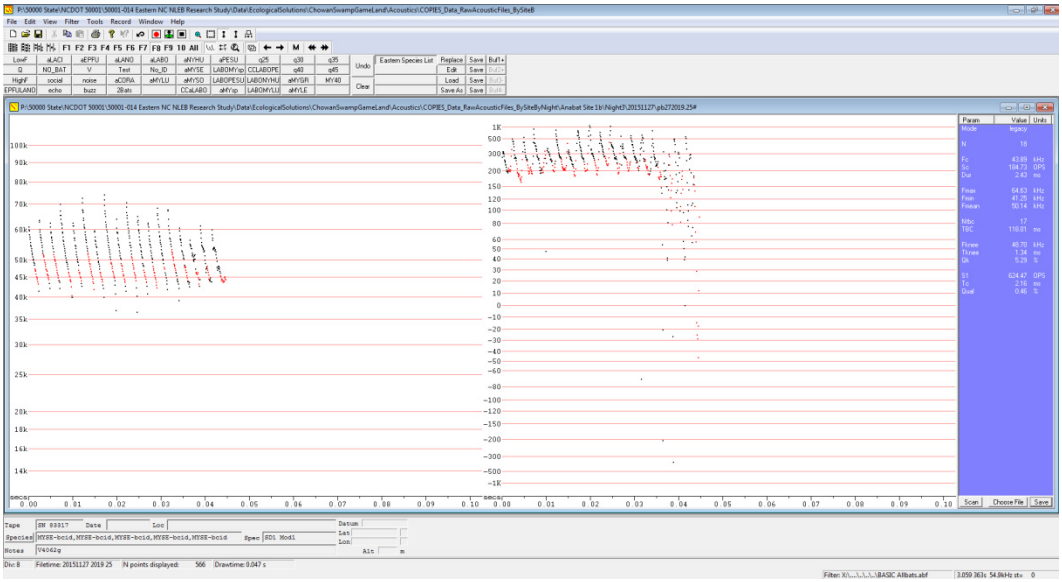
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb271959.56#	1982	2.09	0	492.66	60.61	41.67	49.86	0.72	52.29	3.27	1.89	44.69	483.9	193.03	0.31	35.6
pb271959.56#	3723	2.04	492.66	94.03	60.61	41.88	48.97	1.23	47.62	3.37	1.58	44.69	1064.96	260.68	0.41	35.6
pb271959.56#	4079	2.06	94.03	94.4	57.97	41.45	48.66	0.67	50.96	2.09	1.68	44.69	292.37	186.95	0.36	29.7
pb271959.56#	4447	2.36	94.4	105.11	62.5	40.2	49.07	1.45	46.51	3.87	2.36	40.2	485.31	229.65	0.37	55.5
pb271959.56#	4855	2.8	105.11	101.54	66.12	38.28	49.93	1.21	50.63	6.01	2.32	44.2	552.08	177.6	0.36	49.6
pb271959.56#	5252	2.32	101.54	106.44	59.26	42.11	48.32	0.67	51.28	2.9	1.59	45.2	601.79	198.26	0.36	31.1
pb271959.56#	5680	3.52	106.44	97.61	80.81	40.2	54.56	2.51	46.78	9.7	3.32	43.01	-565.78	149.95	0.49	87.9
pb271959.56#	6065	2.38	97.61	99.97	59.7	41.03	48.74	0.65	52.63	3.32	2.19	43.01	266.17	189.48	0.27	38.8
pb271959.56#	6474	3.53	99.97	96.96	79.21	40.82	53.27	1.63	52.29	12.62	3.24	43.72	812.08	160.74	0.32	81.2
pb271959.56#	6874	2.58	96.96	102.16	62.99	41.45	49.59	0.93	51.61	5.36	2.39	43.48	346.81	169.59	0.32	44.9
pb271959.56#	7276	3.63	102.16	95.33	79.21	36.36	52.94	1.76	51.28	11.73	3.22	43.48	533.66	163.57	0.35	82.2
pb271959.56#	7673	2.71	95.33	93.77	65.04	40.82	50.15	1.14	50.96	5.66	2.42	43.72	413.75	171.78	0.36	48.8
pb271959.56#	8080	2.56	93.77	95.12	65.57	41.03	50.08	1.64	46.78	6.26	2.17	44.44	556.3	139.36	0.38	47.5
pb271959.56#	8478	3.27	95.12	99.45	76.92	40.2	52.58	1.76	50	10.52	2.71	44.44	846.63	180.77	0.37	73.1
pb271959.56#	8847	2.78	99.45	99.45	66.67	41.24	50.38	1.2	51.28	6.84	2.49	43.72	558.65	178.39	0.28	52.5
pb271959.56#	9260	3.4	99.45	98.72	76.92	41.03	52.91	1.13	55.94	7.55	1.98	49.08	717	222.45	0.47	56.7
pb271959.56#	9645	2.74	98.72	4.49	63.49	41.03	49.64	0.84	52.98	4.23	2.09	44.94	522.27	190.78	0.34	41.3
pb271959.56#	9692	2.27	4.49	104.2	64	45.2	51.21	1.25	50	7.39	1.83	49.38	678.25	31.17	0.83	29.6
pb271959.56#	10074	3.2	104.2	100.38	66.12	38.46	50.05	1.66	48.78	6.14	2.89	43.01	394.19	147.17	0.46	53.7
pb271959.56#	10490	2.56	100.38	96.52	62.02	40.2	48.49	1.8	44.94	5.41	2.46	41.67	502.53	167.79	0.51	48.8
pb271959.56#	10910	2.14	96.52	492.38	56.74	39.02	46.79	0.86	47.9	2.69	1.56	43.96	443.29	177.27	0.51	29.1
pb271959.56#	13002	2.4	492.38	92.64	56.34	43.24	48.41	1.25	48.48	0.37	2.22	43.24	-817.89	170.16	0.84	30.3
pb271959.56#	13388	2	92.64	316.17	55.94	43.48	47.98	0.95	48.19	2.29	1.64	44.44	537.85	168.56	0.54	25.9
pb271959.56#	14688	2.21	316.17	0	55.94	42.78	48.87	1.16	50.31	0.37	1.76	44.44	353.75	297.79	1.13	25.9

Parameters of all filtered pulses

Site 1b, Night 3, File PB272019.25# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

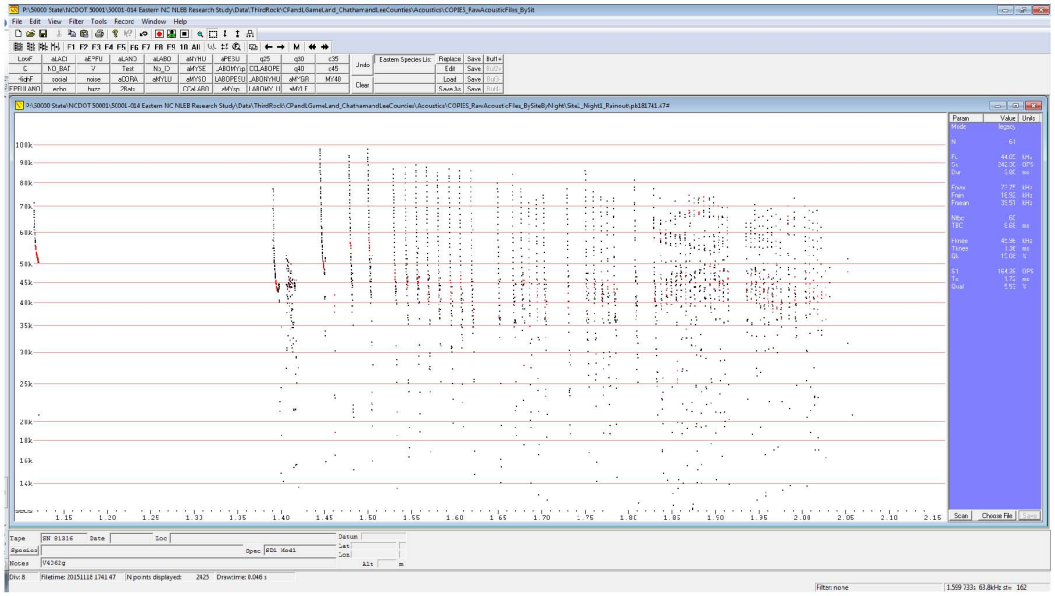
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb272019.25#	749	2.25	0	311.31	61.07	41.45	49.71	1.44	47.34	3.39	2.15	43.24	331.2	183.03	0.3	41.2
pb272019.25#	1881	2.39	311.31	202.94	63.49	42.11	50.23	0.93	51.61	5.37	2.2	44.44	586.49	170.4	0.35	42.9
pb272019.25#	2626	2.25	202.94	291.35	62.5	42.11	49.89	0.87	51.61	4.2	1.97	44.2	569	203.75	0.35	41.4
pb272019.25#	3724	2.84	291.35	103.59	70.18	40	50.67	1.91	46.51	6.66	2.64	40.4	1015.21	276.32	0.45	73.7
pb272019.25#	4116	2.06	103.59	110.47	62.5	42.78	50.39	1.35	47.06	3.62	1.88	44.2	355.04	170.67	0.51	41.4
pb272019.25#	4558	2.66	110.47	98.16	72.73	41.88	52.63	1.29	52.29	8.04	2.66	41.88	858.33	232.93	0.32	73.6
pb272019.25#	4930	2.15	98.16	103.68	59.7	40	48.46	1.32	46.51	3.74	1.85	43.96	396.48	152.11	0.38	35.8
pb272019.25#	5338	2.71	103.68	98.28	74.07	36.87	51.74	1.53	49.38	10.04	2.3	44.94	795.06	176.24	0.31	64.8
pb272019.25#	5697	2.18	98.28	101.49	64	41.45	49.61	1.11	49.08	6.15	1.98	43.72	1173.28	190.82	0.53	46.4
pb272019.25#	6091	2.5	101.49	95.26	70.8	36.53	51.26	1.24	50.96	7.51	2.18	44.2	722.6	218.79	0.37	60.2
pb272019.25#	6469	2.3	95.26	99	65.04	40.82	50.41	1.48	47.06	5.31	2.11	43.72	732.86	170.64	0.59	48.8
pb272019.25#	6858	2.08	99	100.85	62.5	42.33	49.93	1.19	48.19	4.2	2.08	42.33	403.44	209.63	0.27	47.7
pb272019.25#	7237	2.32	100.85	207.66	68.38	41.88	51.72	1.52	47.9	5.22	1.77	46.24	782.23	198.92	0.54	47.9
pb272019.25#	8058	2.61	207.66	100.61	67.8	39.22	50.52	0.89	53.33	5.73	1.87	46.51	512.25	202.51	0.45	45.8
pb272019.25#	8454	2.36	100.61	507.16	60.61	42.55	49.11	1.21	47.9	3.34	1.9	44.2	464.71	166.87	0.61	37.1
pb272019.25#	10482	2.29	507.16	197.9	56.34	42.78	48.8	1.41	46.24	0.75	2.12	43.24	413.18	136.46	0.81	30.3
pb272019.25#	11315	2.6	197.9	105.42	61.54	43.96	49.17	1.53	48.19	4.12	2.06	44.2	526.99	237.28	0.53	39.2
pb272019.25#	11759	3.15	105.42	0	60.15	43.72	48.27	1.98	45.45	7.92	3.15	44.44	602.11	27.69	0.6	35.3

Parameters of all filtered pulses

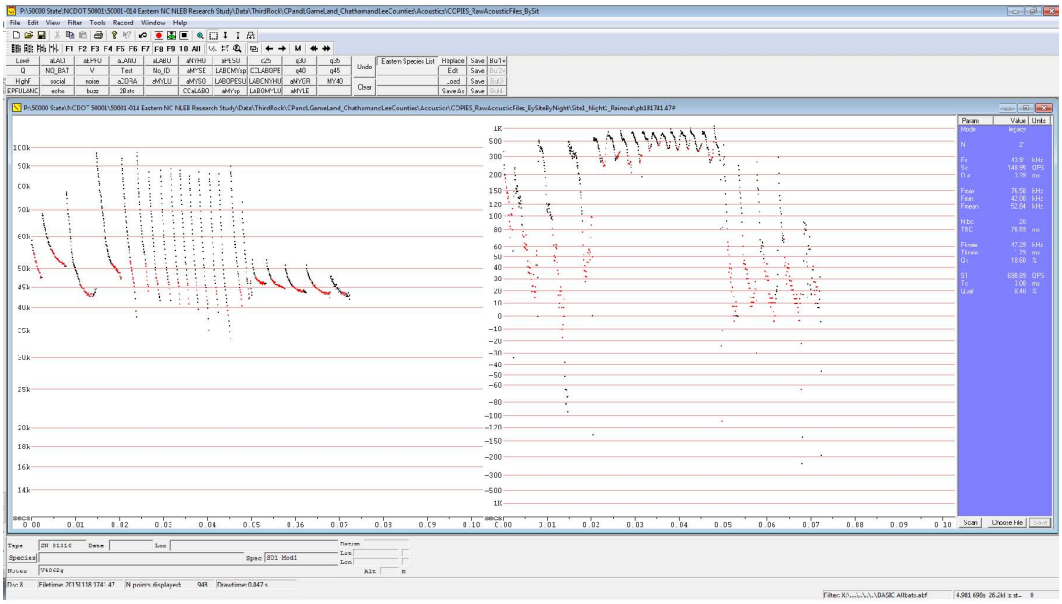
Representative Sonograms & Call Parameters – CP&L Game Land

Rationale: File contains high clutter search, approach, and feeding buzz of LABO

Site 1, Night 1 Rainout, File PB181741.47# – Echo ID: LABO, BCID ID: MYSE, Third Rock ID: **LABO**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

Site 1, Night 1 Rainout, File PB181741.47# (continued)

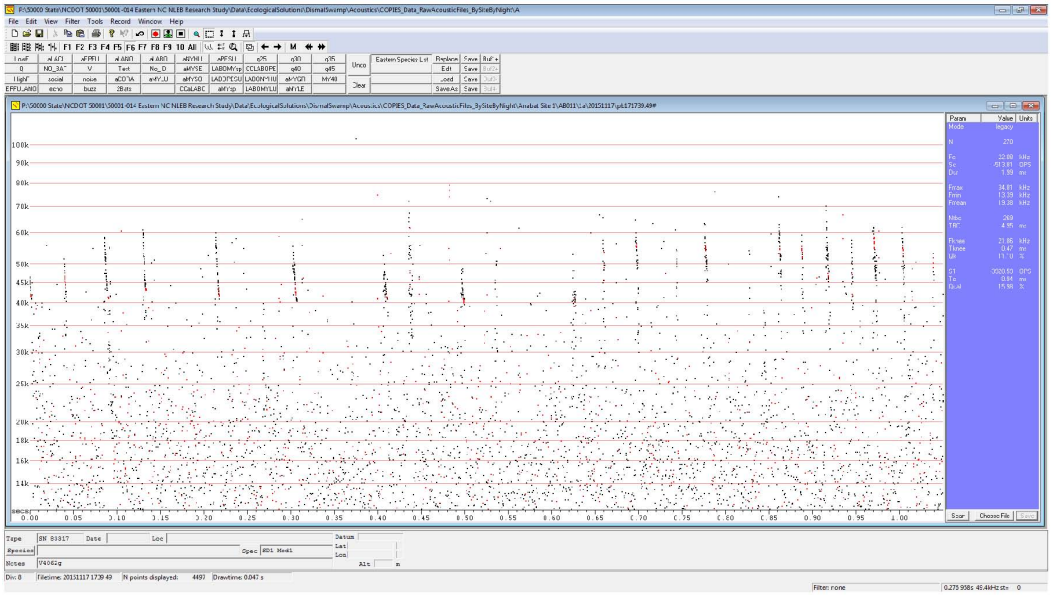
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb181741.47#	53	2.26	0	1018.87	58.82	47.34	51.37	0.43	54.79	2.32	2.09	47.34	443.36	126.99	0.38	24.3
pb181741.47#	167	5.46	1018.87	275.31	68.38	50.63	55.69	2.11	55.94	6.22	5.22	50.63	204.64	46.29	0.27	35
pb181741.47#	250	6.85	275.31	53.87	77.67	42.55	49.02	3.29	45.45	20.77	6.04	42.55	441.21	34.58	0.31	82.5
pb181741.47#	477	5.71	53.87	33.9	97.56	47.06	59.59	3.36	51.28	20.23	5.54	47.06	499.37	56.93	0.38	107.3
pb181741.47#	597	3.27	33.9	21.43	94.12	37.91	58.66	1.96	52.29	13.33	2.87	45.2	620.02	229.5	0.42	108.2
pb181741.47#	663	2.72	21.43	29.31	97.56	43.96	61.76	1.96	51.61	13.53	2.72	43.96	808.5	303.23	0.35	122
pb181741.47#	734	2.57	29.31	13.58	86.96	41.67	56.07	1.67	48.48	11.48	2.19	44.2	964.45	254.82	0.31	96.7
pb181741.47#	788	2.35	13.58	12.42	87.91	41.67	56.1	1.8	46.24	13.2	2.26	41.67	995.62	328.24	0.45	111
pb181741.47#	846	2.1	12.42	12.22	88.89	40.82	57.06	1.55	47.06	11.62	1.81	45.2	1006.51	220.51	0.39	96.7
pb181741.47#	902	2.01	12.22	12.41	87.91	40.82	57.68	1.55	47.06	10.18	2.01	40.82	667.32	441.55	0.5	115.4
pb181741.47#	957	2.1	12.41	13.68	85.11	39.6	55.34	1.52	46.24	9.3	1.7	44.2	695.45	360.32	0.37	92.6
pb181741.47#	1012	2.34	13.68	11.79	86.96	35.09	52.97	1.72	43.96	13.19	1.91	41.67	1279.18	401.92	0.47	108.7
pb181741.47#	1062	2.04	11.79	13.13	86.02	39.02	54.96	1.55	44.94	11.17	1.74	43.24	954.24	300.8	0.37	98.9
pb181741.47#	1113	2.64	13.13	1252.1	86.02	33.47	49.92	1.97	40.4	16.4	2.18	38.28	1239.88	373.22	0.34	124.7
pb181741.47#	5309	2.58	1252.1	81.78	89.89	40.4	55.92	1.92	46.78	15.26	2.58	40.4	1039.75	323.9	0.47	122.5
pb181741.47#	5535	2.25	81.78	2028.94	73.39	42.11	49.84	1.71	42.33	16.82	1.88	46.51	1521.98	-790.57	0.78	57.8
pb181741.47#	6671	3.15	2028.94	196.38	52.63	45.71	46.97	0.82	47.34	4.28	2.89	45.71	468.43	24.32	0.39	15.1
pb181741.47#	6765	4.22	196.38	113.5	52.63	44.44	46.45	1.06	47.06	4.23	4.13	44.44	366.19	26.87	0.26	18.4
pb181741.47#	6824	4.87	113.5	218.09	50.96	43.48	45.17	1.7	45.2	4.59	4.14	44.2	337.13	13.23	0.24	15.3
pb181741.47#	6886	5.43	218.09	223.21	50.96	42.33	44.9	1.44	45.45	3.71	5.34	42.33	333.02	26.3	0.3	20.4
pb181741.47#	6962	4.34	223.21	0	47.9	41.88	44.23	2.48	43.24	0.67	3.41	42.55	-209.45	25.06	0.68	12.6

Parameters of all filtered pulses

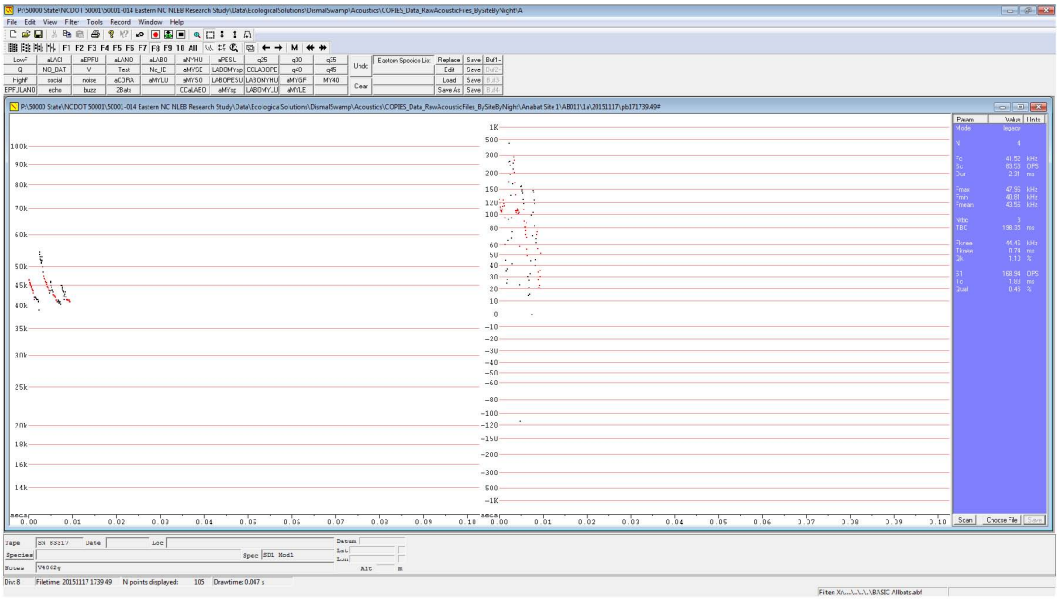
Representative Sonograms & Call Parameters – Great Dismal Swamp NWR

Rationale: Call sequence too short, with pulse quality too poor to determine species

Site 1, Night 2, File PB171739.49# – Echo ID: MYSE, BCID ID: NO ID, Ecological Solutions ID: **NO ID**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



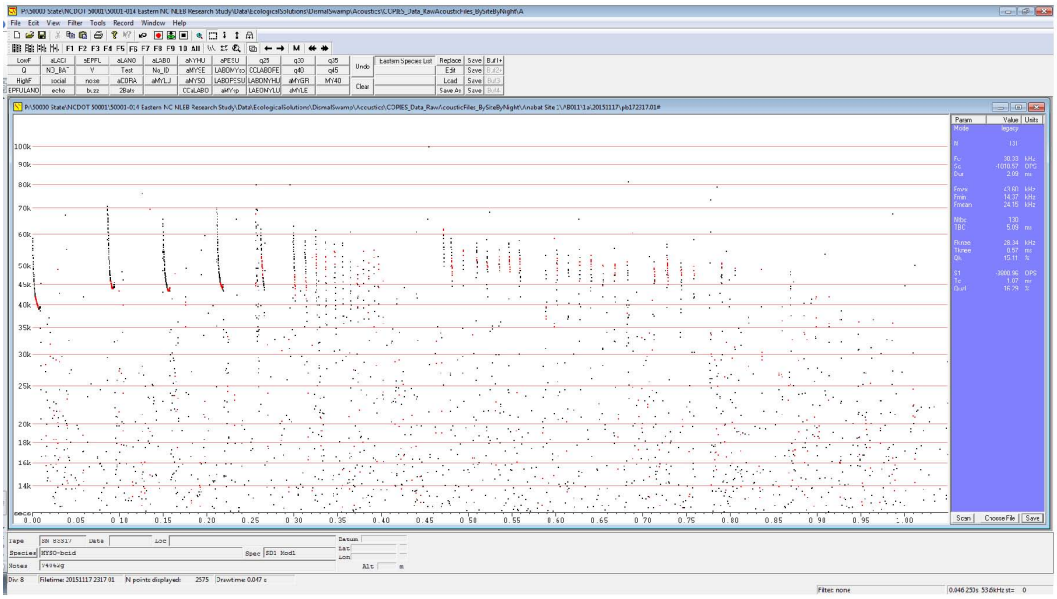
Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb171739.49#	2	2.35	0	151.78	46.51	39.02	42.59	0	46.5	0	1.3	41.5	142.6	130.3	0.32	12.2
pb171739.49#	548	2.45	151.78	426.54	54.42	43.01	47.39	1.02	47.3	1.69	2.3	43	260	111.3	0.51	26.5
pb171739.49#	2009	2.38	426.54	221.63	45.98	40.4	42.05	0.73	42.6	1.33	1.6	40.8	184.2	69.58	0.42	12.6
pb171739.49#	2679	2.09	221.63	0	44.94	40.82	42.21	1.21	41.5	1.39	2.2	40.8	89.06	22.97	0.57	10.1

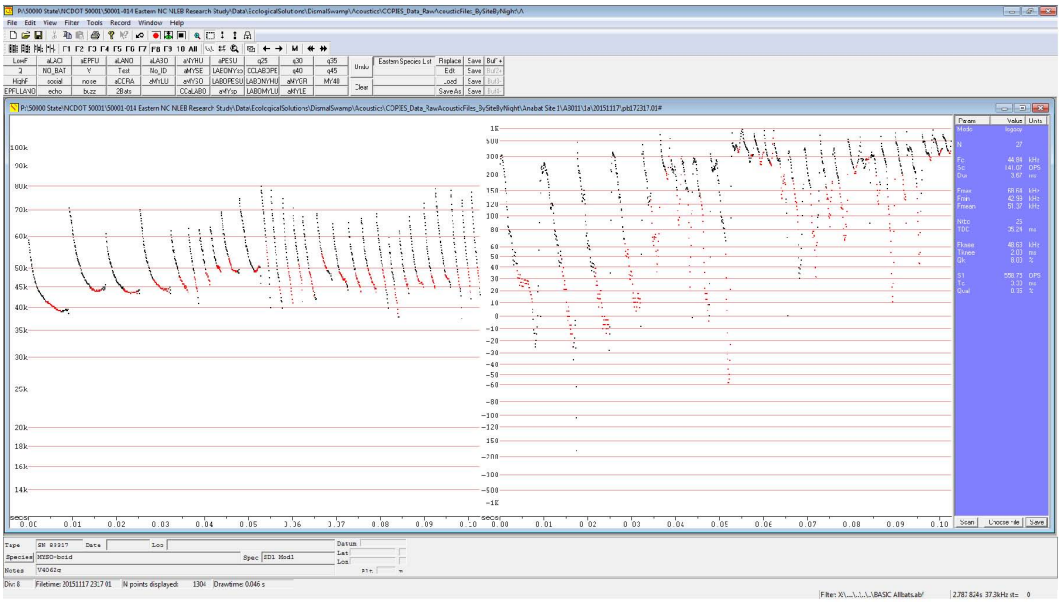
Parameters of all filtered pulses

Rationale: J-shaped pulses characteristic of LABO, Fc highly variable, slope values less than typical MYSE

Site 1, Night 2, File PB172317.01# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **LABO**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

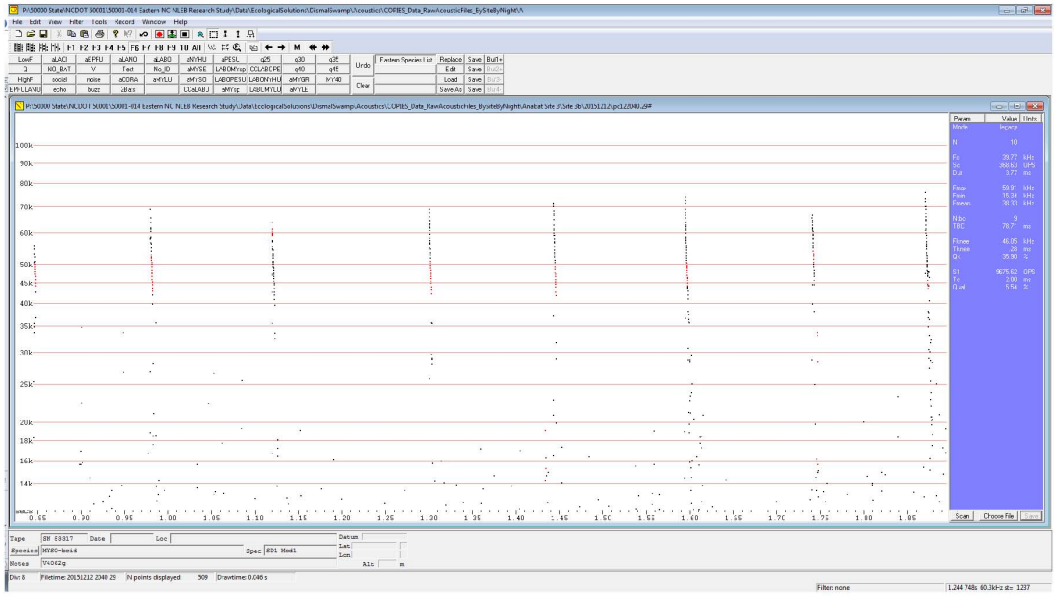
Site 1, Night 2, File PB172317.01# (continued)

Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb172317.01#	2	9.03	0	85.72	58.82	38.65	42.54	4	41.24	12.84	7.29	39.02	305.24	24.16	0.24	50.7
pb172317.01#	316	8.33	85.72	64.19	70.8	43.96	49.48	4.99	44.69	14.76	7.43	44.2	165.07	6.56	0.27	60.2
pb172317.01#	596	7.74	64.19	61.62	61.07	43.24	46.49	4.08	44.2	11.52	7.2	43.24	480.38	10.13	0.34	41.2
pb172317.01#	860	7.09	61.62	50.45	70.18	43.24	49.06	3.17	46.78	14.95	6.73	43.48	221.05	29.65	0.29	61.4
pb172317.01#	1109	3.91	50.45	37.3	62.02	43.72	49.07	1.97	47.62	7.35	3.91	43.72	495.03	63.63	0.34	41.9
pb172317.01#	1253	2.26	37.3	2083.02	62.99	40.82	49.54	1.36	47.62	5.54	2.06	43.96	844.08	163.1	0.29	43.3
pb172317.01#	7516	2.47	2083.02	55.55	62.5	45.45	51.91	1.62	48.78	3.48	2.47	45.45	437.31	120.43	0.56	37.5
pb172317.01#	7738	2.38	55.55	17.03	63.49	49.08	53.69	1.58	50.63	4.41	2.38	49.08	360.64	56.11	0.41	29.4
pb172317.01#	7813	4.09	17.03	41.72	68.97	48.78	53.82	1.76	52.98	7.78	3.68	49.08	-213.51	57.43	0.3	40.5
pb172317.01#	7970	5	41.72	28.93	74.77	45.98	55.26	3.46	49.08	12.02	4.58	50.63	362.66	-39.95	0.34	47.7
pb172317.01#	8152	2.18	28.93	121.61	80	40	58.74	1.19	57.14	3.27	1.64	51.61	560.18	327.77	0.37	55
pb172317.01#	8747	2.56	121.61	75.68	78.43	39.8	53.1	1.98	44.94	9.23	2.17	43.24	1027.69	300.8	0.4	81.4
pb172317.01#	9036	2.28	75.68	63.56	74.77	41.03	52.61	1.22	50.63	8.98	2.28	41.03	745.07	286.1	0.25	82.2
pb172317.01#	9289	2.17	63.56	14.71	70.8	41.45	53.36	1.31	51.28	5.66	2.07	44.2	1058.71	281.79	0.32	60.2
pb172317.01#	9356	3.02	14.71	46.52	67.23	41.88	50.26	1.42	49.08	5.87	2.55	42.78	588.85	175.37	0.4	57.1
pb172317.01#	9517	3.53	46.52	47.39	68.38	46.78	53.21	1.21	54.42	5.33	2.3	49.38	396.43	128.84	0.29	38.5
pb172317.01#	9705	3.58	47.39	49.84	64.52	44.2	50.25	1.61	49.08	8.2	3.05	46.51	408.38	53.99	0.28	38.7
pb172317.01#	9889	2.85	49.84	32.78	65.04	43.72	50.53	1.55	48.78	7.04	2.85	43.72	721.41	121.47	0.48	48.8
pb172317.01#	10021	3.47	32.78	47.14	66.67	43.72	50.72	1.57	50	8.3	3.47	43.72	384.63	102.09	0.27	52.5
pb172317.01#	10188	2.68	47.14	37.28	68.38	39.8	50.78	1.42	49.69	5.88	2.1	44.94	586.58	212.34	0.31	52.1
pb172317.01#	10342	2.33	37.28	880.36	59.7	37.91	46.31	1.44	44.44	3.47	2.12	38.65	755.03	294.79	0.48	54.5
pb172317.01#	13200	2.33	880.36	15.8	62.02	43.24	49.81	1.35	47.06	4.08	2.14	43.48	329.59	144.16	0.57	42.6
pb172317.01#	13285	3.15	15.8	38.72	67.23	44.94	50.71	1.69	47.9	10.04	3.15	44.94	654.46	62.6	0.34	49.6
pb172317.01#	13426	2.57	38.72	11.62	72.73	44.69	52.98	1.7	48.48	10.04	2.57	44.69	760.73	135.36	0.27	62.7
pb172317.01#	13493	3.46	11.62	10.82	79.21	44.94	55.41	2.35	48.19	11.28	3.11	47.06	1290.91	45.14	0.34	68.3
pb172317.01#	13570	2.54	10.82	176.53	78.43	37.56	53.56	1.7	48.19	8.34	2.05	44.94	804.23	287.7	0.53	74.5
pb172317.01#	14445	2.01	176.53	50.43	74.07	42.11	53.84	1.3	50	6.22	1.82	43.96	555.46	357.44	0.25	68.5
pb172317.01#	14642	2.37	50.43	10.8	77.67	33.47	52.34	1.33	50.31	8.06	1.75	46.24	767.04	288.5	0.42	68

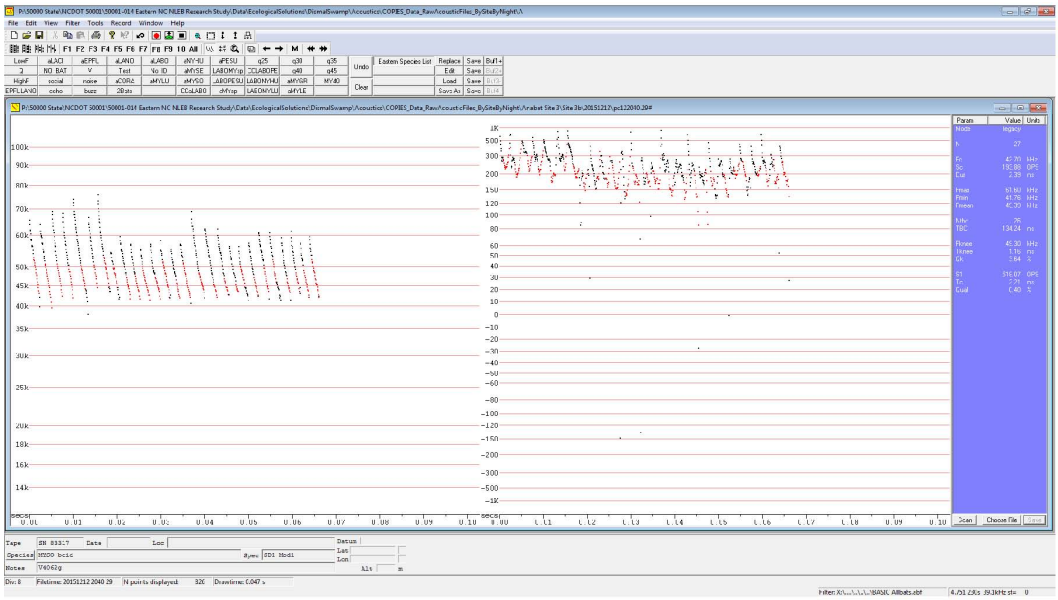
Parameters of all filtered pulses

Rationale: Slope value right for MYAU (<200 OPS), vs. MYSE (>200 OPS), many sigmoidal pulses in file

Site 3b, Night 3, File PC122040.29# – Echo ID: MYSE, BCID ID: MYSO, Ecological Solutions ID: **MYAU**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

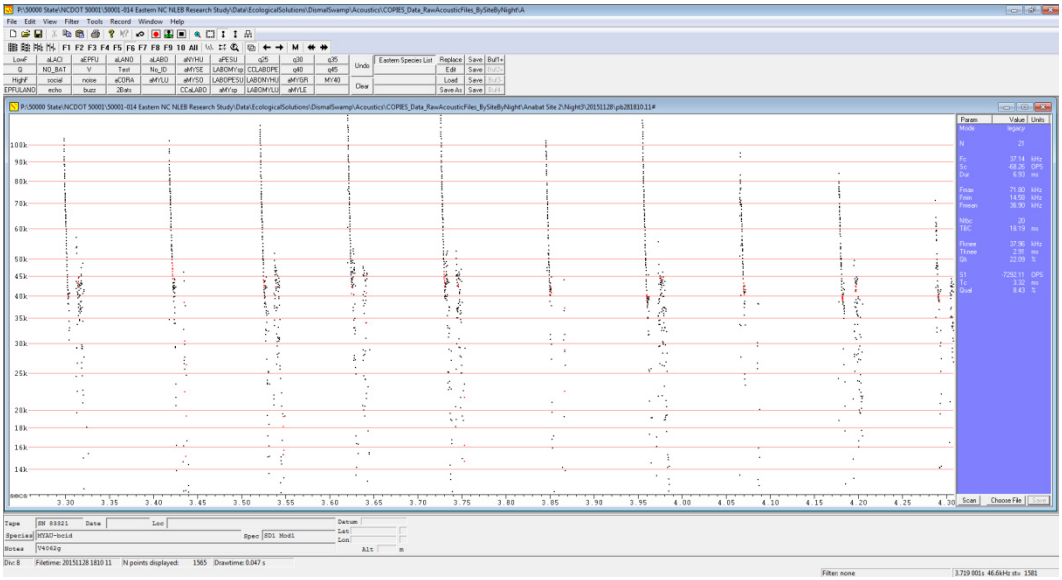
Site 3b, Night 3, File PC122040.29# (continued)

Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pc122040.29#	1441	2.37	0	139.82	65.57	39.8	50.61	0.91	52.98	4.5	2.17	43.01	623.95	237.75	0.41	52.5
pc122040.29#	1667	2.64	139.82	180.58	64	39.6	49.98	1.14	50.96	2.9	2.64	39.6	844.53	242.07	0.46	61.6
pc122040.29#	1930	2.3	180.58	143.38	68.97	42.33	52.11	1.18	50.96	5.94	2.3	42.33	525.77	237.25	0.28	62.9
pc122040.29#	2167	2.46	143.38	150.71	68.38	41.88	52.05	1.49	49.38	5.12	2.46	41.88	586.58	245.18	0.46	63.2
pc122040.29#	2395	3.29	150.71	146.38	74.07	38.1	52.31	1.69	50.63	7.68	2.71	44.2	602.89	192.41	0.33	67.6
pc122040.29#	2650	2.02	146.38	130.12	66.67	44.44	53.47	1.26	50.63	3.14	2.02	44.44	949.9	247.46	0.5	50
pc122040.29#	2873	2.96	130.12	1855.4	76.19	43.48	54.04	1.44	52.98	8.15	2.6	44.44	998.87	219.25	0.44	71.4
pc122040.29#	5608	2.02	1855.4	117.25	54.42	41.67	47.55	0.62	49.69	0.49	1.55	44.44	222.23	172.12	0.58	22.4
pc122040.29#	5802	2.37	117.25	474.15	59.7	41.67	48.99	1.55	47.06	2.83	2.37	41.67	456.33	214.63	0.29	43.3
pc122040.29#	6520	2.18	474.15	106.01	57.14	41.67	47.79	1.18	47.34	2.75	2.18	41.67	338.56	184.64	0.32	37.1
pc122040.29#	6688	2.13	106.01	326.46	55.56	41.45	46.93	0.54	50.31	2.76	2.13	41.45	330.49	175.5	0.3	34
pc122040.29#	7236	2.26	326.46	659.82	57.14	41.67	47.77	1.18	47.06	2.02	2.26	41.67	-296.58	162.57	0.41	37.1
pc122040.29#	8327	2.26	659.82	117.4	58.39	41.88	47.72	0.53	51.61	3.63	2.08	42.11	1091.69	189.5	0.45	38.7
pc122040.29#	8518	2.03	117.4	130.74	55.56	41.88	47.27	1.2	46.51	2.47	2.03	41.88	305.71	182.79	0.22	32.6
pc122040.29#	8741	2.43	130.74	751.58	57.14	40.61	47.8	0.67	51.28	2.52	2.33	42.11	244.41	171.77	0.25	35.7
pc122040.29#	9889	3.12	751.58	123.82	68.97	41.88	51.28	1.79	48.48	7.64	2.84	43.96	981.97	134.86	0.35	56.9
pc122040.29#	10108	2.79	123.82	107.35	62.5	42.11	50.18	2.06	45.2	3.65	2.79	42.11	250.34	139.31	0.29	48.4
pc122040.29#	10303	2.6	107.35	137.81	62.5	42.55	49.31	1.6	46.78	5.36	2.5	42.55	825.11	151.26	0.42	46.9
pc122040.29#	10540	2.05	137.81	232.26	56.34	43.48	48.78	1.59	45.2	1.78	2.05	43.48	274.5	122.71	0.34	29.6
pc122040.29#	10958	2.31	232.26	117.64	56.34	41.24	46.83	0.54	50.31	2.38	1.47	44.69	556.63	183.8	0.37	26.1
pc122040.29#	11154	2.25	117.64	1280.77	57.55	42.33	48.06	1.25	47.06	3.09	2.15	42.55	290.29	160.44	0.23	35.3
pc122040.29#	13117	2.48	1280.77	130.82	61.07	41.67	50.02	1.25	49.69	1.05	2.39	41.67	236.64	223.04	0.47	46.6
pc122040.29#	13328	2.56	130.82	133.17	61.07	41.45	48.49	0.72	52.29	2.95	1.55	45.98	487.56	225.19	0.47	32.8
pc122040.29#	13543	2.22	133.17	155.54	59.26	41.45	48.58	1.4	46.78	2.44	2.13	41.45	601.79	238.86	0.48	43
pc122040.29#	13779	2.11	155.54	1369.24	61.54	43.01	49.36	1.13	48.48	4.37	1.92	43.48	789.1	199.54	0.55	41.5
pc122040.29#	15961	2.09	1369.24	128.32	57.55	42.11	47.85	0.76	49.08	2.8	1.99	42.11	417.11	179.34	0.58	36.7
pc122040.29#	16151	2.23	128.32	0	59.7	42.11	48.41	0.59	52.29	3.88	2.14	42.11	451.38	201.59	0.48	41.8

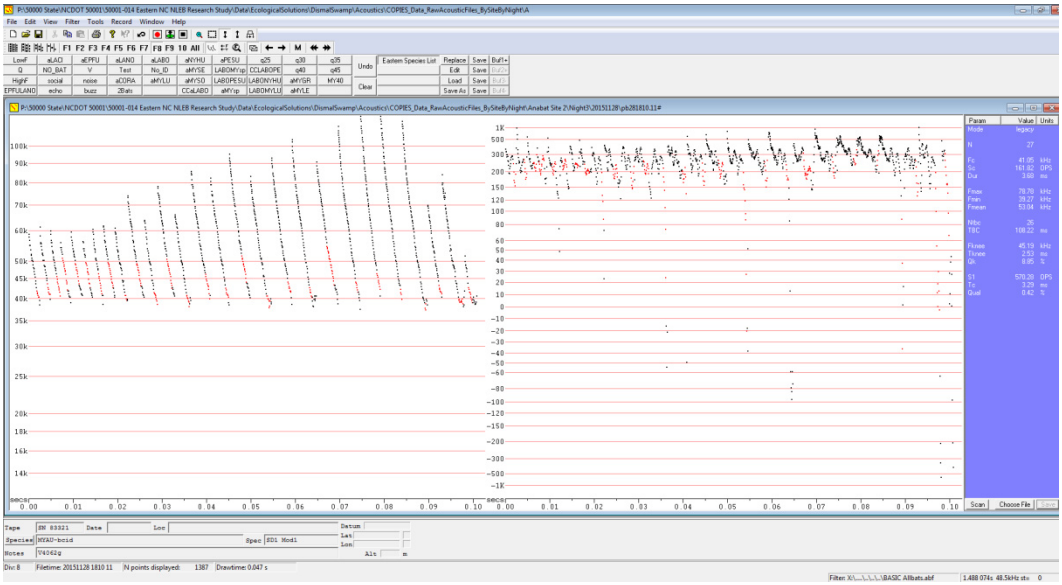
Parameters of all filtered pulses

Rationale: Pulses straight, many steep pulses with slope ~200 OPS, Fc and other parameters consistent with MYSE

Site 2, Night 3, File PB281810.11# – Echo ID: MYSE, BCID ID: MYAU, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



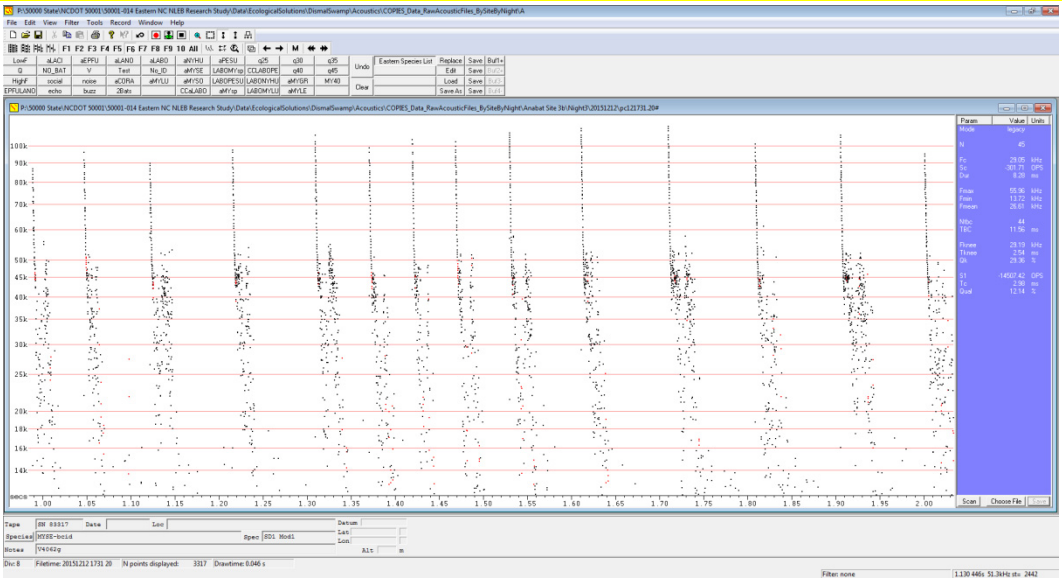
Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

Site 2, Night 3, File PB281810.11# (continued)

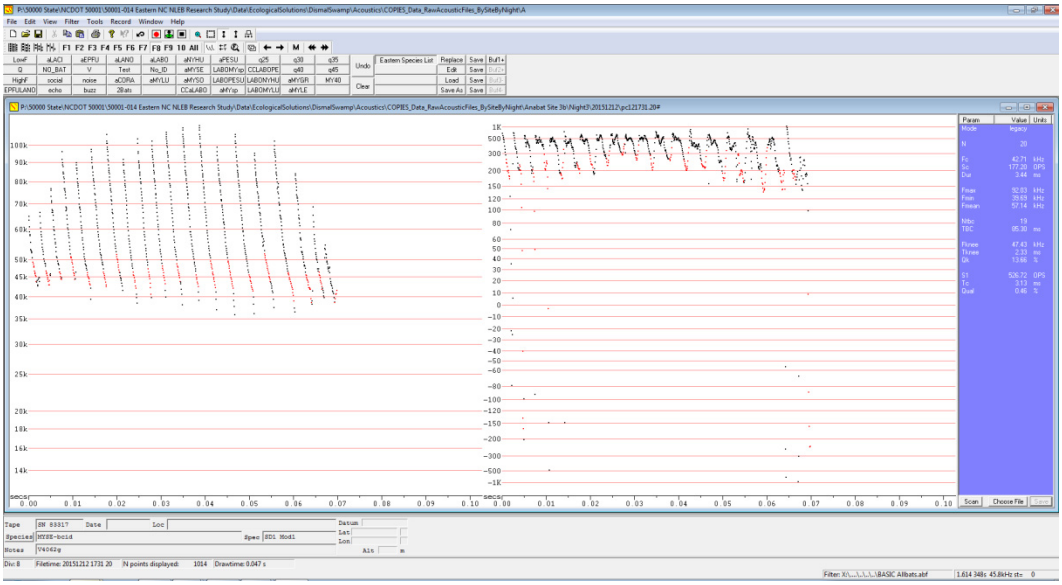
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb281810.11#	212	2.49	0	222.98	58.82	38.46	46.53	1.79	41.88	4.32	2.29	40.4	431.99	105.76	0.41	45.6
pb281810.11#	284	2.37	222.98	114.2	61.54	39.8	47.3	1.69	43.72	6.76	2.26	41.03	1065.69	158.53	0.53	50
pb281810.11#	331	2.17	114.2	105.57	60.15	40.61	47.95	1.42	45.71	4.29	2.17	40.61	597.65	226.58	0.38	48.1
pb281810.11#	368	2.26	105.57	108.45	55.94	39.02	45.94	0.46	50.96	0.75	1.57	42.11	545.22	246.19	0.52	32.9
pb281810.11#	413	2.52	108.45	103.92	59.7	40.82	47.6	0.98	49.38	2.59	1.76	43.72	597.68	226.03	0.37	36.6
pb281810.11#	451	2.22	103.92	197.48	56.34	40.4	46.85	0.68	49.69	0.81	1.64	42.78	275.14	225.92	0.54	31.7
pb281810.11#	505	2.36	197.48	114.56	60.61	38.65	47.38	1.32	46.51	4.15	2.06	41.24	413.9	234.34	0.49	47
pb281810.11#	555	2.62	114.56	105.99	62.02	40.4	48.8	1.1	49.69	3.89	2.23	42.78	322.69	190.29	0.26	45
pb281810.11#	601	2.87	105.99	115.84	61.07	39.6	47.32	2.27	40.82	4.43	2.67	39.6	480.38	109.3	0.45	54.2
pb281810.11#	654	3.66	115.84	195.46	74.07	40.4	52.52	2.03	49.38	6.26	2.98	43.24	468.46	200.35	0.33	71.3
pb281810.11#	722	2.91	195.46	117.74	64	38.65	48.14	2.21	41.45	5.85	2.91	38.65	303.51	144.12	0.4	65.6
pb281810.11#	799	3.83	117.74	109.97	78.43	40.61	54.35	2.12	50.63	5.63	3.25	42.55	390.75	222.54	0.38	84.3
pb281810.11#	888	3.54	109.97	117.51	66.12	38.1	48.6	2.63	40.82	4.88	3.24	38.1	234.6	162.64	0.45	73.6
pb281810.11#	987	4.29	117.51	103.42	86.02	40	56.9	3.26	46.24	9.47	4.19	40	653.12	224.49	0.43	115.1
pb281810.11#	1069	4.21	103.42	117.4	82.47	38.46	55.11	3.42	42.55	9.24	4	40.4	588.88	127.59	0.44	104.1
pb281810.11#	1198	4.68	117.4	104.88	95.24	40.2	58.96	2.81	51.61	11.02	3.82	44.2	771.53	222.17	0.36	115.5
pb281810.11#	1321	4.74	104.88	112.2	83.33	37.91	53.18	3.63	40.61	13	4.44	39.41	887.88	53.31	0.51	111.5
pb281810.11#	1472	4.58	112.2	195.1	93.02	38.65	58.54	3.71	44.2	12.94	4.37	41.88	555.83	117.19	0.41	122.1
pb281810.11#	1589	5.42	195.1	119.54	103.9	38.1	57.56	3.93	42.78	17.45	4.41	40.4	750.13	169.33	0.46	157.1
pb281810.11#	1800	4.84	119.54	103.03	90.91	38.83	57.9	2.33	54.79	9.12	3.97	43.48	471.55	203.75	0.36	109.1
pb281810.11#	1936	4.94	103.03	99.43	112.68	37.56	62.34	3.96	44.2	18.79	4.43	41.67	1083.17	181.1	0.32	170.4
pb281810.11#	2157	4.48	99.43	105.4	119.4	40.61	67.87	3.74	46.51	17.4	4.38	42.33	314.32	213.13	0.35	182.1
pb281810.11#	2346	4.82	105.4	229.13	119.4	39.8	67.22	4.52	42.33	17.69	4.82	39.8	628.64	298.02	0.43	200
pb281810.11#	2712	5.67	229.13	111.94	115.94	37.38	61.38	5.16	37.74	23.23	5.36	38.83	388.89	-201.07	0.44	198.6
pb281810.11#	2973	3.23	111.94	110.83	70.18	40.4	51.96	2.56	43.24	5.79	3.13	41.24	221.05	119.19	0.33	70.2
pb281810.11#	3059	5.07	110.83	111.37	84.21	38.1	52.1	3.75	39.8	15.41	4.67	38.83	1396.24	38.66	0.61	116.8
pb281810.11#	3260	2.67	111.37	0	51.61	38.65	41.92	0.78	42.78	3.81	1.66	39.02	558.58	149.81	0.49	32.3

Parameters of all filtered pulses

Site 3b, Night 3, File PC121731.20# – Echo ID: UNKN, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

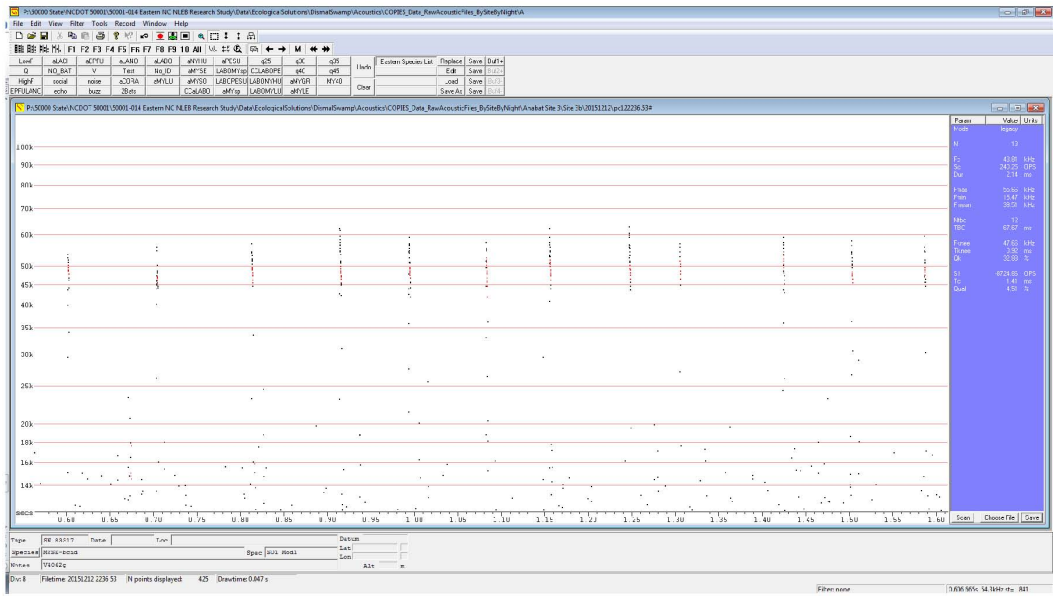


Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

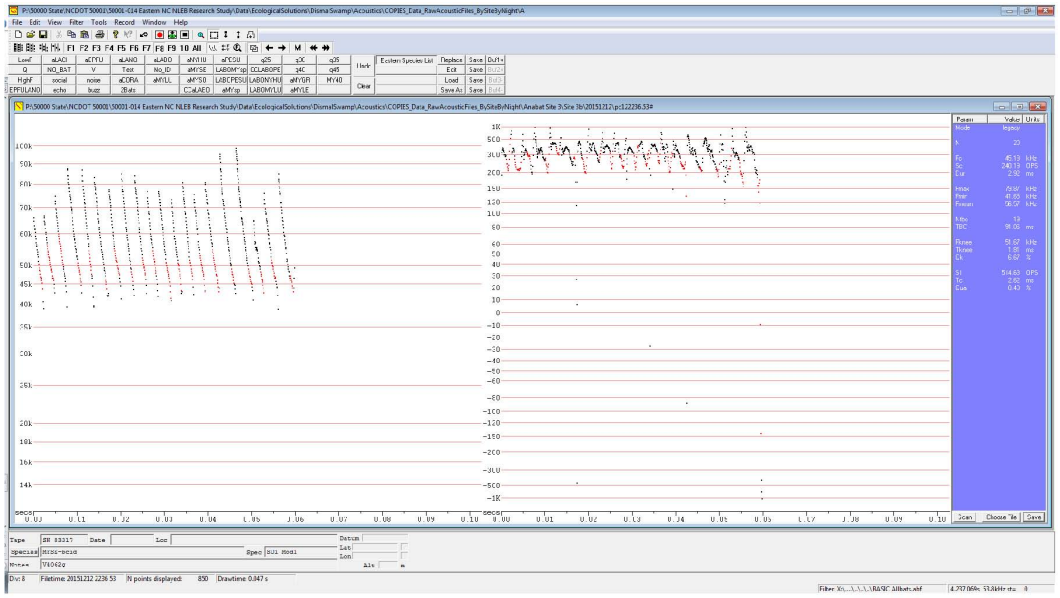
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pc121731.20#	1996	2.47	0	83.76	65.04	42.78	48.64	1.3	46.78	7.99	2.02	42.78	693.96	178.98	0.76	52
pc121731.20#	2234	2.5	83.76	70.94	66.67	43.01	49.64	1.43	46.78	11.92	2.32	45.71	727.42	37.27	0.46	45.8
pc121731.20#	2464	2.5	70.94	57.88	76.92	44.44	54.49	1.97	46.51	9.86	2.41	44.44	647.97	148.06	0.63	73.1
pc121731.20#	2686	3.13	57.88	74.81	96.39	44.44	61.36	2.03	50.96	12.43	2.96	44.44	780.51	212.76	0.7	116.9
pc121731.20#	2947	3.37	74.81	93.75	89.89	39.41	57.02	2.53	46.24	13.65	3.16	43.01	519.88	164.88	0.38	109
pc121731.20#	3268	3.48	93.75	93.68	97.56	42.55	61.01	2.84	46.51	13.04	3.48	42.55	-437.19	201.45	0.4	129.3
pc121731.20#	3576	3.65	93.68	61.6	106.67	41.67	62.43	2.84	47.06	17.88	3.65	41.67	725.43	214.9	0.39	156
pc121731.20#	3901	3.23	61.6	48.7	91.95	38.46	56.95	2.28	46.51	13.29	2.92	42.11	1086.88	224.71	0.4	118.4
pc121731.20#	4127	3.2	48.7	49.04	103.9	39.8	62.52	2.46	47.34	13.4	3.1	40.61	924.86	342.9	0.47	155.8
pc121731.20#	4332	3.21	49.04	61.16	102.56	40	62.29	2.39	48.19	13.68	3.01	43.24	596.28	252.16	0.34	137.2
pc121731.20#	4586	3.66	61.16	81.5	108.11	38.1	62.33	2.47	48.78	15.59	3.17	43.96	509.61	215.56	0.35	145.9
pc121731.20#	4900	3.72	81.5	98.74	111.11	39.22	63.47	3.05	45.71	17.88	3.51	42.55	785.25	224.73	0.38	161.1
pc121731.20#	5224	3.97	98.74	98.86	112.68	37.04	62.47	2.6	49.69	19.75	3.65	42.33	712.36	218.85	0.29	166.2
pc121731.20#	5634	4.1	98.86	96.62	98.77	35.87	58.58	2.52	49.69	15.18	3.67	42.11	837.84	208.13	0.36	134.6
pc121731.20#	5962	4.36	96.62	95.73	106.67	36.2	59.62	3.2	45.71	19.14	4.04	41.45	-502.86	169.16	0.38	157.3
pc121731.20#	6378	4.39	95.73	96.42	95.24	37.56	57.36	2.34	51.95	14.28	3.61	43.96	581.91	189.77	0.46	116.7
pc121731.20#	6700	4.67	96.42	188.76	102.56	36.53	57.45	3.13	46.24	20.59	4.45	39.02	890.88	186.77	0.4	162.8
pc121731.20#	7344	3.96	188.76	108.96	84.21	38.28	52.53	2.43	45.71	14.08	3.66	38.65	457.7	197.29	0.61	117.9
pc121731.20#	7740	2.6	108.96	213.66	68.97	39.8	47.73	1.38	46.51	11.67	2.11	41.88	1154.86	206.23	0.49	64.7
pc121731.20#	8338	2.76	213.66	0	54.79	38.65	44.9	2.37	38.65	2.47	2.76	41.67	-1159.07	-278.98	0.61	31.5

Parameters of all filtered pulses

Site 3b, Night 3, File PC122236.53# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

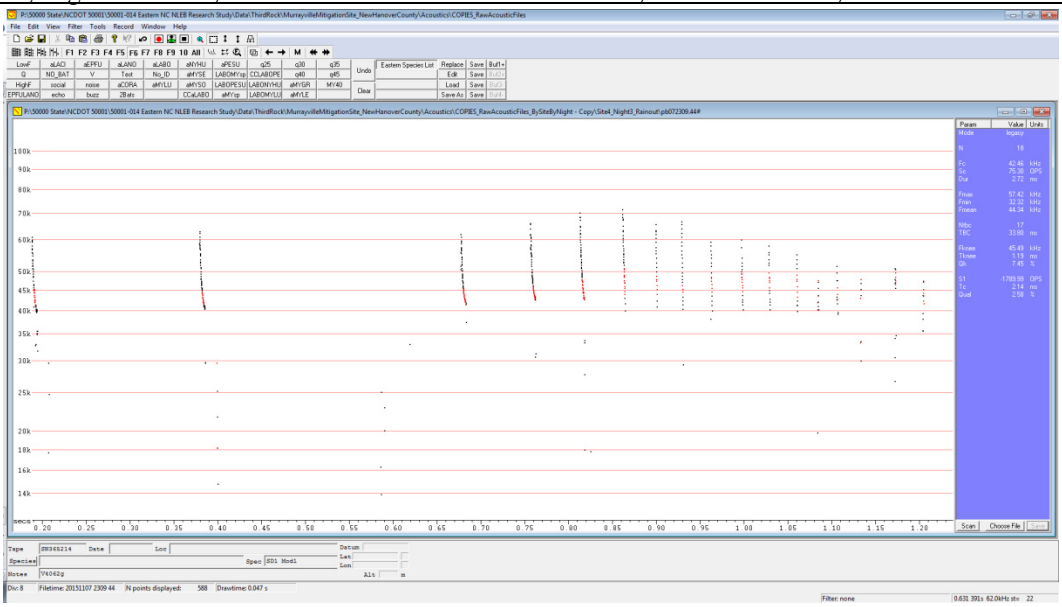
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pc122236.53#	892	1.56	102.46	72	53.69	15.12	46.09	0.74	50.31	34.43	1.07	47.9	-10604.12	214.61	2.7	12.1
pc122236.53#	1010	1.3	72	29.93	17.98	14.55	15.36	0.53	15.07	0.23	1.3	14.55	-585.75	65.78	8.63	23.6
pc122236.53#	1062	2.3	29.93	109.45	55.94	13.56	39.95	1.36	46.78	41.18	1.62	45.45	-9471.83	159.92	6.27	23.1
pc122236.53#	1238	1.94	109.45	101.4	57.14	16.06	41.15	0.76	49.69	36.88	1.36	45.45	-18013.63	217.09	3.78	25.7
pc122236.53#	1398	3.26	101.4	78.96	62.5	12.16	36.79	1.15	50	48.54	1.75	45.45	-14091.01	231.49	3.2	37.5
pc122236.53#	1536	2.22	78.96	88.84	59.26	21.45	48.67	1.43	49.69	30.84	1.85	46.78	-3630.7	207.98	2.92	26.7
pc122236.53#	1681	2.89	88.84	72.98	57.55	15.24	38.79	0.75	52.63	48.58	1.85	41.88	-12309.94	299.82	8	37.4
pc122236.53#	1805	3.23	72.98	92.09	62.5	13.29	34.7	0.96	51.95	58.5	1.62	46.24	-14670.72	253.92	6.42	35.2
pc122236.53#	1956	1.94	92.09	58.01	62.99	19.61	45.41	0.93	50.31	8.57	1.35	46.51	-2041.28	271.25	2.54	35.4
pc122236.53#	2066	1.38	58.01	118.56	57.14	17.66	40.55	0.51	51.61	34.77	0.93	46.51	-13653.63	361.78	4.92	22.9
pc122236.53#	2233	2.35	118.56	78.81	59.26	12.12	39.2	0.85	53.33	35.17	1.16	49.69	-5405.03	323.1	2.48	19.3
pc122236.53#	2386	1.58	78.81	83.9	57.97	13.22	45.51	1.06	48.48	39.42	1.41	45.45	-7327.38	269.88	3.77	27.5
pc122236.53#	2519	1.83	83.9	73.33	59.7	17.13	41.51	0.85	49.69	10.39	1.1	47.62	-1618.16	246.59	2.98	25.4

Parameters of all filtered pulses

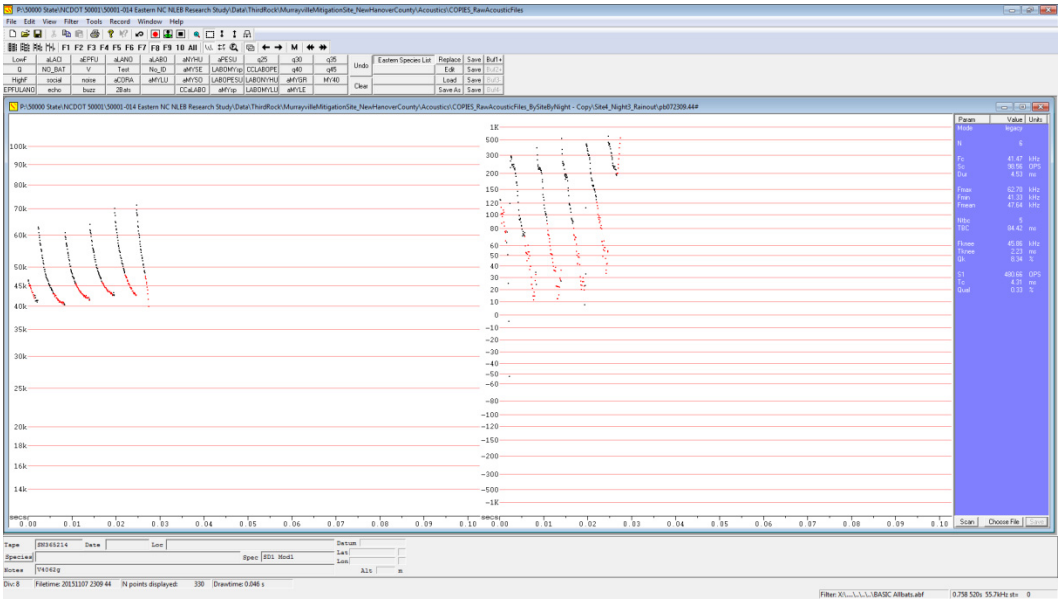
Representative Sonograms & Call Parameters – Murrayville Mitigation Site

Rationale: File contains high clutter search, approach, and feeding buzz of LABO

Site 4, Night 3 Rainout, File PB072309.44# – Echo ID: MYSE, BCID ID: LABO, Third Rock ID: **LABO**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

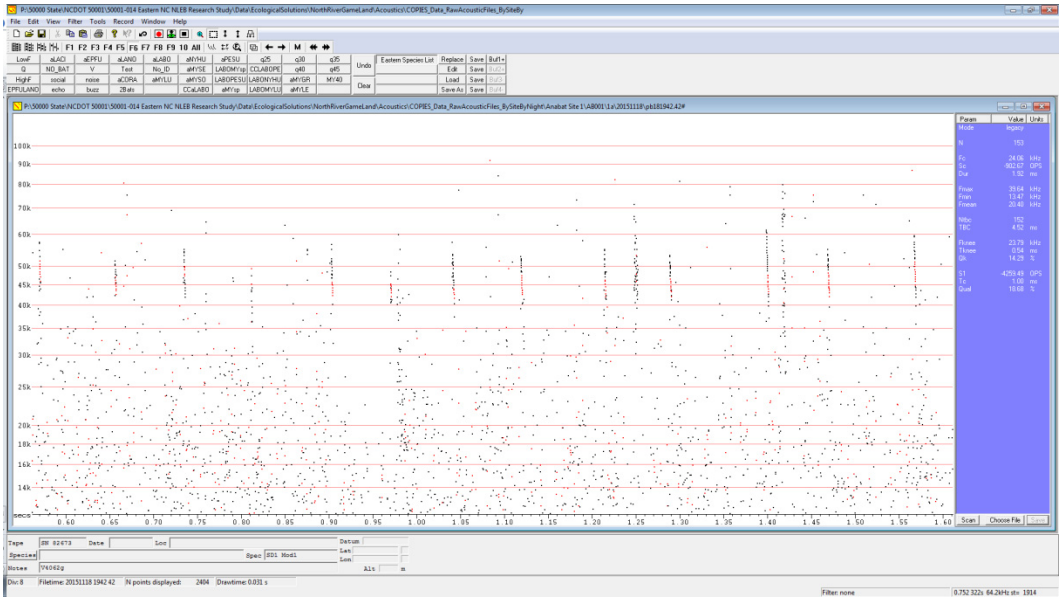
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb072309.44#	49	2.13	0	189.25	46.51	41.03	43.13	0.26	45.2	0.51	1.46	41.88	156.59	91.83	0.46	11
pb072309.44#	109	6.08	189.25	298.09	62.99	40.4	46.06	3.47	43.01	11.47	5.88	40.4	255.16	37.44	0.34	55.9
pb072309.44#	221	5.6	298.09	79.17	61.07	41.45	46.45	2.44	45.45	9.89	5.5	41.45	480.38	43.39	0.28	47.3
pb072309.44#	297	5.6	79.17	56.35	64	42.55	47.89	2.77	45.98	10.14	5.22	42.55	699.12	45.48	0.26	50.4
pb072309.44#	369	4.97	56.35	48.66	70.18	42.55	49.88	2.46	47.9	12.56	4.97	42.55	635.16	67.97	0.3	64.9
pb072309.44#	448	2.82	48.66	0	71.43	40	52.41	2	47.62	5.5	2.82	40	657.5	305.27	0.35	78.6

Parameters of all filtered pulses

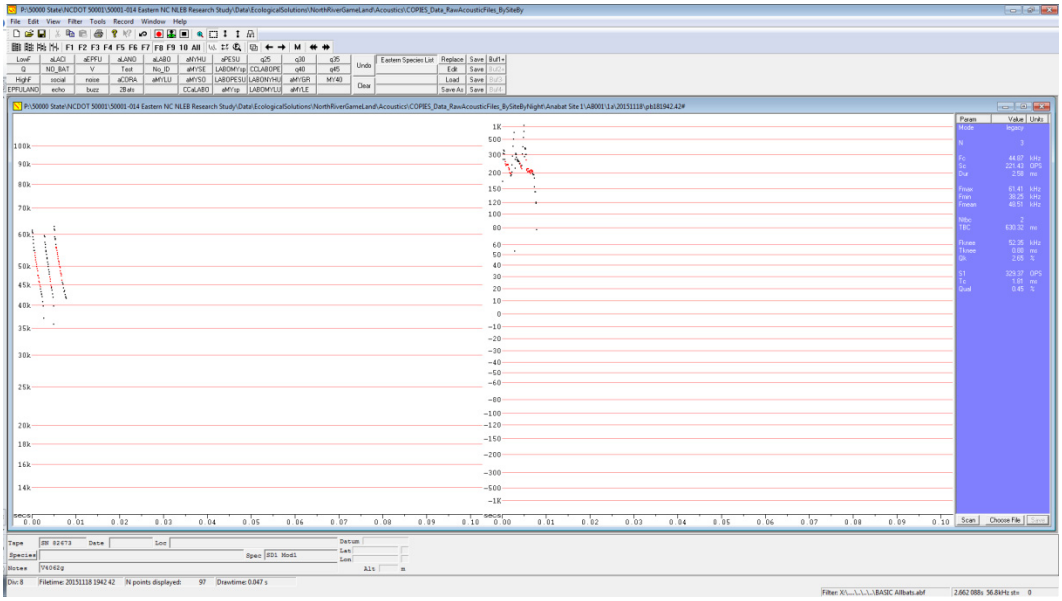
Representative Sonograms & Call Parameters – North River Game Land

Rationale: Call sequence too short, with pulse quality too poor to determine species

Site 1, Night 2, File PB181942.42# – Echo ID: MYSE, BCID ID: NO ID, Ecological Solutions ID: **NO ID**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



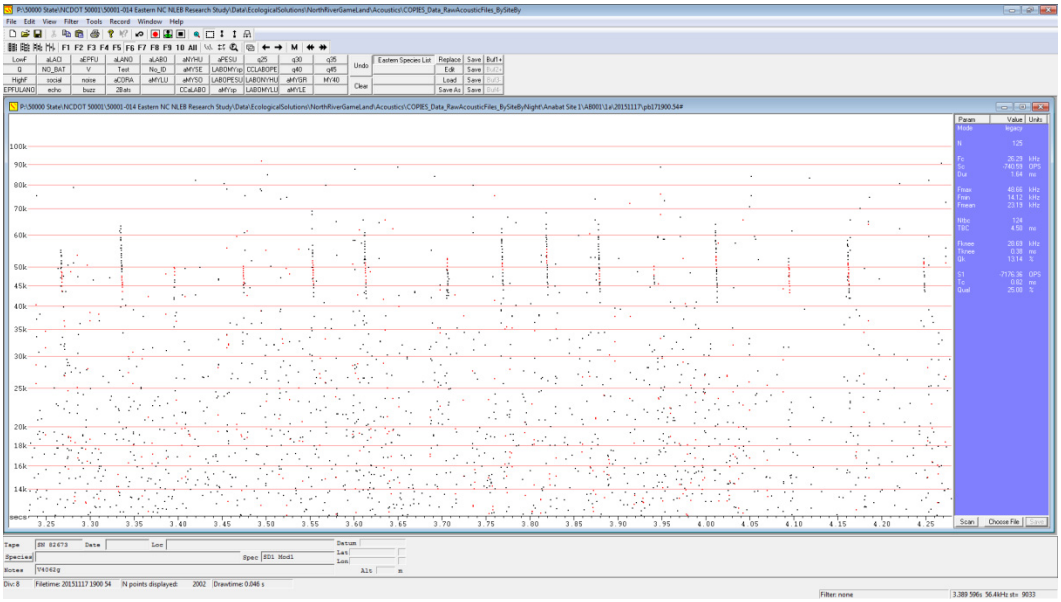
Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb181942.42#	4761	2.66	0	168.33	61.54	37.21	48.12	0.63	54.05	3.04	1.88	44.44	281.28	227.19	0.34	38.5
pb181942.42#	5347	2.25	168.33	1092.3	59.7	35.87	48.02	1.3	47.06	1.8	1.65	44.44	266.17	232.94	0.46	34.3
pb181942.42#	9030	2.84	1092.3	0	62.99	41.67	49.38	0.48	55.94	3.12	1.91	45.71	440.65	204.16	0.55	37.8

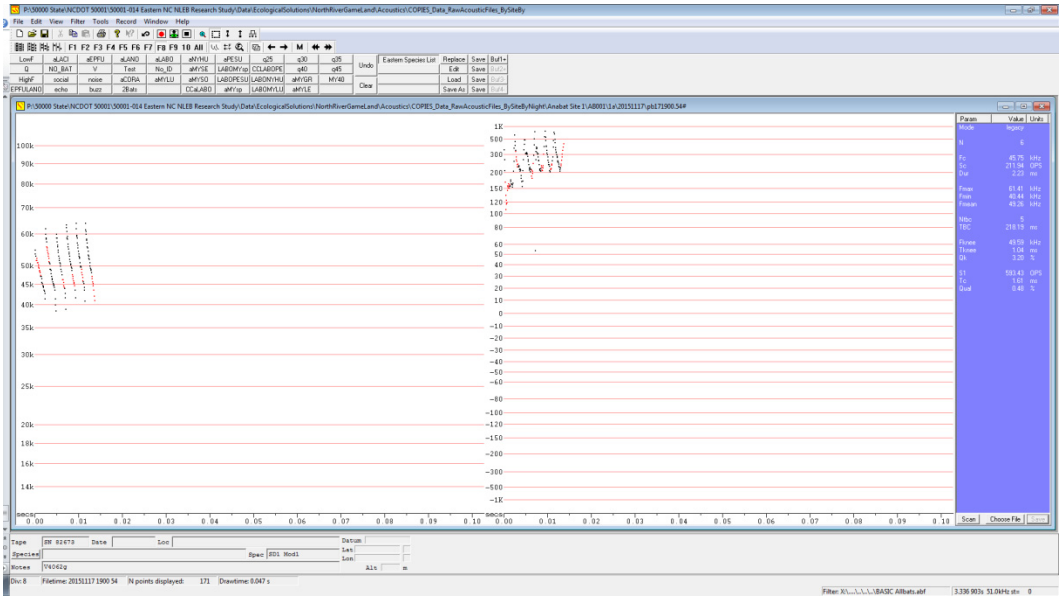
Parameters of all filtered pulses

Rationale: Slope value right for MYAU (<200 OPS), vs. MYSE (>200 OPS), many sigmoidal pulses in file

Site 1, Night 1, File PB171900.54# – Echo ID: MYSE, BCID ID: NO ID Ecological Solutions ID: **MYAU**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



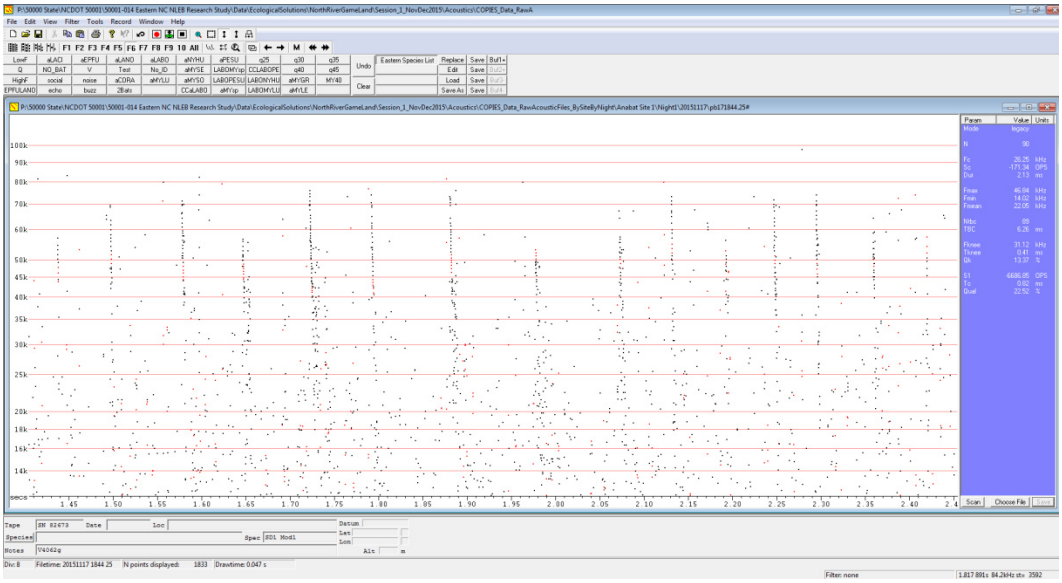
Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb171900.54#	4820	2.36	0	150.65	54.79	41.45	47.56	0.31	51.61	1.01	1.27	47.34	391.25	129.28	0.54	15.8
pb171900.54#	5297	2.47	150.65	140.73	62.02	38.65	48.62	0.35	55.94	2.64	0.87	51.28	657.54	238.2	0.42	20.9
pb171900.54#	5743	2.22	140.73	1194.62	60.15	39.02	48.56	1.39	46.24	3.31	1.83	44.2	466.38	147.22	0.5	36.1
pb171900.54#	9368	2.14	1194.62	542.93	63.49	41.67	50.42	1.42	47.62	3.88	1.95	44.69	439.51	173.62	0.51	42.1
pb171900.54#	11130	2.07	542.93	133.28	64	40.82	50.17	1.27	49.08	4.69	1.61	45.98	748.54	275.48	0.46	39.2
pb171900.54#	11559	2.15	133.28	0	64	41.03	50.23	1.51	47.06	3.69	2.15	41.03	857.33	307.84	0.47	56

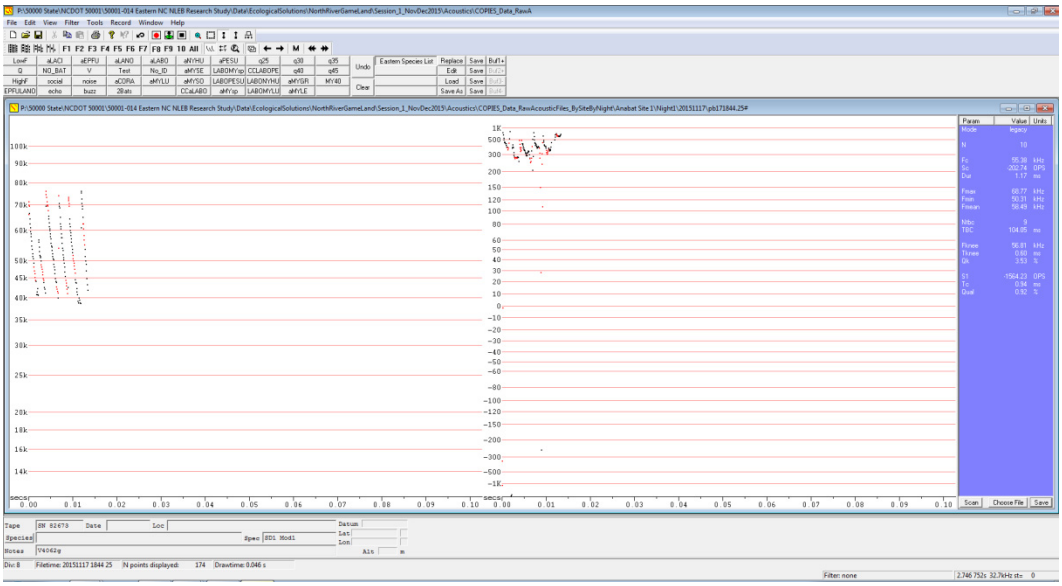
Parameters of all filtered pulses

Rationale: Pulses straight, many steep pulses with slope ~/>200 OPS, Fc and other parameters consistent with MYSE

Site 1, Night 1, File PB171844.25# – Echo ID: MYSE, BCID ID: NO ID, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

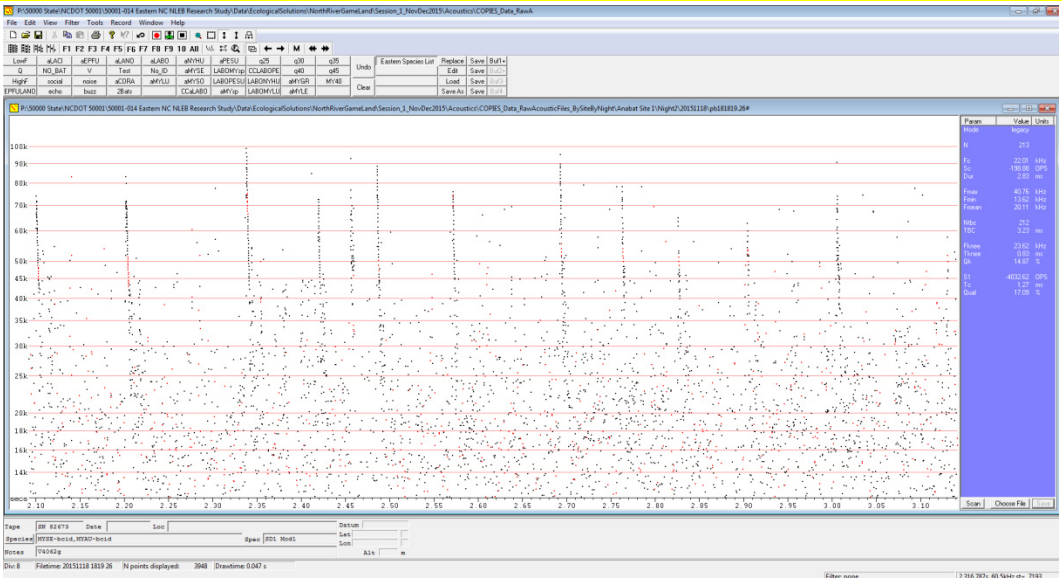


Frequency & slope view of all filtered pulses – F8, compressed, manually cleaned

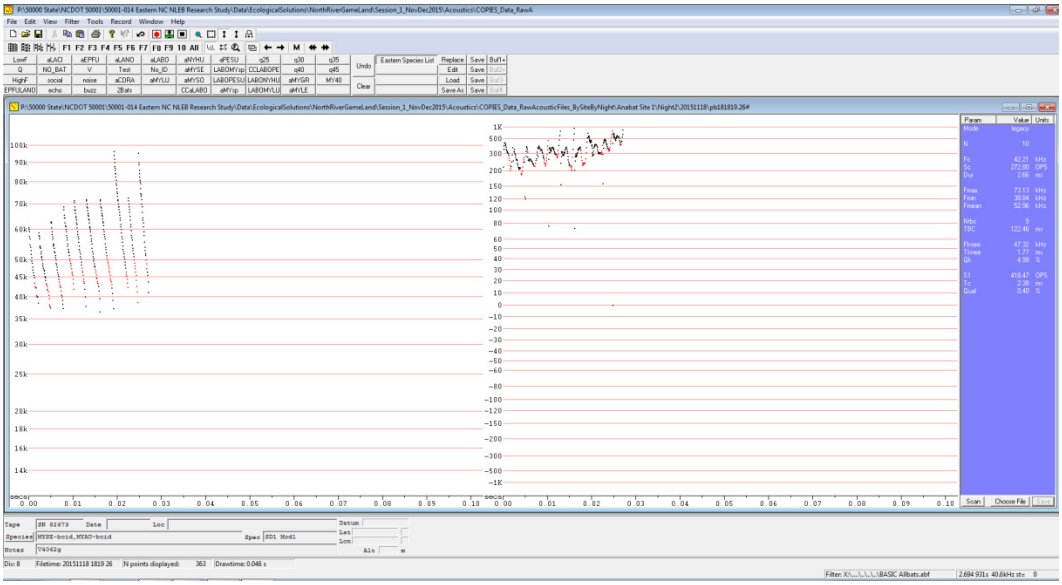
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb171844.25#	4008	0.23	0	0.45	71.43	66.12	68.38	0	66.12	0	0.17	69.57	-1991.22	-429.08	1.39	2.7
pb171844.25#	4015	1.51	0.45	68.35	64.52	40.82	50.36	0.96	48.19	4.17	1.31	44.44	704.67	330.92	0.45	45.2
pb171844.25#	4239	1.53	68.35	75.6	56.74	41.24	47.15	0.62	48.78	2.64	1.15	44.44	452.23	257.28	0.38	27.7
pb171844.25#	4477	0.51	75.6	0.71	76.19	67.8	71.29	0.05	76.19	3.79	0.51	67.8	-2523.93	371.74	1.05	12.4
pb171844.25#	4489	2.25	0.71	69.08	65.57	40	49.89	1.85	42.78	5.08	2.14	41.24	474.77	183.46	0.4	59
pb171844.25#	4743	0.28	69.08	0.55	74.07	54.05	70.92	0	54.05	0	0.11	74.07	-8576.71	-4208.94	3.29	0
pb171844.25#	4751	1.77	0.55	88.39	65.04	41.03	49.75	1.3	44.44	4.95	1.68	41.03	898.21	303.09	0.56	58.5
pb171844.25#	4979	0.23	88.39	0.54	73.39	69.57	70.8	0	73.39	0	0.23	69.57	342.06	342.06	0.09	5.5
pb171844.25#	4986	1.95	0.54	864.03	64.52	39.22	49.23	0.78	51.61	3.61	1.28	46.51	715.68	302.09	0.36	38.7
pb171844.25#	7425	1.4	864.03	0	76.19	43.24	57.1	0.46	62.5	11.04	0.81	55.17	-6138.03	519.97	1.18	38.1

Parameters of all cleaned pulses (note some pulses lack continuity/smoothness)

Site 1, Night 2, File PB181819.26# – Echo ID: LABO, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

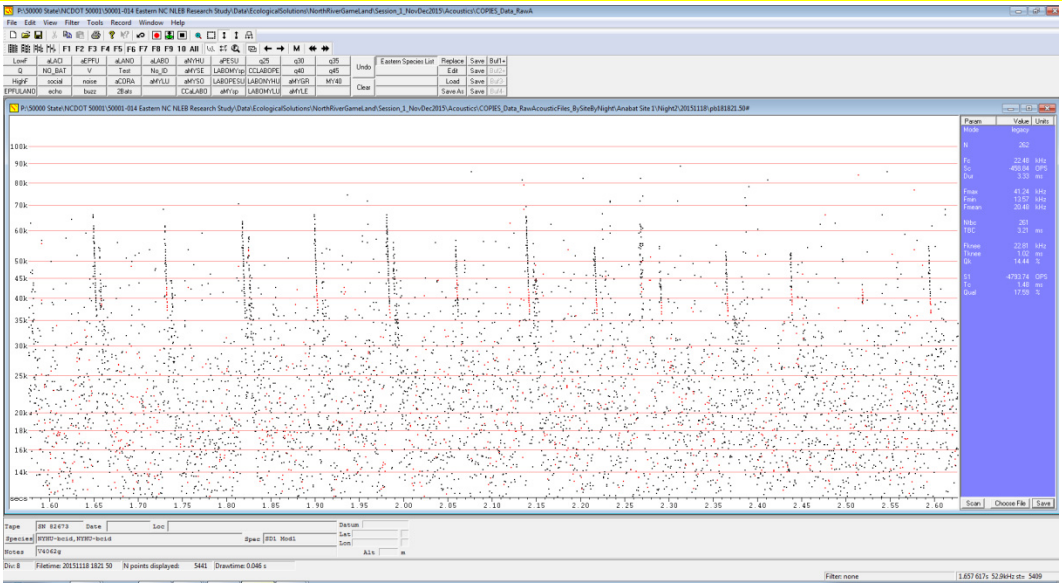


Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

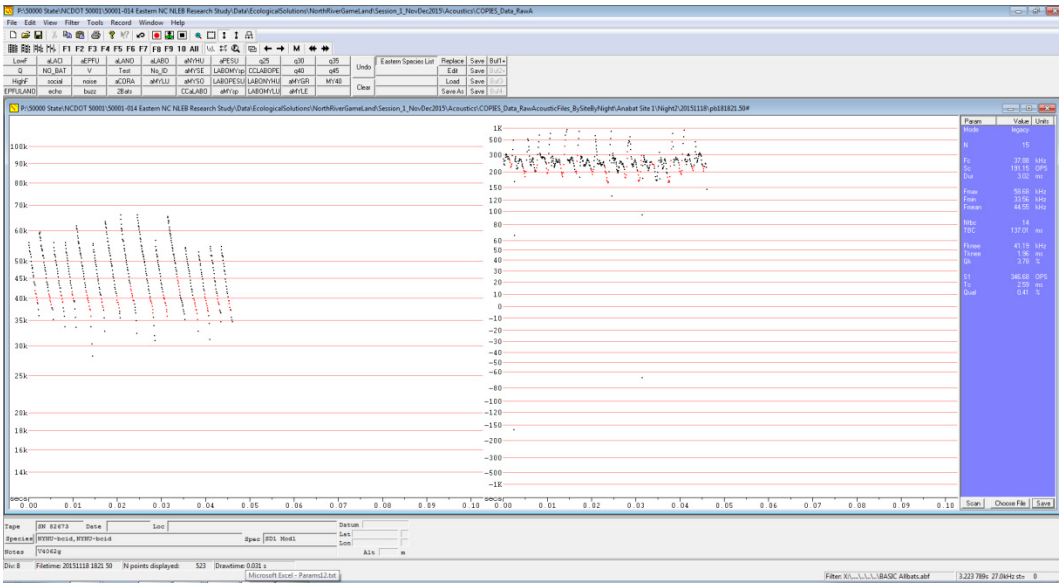
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb181819.26#	1031	2.14	0	232.68	60.61	38.46	46.73	1.35	43.48	5.17	1.73	42.11	363.64	122.15	0.61	43.9
pb181819.26#	1816	2.7	232.68	66.26	58.82	37.38	45.87	1.7	43.24	3.26	2.49	38.1	392.34	232.06	0.46	54.4
pb181819.26#	2062	2.84	66.26	1166.23	62.99	37.21	47.84	1.94	43.72	4.05	2.32	41.45	335.1	201.46	0.37	52
pb181819.26#	6026	2.34	1166.23	203.6	68.97	41.88	52.95	1.38	50.31	3.86	2.34	41.88	418	275.86	0.41	64.7
pb181819.26#	6733	2.65	203.6	126.99	71.43	37.74	52.89	1.8	47.62	3.76	2.24	43.96	325.92	260.08	0.29	62.5
pb181819.26#	7233	3.12	126.99	101.67	72.07	36.53	52.5	2.08	47.06	5.13	2.71	43.24	278.79	193.33	0.37	66.7
pb181819.26#	7668	3.05	101.67	135.81	72.07	37.21	52.51	1.51	51.28	4.18	2.64	43.01	294.34	226.37	0.29	67.6
pb181819.26#	8232	3.21	135.81	81.23	96.39	42.33	62.25	2.5	49.38	8.97	2.76	46.51	798.87	338.88	0.32	107.2
pb181819.26#	8631	2.17	81.23	273.22	72.73	38.65	53.46	1.35	50	3.07	2.17	38.65	336.06	452.02	0.27	88.2
pb181819.26#	9841	2.36	273.22	0	95.24	41.03	62.66	1.82	50	6.8	1.99	47.34	641.66	467.17	0.56	101.2

Parameters of all filtered pulses

Site 1, Night 2, File PB181821.50# – Echo ID: MYSE, BCID ID: NYHU, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

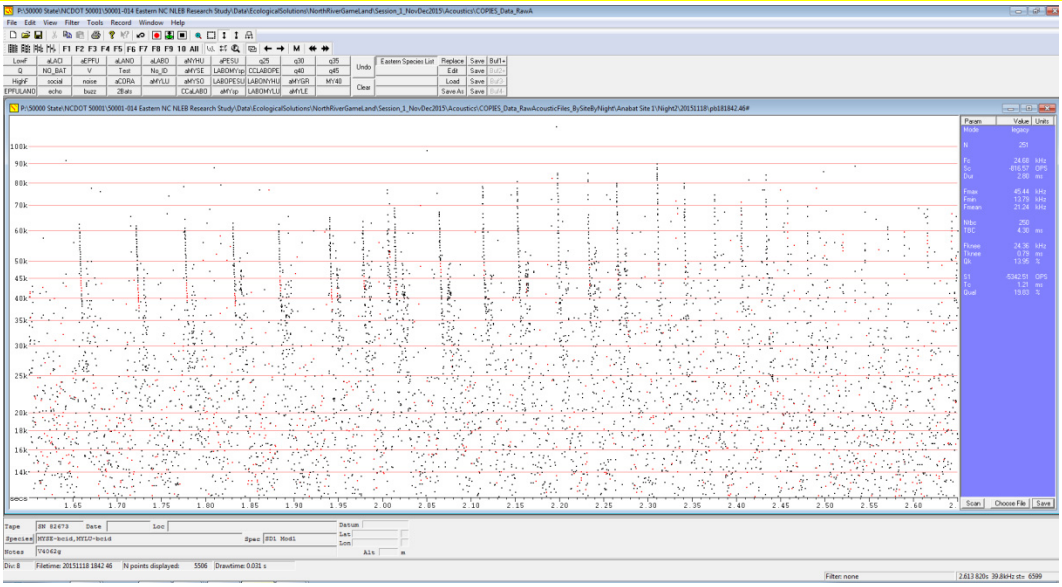


Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

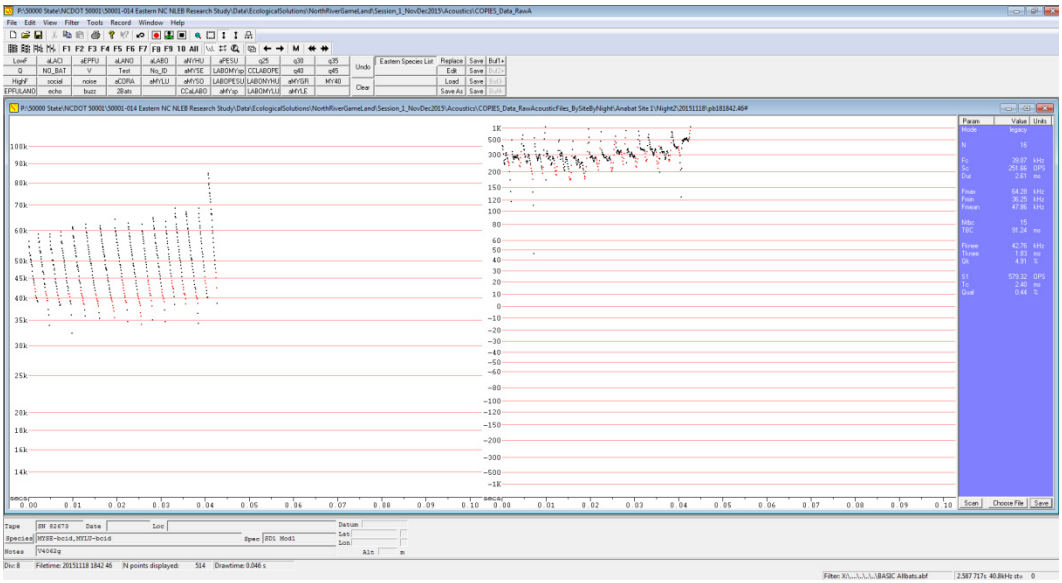
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb181821.50#	3368	2.32	0	200.9	55.94	36.04	44.77	1.5	41.88	2.44	2	39.02	309.18	203.69	0.47	43.4
pb181821.50#	4110	3.14	200.9	96.67	59.7	35.24	45.92	2.19	41.03	1.89	2.8	37.74	-161.32	196.08	0.46	58.2
pb181821.50#	4529	2.57	96.67	206.22	55.94	33.76	43.53	1.71	40.82	4.25	2.12	39.02	537.85	159.53	0.46	43.4
pb181821.50#	5383	2.47	206.22	103.93	55.94	33.61	43.78	1.52	41.67	3.08	1.92	39.41	350.6	201.44	0.35	42
pb181821.50#	5840	3.66	103.93	97.76	62.02	28.27	44.86	2.21	41.88	4.08	3.25	35.87	336.3	215.29	0.44	72.9
pb181821.50#	6310	2.67	97.76	102.27	55.56	32.79	43.43	1.9	39.8	3.48	2.32	37.91	330.49	168.38	0.47	46.5
pb181821.50#	6776	3.48	102.27	94.3	63.49	35.56	47.09	2.63	40.61	4.23	3.15	37.74	233.62	203.99	0.37	68.3
pb181821.50#	7255	3.72	94.3	104.24	66.12	32.39	46.26	2.25	43.01	8.1	3.04	39.41	633.88	159.32	0.38	67.8
pb181821.50#	7756	4.12	104.24	94.33	66.12	31.01	46.64	2.99	39.8	5.35	3.62	36.7	279.29	185.34	0.33	80.2
pb181821.50#	8230	2.73	94.33	96.87	56.74	35.87	43.92	1.79	40.82	4.63	2.73	35.87	679.37	197.24	0.33	58.2
pb181821.50#	8696	3.93	96.87	94.46	65.57	35.24	47.86	2.21	45.45	1.91	2.77	41.45	248.23	237.54	0.36	58.2
pb181821.50#	9176	2.91	94.46	185.02	54.42	32.79	42.66	1.82	40	3.09	2.78	35.24	280.16	190.9	0.32	54.4
pb181821.50#	10056	2.6	185.02	273.57	52.98	31.25	41.59	1.39	41.03	3.77	2.23	37.04	413.77	176.93	0.45	43
pb181821.50#	11328	2.5	273.57	400.59	54.79	34.78	43.29	1.64	40.61	3.12	2.05	38.46	337.55	190.26	0.53	42.5
pb181821.50#	13151	2.53	400.59	0	54.79	34.78	42.69	1.66	39.41	3.27	2.08	37.38	391.25	181.26	0.47	46.6

Parameters of all filtered pulses

Site 1, Night 2, File PB181842.46# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

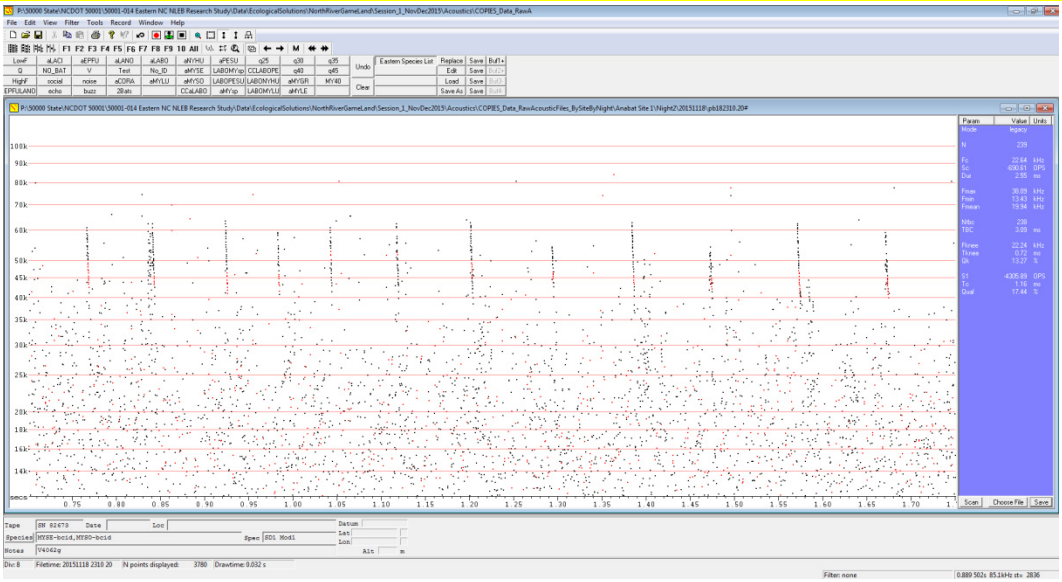


Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

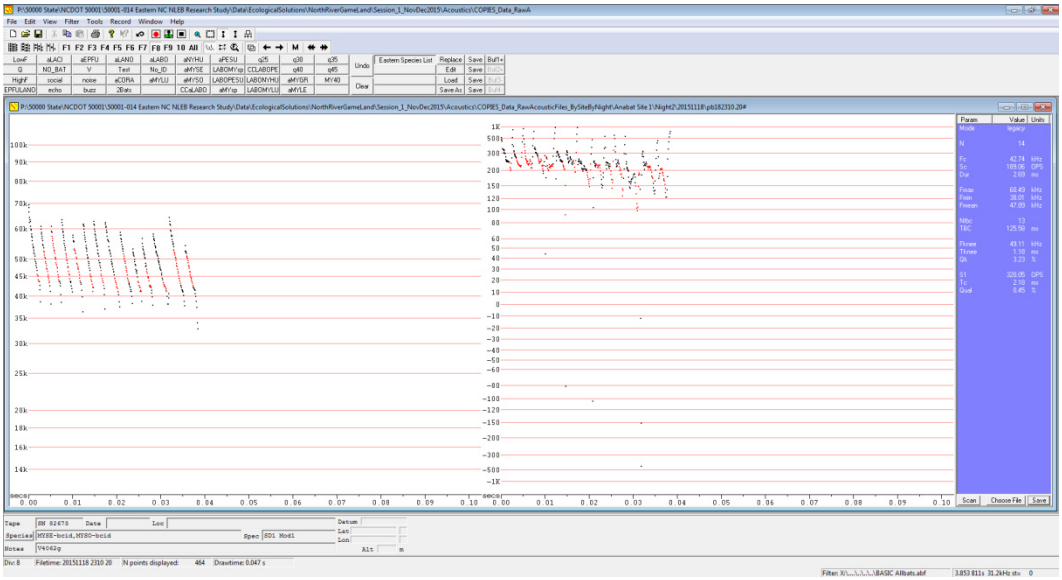
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb181842.46#	4204	2.02	0	174.75	56.34	39.22	45.5	1.33	43.24	2.8	1.72	40.2	541.59	269.16	0.52	40.1
pb181842.46#	4960	2.57	174.75	185.65	58.82	33.9	45.17	1.72	41.67	4.15	2.22	39.41	506.35	160.43	0.68	49.3
pb181842.46#	5720	2.45	185.65	95.93	58.82	38.28	45.71	1.74	41.45	4.11	2.14	39.22	438.62	199.42	0.56	50
pb181842.46#	6151	2.58	95.93	101.96	59.7	32.39	44.98	1.83	41.03	4.65	2.13	39.41	589.14	193.35	0.54	51.5
pb181842.46#	6549	2.92	101.96	94.91	61.54	35.87	46.5	2	41.88	4.88	2.7	38.46	376.44	173.99	0.42	60
pb181842.46#	6930	3.19	94.91	96.04	62.5	35.4	46.41	2.25	41.03	5.82	2.96	38.1	498.85	150.16	0.29	64.1
pb181842.46#	7317	3.26	96.04	93.81	62.02	35.56	46.6	2.52	40.2	3.95	3.26	35.56	336.3	239.08	0.34	74.4
pb181842.46#	7683	2.9	93.81	93.75	64.52	34.78	46.86	1.78	43.96	7.4	2.67	39.02	1148.21	193.12	0.47	65.3
pb181842.46#	8059	3.1	93.75	89.08	62.99	34.19	46.44	2.14	41.24	3.78	3.1	34.19	518.2	282.6	0.34	84.3
pb181842.46#	8415	2.39	89.08	103.28	62.5	35.09	46.92	1.39	44.69	4.61	2.27	38.1	825.11	261.85	0.39	64.1
pb181842.46#	8811	2.85	103.28	69.25	65.04	34.78	47.77	2.02	42.11	5.89	2.62	39.22	357.88	170.66	0.46	65.9
pb181842.46#	9100	2.07	69.25	66.3	63.49	38.46	48.4	1.39	44.44	5.12	1.86	41.45	683.15	212.69	0.38	53.2
pb181842.46#	9399	2.49	66.3	81.57	68.97	38.65	49.78	1.8	43.48	7.11	2.49	38.65	788.86	245.91	0.34	78.4
pb181842.46#	9744	2.86	81.57	122.28	67.23	34.33	48.88	2.23	41.45	4.97	2.63	38.83	400.76	232.21	0.34	73.1
pb181842.46#	10337	2.07	122.28	81.54	68.97	40.2	50.24	1.4	45.45	5.58	1.68	42.78	801.8	314.61	0.36	61.2
pb181842.46#	10656	2.08	81.54	0	85.11	38.83	59.62	1.78	46.78	3.81	1.97	42.55	457.78	727.32	0.54	100

Parameters of all filtered pulses

Site 1, Night 2, File PB182310.20# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

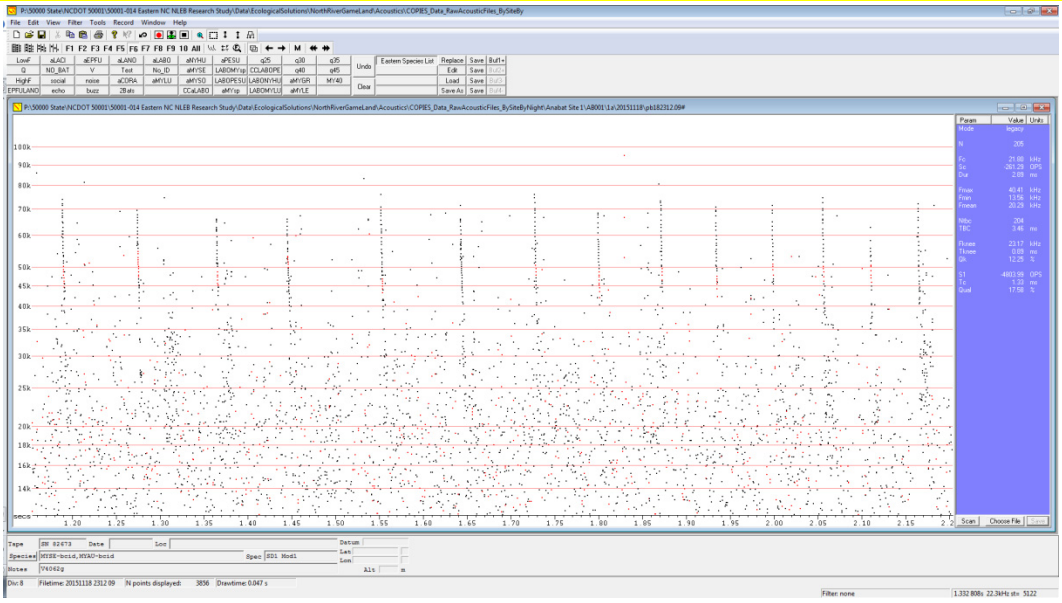


Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

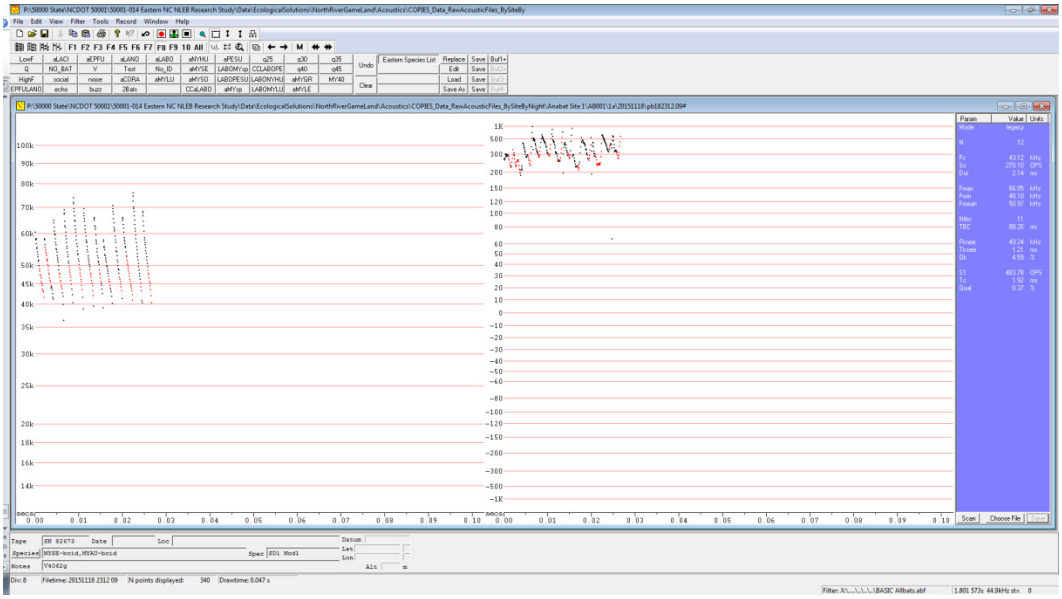
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb182310.20#	2710	2.73	0	89.52	69.57	38.65	51.24	1.98	45.71	6.22	2.34	43.72	623.02	179.13	0.51	59.1
pb182310.20#	3118	2.29	89.52	74.36	61.07	38.1	48.8	0.72	52.63	3.42	1.99	43.48	397.35	216.52	0.4	40.5
pb182310.20#	3502	2.31	74.36	82.57	61.07	38.46	48.46	0.21	57.55	2.98	1.73	44.2	647.65	249.61	0.36	38.2
pb182310.20#	3828	2.41	82.57	193.9	63.49	41.03	49.73	0.92	51.95	3.29	1.94	43.72	393.95	244.75	0.32	45.2
pb182310.20#	4646	2.28	193.9	83.7	57.97	36.36	47.29	0.36	53.33	0.94	1.69	43.96	-296.55	210.87	0.74	31.9
pb182310.20#	4999	2.34	83.7	182.83	62.02	41.24	49.62	1.6	45.71	2.84	2.25	41.24	285.53	229.12	0.37	50.4
pb182310.20#	5767	2.6	182.83	187.22	62.99	37.04	49.25	1.65	46.78	3.64	2.29	42.78	352.23	202.58	0.44	47.2
pb182310.20#	6575	3.31	187.22	190.8	62.5	37.56	48.38	2.15	44.69	4.22	2.99	41.03	255.14	145.48	0.41	52.3
pb182310.20#	7408	2.79	190.8	270.1	58.82	38.28	47.31	0.81	51.61	0.82	1.91	43.72	-309.73	216.22	0.29	34.6
pb182310.20#	8460	2.04	270.1	1502.8	53.33	38.83	45.16	1.17	43.72	3.18	1.93	41.24	362.71	110.66	0.69	29.3
pb182310.20#	14514	2.44	1502.8	101.08	56.74	37.91	45.85	1.03	47.06	4.18	1.94	42.55	545.38	159.38	0.55	33.3
pb182310.20#	14966	3.6	101.08	114.05	58.39	38.1	46.61	2.33	43.48	3.79	3.1	41.24	298.7	100.33	0.39	41.6
pb182310.20#	15524	3.53	114.05	100.36	64.52	37.74	48.7	2.55	43.24	4.35	3.53	37.74	298.59	199.53	0.39	71
pb182310.20#	16002	2.91	100.36	0	54.42	32.79	44	0.39	50.96	2.19	1.87	42.33	626.69	180.7	0.48	28.6

Parameters of all filtered pulses

Site 1, Night 2, File PB182312.09# – Echo ID: LABO, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

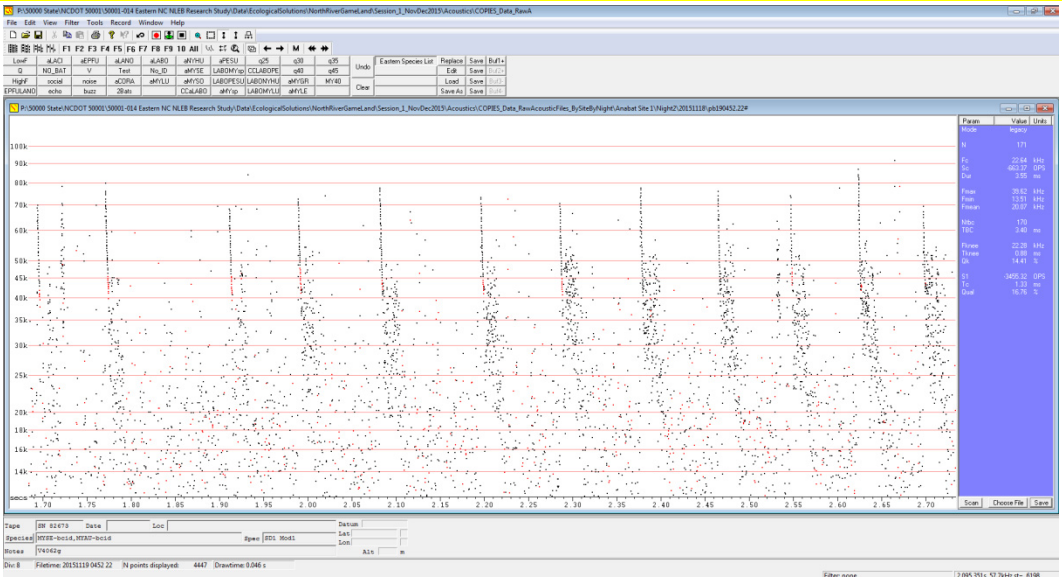


Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

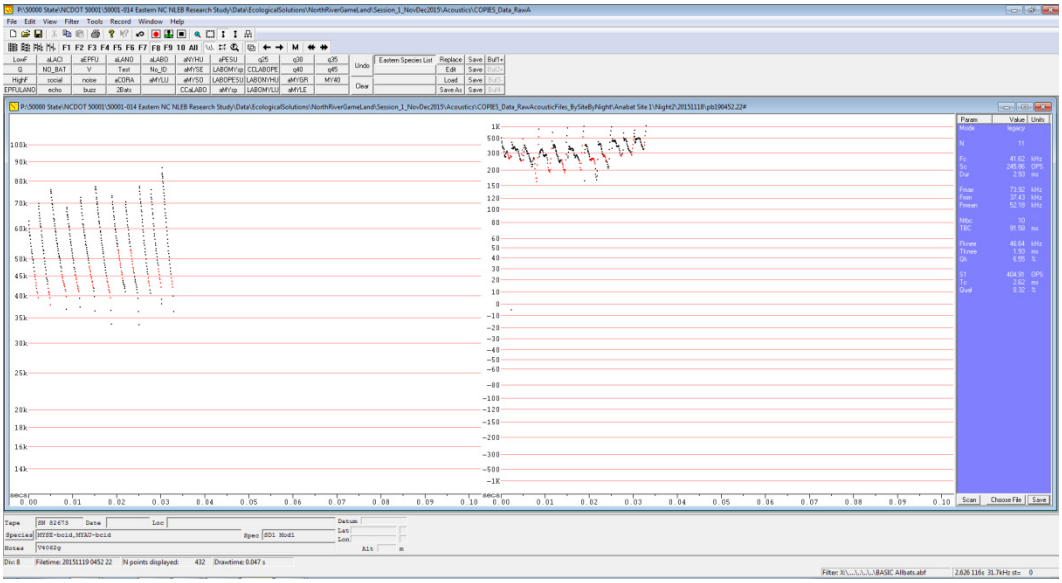
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb182312.09#	2242	2.02	0	277.8	60.61	41.67	49.48	1.04	49.08	2.58	2.02	41.67	391.52	240.08	0.56	45.5
pb182312.09#	3457	2.08	277.8	93.9	58.39	41.24	48.15	0.21	55.56	1.77	1.51	44.44	364.19	247.64	0.37	31.4
pb182312.09#	3858	2.35	93.9	198.42	65.04	36.53	49.38	1.32	47.9	4.82	1.94	43.72	468.6	212.9	0.38	48.8
pb182312.09#	4684	2	198.42	130.8	68.97	40.4	51.9	1.2	49.69	5.25	1.71	44.94	531.32	281.2	0.42	53.4
pb182312.09#	5268	2.25	130.8	85.34	74.07	39.02	53.29	1.35	50.31	6.6	2.05	43.48	718.7	304.01	0.41	70.4
pb182312.09#	5652	2.31	85.34	90.35	69.57	39.6	51.9	1.49	48.78	5.35	2.21	42.11	629.71	297.76	0.24	65.2
pb182312.09#	6070	2.04	90.35	81.05	66.12	39.22	51.03	1.22	48.78	3.69	1.65	45.2	373.38	254.16	0.51	46.3
pb182312.09#	6432	2	81.05	106.52	57.97	40.2	47.98	1.17	47.06	2.31	1.62	43.96	359.07	221.13	0.36	31.9
pb182312.09#	6877	2.13	106.52	90.65	70.8	41.45	52.66	1.58	46.78	6.18	2.03	43.24	462.59	252.29	0.37	63.7
pb182312.09#	7289	2.36	90.65	84.54	66.12	41.03	50.89	0.89	52.98	4.45	2.36	41.03	366.52	251.83	0.27	61.2
pb182312.09#	7677	2.16	84.54	72.16	76.19	40.4	53.7	1.78	45.2	7.56	1.96	43.24	710.45	344.74	0.3	76.2
pb182312.09#	8007	2.03	72.16	0	68.38	40.4	51.23	1.22	48.78	4.57	2.03	40.4	429.32	333.5	0.29	69.2

Parameters of all filtered pulses

Site 1, Night 2, File PB190452.22# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

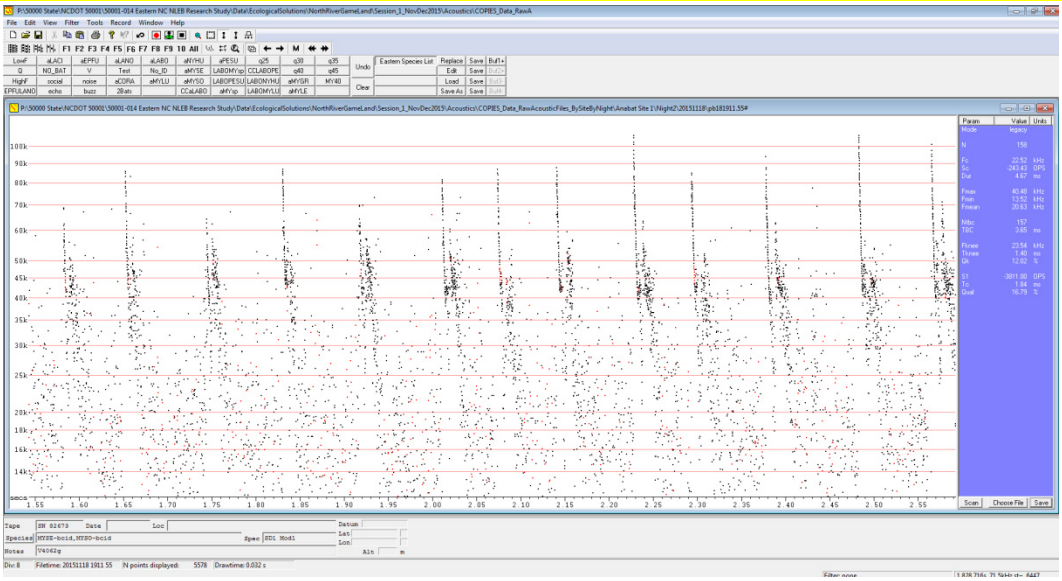


Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

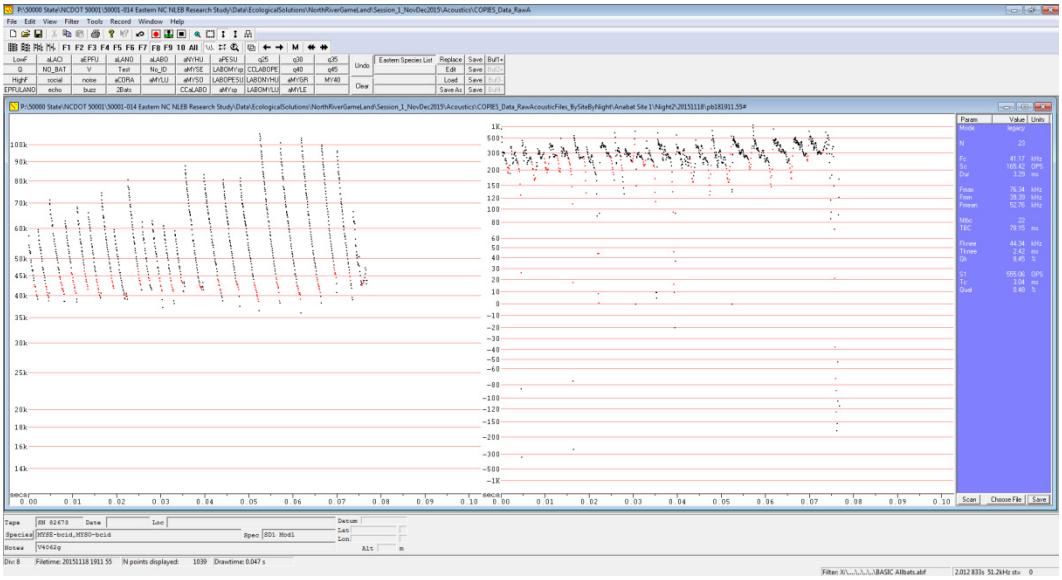
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb190452.22#	5698	2.14	0	138.63	62.99	39.6	48.53	1.56	44.2	4.76	2.04	40.61	510.35	254.07	0.26	55.1
pb190452.22#	6236	2.7	138.63	77.09	70.18	37.91	50.35	2.19	41.88	5.79	2.59	39.6	-432.6	202.97	0.37	77.2
pb190452.22#	6575	3.62	77.09	140.39	76.19	36.87	53.02	2.56	45.45	7.58	3.51	39.8	309.28	202.99	0.33	91.4
pb190452.22#	7160	3.02	140.39	77.98	68.38	37.38	50.33	1.96	45.45	5.96	2.81	41.03	333.55	175.44	0.29	66.7
pb190452.22#	7531	3.33	77.98	92.32	72.73	36.53	51.7	2.01	47.9	6.75	2.91	42.11	464.2	206.6	0.33	72.7
pb190452.22#	7966	3.63	92.32	114.54	77.67	33.76	52.83	2.63	44.44	7.68	3.4	39.6	268.06	216.05	0.3	96.1
pb190452.22#	8494	3.1	114.54	89.48	73.39	41.03	52.97	1.44	52.98	4.99	2.44	44.44	343.58	253.7	0.33	65.1
pb190452.22#	8922	3.05	89.48	91.41	70.8	33.61	49.85	1.13	52.98	5.04	1.87	46.51	436.4	255.59	0.33	52.2
pb190452.22#	9400	2.5	91.41	87.7	77.67	40.61	54.36	2.02	44.69	7.42	2.31	42.55	497.31	252.76	0.31	82.5
pb190452.22#	9856	2.48	87.7	158.96	76.19	38.1	53.12	1.73	47.06	7.71	2.27	42.11	738.95	293.35	0.41	81
pb190452.22#	10692	2.67	158.96	0	86.96	36.36	56.95	2.17	44.69	8.97	2.45	42.11	984.97	305.11	0.29	106.5

Parameters of all filtered pulses

Site 1, Night 2, File PB181911.55# – Echo ID: LABO, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



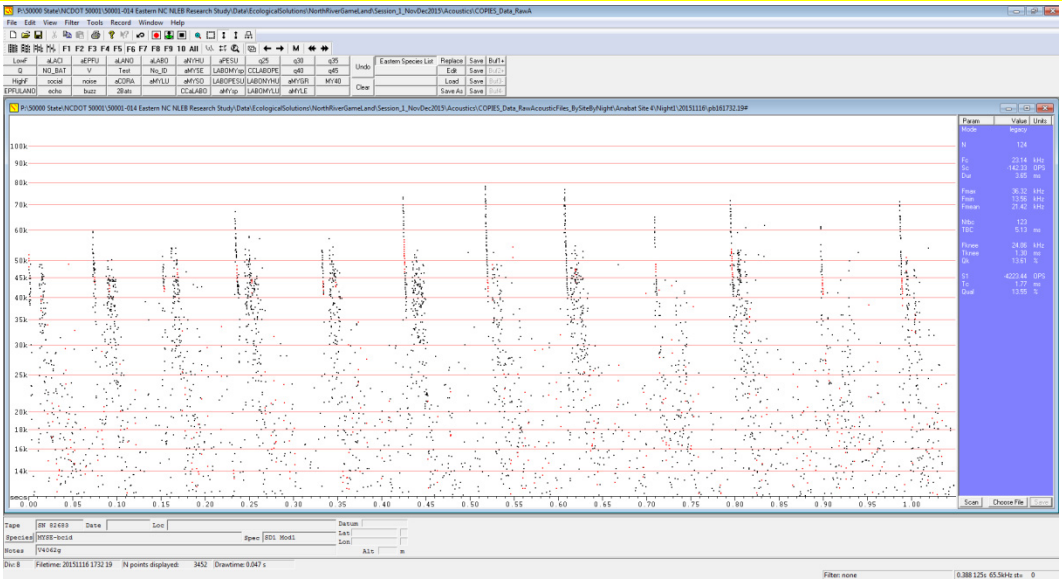
Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

Site 1, Night 2, File PB181911.55# (continued)

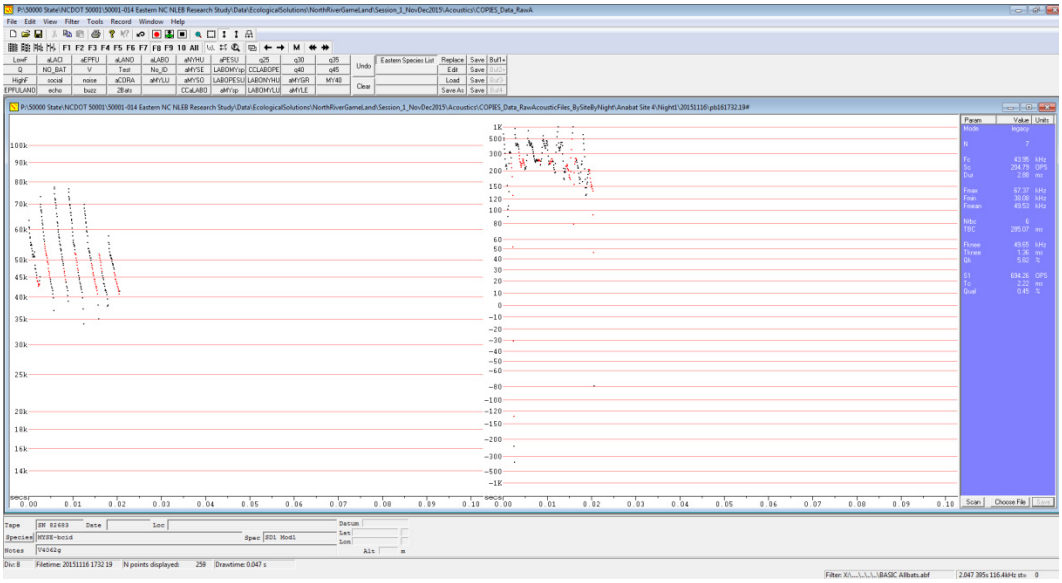
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb181911.55#	2372	2.02	0	196.72	57.55	39.22	45.57	1.33	42.78	4.79	1.81	40.2	1090.96	185.39	0.67	43.2
pb181911.55#	3135	2.58	196.72	103.25	59.7	38.83	46.57	1.69	43.01	3.94	2.38	38.83	444.46	212.92	0.59	53.7
pb181911.55#	3532	3.46	103.25	101.56	71.43	38.65	50.81	2.31	44.94	7.62	3.06	41.67	520.6	145.64	0.62	71.4
pb181911.55#	3990	2.74	101.56	70.59	62.99	38.46	48.25	1.5	45.98	4.95	2.53	40.61	346.81	173.72	0.34	55.1
pb181911.55#	4348	2.48	70.59	83.89	68.38	41.67	51.57	1.66	47.34	5.88	2.48	41.67	479.03	222.59	0.51	64.1
pb181911.55#	4757	2.95	83.89	105.01	66.12	39.41	48.85	1.88	44.2	6	2.75	39.41	560.84	189.13	0.34	67.8
pb181911.55#	5265	2.83	105.01	113.75	74.77	41.88	53.67	2.27	45.2	7.86	2.83	41.88	588.28	195.41	0.32	78.5
pb181911.55#	5843	3.05	113.75	65.81	59.7	39.22	45.84	2.55	39.22	7.75	2.85	40.61	380.23	-169.61	0.47	47
pb181911.55#	6220	3.15	65.81	73.19	80.81	41.45	55.84	2.32	47.06	7.96	3.06	41.45	554.79	248.39	0.48	94.9
pb181911.55#	6625	2.13	73.19	335.25	62.5	41.45	48.76	1.47	44.69	3.91	1.75	42.78	662.6	228.55	0.47	46.1
pb181911.55#	8396	2.47	335.25	94.19	62.99	37.21	48.62	1.69	44.44	4.14	2.25	41.24	390.93	190.92	0.74	52.8
pb181911.55#	8919	2.56	94.19	63.06	61.07	38.1	48.34	1.69	44.44	2.99	2.36	41.03	202.4	173.65	0.48	48.9
pb181911.55#	9340	2.34	63.06	65.6	59.26	41.03	47.78	1.5	44.69	2.34	1.97	41.24	446.6	247.01	0.68	43.7
pb181911.55#	9698	4.22	65.6	87.8	87.91	41.45	55.91	3.37	42.78	12.54	3.84	41.45	653.42	95.32	0.51	112.1
pb181911.55#	10204	4.27	87.8	65.35	83.33	38.83	55.28	3.2	44.2	9.35	3.86	41.67	594.95	128.57	0.44	100
pb181911.55#	10634	3.84	65.35	84.03	80.81	37.56	54.21	2.96	43.72	10.44	3.62	41.67	565.78	104.79	0.31	93.9
pb181911.55#	11116	4.28	84.03	104.81	81.63	36.53	53.33	3.18	43.24	11.08	4.16	38.65	571.5	164.74	0.29	111.2
pb181911.55#	11707	4.67	104.81	82.59	106.67	38.28	63.42	3.79	44.69	13.1	4.56	38.83	126.55	263.57	0.45	174.7
pb181911.55#	12214	4.74	82.59	140.29	101.27	36.04	58.25	3.83	42.55	18.71	4.62	39.22	1280.27	149.54	0.42	158.2
pb181911.55#	12950	4.53	140.29	64.2	103.9	38.28	60.97	3.56	44.69	16.11	4.32	40.82	468.28	172.68	0.31	154.5
pb181911.55#	13385	3.5	64.2	96.24	100	40.82	62.93	2.86	47.34	12.05	3.3	44.69	437.12	188.49	0.26	123.8
pb181911.55#	13859	3.54	96.24	92.7	96.39	39.02	59.95	2.86	45.98	10.99	3.05	43.96	649.17	356.32	0.43	119.3
pb181911.55#	14397	3.2	92.7	0	66.67	42.55	48.69	2.12	42.55	9.89	2.49	43.24	750.88	-63.06	1.02	54.2

Parameters of all filtered pulses

Site 4, Night 1, File PB161732.19# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

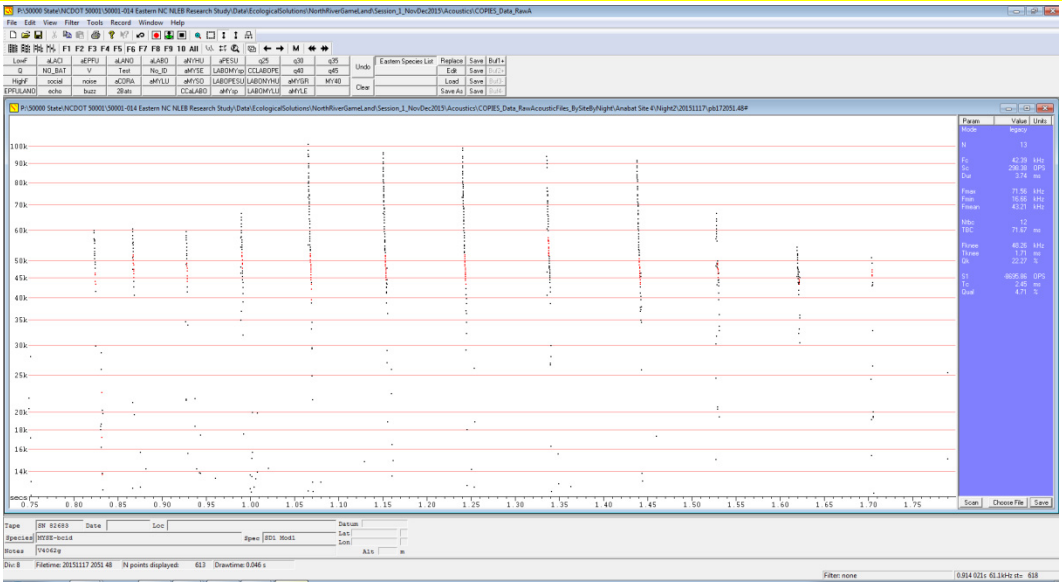


Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

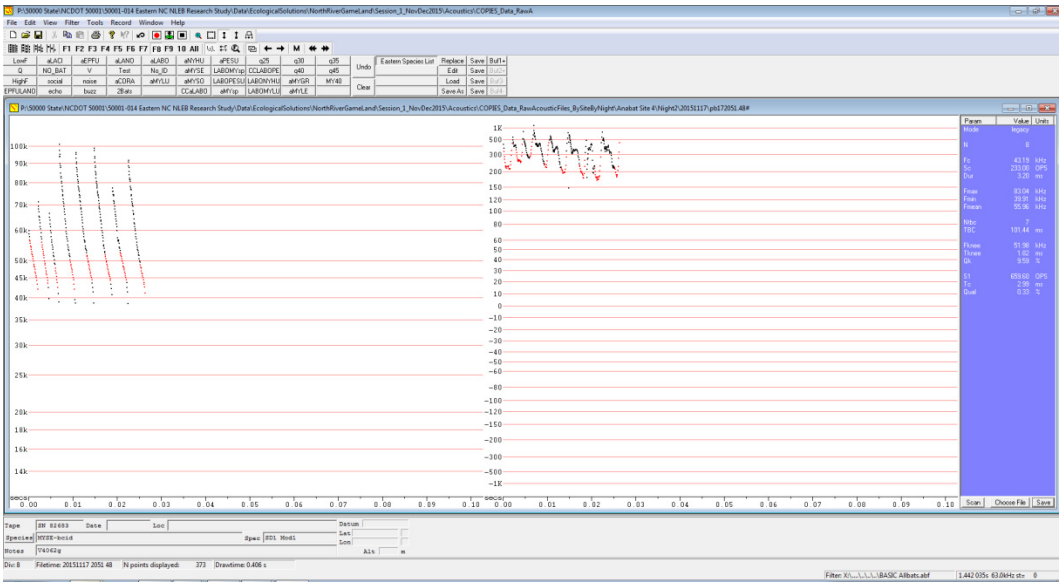
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb161732.19#	1005	2.58	0	189.94	63.49	42.78	49.61	1.85	44.94	6.23	2.4	43.24	863.74	100.45	0.76	46.8
pb161732.19#	1794	3.07	189.94	93.11	73.39	36.87	50.83	0.97	55.17	7.72	2.19	44.94	1115.62	242.68	0.31	63.3
pb161732.19#	2214	3.21	93.11	89.93	77.67	39.02	53.57	2.18	47.62	7.5	2.63	43.96	585.55	260.08	0.42	76.7
pb161732.19#	2586	3.4	89.93	187.69	76.92	34.04	51.73	1.49	52.29	6.89	2.14	47.06	621.51	233.85	0.41	63.5
pb161732.19#	3344	3.28	187.69	480.04	70.18	35.09	50.05	1.69	49.08	7.9	3.05	40.82	646.12	195.57	0.47	71.9
pb161732.19#	5168	2.09	480.04	769.72	51.95	37.91	44.1	0	51.95	0	0.65	46.78	174.5	231.7	0.4	11
pb161732.19#	7610	2.56	769.72	0	57.97	40.82	46.84	1.35	46.51	4.48	2.47	40.82	852.78	169.16	0.35	42

Parameters of all filtered pulses

Site 4, Night 2, File PB172051.48# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered

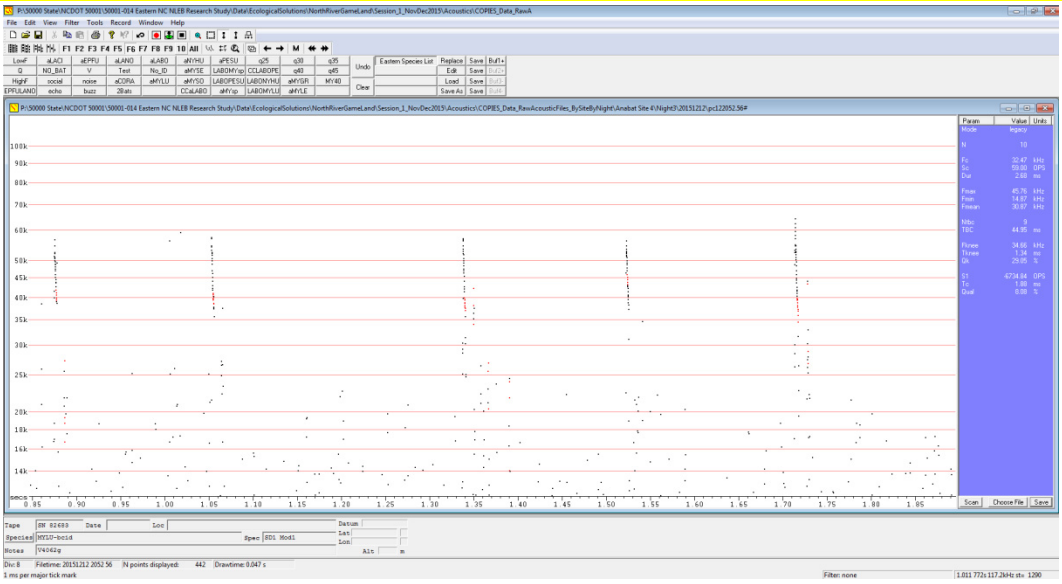


Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

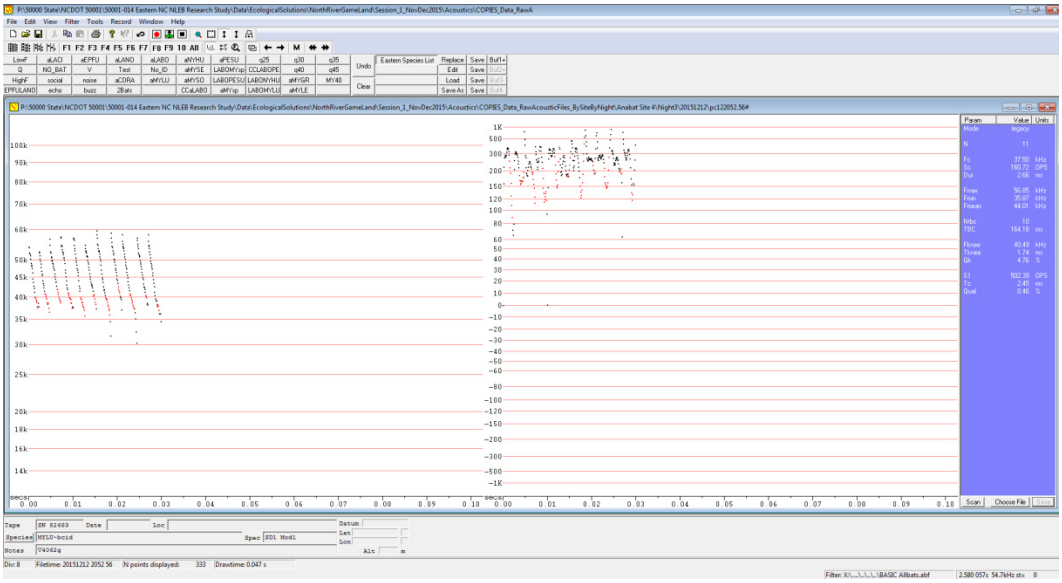
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb172051.48#	425	2.01	0	185.7	60.15	42.11	49.8	0.21	56.74	1.94	2.01	42.11	473.24	239.19	0.23	42.9
pb172051.48#	582	2.44	185.7	245.85	71.43	39.8	52.57	0.84	55.94	6.46	2.23	43.72	646.36	255.44	0.26	63.4
pb172051.48#	905	2.13	245.85	76	66.67	39.02	50.68	1.39	47.9	4.35	1.93	42.55	584	317.04	0.32	56.7
pb172051.48#	1014	3.65	76	84.62	101.27	38.83	60.26	2.49	50.31	15.91	3.44	42.11	1280.27	268.24	0.45	140.5
pb172051.48#	1140	4.02	84.62	89.92	96.39	38.83	59.7	2.53	51.61	13.9	3.63	44.69	649.17	190.02	0.28	115.7
pb172051.48#	1276	4.01	89.92	96.08	98.77	40.82	60.79	2.54	51.95	14.57	3.73	44.44	556.33	190.41	0.25	122.2
pb172051.48#	1426	3.56	96.08	101.74	77.67	38.65	55.03	1.84	52.63	7.23	3.17	44.69	544.02	177.36	0.44	73.8
pb172051.48#	1560	3.8	101.74	0	91.95	41.24	58.89	2.73	48.78	12.32	3.8	41.24	543.44	226.29	0.4	123

Parameters of all filtered pulses

Site 4, Night 3, File PC122052.56# – Echo ID: MYSE, BCID ID: MYLU, Ecological Solutions ID: **MYSE**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

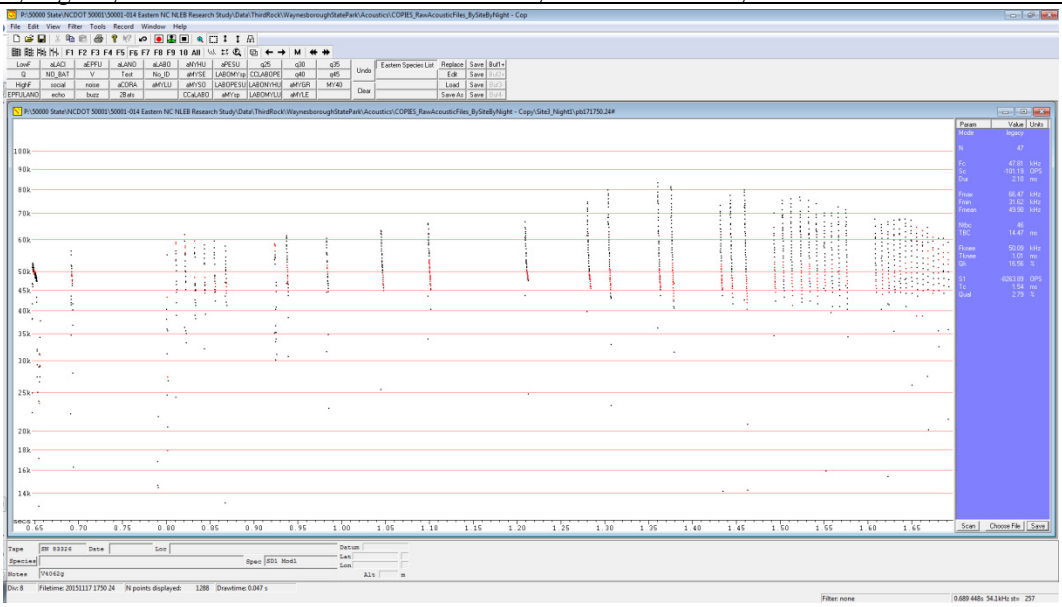
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pc122052.56#	716	2.29	0	291.08	54.05	37.56	43.71	1.46	40	2.59	2.08	37.56	213.99	146.3	0.67	43.9
pc122052.56#	1143	2.36	291.08	104.81	52.63	36.53	42.41	1.32	40.82	3.97	2.36	36.53	235.15	153.63	0.53	44.1
pc122052.56#	1342	2.49	104.81	177.7	56.74	38.65	45.02	1.68	41.88	5.23	2.49	38.65	713	144.17	0.4	46.8
pc122052.56#	1630	2.79	177.7	284.98	57.55	37.38	44.36	1.66	41.03	4.95	2.58	37.38	485.5	145.64	0.66	54
pc122052.56#	2047	2.55	284.98	184.99	57.14	35.71	43.9	1.6	40	4.88	2.55	35.71	308.88	171.56	0.4	60
pc122052.56#	2353	2.5	184.99	191.43	54.79	37.21	44.71	1.89	40.4	2.63	2.4	38.28	391.25	152.95	0.39	43.2
pc122052.56#	2663	3.23	191.43	194.27	59.7	31.62	43.34	2.02	39.8	7.12	2.98	35.87	534.37	157.4	0.45	66.4
pc122052.56#	2981	2.45	194.27	279.13	58.82	37.04	45.77	1.64	42.55	4.01	2.03	40.2	589.02	209.28	0.41	46.3
pc122052.56#	3403	3.28	279.13	109.29	58.39	30.3	42.63	1.76	40.82	7.15	2.79	37.21	858.88	128.97	0.32	56.9
pc122052.56#	3587	2.47	109.29	280.27	57.14	38.1	45.34	1.95	40.4	2.93	2.26	38.28	349.14	253.26	0.41	49.3
pc122052.56#	3966	2.89	280.27	0	58.39	34.48	42.88	2.12	37.74	6.88	2.44	36.87	847.11	104.77	0.47	58.4

Parameters of all filtered pulses

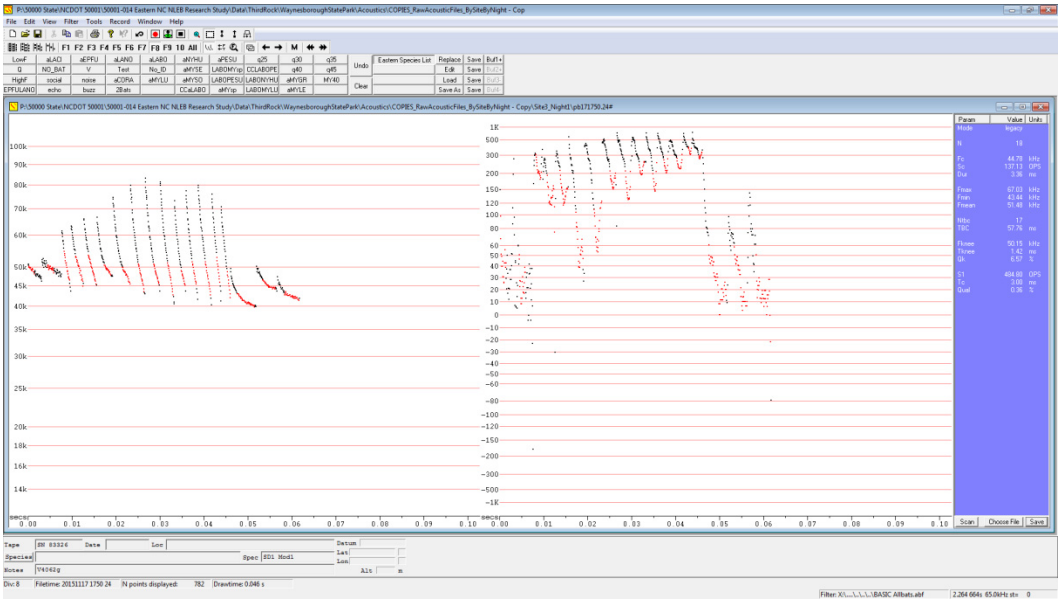
Representative Sonograms & Call Parameters – Old Waynesborough Park

Rationale: Search, approach, and feeding buzz of LABO or PESU.

Site 3, Night 1, File PB171750.24# – Echo ID: MYSE, BCID ID: MYSO, Third Rock ID: **LABO or PESU**



Typical frequency only view of pulses – F6, uncompressed, unfiltered



Frequency & slope view of all filtered pulses – F8, compressed, filtered with "BasicAllBats"

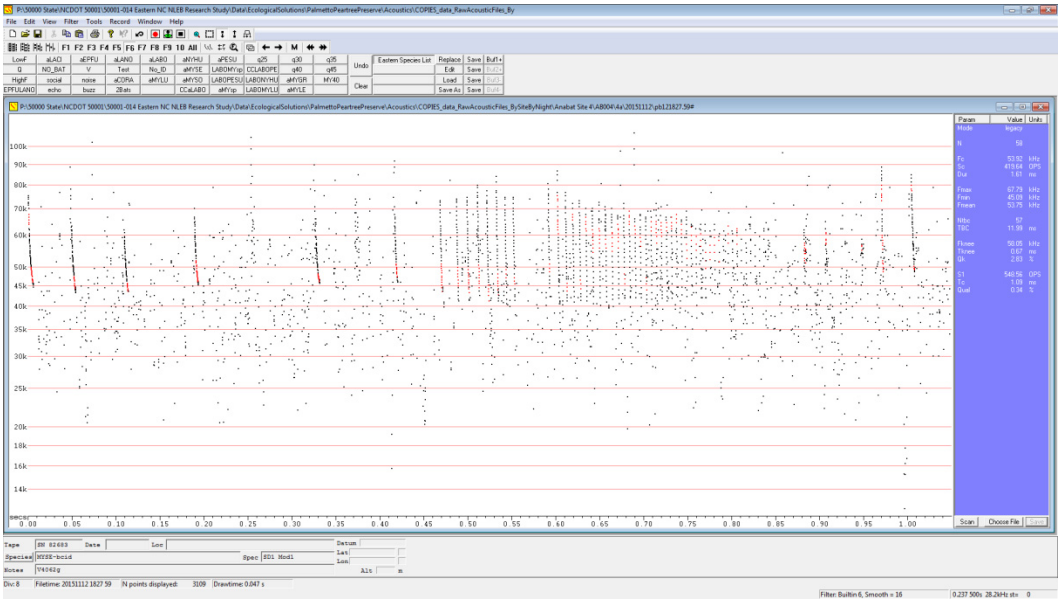
Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb171750.24#	2	2.7	0	113.96	52.98	20.46	42.95	1.18	50	0.36	1.74	49.08	-187.96	47.52	2.02	7.9
pb171750.24#	38	5.66	113.96	103.82	44.69	13.4	25.43	3.4	32.92	4.05	3.72	36.04	-945.8	-404.96	11.26	24
pb171750.24#	81	3.41	103.82	117.37	53.69	12.35	44.57	0.71	52.63	38.18	2.12	50.31	-9871.13	45.97	4.97	6.7
pb171750.24#	124	7.65	117.37	199.49	51.28	14.21	37.63	4.56	50	2.64	4.73	47.9	1837.15	369.92	8.71	7.1
pb171750.24#	201	4.42	199.49	112.17	52.98	19.85	45.23	1.02	50	25.35	2.23	48.19	-3991.73	43.64	2	9.9
pb171750.24#	257	6.45	112.17	7.63	52.63	22.28	45.88	2.31	50.63	24.02	3.36	50	-2940.52	17.35	4.18	5.3
pb171750.24#	334	1.82	7.63	36.69	37.74	13.01	28.51	1.06	23.53	14.96	1.32	31.01	-4188.11	-1543.27	11.43	21.7
pb171750.24#	350	2.73	36.69	109.32	56.34	16.29	41.01	1.07	49.38	31.53	1.65	47.62	-9479.63	90.15	5.83	18.3
pb171750.24#	390	1.53	109.32	10.19	55.17	17.94	28.72	0.65	43.24	8.13	1.1	17.94	-3685.08	2846.45	21.65	207.6
pb171750.24#	405	1.21	10.19	10.37	59.26	24.32	49.71	0.07	53.33	23.14	0.2	58.82	-16663.6	-1039.38	4.02	0.7
pb171750.24#	423	1.61	10.37	11.07	62.02	33.33	47.2	0.2	57.97	20.53	0.35	55.94	-11848.19	359.07	3.17	10.9
pb171750.24#	445	1.4	11.07	11.1	59.7	38.28	45.78	0	48.48	0	0.14	57.55	-4415.19	-1779.72	4.75	3.7
pb171750.24#	465	1.17	11.1	11.44	58.39	32.13	47.82	0.62	44.2	21.62	0.79	46.51	-12676.03	-427.8	4.58	25.5
pb171750.24#	482	1.42	11.44	12.54	59.7	42.33	47.95	0.88	48.19	0.5	1.23	44.69	-2048.06	308.15	3.38	33.6
pb171750.24#	502	1.58	12.54	56.36	57.97	13.27	48.16	1.03	47.06	40.47	1.38	44.2	-16954.97	254.8	3.56	31.2
pb171750.24#	525	2.15	56.36	13.41	58.82	30.19	42.89	0.14	58.82	23.09	0.35	56.34	-9065.37	296.59	4.44	4.4
pb171750.24#	551	2.36	13.41	45.55	61.54	30.77	49.13	0.92	51.95	12.21	1.74	46.78	-6084.38	184.23	1.02	31.5
pb171750.24#	583	2.45	45.55	62.28	60.61	22.86	47.37	0.93	51.95	27.92	1.25	50	-7556.01	173.95	1.64	21.2
pb171750.24#	616	2.9	62.28	53.6	63.49	25.48	52.43	2.21	49.08	32.65	2.81	44.94	-20266.78	210.97	1.7	41.3
pb171750.24#	657	3.19	53.6	110.66	66.12	34.04	52.71	1.28	53.69	25.87	2.99	45.45	-6174.69	140.75	0.89	45.5
pb171750.24#	705	3.94	110.66	70.81	66.67	24.84	50.74	1.91	50.63	14.16	3.62	47.9	-6307.09	46.6	1.44	39.2
pb171750.24#	760	3.99	70.81	23.72	74.77	39.8	54.14	2.31	50	21.16	3.99	45.45	-11642.29	81.94	0.66	64.5
pb171750.24#	818	3.73	23.72	56.63	80	23.19	52.52	1.92	50.96	0.94	3.02	45.2	-2265.08	158.27	1.02	77
pb171750.24#	872	3.33	56.63	15.23	83.33	36.2	56.44	1.98	50.96	28.56	3.15	45.71	-25061.25	133.61	1.23	82.3
pb171750.24#	923	3.54	15.23	55.88	81.63	31.5	53.17	1.63	52.63	1.72	2.99	42.78	-5113.1	220.15	1.19	90.8
pb171750.24#	973	3.2	55.88	11.56	73.39	14.18	47.54	1.38	52.29	1.2	2.54	45.45	2787.32	173.13	2.08	61.5
pb171750.24#	1015	2.82	11.56	16.22	77.67	41.67	55.36	1.93	49.08	4.29	2.63	44.2	787.85	218.38	0.74	75.7
pb171750.24#	1057	3.73	16.22	33.42	80	14.26	49.32	2.09	49.08	28.52	3.17	40.4	-15464.58	259.84	1.87	98
pb171750.24#	1109	2.07	33.42	9.67	70.18	34.63	52.12	0.89	52.98	24.86	1.97	44.44	-17874.72	233.16	2.67	57.9
pb171750.24#	1139	2.29	9.67	9.66	75.47	43.24	55.99	1.36	52.98	1.01	1.84	47.9	778.86	300.21	1.44	57.5
pb171750.24#	1174	2.21	9.66	10.58	76.19	41.24	55.98	1.59	49.38	15.57	2.21	41.24	-7574.09	415.44	0.75	84.8
pb171750.24#	1209	2.35	10.58	9.62	76.92	42.11	54.42	1.39	51.28	8.06	2.16	43.96	1968.09	288.82	0.93	75
pb171750.24#	1244	2.02	9.62	8.72	75.47	42.33	55.42	1.17	52.29	6.65	1.57	48.19	-5345.41	291.94	0.97	56.6
pb171750.24#	1275	1.99	8.72	9.11	74.07	41.67	54.24	1.37	49.38	0.94	1.89	43.48	-2178.82	347.94	1.16	70.4
pb171750.24#	1305	2	9.11	8.19	70.18	15.94	45.98	1.08	50.63	22.12	1.5	46.24	-6156.27	311.54	2.65	51.8

Parameters of all filtered pulses

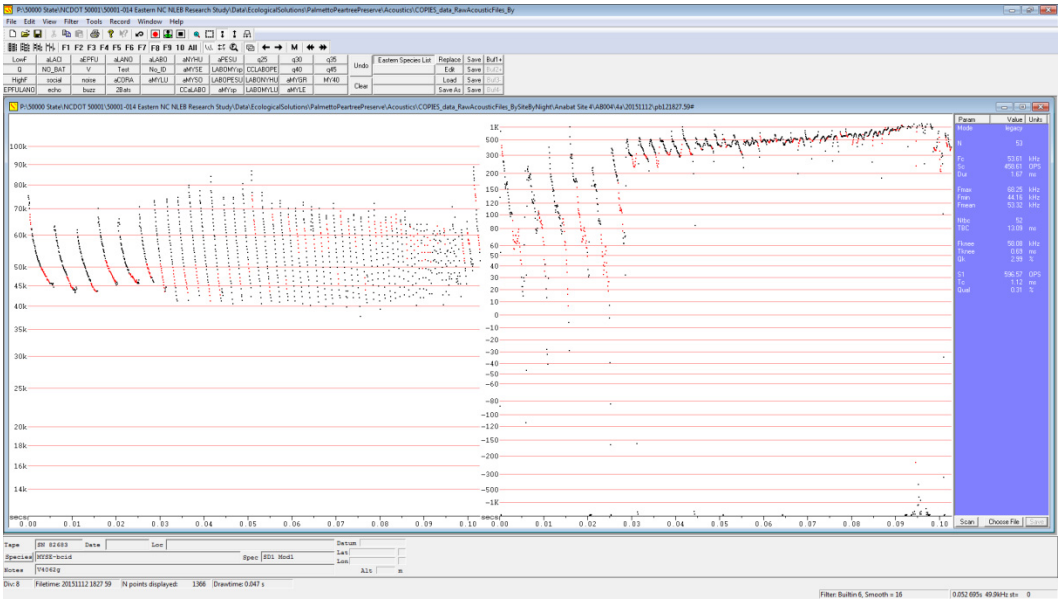
Representative Sonograms & Call Parameters – Palmetto Peartree Preserve

Rationale: Slope consistent with PESU, not steep enough for MYSE, feeding buzz likely led to MYSE auto-ID

Site 4, Night 3, File PB121827.59# – Echo ID: MYSE, BCID ID: MYSE, Ecological Solutions ID: **PESU**



Typical frequency only view of pulses – F6, uncompressed, built-in filter 6



Frequency & slope view of all filtered pulses – F8, compressed, manually cleaned

Site 4, Night 3, File PB121827.59# (continued)

Filename	st	Dur	Prev	Next	Fmax	Fmin	Fmean	Tk	Fk	Qk	Tc	Fc	S1	Sc	Qual	Pmc
pb121827.59#	15	0.31	0	0.38	67.8	62.5	64.1	0	67.8	0	0.31	62.5	404.13	376.14	0.21	8.5
pb121827.59#	21	5.02	0.38	48.16	62.5	44.69	50.2	2.13	50	5.44	4.14	45.71	336.32	64.26	0.2	36.7
pb121827.59#	515	4.94	48.16	59.99	63.49	43.24	49.42	2.8	47.34	6.42	4.21	43.96	522.27	75.72	0.32	44.4
pb121827.59#	1100	4.65	59.99	79.96	62.02	43.48	49.07	3.2	45.71	6.69	4.46	43.48	409.42	57.15	0.23	42.6
pb121827.59#	1915	4.03	79.96	138.1	66.12	45.2	51.68	1.54	51.95	7.75	3.85	46.24	375.42	72.66	0.25	43
pb121827.59#	3315	4.36	138.1	89.53	59.7	45.71	49.55	2.13	48.19	5.3	3.92	45.71	256.56	42.55	0.27	30.6
pb121827.59#	4209	3.22	89.53	51.33	66.67	45.98	52.21	1.55	50.96	5.87	2.62	47.06	435.07	107.66	0.33	41.7
pb121827.59#	4737	2.41	51.33	18.69	73.39	43.48	54.7	1.47	50.96	6	2.41	43.48	343.58	242.52	0.26	68.8
pb121827.59#	4938	2.41	18.69	12.03	74.07	41.24	53.11	1.42	50	6.1	1.94	44.94	456.17	298.07	0.16	64.8
pb121827.59#	5074	2.38	12.03	11.77	74.77	41.45	53.83	1.49	49.38	7.59	2.28	43.24	485.77	242.44	0.28	72.9
pb121827.59#	5205	2.41	11.77	10.62	80	42.55	56.48	1.62	50.63	7.1	2.22	44.44	544.07	312.93	0.32	80
pb121827.59#	5327	2.42	10.62	10.98	77.67	41.24	54.66	2.04	45.2	7.76	2.42	41.24	767.04	350.02	0.27	88.3
pb121827.59#	5447	2.22	10.98	9.66	76.92	41.24	53.98	1.49	48.19	7.49	2.03	42.78	759.76	319.43	0.3	79.8
pb121827.59#	5557	2.14	9.66	9.4	74.77	40.61	54.31	1.41	49.38	3.77	1.58	47.06	466.47	409.06	0.26	58.9
pb121827.59#	5657	2.07	9.4	39.79	74.77	41.45	54	1.52	47.06	5.24	1.69	45.45	544.18	284.32	0.3	64.5
pb121827.59#	6067	1.97	39.79	10.53	80.81	42.33	56.74	1.36	50.96	6.64	1.52	48.78	812.62	383.73	0.37	65.7
pb121827.59#	6181	0.28	10.53	0.34	76.92	68.97	71.68	0.05	75.47	0.97	0.22	70.8	541.81	552.45	0.4	8.7
pb121827.59#	6187	1.83	0.34	8.98	68.97	40.61	52.43	0.12	65.57	1.88	0.44	60.61	603.88	354.07	0.27	13.8
pb121827.59#	6287	1.93	8.98	7.92	70.18	41.24	51.81	1.46	45.71	5.31	1.64	43.72	710.52	352.4	0.23	60.5
pb121827.59#	6374	1.86	7.92	7.64	72.07	41.03	53.65	0.17	67.8	1.13	0.3	65.57	507.05	394.22	0.27	9.9
pb121827.59#	6457	1.86	7.64	7.36	73.39	41.45	53.68	1.4	46.51	4.28	1.58	44.2	594.07	406.53	0.29	66.1
pb121827.59#	6536	1.6	7.36	7.43	70.18	41.24	52.66	0.12	66.67	2.16	0.38	61.54	843.27	452.85	0.27	14
pb121827.59#	6619	1.67	7.43	7.76	70.18	40.61	52.76	0.37	62.02	2.11	0.79	54.42	520.4	447.61	0.29	28.9
pb121827.59#	6698	1.42	7.76	6.93	65.57	40.2	50.67	0.13	62.5	1.48	0.47	55.94	541.11	464.74	0.45	17.2
pb121827.59#	6780	1.72	6.93	7.29	70.8	41.03	53.58	0.63	58.82	1.37	0.77	55.94	529.36	506.35	0.22	26.5
pb121827.59#	6863	1.61	7.29	6.96	70.18	40	52.27	0.38	61.07	2.26	0.73	54.79	829.22	445.59	0.32	28.1
pb121827.59#	6938	1.55	6.96	6.81	67.23	40.61	51.75	0.19	64	0.29	0.59	55.94	422.42	476.87	0.36	20.2
pb121827.59#	7018	1.33	6.81	6.17	66.12	42.11	51.28	0.87	48.19	2.64	1.04	45.45	560.84	479.5	0.28	45.5
pb121827.59#	7073	1.35	6.17	6.5	68.97	42.33	53.41	0	68.97	0	0.25	64	624.35	440.01	0.35	7.8
pb121827.59#	7156	1.23	6.5	6.21	66.12	42.11	51.91	0.13	63.49	1.26	0.26	60.61	486.55	508.44	0.21	9.1
pb121827.59#	7225	1.26	6.21	5.99	62.02	37.74	47.73	0.14	59.26	1.48	0.28	56.34	500.07	513.6	0.31	10.1
pb121827.59#	7290	1.41	5.99	6.05	66.67	40.82	51.14	0.94	47.06	1.64	1.12	43.96	414.03	540.68	0.2	51.7
pb121827.59#	7356	1.22	6.05	5.87	68.97	41.67	52.29	0.12	65.04	2.07	0.25	61.54	815.16	614.26	0.31	12.1
pb121827.59#	7413	1.38	5.87	5.84	72.07	39.41	52.1	0.18	65.04	3.17	0.51	57.55	880.59	529.81	0.27	25.2
pb121827.59#	7480	1.09	5.84	5.67	64.52	41.88	51.28	0	64.52	0	0.26	59.7	442.1	425.45	0.4	8.1
pb121827.59#	7538	1.24	5.67	5.92	66.67	41.24	51.65	0.12	64.52	0.91	0.25	61.54	454.63	524.4	0.31	8.3
pb121827.59#	7609	1.07	5.92	5.74	66.67	41.88	52.34	0	66.67	0	0.19	62.5	763	490.05	0.3	6.7
pb121827.59#	7671	0.98	5.74	5.53	67.8	42.33	53.06	0	67.8	0	0.12	64.52	620.94	577.04	0.26	5.1
pb121827.59#	7735	0.98	5.53	5.85	65.57	42.78	52.85	0.13	64	0.4	0.26	60.61	442.24	595.53	0.36	8.2
pb121827.59#	7800	0.73	5.85	5.21	60.61	42.33	49.05	0.14	57.14	1.69	0.29	52.63	697.03	780.56	0.37	15.2
pb121827.59#	7855	0.84	5.21	5.56	64	42.78	52.13	0.13	62.99	0.21	0.26	58.39	500.94	798.16	0.46	9.6
pb121827.59#	7909	0.75	5.56	5.18	62.5	40.2	48.32	0.07	59.7	3.19	0.21	55.17	957.81	784.97	0.28	13.3
pb121827.59#	7956	0.79	5.18	5.56	64	42.11	50.7	0.13	60.61	1.61	0.27	56.34	699.12	741.92	0.3	13.6
pb121827.59#	8021	0.51	5.56	5.21	57.55	42.11	46.69	0.08	54.42	3.59	0.24	49.69	1062.25	815.18	0.33	15.8
pb121827.59#	8076	0.56	5.21	5.07	61.54	43.96	50.18	0.14	56.74	2.66	0.29	52.29	831.09	770.17	0.33	17.7
pb121827.59#	8136	0.63	5.07	5.29	64	43.01	50.79	0.14	59.26	2.51	0.28	54.42	839.45	835.76	0.25	17.6
pb121827.59#	8193	0.42	5.29	10.12	58.39	43.01	47.06	0	58.39	0	0.16	51.61	1337.37	1148.98	0.48	13.1
pb121827.59#	8305	0.38	10.12	9.93	63.49	48.48	52.63	0	63.49	0	0.14	57.55	1079.88	1019.15	0.2	10.3
pb121827.59#	8408	0.43	9.93	76.55	62.5	50.96	56.21	0.07	62.5	1.15	0.27	57.14	-514.2	630.65	0.54	9.4
pb121827.59#	9184	1.14	76.55	24.57	62.02	45.45	52.82	0.27	57.55	1.31	0.72	51.95	396.01	332.24	0.4	19.4
pb121827.59#	9435	1.22	24.57	63.18	65.04	50.96	55.65	0.13	61.07	3.63	0.61	57.14	870.99	198.47	0.62	13.8
pb121827.59#	10078	0.56	63.18	0.73	88.89	73.39	78.57	0.24	80	2.38	0.56	73.39	674.66	392.2	0.51	21.1
pb121827.59#	10092	0.95	0.73	1.04	69.57	51.95	59.01	0.44	60.15	2.71	0.8	55.56	619.22	326.62	0.25	25.2

Parameters of all cleaned pulses

Representative Sonograms & Call Parameters – Pocosin Lakes NWR

No call files identified as MYSE during Session 1 at Pocosin Lakes NWR

Appendix G

Acoustic Data Sheets

Appendix G

Bladen Lakes State Forest, Session 1

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 1	Night#: 1	Site Name: Bladen Lakes SF
Start Date: 11/11/15		End Date: 11/12/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	2:08	42.5°F	calm	clear	0/95%	7:08	44°F	3.5mph	clear	0/95%

Moon Effect:	Start: 6:28	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
waning crescent (6%)	Stop: 5:30	

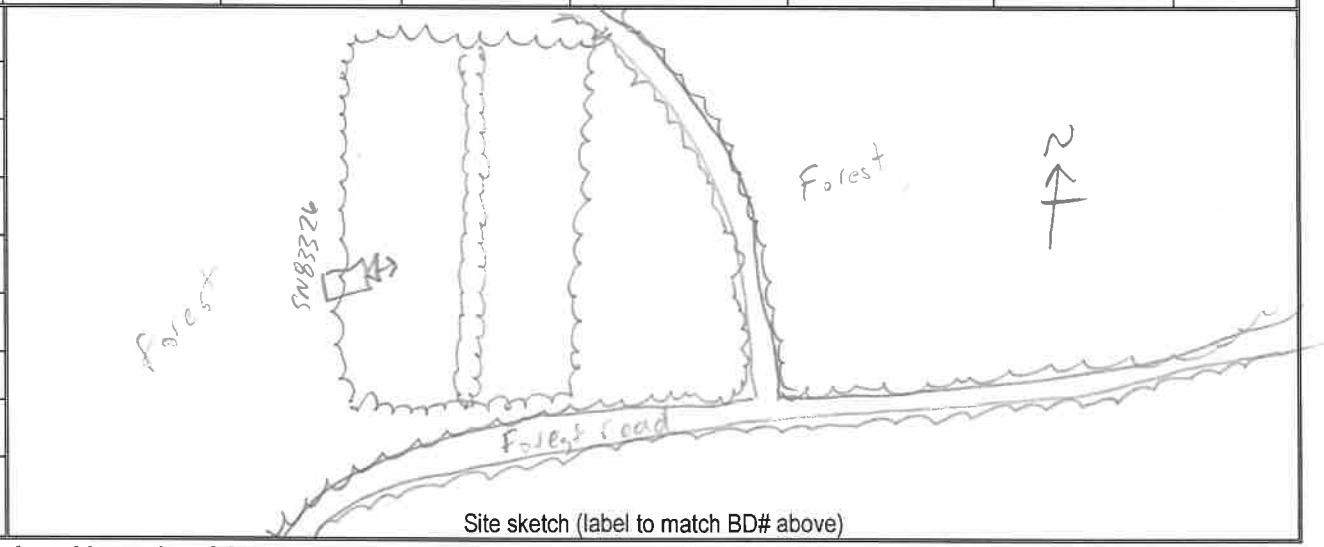
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83326	Anabat SD2	U4062g	Green "High"	Angled PVC	34.683451	-78.631116	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83326	Yes	E	45	10ft	Lo	6	8		Yes

Habitat & Site Description:

Agricultural field surrounded by planted pine forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of open food plot. Surrounding habitat is fire maintained/raked for pine straw longleaf pine. Understory very sparse, with few *Q. laevis*, small amounts of *Aristida stricta*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 1	Night#: 2	Site Name: Bladen Lakes SF
Start Date: 11/12/15		End Date: 11/13/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:35	45.5°F	3.5mph	clear	0/99%	7:05	46.0°F	calm	clear	0/99%

Moon Effect: New Moon (10%) Start: 7:23 Stop: 16:11

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

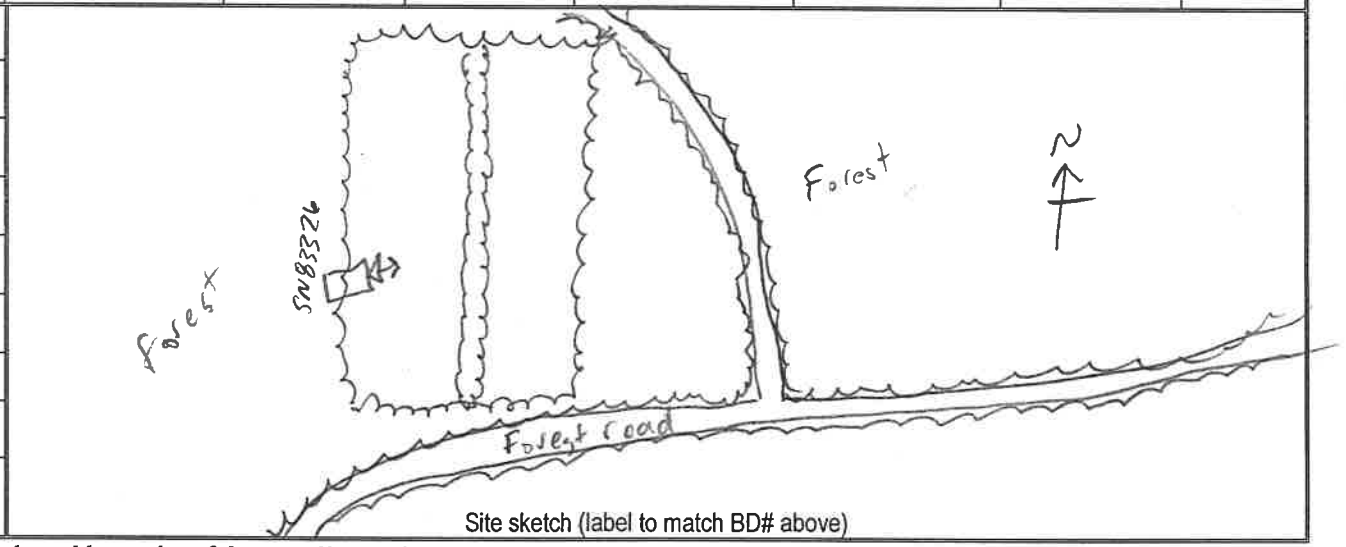
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83326	Anabat SD2	U4062g	Green "High"	Angled PVC	34.683451	-78.631116	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83326	Yes	E	45	10 ft	Lo	6	8		Yes

Habitat & Site Description:

Agricultural field surrounded by planted pine forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of open food plot. Surrounding habitat is fire maintained/raked for pine straw longleaf pine. Understory very sparse, with few *Q. laevis*, small amounts of *Aristida stricta*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 1	Night#: 3	Site Name: Bladen Lakes SF
Start Date: 11/16/15		End Date: 11/17/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	16:44	33.5°F	calm	clear	0/95%	7:04	33.9°F	calm	clear	0/95%

Moon Effect: waxing crescent (24%) Start: 10:51 Stop: 9:38

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

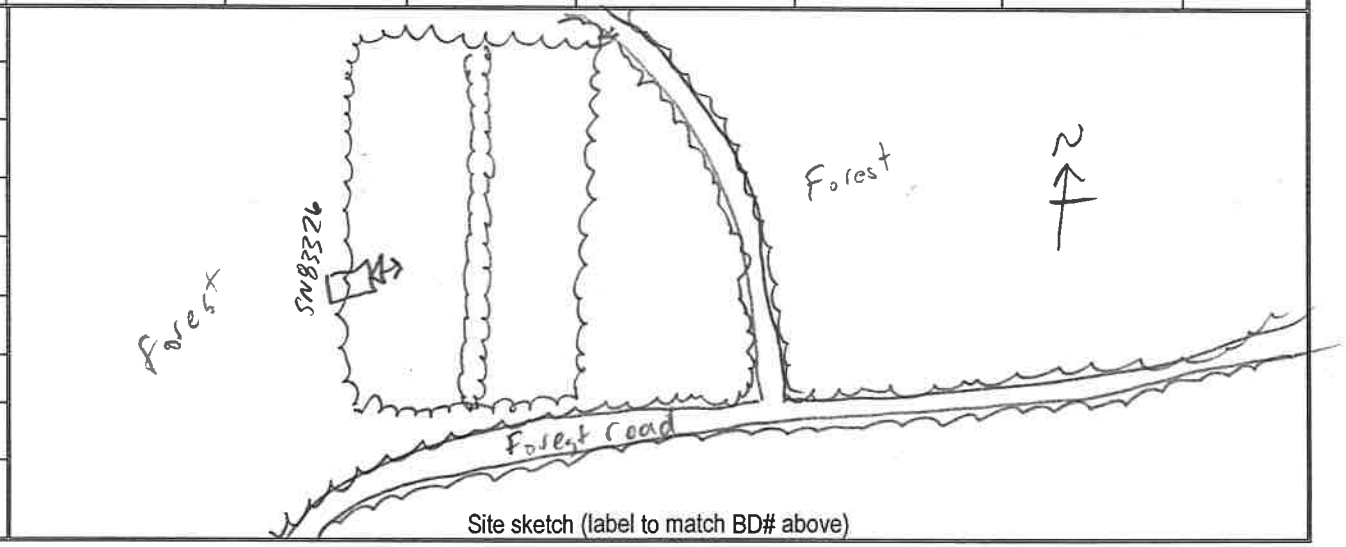
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83326	Anabat SD2	V4062g	Green "High"	Angled PVC	34.683451	-78.631116	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83326	Yes	E	45	10 ft	Lo	6	8		Yes

Habitat & Site Description:

Agricultural field surrounded by planted pine forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of open food plot. Surrounding habitat is fire maintained/raked for pine straw longleaf pine. Understory very sparse, with few *Q. laevis*, small amounts of *Aristida stricta*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 2	Night#: 1	Site Name: Bladen Lakes SF
Start Date: 11/11/15		End Date: 11/12/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	2:08	42.5°F	calm	clear	0 195%	7:08	44°F	3.5mph	clear	0195

Moon Effect:	Start:	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
waning crescent (0%)	Stop: 5:30	

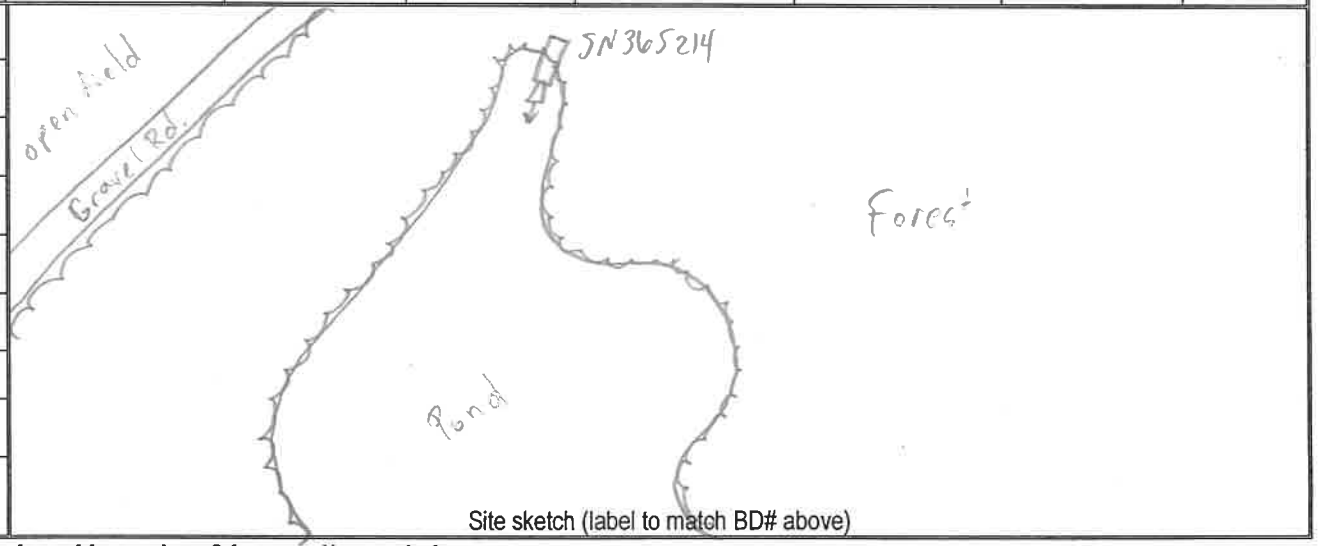
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365214	Anabat SD2	V406Zg	Green "High"	Angled PVC	34.772659	-78.568102	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365214	Yes	SW	45	10ft	Lo	6	8		Yes

Habitat & Site Description:

Pond surrounded by forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of open pond. Surrounding habitat is managed loblolly pine. Understory is relatively dense saplings, +/- 7' in height. Vines are common.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 2	Night#: 2	Site Name: Bladen Lakes SF
Start Date: 11/12/15		End Date: 11/13/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:35	45.9F	3.5mph	clear	0/99%	7:05	46.0°F	calm	clear	0/99%

Moon Effect:	Start: 7:23	Land Use: Urban / Agriculture / ~~Forest~~ / ~~Water~~ / Wetland / Barren/ Other (describe):
New Moon (1%)	Stop: 10:11	

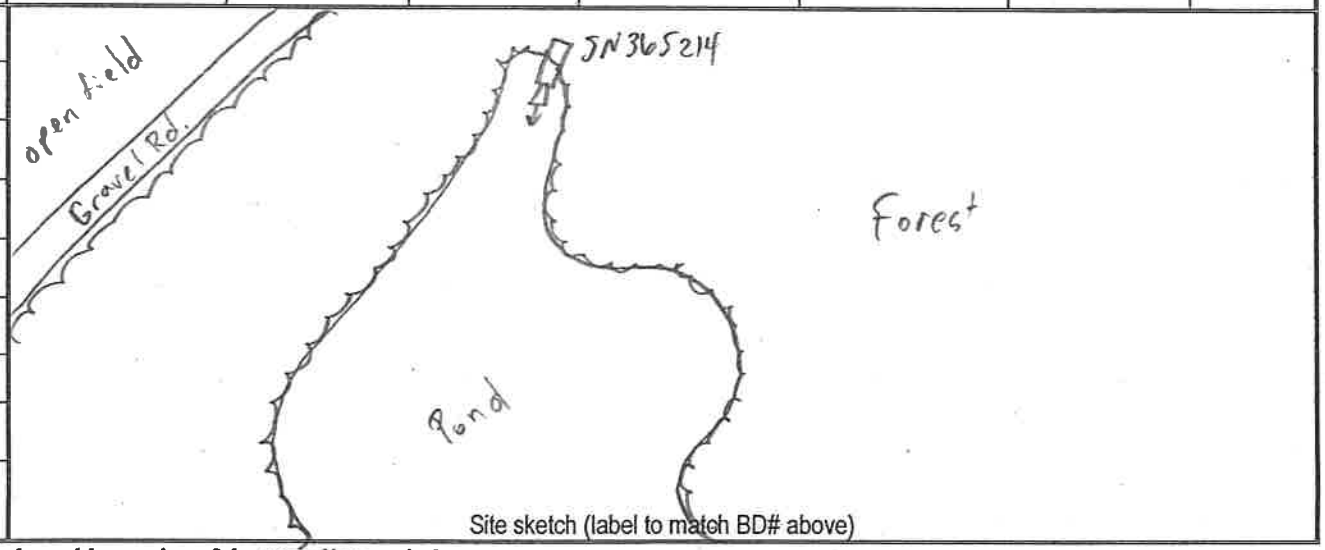
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365214	Anabat SD2	V406Zg	Green "High"	Angled PVC	34.772659	-78.568102	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365214	Yes	SW	45	10ft	Lo	6	8		Yes

Habitat & Site Description:

Pond surrounded by forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of open pond. Surrounding habitat is managed loblolly pine. Understory is relatively dense saplings, +/- 7' in height. Vines are common.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 2	Night#: 3	Site Name: Bladen Lakes SF
Start Date: 11/16/15		End Date: 11/17/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:44	33.5°F	calm	clear	0/95%	7:04	33.5°F	calm	clear	0/95%

Moon Effect:	Start: 10:51	Land Use: Urban / Agriculture / ~~Forest~~ / ~~Water~~ / Wetland / Barren/ Other (describe):
waxing crescent (24%)	Stop: 9:38	

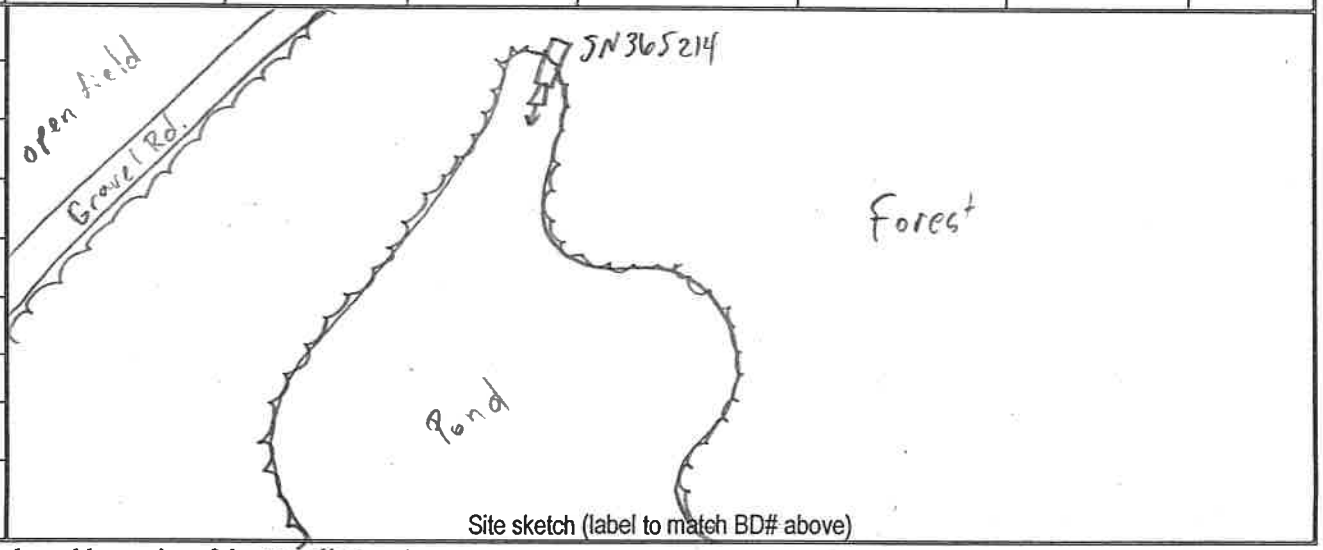
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365214	Anabat SD2	V406Zg	Green "High"	Angled PVC	34.772659	-78.568102	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365214	Yes	SW	45	10ft	Lo	6	8		Yes

Habitat & Site Description:

Pond surrounded by forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of open pond. Surrounding habitat is managed loblolly pine. Understory is relatively dense saplings, +/- 7' in height. Vines are common.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 3	Night#: 1	Site Name: Bladen Lakes SF
Start Date: 11/11/15		End Date: 11/12/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	2:08	42.5°F	calm	clear	0/95%	7:08	44°F	3.5mph	clear	0/95%

Moon Effect: waning crescent (0%) Start: 6:38 Stop: 5:30

Land Use: Urban / Agriculture / ~~Forest~~ / Water / Wetland / Barren/ Other (describe):

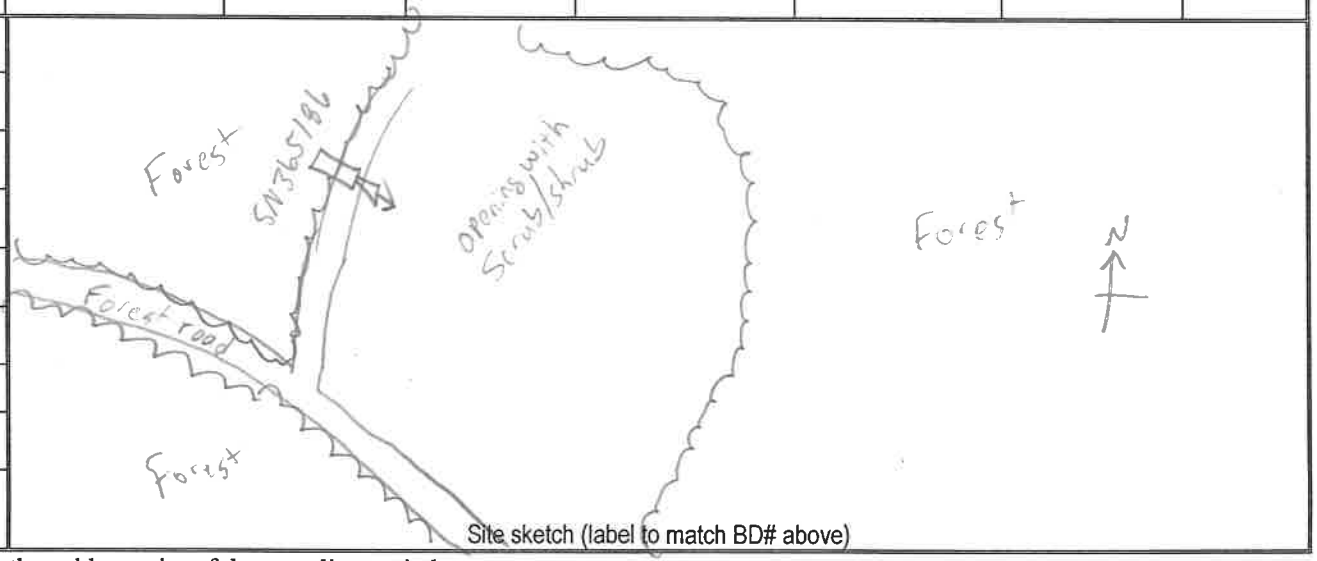
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365186	Anabat SD2	V4062g	Green "High"	Angled PVC	34.688192	-78.473131	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365186	Yes	SE	45	10ft	Lo	6	8		Yes

Habitat & Site Description:

Scrub/shrub opening surrounded by planted pine

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at open clearing where dirt roads meet. Surrounding habitat is fire maintained longleaf pine. Understory is relatively sparse, and includes *Quercus laevis* and *Aristida stricta*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 3	Night#: 2	Site Name: Bladen Lakes SF
Start Date: 11/12/15		End Date: 11/13/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:35	45.5°F	3.5mph	clear	0/99%	7:05	46.8°F	calm	clear	0/99%

Moon Effect:	Start: 7:23	Land Use: Urban / Agriculture / ~~Forest~~ / Water / Wetland / Barren/ Other (describe):
New Moon (1%)	Stop: 6:11	

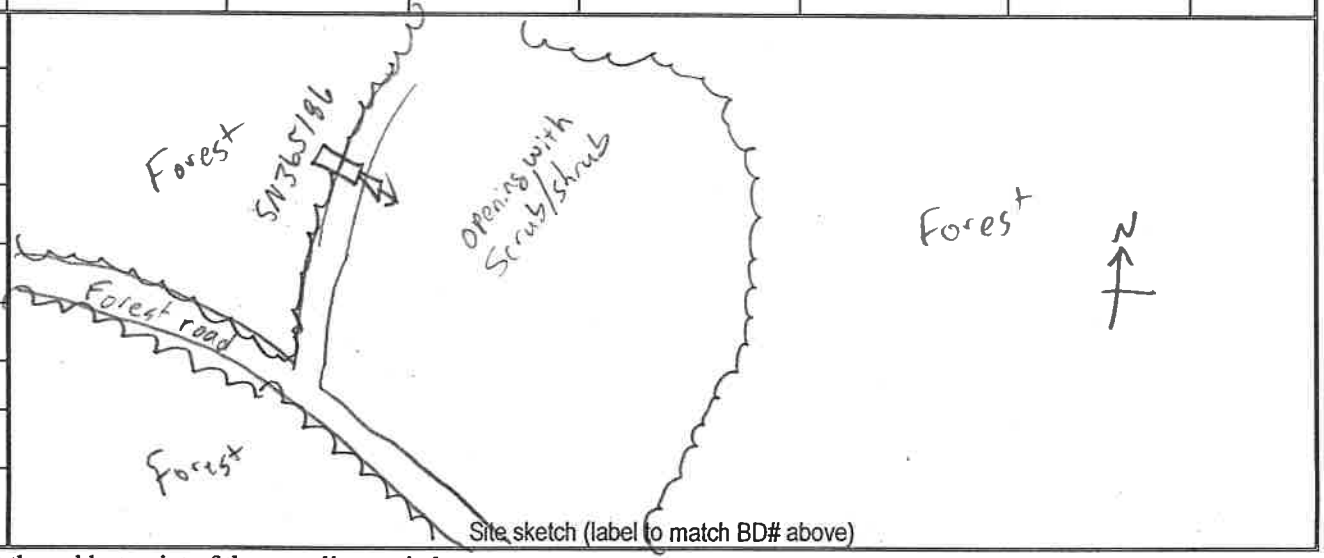
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365186	Anabat SD2	V4062g	Green "High"	Angled PVC	34.688192	-78.473131	~108 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365186	Yes	SE	45	10ft	Lo	6	8		Yes

Habitat & Site Description:

Scrub/shrub opening surrounded by planted pine.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at open clearing where dirt roads meet. Surrounding habitat is fire maintained longleaf pine. Understory is relatively sparse, and includes *Quercus laevis* and *Aristida stricta*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 3	Night#: 3	Site Name: Bladen Lakes SF
Start Date: 11/16/15		End Date: 11/17/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:44	33.9F	calm	clear	0/95%	7:04	33.9F	calm	clear	0/95%

Moon Effect: waxing crescent (24%) Start: 10:51 Stop: 9:38

Land Use: Urban / Agriculture / ~~Forest~~ / Water / Wetland / Barren/ Other (describe):

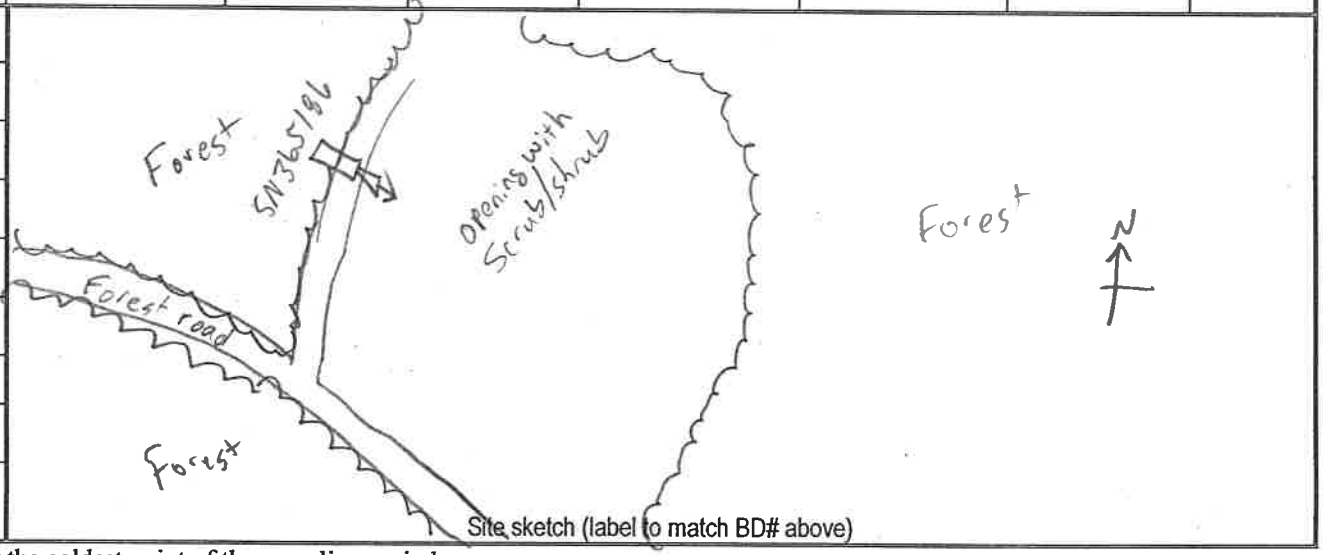
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365186	Anabat SD2	V4062g	Green "High"	Angled PVC	34.688192	-78.473131	~108 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365186	Yes	SE	45	10ft	Lo	6	8		Yes

Habitat & Site Description:

Scrub/shrub opening surrounded by planted pine.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at open clearing where dirt roads meet. Surrounding habitat is fire maintained longleaf pine. Understory is relatively sparse, and includes *Quercus laevis* and *Aristida stricta*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 4a	Night#: 1	Site Name: Bladen Lakes SF
Start Date: 11/11/15		End Date: 11/12/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown	Biologists/observers Present: Jones Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	21:08	42.5°F	Calm	clear	0/95%
	7:08	44°F	3.5mph	clear	0/95%

Moon Effect:	Start: 6:28	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
waning crescent (0%)	Stop: 5:30	

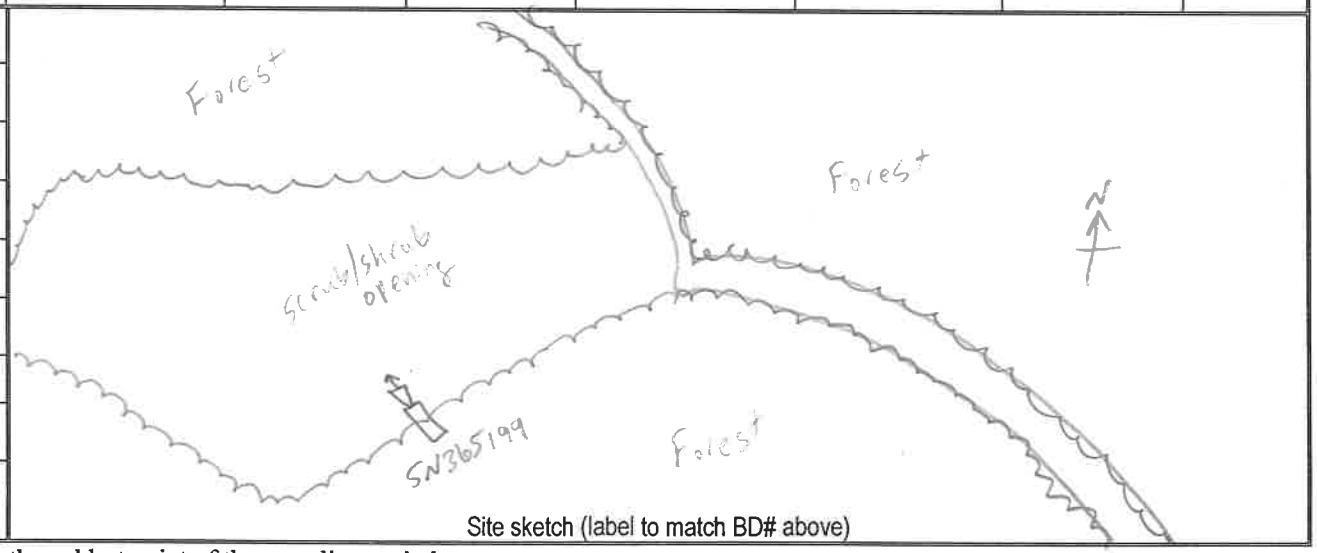
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365199	Anabat SD2	V4062g	Green "Hat"	Angled PVC	34.576907	-78.46334	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365199	Yes	NW	45	10 ft	Lo	6	8		Yes

Habitat & Site Description:

Scrub/shrub opening surrounded by planted pine

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of recent clearcut in mixed pine-hardwood forest. Clearcut is obviously managed, while surrounding forest appears unmanaged.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 4a	Night#: 2	Site Name: Bladen Lakes SF
Start Date: 11/12/15		End Date: 11/13/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown	Biologists/observers Present: James Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	16:35	45.50 F	3.5mph	clear	0/99%
	7:05	46.00 F	calm	clear	0/99%

Moon Effect: New Moon (1%) Start: 7:23 Stop: 16:11

Land Use: Urban / Agriculture / ~~Forest~~ / Water / Wetland / Barren/ Other (describe):

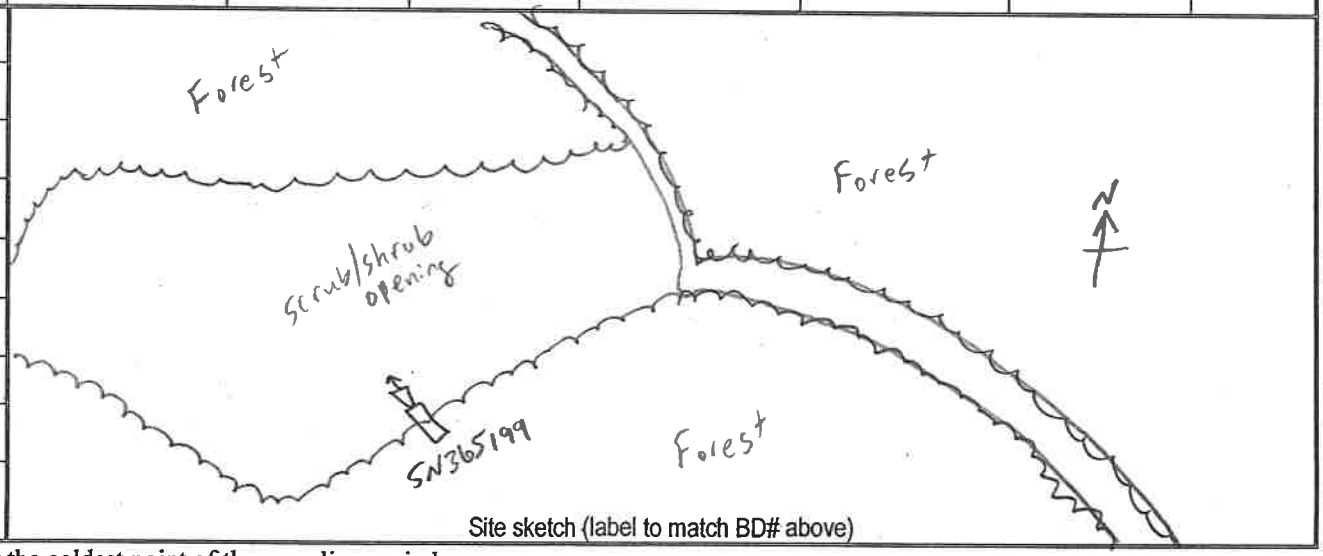
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365199	Anabat SDZ	V4062g	Green "High"	Angled PVC	34.576907	-78.46334	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365199	Yes	NW	45	10ft	Lo	6	8		Yes

Habitat & Site Description:

Scrub/shrub opening surrounded by planted pine

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of recent clearcut in mixed pine-hardwood forest. Clearcut is obviously managed, while surrounding forest appears unmanaged.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: Bladen	Site#: 4b	Night#: 3	Site Name: Bladen Lake SF
Start Date: 11/16/15		End Date: 11/17/15	Start Time: 16:40		End Time: 07:10
Nearest town: Elizabethtown		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	16:44	33.5°F	calm	clear	D/99%	7:04	33.5°F	calm	clear	D/95%

Moon Effect: waxing crescent (24%) Start: 10:51 Stop: 9:38

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

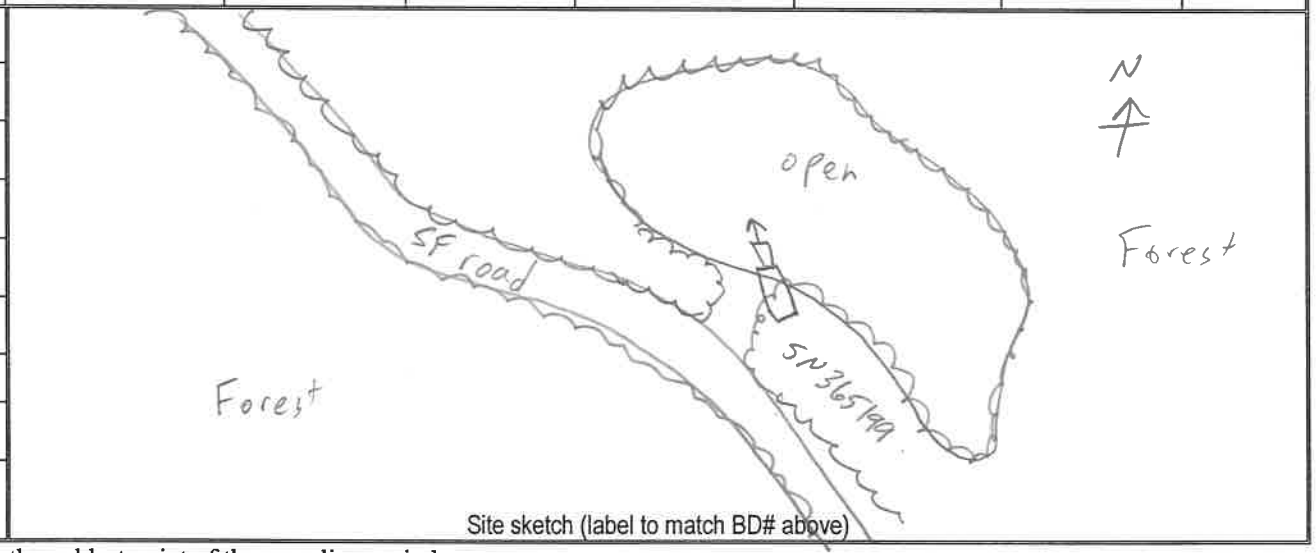
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365199	Anabat SD2	V40629	Green "High"	Angled PVC	34.573549	-78.480442	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365199	✓ Yes	NW	45	10 ft	Lo	lo	8		Yes

Habitat & Site Description:

Pond with open water adjacent to state forest road and surround by forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of small borrow pond adjacent to dirt forest road and also a small stream swamp system. Lowland hardwoods are mature and include *Platanus occidentalis*, *Quercus phellos*, *Q. michauxii*, *Acer rubrum*, and *Ulmus alata*.

Appendix G

Chowan Swamp Game Land, Session 1

Drew replace w/ card 5! / need cutters to cut zip tie / card 2 goes to 1a

NCDOT Acoustic Survey Data Form

Wiccan /

Project Name: NC NLEB Research	Proj #: 42062	County: Hertford	Site#: ABCG1a	Night#: 1	Site Name: First Ridge Rd
Start Date: 11/25/15		End Date: 11/26/15	Start Time: 1615		End Time: 0715
Nearest town: Harrellsville		Biologists/observers Present: Dottie Brown, Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	50.7	1	0	0/100%	22:30	41.2	0	0	0/100%

Moon Effect: Full Moon 100% — Start: 1706 — Stop: 0614

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

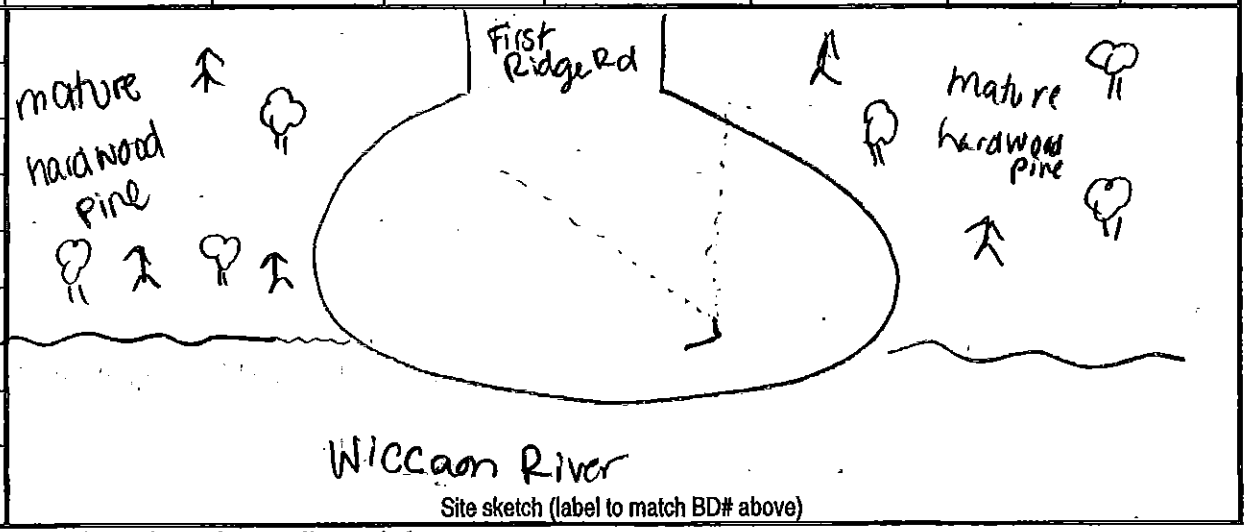
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
	Anabat SD2	4062g	green	Tackle box weatherproofed	36.32452	-76.78201	-6ft
ABO11				+ trash bag			

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
	Yes	N	0	10 ft	no	7	16/8	NA	√
ABO11									

Habitat & Site Description:

- Set at end of road, facing road corridor.
- goal is to catch while foraging along forest and while using river

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Wiccacon/

Project Name: NLEB Research	Proj #: 42262	County: Hertford	Site#: ABCG1a	Night#: 2	Site Name: FirstRidge Rd
Start Date: 11/26/15		End Date: 11/27/15		Start Time: 1615	End Time: 0715
Nearest town: Harrellsville		Biologists/observers Present: Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	46.5	0	0	fog/100%	0345	46.0	2	0	0/100%

Moon Effect: Full Moon 99% — Start: 1759 — Stop: 0720

Land Use: Urban / Agriculture / (Forest) (Water) / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB011	Anabat SD2	4062g	green	tackle box weatherproofed + trash bag	36.32452	-76.78201	-6ft

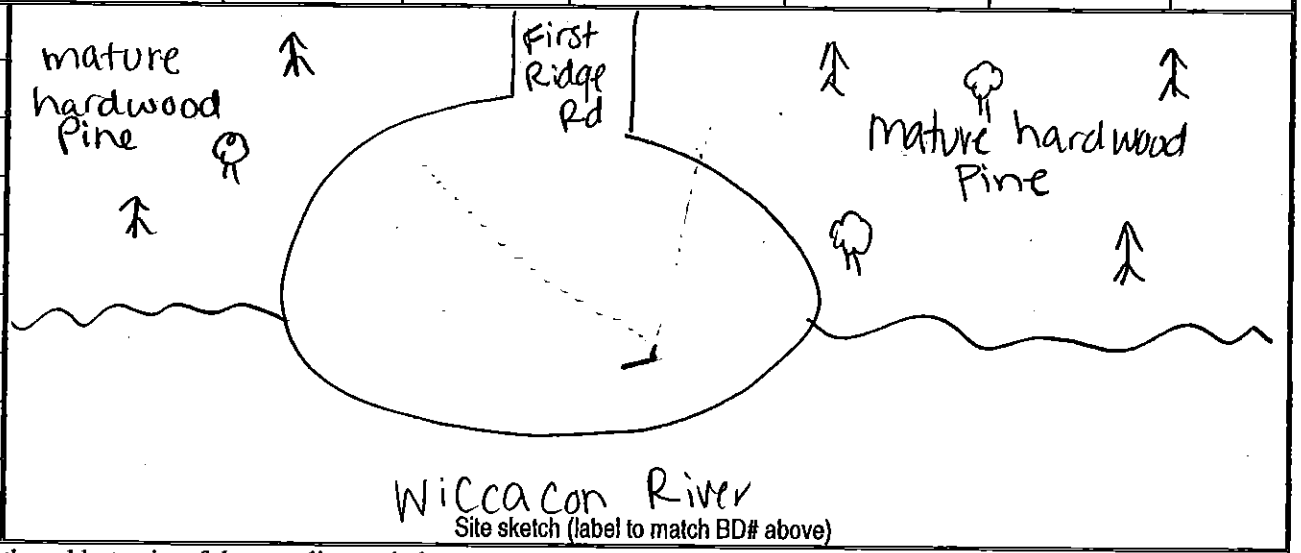
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB011	Yes KL	N	0	10 ft	no	7	16/8	NA	✓

Habitat & Site Description:

- Set at end of road facing road corridor
- goal is to catch while foraging along forest and while using river

Remarks:

- Card AB002 put in 11/26
- no damage @ Cardswap



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

(1:20 pm)

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research	Proj #: 42262	County: Hertford	Site#: ABCG1b	Night#: 1	Site Name: Mapleton / River Rd Tract
Start Date: 11/27/15		End Date: 11/28/15	Start Time: 16:15		End Time: 7:15
Nearest town: Winton		Biologists/observers Present: Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	40.6	0	0	0/97%	0715	40.5	0	0	0/97%

Moon Effect: waning gibbous 90 — Start: 1954 — Stop: 0220

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

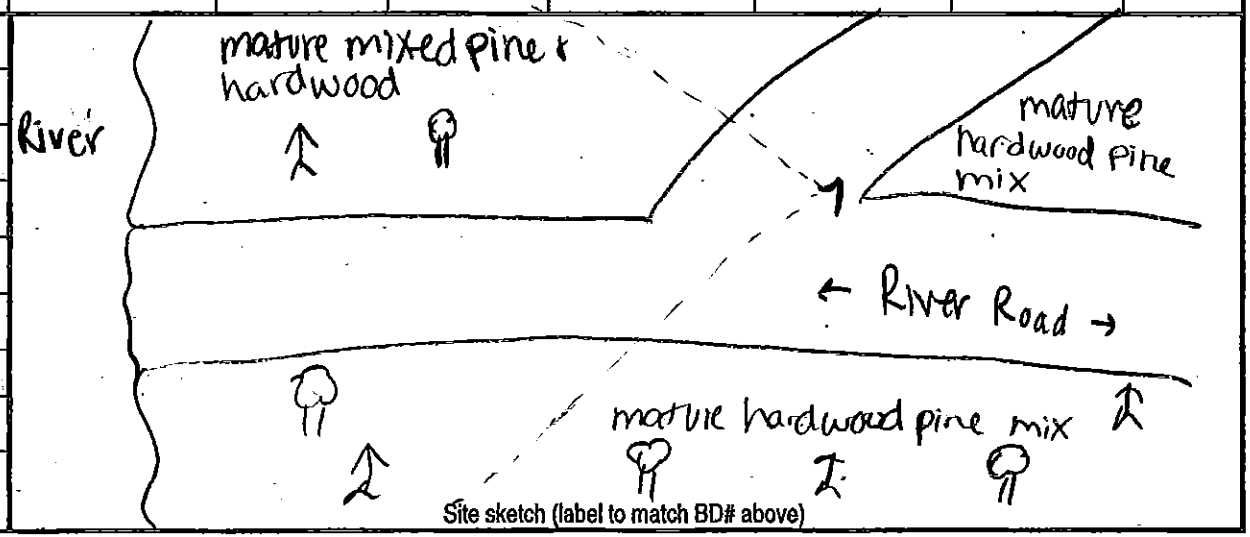
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABO11	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.45492	-76.99815	64 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABO11	Yes KL	N	35	10 ft	med	7	16/8	NA	Yes

Habitat & Site Description:

- mixed hardwood + pine
- opens into a corridor with water at the end
- goal is to capture foraging and using the water way

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Wiccacon River/

Project Name: NLEB research	Proj #: 42262	County: Hertford	Site#: ABCG2a	Night#: 1	Site Name: Landing Road
Start Date: 11/25/15		End Date: 11/26/15	Start Time: 1615		End Time: 0715
Nearest town: Harrells-ville		Biologists/observers Present: Dottie Brown, Kelly Linton			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	50.7	1	0	0/100%	2230	41.2	0	0	0/100%

Moon Effect: Full Moon 100%. Start: 1706 Stop: 0614

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

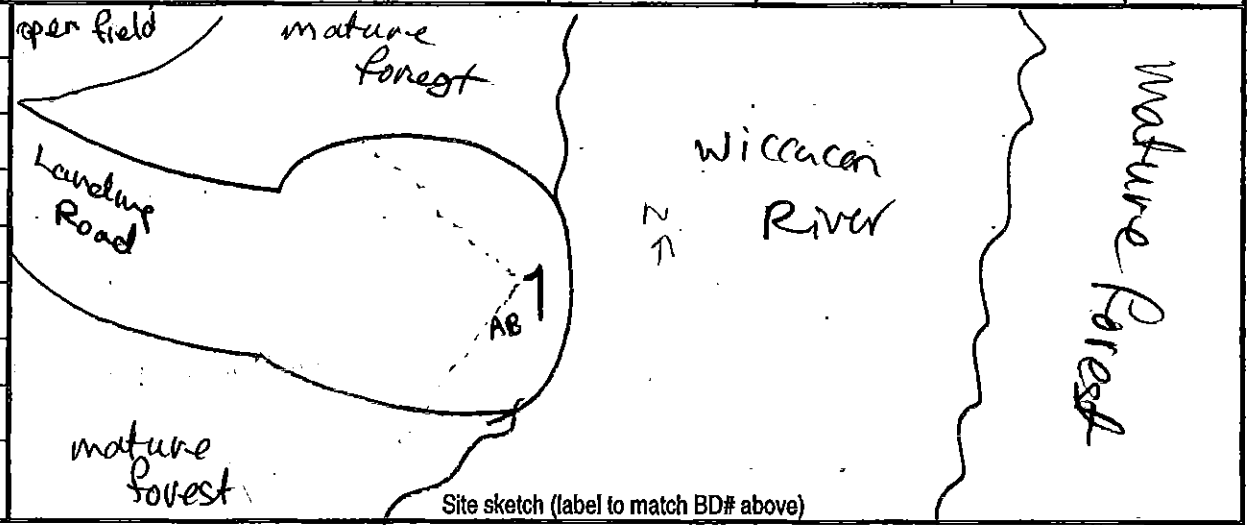
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB007	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.33747	-76.77377	3

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB007	Yes	235°	W	10 ft	lo	7	16/8	NA	Yes

Habitat & Site Description:

-mature hardwood, borders River
-pointed towards forested rd.
-Anabat set at end of Landing road

Remarks: area to hear bats foraging off of River



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Wiccacon River/

Project Name: NLEB Research	Proj #: 42262	County: Hertford	Site#: ABCG2a	Night#: 2	Site Name: landing Road
Start Date: 11/26/15	End Date: 11/27/15	Start Time: 1615	End Time: 0715		
Nearest town: Harrellsville	Biologists/observers Present: Kelly Lasch				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	46.5	0	0	109/100%	0345	46	2	0	0/100%

Moon Effect: Full Moon 99%. Start: 1759 Stop: 0720

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB007	Anabat SD2	4062g	grun	Tackle box weatherproofed + trash bag	36.33747	-76.77377	3ft

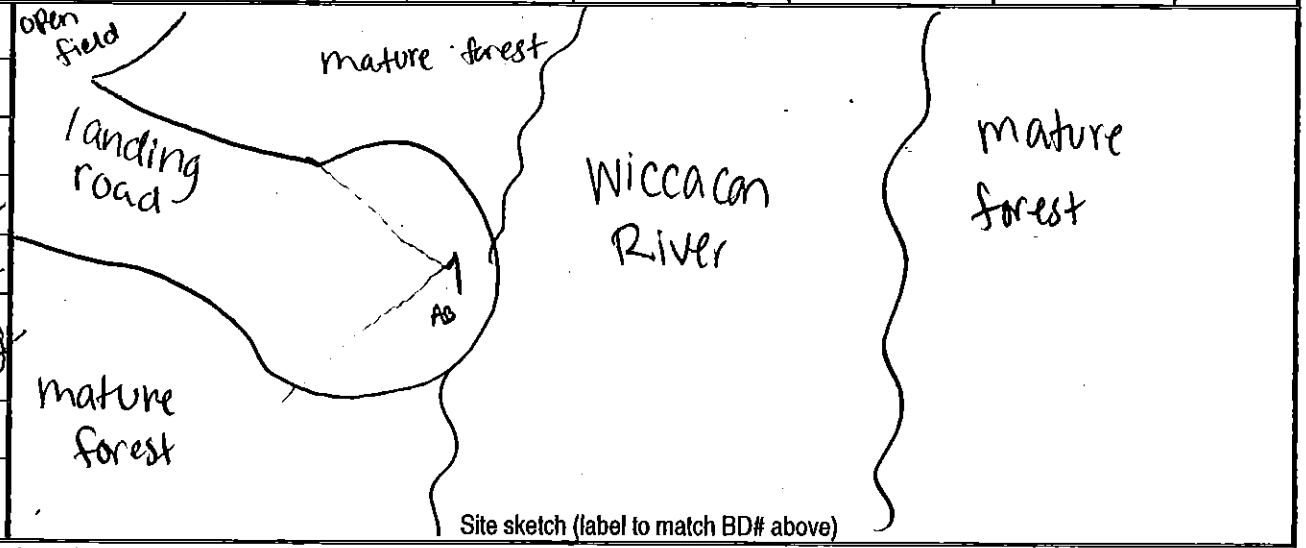
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB007	Yes KL	235°	W	10 ft	lo	7	16/8	NA	✓

Habitat & Site Description:

- mature hardwood, borders River
- Anabat set at end of forest road pointing along road for foraging bats entering or leaving

Remarks: River for fordging

- card AB007 put in 11/26/15
- no bear damage



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

(1:40)

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research	Proj #: 42262	County: Hertford	Site#: ABC92b	Night#: 1	Site Name: Mapleton/Sheep Pasture/Potecasi Road
Start Date: 11/27/15		End Date: 11/28/15	Start Time: 16:15		End Time: 7:15
Nearest town: Winton		Biologists/observers Present: Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	40.5	0	0	0/97%	0715	40.5	0	0	0/97%

Moon Effect: Waning Gibbous 90% | Start: 1954 | Stop: 0920

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

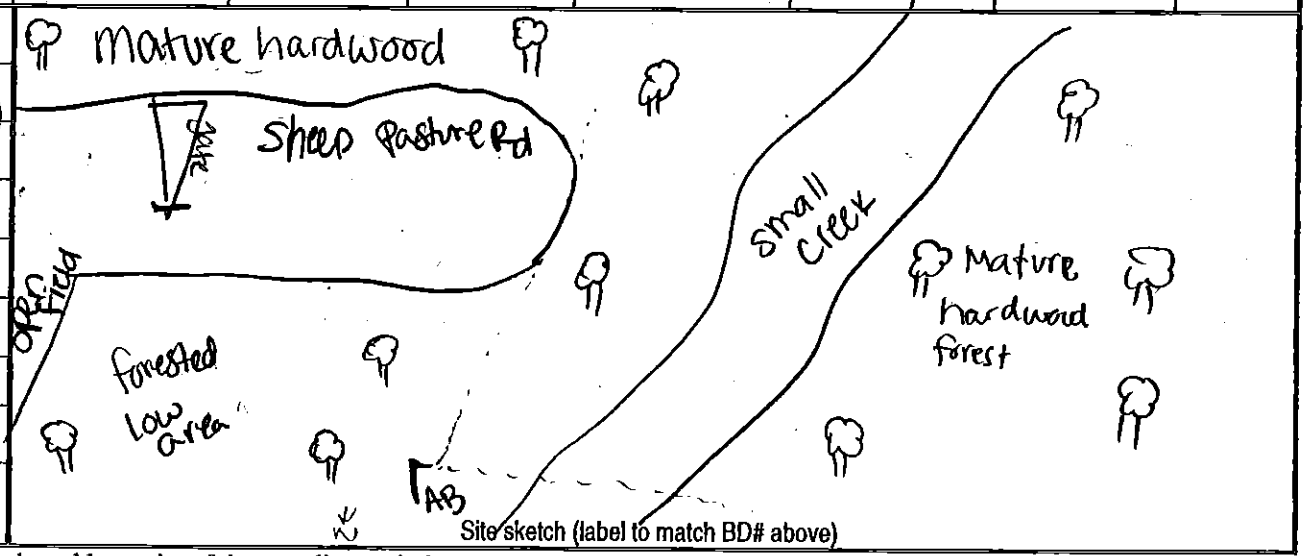
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB007	Anabat SD2	4062g	green	tackle box weatherproofed + trash bag	36.42530	-77.01057	69ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB007	Yes KL	W	340°	12 ft	low	7	16/8	NA	✓

Habitat & Site Description:

Mature hardwood forest with small creek corridor, good for water, insects, foraging and connectivity

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Wiccacon/ Pawnee/

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NLEB Research	42262	Hertford	ABCG3a	1	long Road T
Start Date: 11/25/15		End Date: 11/26/15	Start Time: 1615		End Time: 0715
Nearest town: Harrellsville		Biologists/observers Present: Dottie Brown, Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	50.7	1	0	0/100%	2230	41.2	0	0	0/100%

Moon Effect: Full Moon 100% Start: 7026 Stop: 0614

Land Use: Urban / Agriculture / (Forest) / Water / (Wetland) / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABG03	Anabat SD2	4062g	grun	Tackle box weatherproofed + trash bag	36.32784	-76.75735	49

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABG03	yes KL	316°	N/W	10 ft	low	7	16/8	N/A	Yes

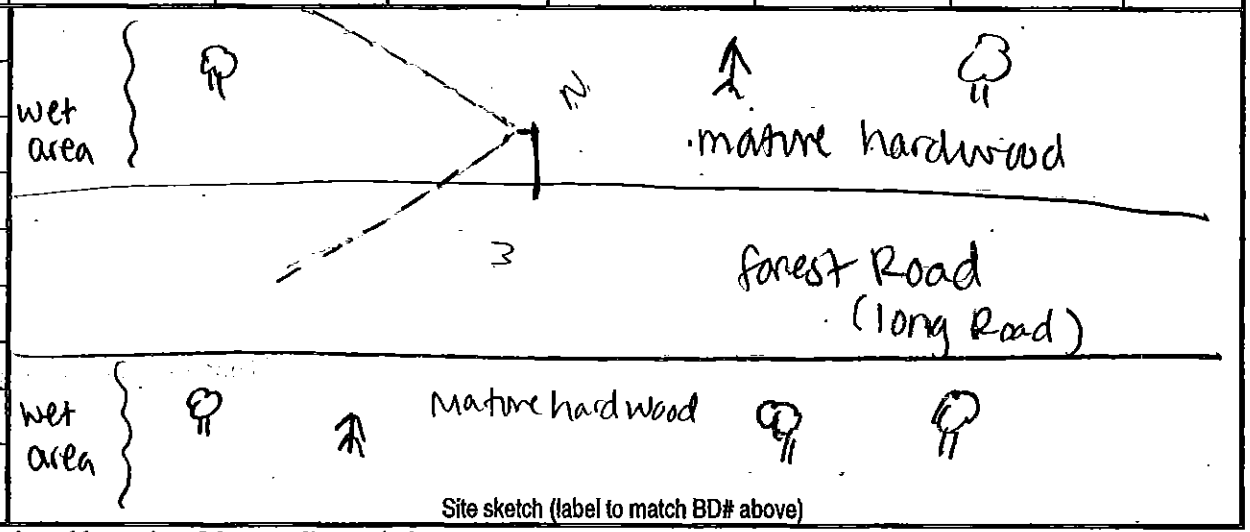
Habitat & Site Description:

-pointed down forest road to capture corridor and wet area

-White oak, black oak

Remarks:

-on road open to public



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

wht oak, Blk oak, red maple, N+S red oak, loblolly pine, Tulip Poplar, Sweetgum, Bald cypress

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / ≤20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Wiccacon/ Pawnee/

Project Name: NLEB Research	Proj #: 42262	County: Hertford	Site#: ABC93a	Night#: 2	Site Name: long Road 1
Start Date: 11/26/15		End Date: 11/27/15		Start Time: 1615	End Time: 0715
Nearest town: Harrellsville		Biologists/observers Present: Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	46.5	0	0	0/100%	0345	46	2	0	0/100%

Moon Effect: Full Moon 99% Start: 1759 Stop: 0720

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB003	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.32784	-75.75735	49ft

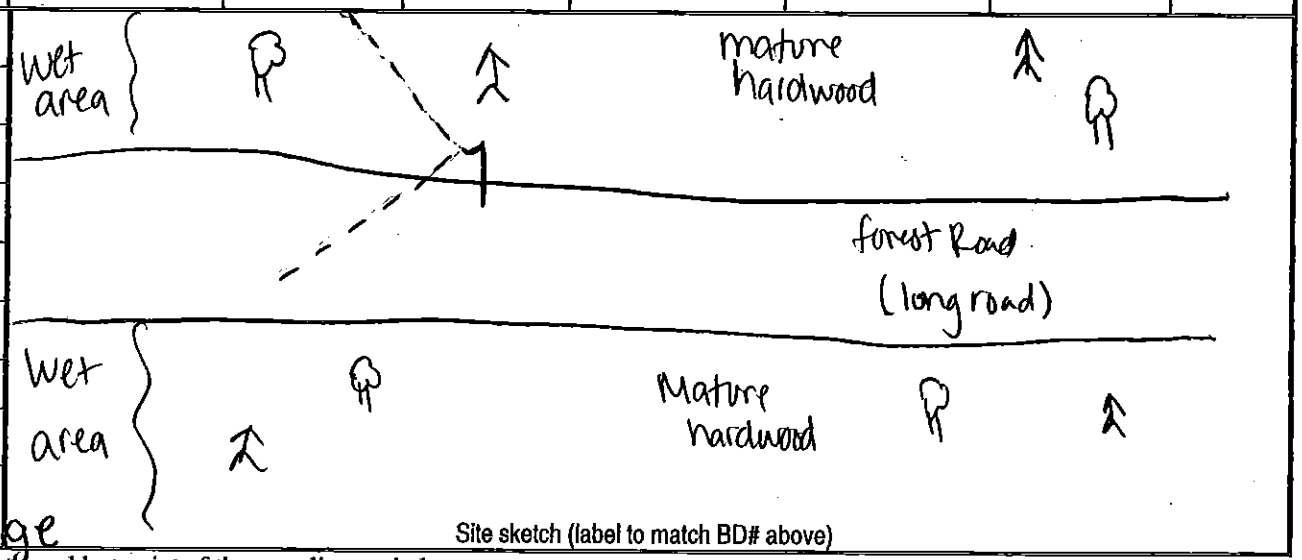
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB003	Yes KL	316°	N/W	10 ft	low	7	16/8	NA	✓

Habitat & Site Description:

- Pointed down forest road to capture corridor and wet area
- White oak, black oak

Remarks:

- On road open to public
- Card swap 11/26/15: no damage



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research	Proj #: 42262	County: Hertford	Site#: AB CG3b	Night#: 1	Site Name: Mapleton/Newsome/Potecasi Road
Start Date: 11/27/15		End Date: 11/28/15	Start Time: 16:15		End Time: 7:15
Nearest town: Winton		Biologists/observers Present: Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	40.5	0	0	0/97%	0715	40.5	0	0	0/97%

Moon Effect: Waning gibbous 90% — Start: 1954 — Stop: 0920

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

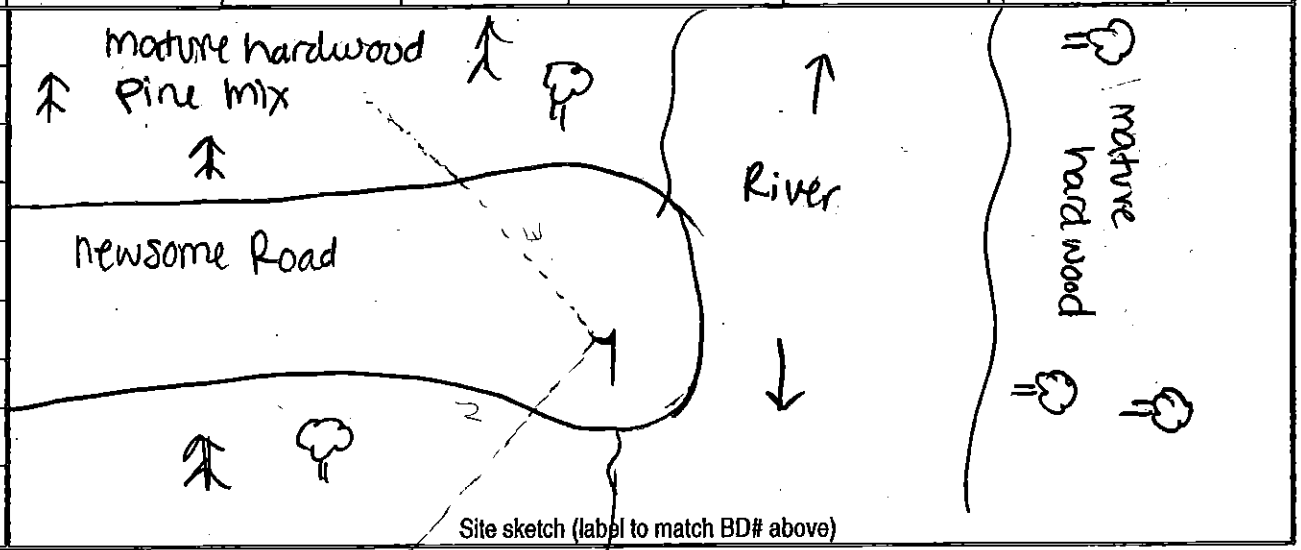
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABC003	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.42596	-76.98265	34ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABC003	Yes KL	NE	50°	10 ft	low	7	16/8	NA	√

Habitat & Site Description:

- Pine dominated within mix
- goal is to catch bat calls while foraging and using water way as corridor to mature hardwood stand

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Wiccacon/Pawneie

Project Name: NLEB Research	Proj #: 42262	County: Hertford	Site#: ABCG4a	Night#:	Site Name: long Road #2
Start Date: 11/25/15		End Date: 11/26/15	Start Time: 1615		End Time: 0715
Nearest town: Harrellsville		Biologists/observers Present: Dottie Brown, Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	50.7	1	0	0/100%	2330	41.2	0	0	0/100%

Moon Effect: Full Moon 100% | Start: 1706 | Stop: 0614

Land Use: Urban / Agriculture / (Forest) / Water / (Wetland) / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABOO4	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.32124	-76.74524	25'

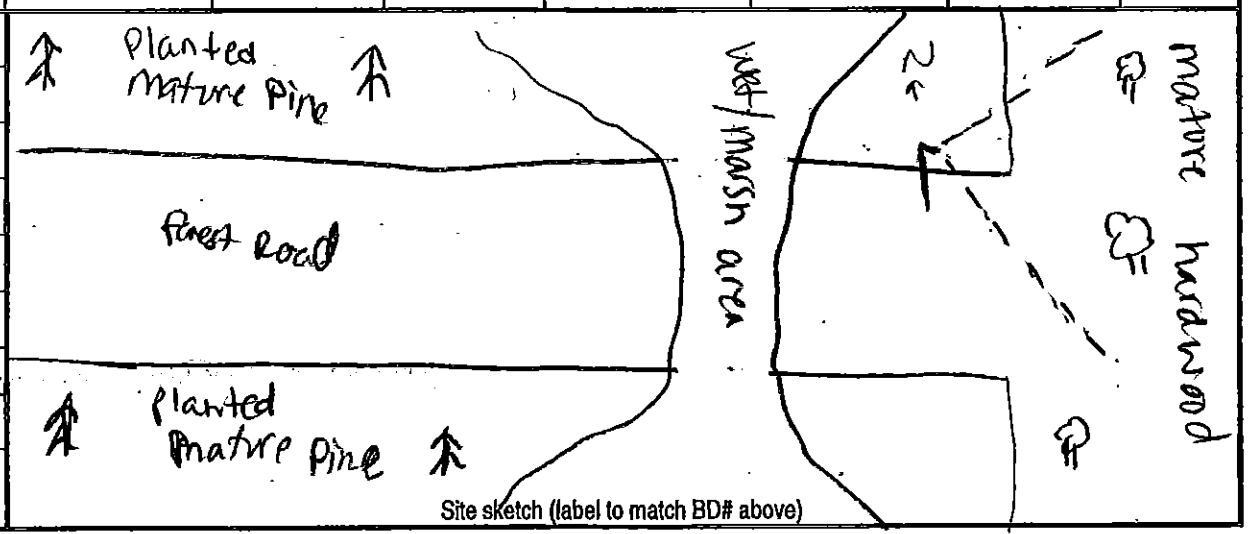
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABOO4	yes KL	E	1120	10 ft	lo	7	16/8	NA	yes

Habitat & Site Description:

- mature planted pine borders road, small Marsh area across road, cone is directed towards mature hardwood

Remarks:

- survey will capture 2 habitats



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Wiccacon/Pawnee

Project Name: NLEB Research	Proj #: 42262	County: Hertford	Site#: ABCG4a	Night#: 2	Site Name: Long Road #2
Start Date: 11/26/15		End Date: 11/27/15	Start Time: 1615		End Time: 0715
Nearest town: Harrellsville		Biologists/observers Present: Kelly Lutson			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	46.5	0	0	fog/100%	03:45	46.0	2	0	0/100%

Moon Effect: Full Moon 99%	Start: 1759	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):
	Stop: 0720	

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB004	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.32124	-76.74524	25ft

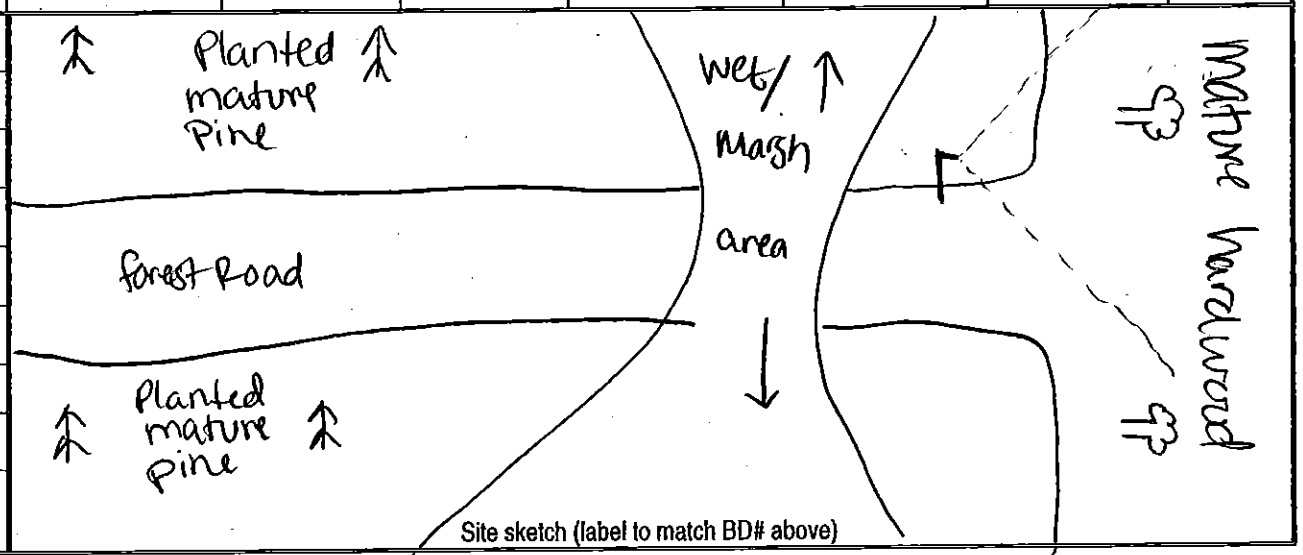
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB004	Yes KL	E	112°	10 ft	lo	7	16/8	NA	✓

Habitat & Site Description:

mature planted pine borders road, small marsh area across road, cone is directed towards mature hardwood -Sweetgum and

Remarks:

-Survey will capture 2 habitats



* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Hobo #3 Set Out 11/26/15

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research	Proj #: 42262	County: Hertford	Site#: ABCG4b	Night#: 1	Site Name: Mapleton tract/ Sandpit Path
Start Date: 11/27/15		End Date: 11/28/15	Start Time: 16:15		End Time: 7:15
Nearest town: Winton		Biologists/observers Present: Kelly Lusch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	40.5	0	0	0/97%	0715	40.5	0	0	0/97%

Moon Effect: Waning gibbous 90% Start: 1954 Stop: 0920

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABG04	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.43135	-76.96623	14

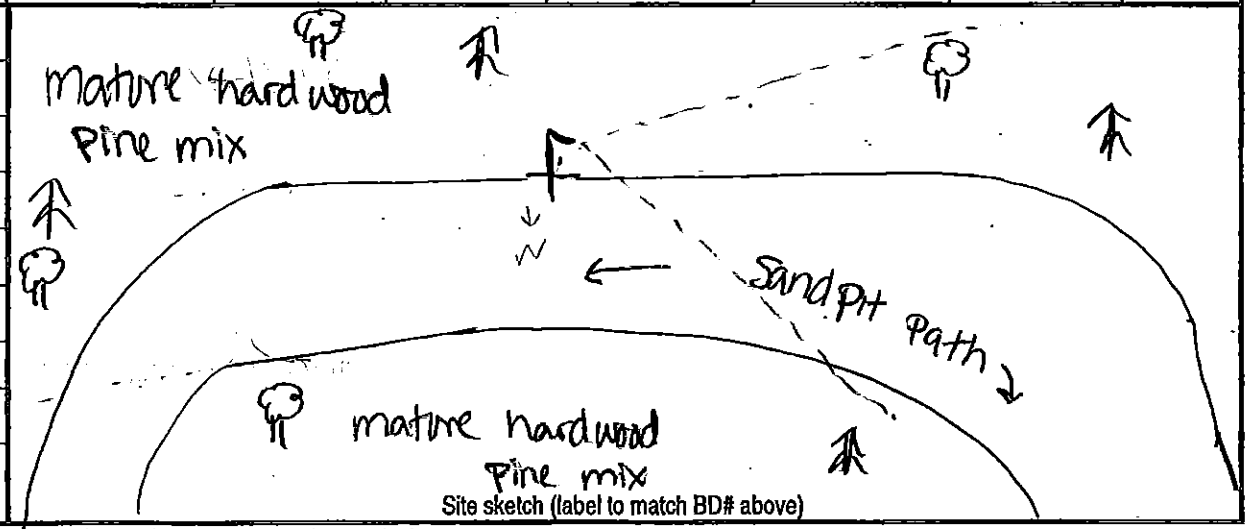
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABG04	Yes KL	W	300°	10 ft	lo	7	16/8	NA	✓

Habitat & Site Description:

- goal is to catch foraging along forest edge or corridor corner
- mature hardwood mix

Remarks:

Hobo #3 11/27/15



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

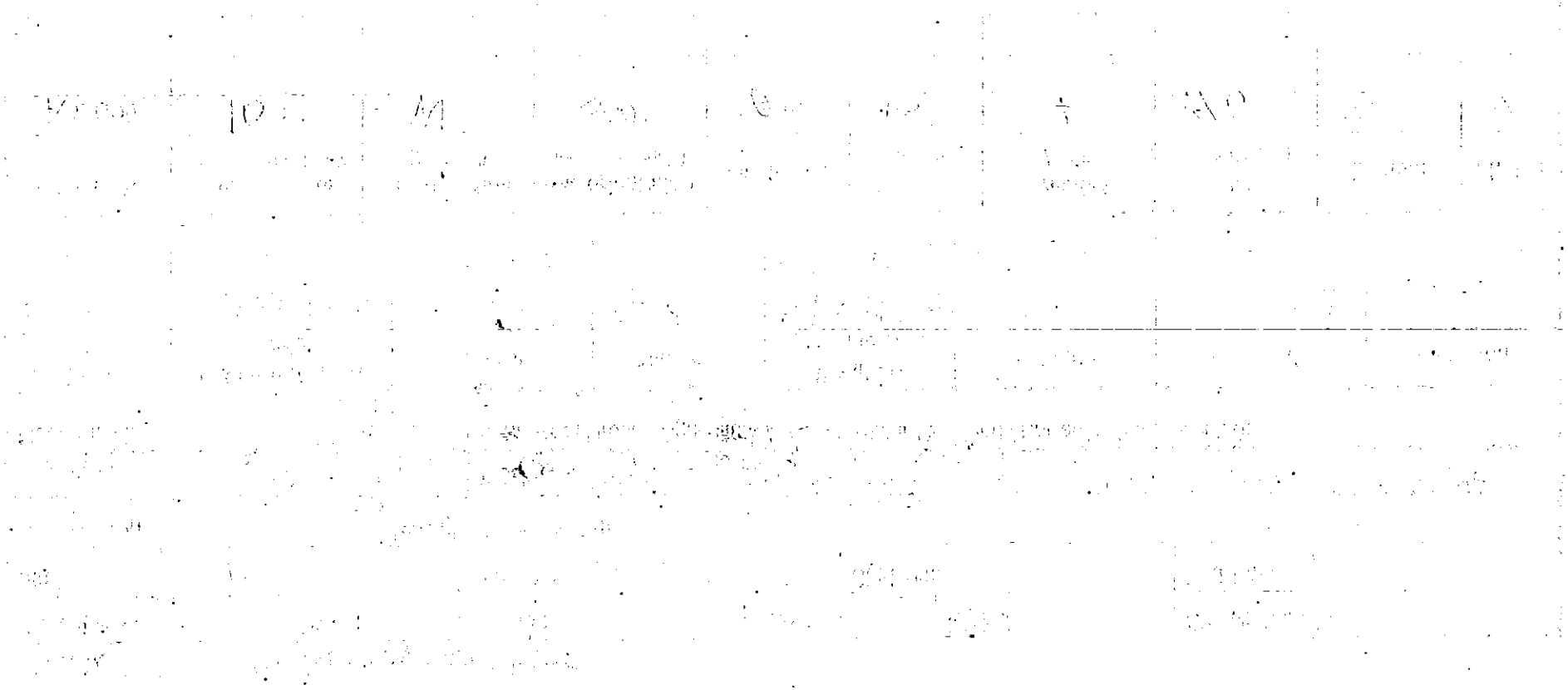
Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped



Appendix G

CP&L Game Land, Session 1

NCDOT Acoustic Survey Data Form

* Rained out

Project Name: NLEB Research Proj. E,NC	Proj #:	County: Lee-Chatham	Site#: CP+L #1	Night#: 1-Rain Out	Site Name: #1 CP+L gameland
Start Date: 11/18/2015		End Date: 11/19/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m
Nearest town: Moncure		Biologists/observers Present: R. Storm, C. Blvd, C. Olsen			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	5:00am	65.5°F	calm	Rain	Rain/97%	7:10 a.m.	66.5°F	4.6mph	Rain	Rain/97%

Moon Effect: waxing crescent (44%) Start: 12:24 Stop: 11:42

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN81316	SD2	V406e2g	high	Angled Pic	35.545948	-79.026186	~108 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN81316	Yes	SW	45°	10'	Lo	6	8		Yes

Habitat & Site Description:

Clearing in young pine forest.

Remarks:

Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

CPTL1

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Young pine trees

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NLEB Research proj. E,NC		Lee + Chatham	CP+L #1	1	#1 CP+L Gameland

Start Date:	End Date:	Start Time:	End Time:
11/19/2015	11/20/2015	4:30 p.m.	7:20 a.m.

Nearest town: Moncure

Biologists/observers Present: R. Storm, C. Bloud, C. Olsen

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:53a.m.	40.5°F	Calm	Clear	0/78%	7:13a.m.	40.5°F	4.6mph	Clear	0/73%

Moon Effect: First Quarter (55%) Start: 1:05pm Stop: no set

Land Use: Urban / Agriculture / ~~Forest~~ / Water / Wetland / Barren/ Other (describe):

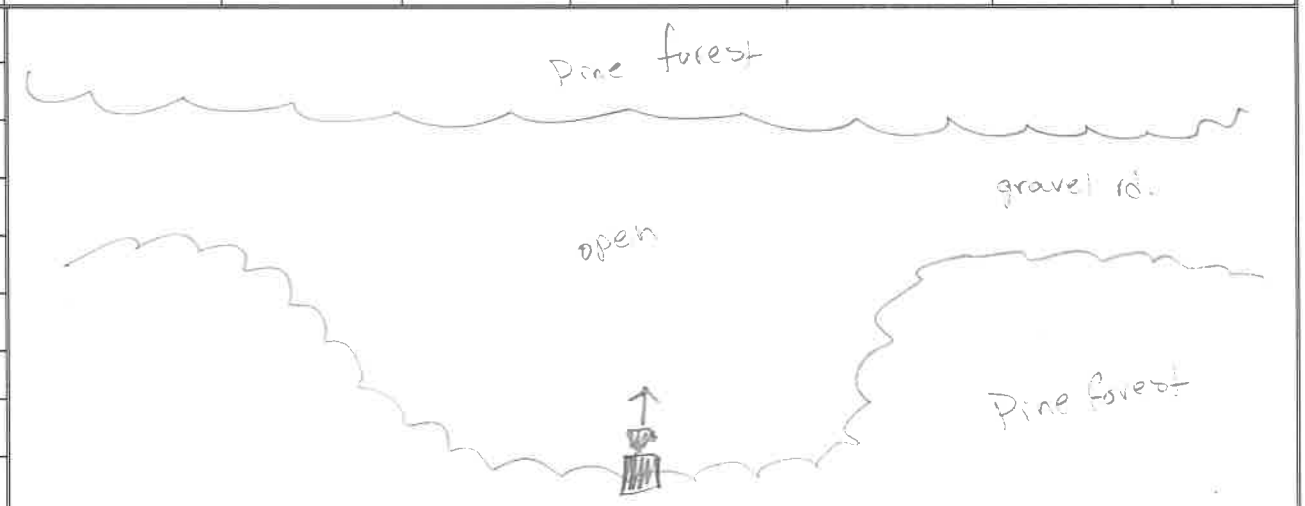
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN813116	SD2	V406Zg	high	Angled PVC	35.545948	-79.021686	~107ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN813116	Yes	SW	45°	10'	Lo	6	8		Yes

Habitat & Site Description:

clearing in Pine forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Young pine trees

NCDOT Acoustic Survey Data Form

Project Name: NCEB Research Proj. ELK	Proj #:	County: Lee+Chatham	Site#: CP+L #1	Night#: 2	Site Name: #1 CP+L gameland
Start Date: 11/20/2015		End Date: 11/21/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Moncure		Biologists/observers Present: R. Storm, C. Olson			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	4:40a.m.	31.5°F	calm	Clear	0 / 88%	7:10a.m.	33.5°F	Calm	Clear	0 / 88%

Moon Effect: waxing gibbous (66%) Start: 1:44 pm Stop: 12:46 pm

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

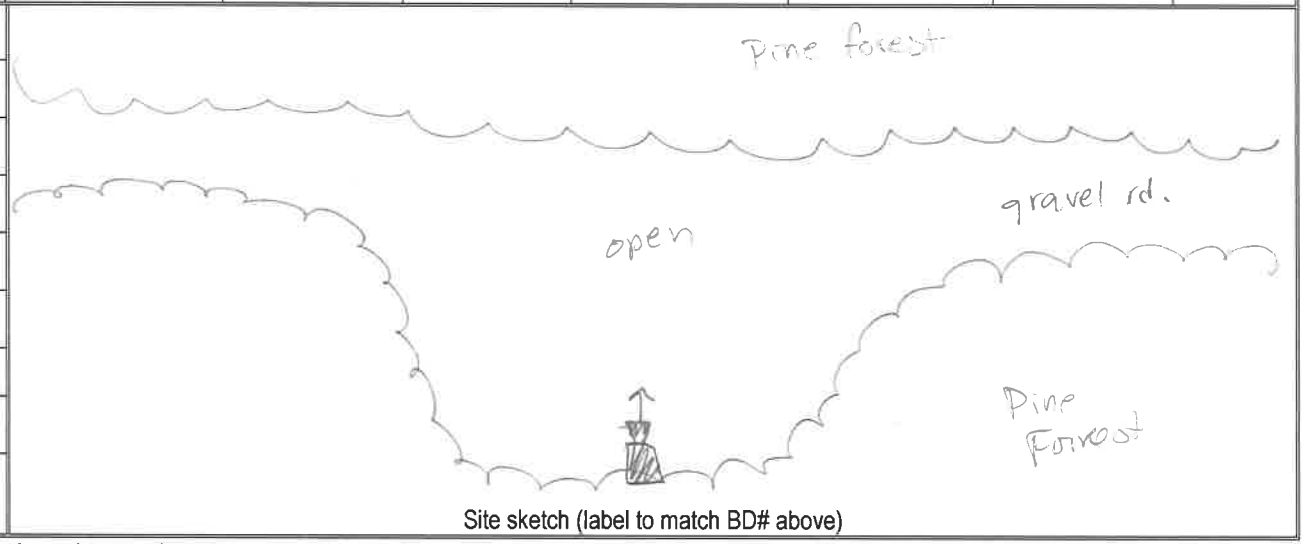
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN81316	SD2	V4.062g	high	Angled PVC	35.54948	-79.020186	~108ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN81316	Yes	SW	45°	10'	Lo	6	8		Yes

Habitat & Site Description:

clearing in young pine forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

young pine forest

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Lee + Chatham	Site#: CPHL #1	Night#: 3	Site Name: #1 CPHL gameland
Start Date: 11/21/2015		End Date: 11/22/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Moncure		Biologists/observers Present: R. Storm, C. Olsen			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:33am.	45.8F	Calm	Clear	0/97%	7:13 am	46°F	Calm	Clear	0/95%

Moon Effect: waxing gibbous (77%) Start: 2:23pm Stop: 1:52am

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN81316	SD2	V40629	high	Angled PVC	35.545948	-79.026186	408 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN81316	Yes	SW	45°	10'	Lo	6	8		Yes

Habitat & Site Description:

Clearing in young pine forest

Remarks:

Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes: young pine trees

NCDOT Acoustic Survey Data Form

* Rained out

Project Name: NCEB Research Proj. E,NC	Proj #:	County: Lee + Chatham	Site#: CPL 2	Night#: 1 - Rainout	Site Name: #2 CP+L gameland
Start Date: 11/18/2015		End Date: 11/19/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Moncure		Biologists/observers Present: R. Storm, C. Bloyd, C. Dixon			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	5:00 a.m.	65.5°F	calm	Rain	Rain/97%	7:10 a.m.	66.5°F	4.6 mph	Rain	Rain/97%

Moon Effect:	Start: 12:24	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
waxing crescent (40%)	Stop: 11:42	

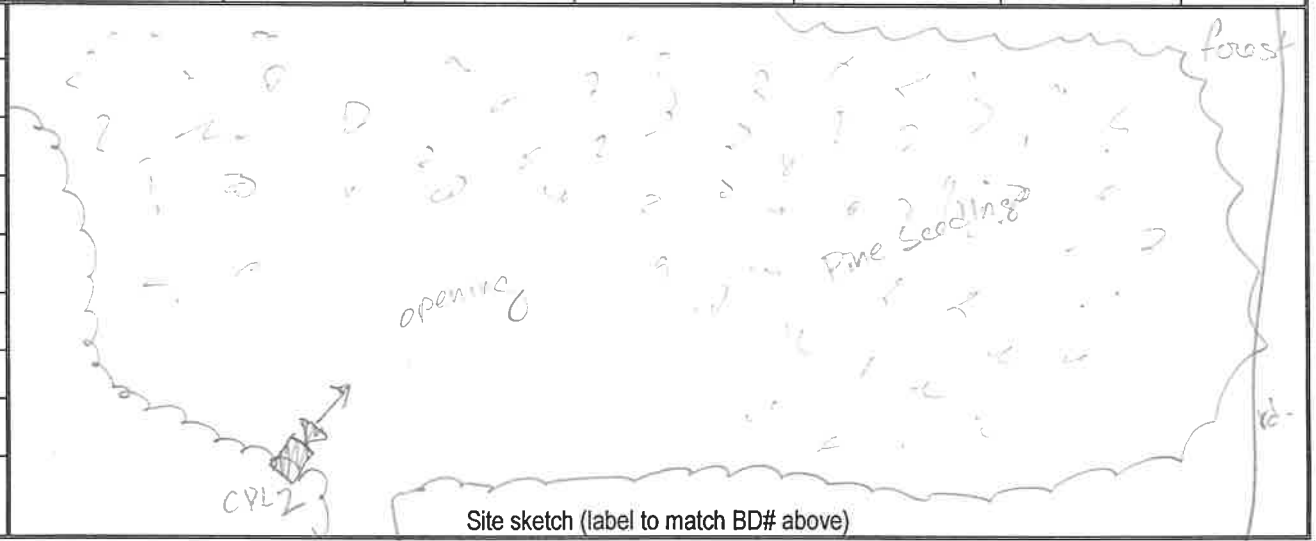
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
TRC 3	SD2	V4D67g	high freq.	Angled PVC	35.545496	-79.030282	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
TRC 3	Yes	E-NE	45°	10'	Lo	6	8		Yes

Habitat & Site Description:

Opening in young pine forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

CRZ

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NLEB Research Proj, E. NC		Lee/Chatham	CP+L 2	1	#2 CP+L gameland

Start Date:	End Date:	Start Time:	End Time:
11/19/2015	11/20/2015	4:30 p.m.	7:20 a.m.

Nearest town:	Biologists/observers Present:
Moncure	R. Storm, C. Bloyd., C. Olsen

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:53 a.m.	40.5°F	Calm	Clear	D / 98%	7:13 am	40.5°F	4.6 mph	Clear	D / 73%

Moon Effect:	Start: 1:05 pm	Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):
First Quarter (55%)	Stop: no set	

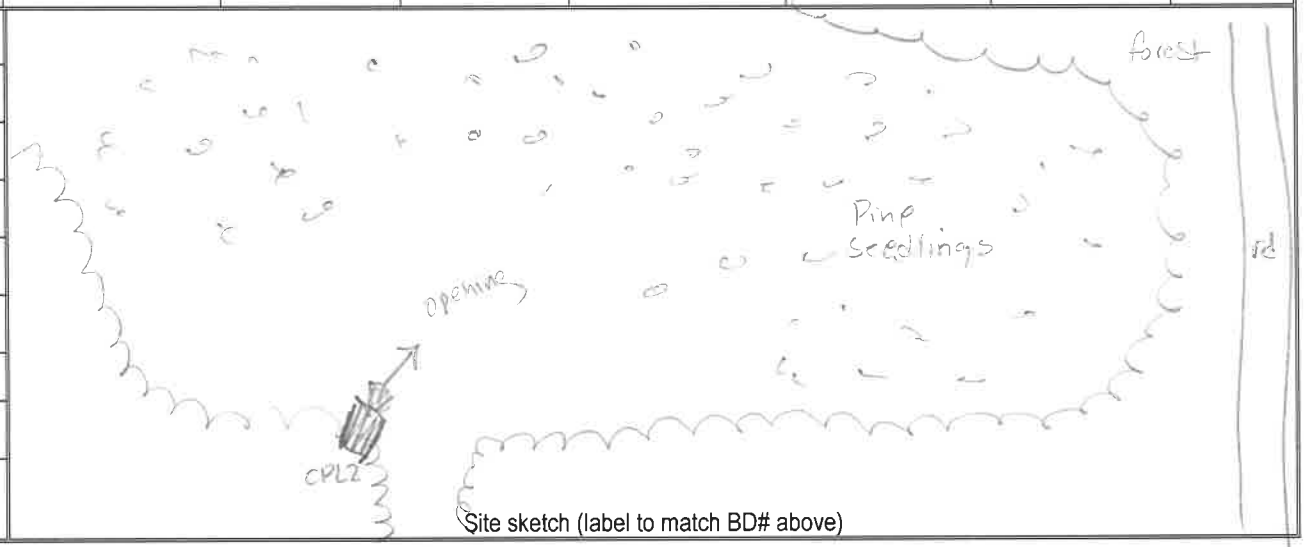
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
TRC 3	SD2	V4D62g	high freq.	Angled PVC	35.545496	-79.030282	~108 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
TRC 3	Yes	E-NE	45°	10'	Lo	6	8		Yes

Habitat & Site Description:

Opening in young pine forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

Project Name: NCEB Research Proj E, NC	Proj #:	County: Lee + Chatham	Site#: CP+L 2	Night#: 2	Site Name: #2 CP+L gameland
Start Date: 11/20/2015		End Date: 11/21/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Moncure		Biologists/observers Present: R. Storm, C. Olsen			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	4:40 am	31.5°F	calm	clear	0 / 98%	7:10 am	33.8°F	calm	Clear	0 / 98%

Moon Effect: waxing gibbous (66%) Start: 1:44 pm Stop: 12:46 pm

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):

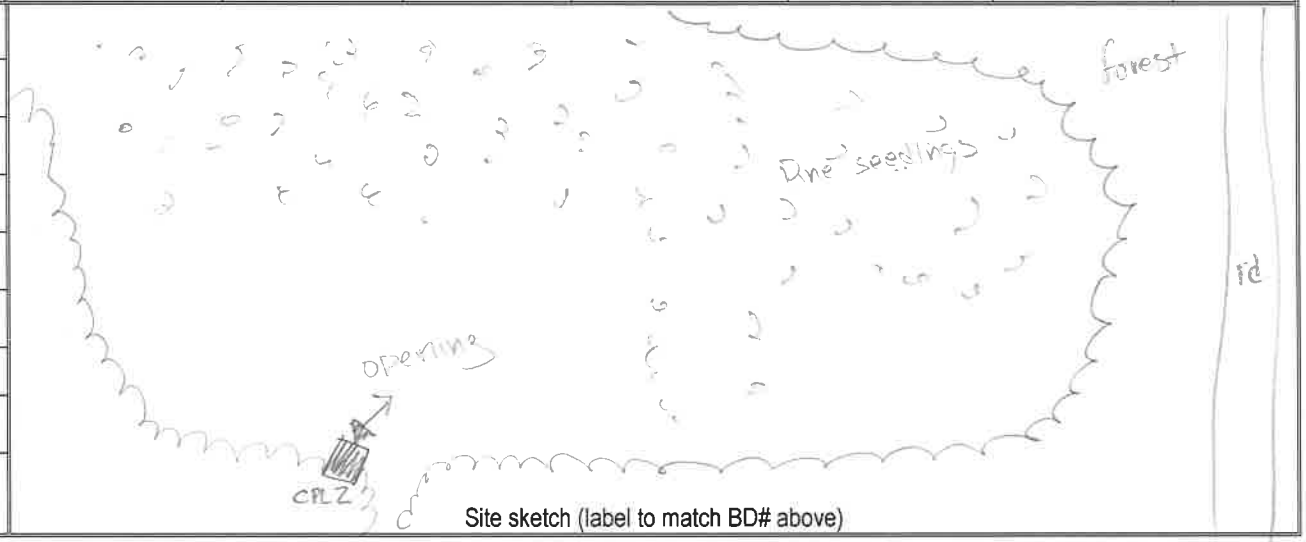
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
TRC 3	SD2	V40629	high	stngled PVC	35.545496	-79.035287	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
TRC 3	Yes	E-NE	45°	10'	Lo	6	8		Yes

Habitat & Site Description:

Openings in young pine forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NLEB Research Proj. E,NC		Lee + Chatham	CPtL 2	3	#2 CPtL gameland

Start Date:	End Date:	Start Time:	End Time:
11/21/2015	11/22/2015	4:30 p.m.	7:20 a.m.

Nearest town: Moncure

Biologists/observers Present: R. Storm, C. Olsen

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:33a.m.	45.0°F	calm	clear	0/97%	7:13a.m.	46°F	calm	clear	0/95%

Moon Effect: waxing gibbous (77%) Start: 2:23pm Stop: 1:52am

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):

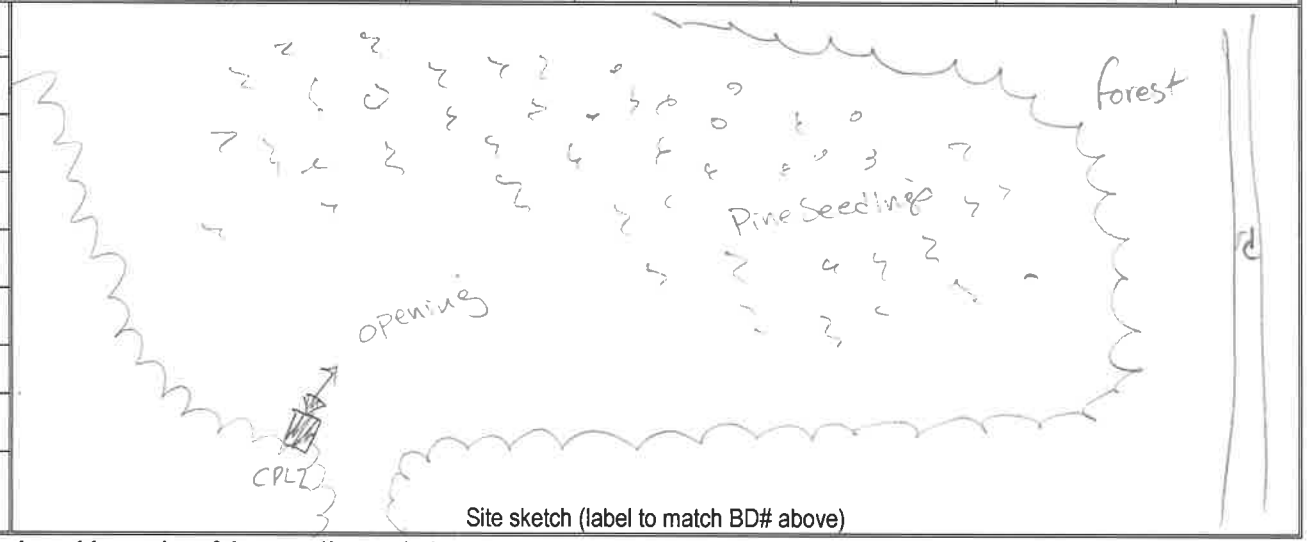
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
TRC 3	SD2	V4D62g	high	Angled PVC	35.545496	-79.030282	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
TRC3	Yes	E-NE	45°	10'	Lo	6	8		Yes

Habitat & Site Description:

Opening in young pine forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

* Rained out

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Lee + Chatham	Site#: CPL 3	Night#: 1 - Rain Out	Site Name: #3 CP+L Gameland
Start Date: 11/18/2015		End Date: 11/19/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Moncure		Biologists/observers Present: Q. Stone, C. Bloyd, C. Olsen			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	5:00 a.m.	65.5°F	calm	Rain	Rain / 93%	7:10 a.m.	66.5°F	4 mph	Rain	Rain / 97%

Moon Effect: waxing crescent (44%) Start: 12:24 Stop: 1:42

Land Use: Urban / Agriculture / ~~Forest~~ / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
TRC Job 2985	SM2	V4062g	mfr	caulked RK	35.561004	-79.054143	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
TRC Job 2985	Yes	E	45°	10'	med	6	8		Yes

Habitat & Site Description:

Small wetland in Corey opening

Remarks:

Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

CRL 3

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

wetland

NCDOT Acoustic Survey Data Form

Project Name: NCEB Research Proj. E, NC	Proj #:	County: Lee + Chatham	Site#: CP+L 3	Night#: 1	Site Name: #3 CP+L gameland
Start Date: 11/19/2015		End Date: 11/20/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Moncure		Biologists/observers Present: R. Storm, C. Boyd, C. Olsen			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:53 a.m.	40.8°F	calm	clear	0.58%	7:32 a.m.	40.5°F	4.6 mph	clear	0.73%

Moon Effect: First Quarter (55%) Start: 1:05 pm Stop: no set

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

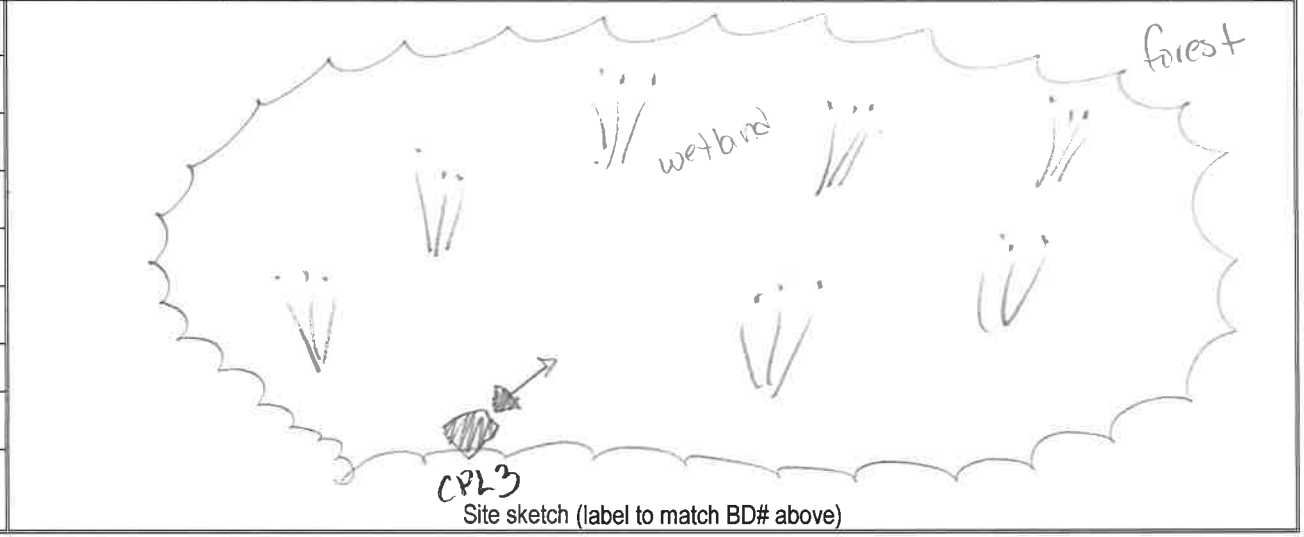
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
TRC Job2985	SD2	V4062g	high	Angled PVC	35.561004	-79.054143	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
TRC Job 2985	Yes	E	45°	10'	med.	6	8		Yes

Habitat & Site Description:

Small wetland in forest opening

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

wetland.

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj, E, NC	Proj #:	County: Lee + Chatham	Site#: CPL3	Night#: 2	Site Name: #3 CP+L gamelan
Start Date: 11/20/2015		End Date: 11/21/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Moncure		Biologists/observers Present: R. Storm, C. Olsen			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	4:40 a.m.	31.5°F	calm	clear	0/98%	7:10 a.m.	33.5°F	Calm	Clear	0/98%

Moon Effect: waxing gibbous — Start: 1:44pm — Stop: 12:46pm

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
TRC Job 2985	SD2	V4062g	high	Angled PVC	35.561004	-79.054143	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
TRC Job 2985	Yes	E	45°	10'	med	6	8		Yes

Habitat & Site Description:

small wetland in forest opening

Remarks:

Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

wetland

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj E NC	Proj #:	County: Lee + Chatham	Site#: CP+L 3	Night#: 3	Site Name: #3 CP+L gameland
Start Date: 11/21/2015		End Date: 11/22/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Moncure		Biologists/observers Present: R. Storm, C. Olsen			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:33 pm	45.0°F	calm	clear	0/93%	7:13 a.m.	46°F	Calm	Clear	0/95%

Moon Effect: waxing gibbous (77%) Start: 2:23 pm Stop: 1:52 am

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
TRC Job 2985	SD2	V4D67g	high	taped PVC	35.561004	-79.054143	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
TRC Job 2985	Yes	E	450	10'	med	6	8		Yes

Habitat & Site Description:

small wetland in forest opening.

Remarks:

Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Wetland

NCDOT Acoustic Survey Data Form

* Rained out

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NLEB Research Proj, E. NC		Lee + Chatham	CPL 4a	1-Rained out	CP+L Gameland #4a

Start Date:	End Date:	Start Time:	End Time:
11/18/2015	11/19/2015	4:30 p.m.	7:20 a.m.

Nearest town: Moncure

Biologists/observers Present: R. Storm, Cory Blood, C. Olsen

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	5:00 am	65.5°F	calm	Rain	Rain/97%
	7:10 a.m.	66.5°F	4.1 mph	Rain	Rain/97%

Moon Effect: waxing crescent (44%) Start: 12:24 Stop: 11:42

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83314	SD2	V406Zg	high freq	Angled PVC	35.516212	-79.057955	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83314	Yes	SE	45°	10'	Lo	6	8		Yes

Habitat & Site Description:

Recently logged clearing in mature pine forest

Remarks:

Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

CR24

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj, E. NC	Proj #:	County: Lee + Chatham	Site#: CP+L 4a	Night#: 1	Site Name: #4a CP+L gameland
Start Date: 11/19/2015		End Date: 11/20/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Moncure		Biologists/observers Present: R. Storm, C. Boyd, C. Olsen			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:53 a.m.	40.6°F	Calm	Clear	0 / 98%	7:13 a.m.	40.5°F	4 mph	Clear	0 / 73%

Moon Effect: First Quarter (55%) Start: 1:05 p.m. Stop: no set

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

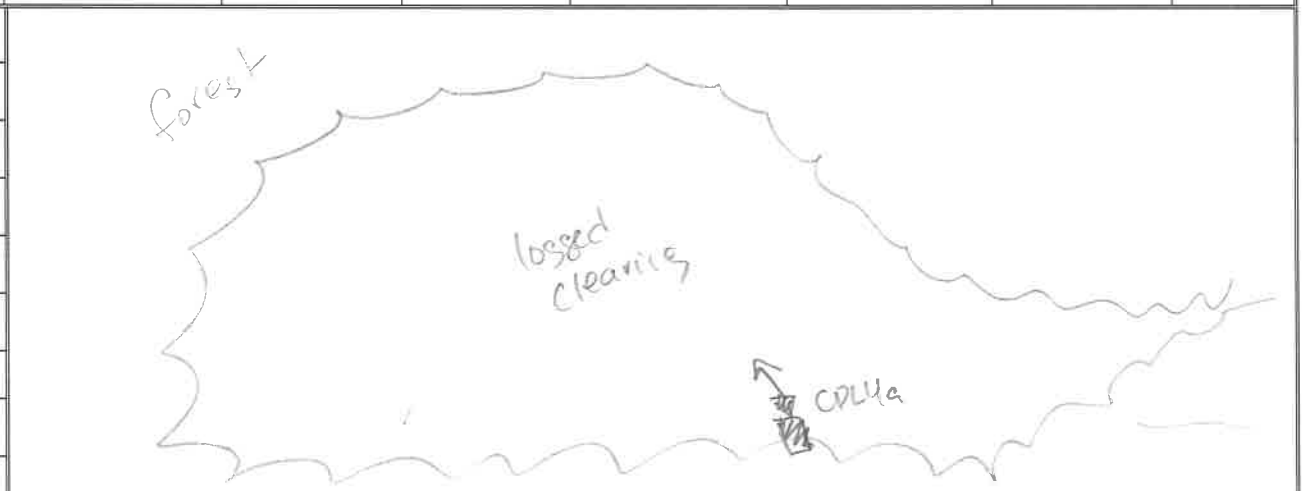
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83314	SD2	V406Zg	high	Angled DMC	35.566212	-79.052955	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83314	Yes	SE	45°	10'	LO	6	8		Yes

Habitat & Site Description:

Recently logged clearing in mature Pine forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. EIC	Proj #:	County: Lee/Chatham	Site#: CPtL #4a	Night#: 2	Site Name: #4a CPtL gameland
Start Date: 11/20/2015		End Date: 11/21/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m
Nearest town: Moncure		Biologists/observers Present: R. Storm, C. Olsen			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	4:40am	31.5°F	Calm	Clear	0/98%	7:10 a.m.	33.5°F	Calm	Clear	0/98%

Moon Effect: waxing gibbous (66%) Start: 1:44pm Stop: 12:46 pm

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):

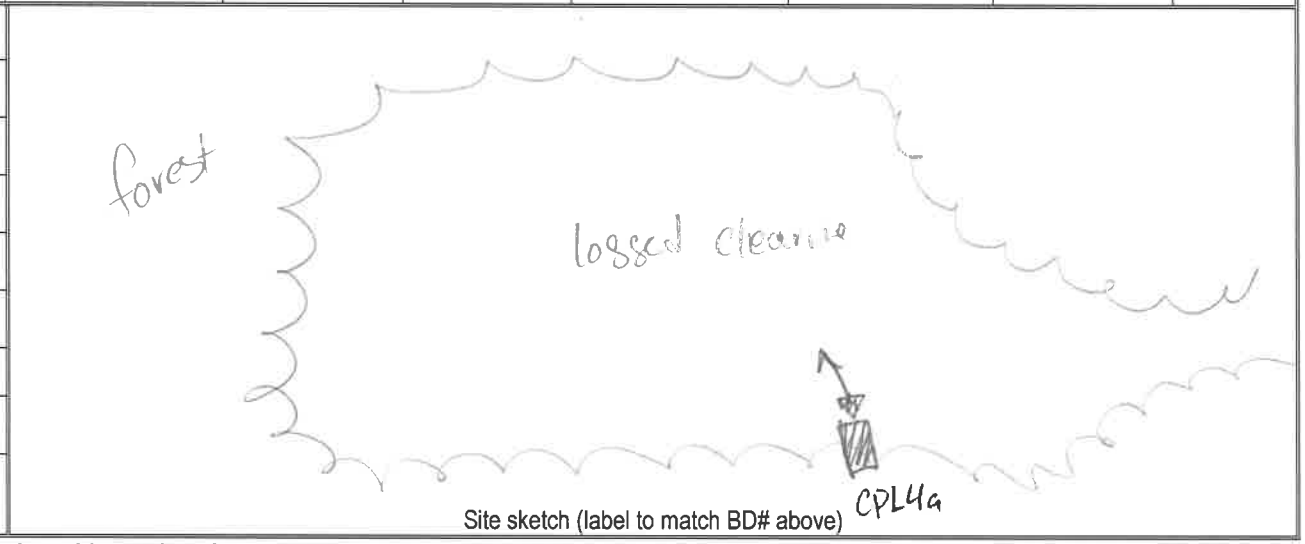
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83314	SD2	V4062g	high Freq	Angled PVC	35.566212	-79.052955	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83314	Yes	SE	45°	10'	Lo	6	8		Yes

Habitat & Site Description:

Recently logged clearing in pine forest.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Lee + Chatham	Site#: CPL4b	Night#: 3	Site Name: #4b CPTL gameland
Start Date: 11/21/2015		End Date: 11/22/2015	Start Time: 4:30 p.m.		End Time: 7:00 a.m
Nearest town: Moncure		Biologists/observers Present: R. Stoffa, C. Olsen			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:35a.m.	46.0°F	Calm	Clear	0/97%	7:13a.m	46°	Calm	Clear	0/95%

Moon Effect: waxing gibbous (77%) Start: 2:23pm Stop: 1:52am

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

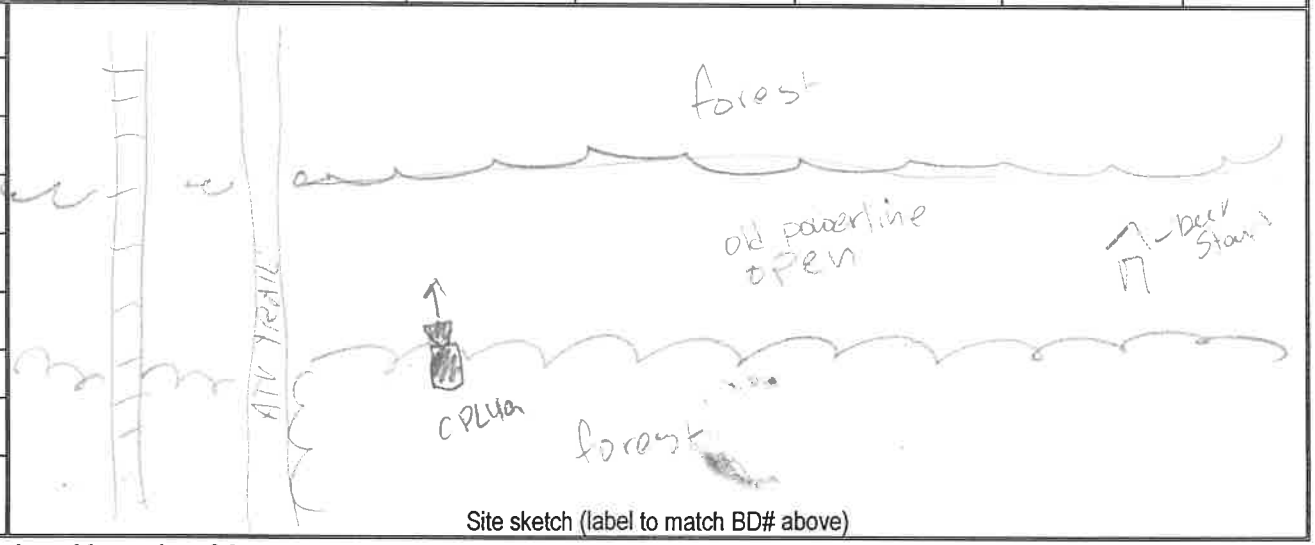
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83314	SD2	V406.2g	high	Angled PVC	35.560506	-79.051548	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83314	Yes	N	45°	10	lo	lo	8		Yes

Habitat & Site Description:

adj. to long open open powerline and RR track in Mature forest.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

CPL 46

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Opening in forest near RR and grassy hunting lane. Water pooled in puddles throughout.

Appendix G

Great Dismal Swamp NWR, Session 1

NCDOT Acoustic Survey Data Form

Project Name: NC Bats research	Proj #: 42262	County: Gates	Site#: ABGDS1a	Night#: 1	Site Name: Sherrill Ditch
Start Date: 11-16-15		End Date: 11-17-15	Start Time: 16:15		End Time: 07:15
Nearest town: Corapeake		Biologists/observers Present: Dottie Brown			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	42.5	0	0	dry 20%	0130	39	0	0	dry 69%

Moon Effect: waxing crescent 24% | Start: 1047 | Stop: 2125

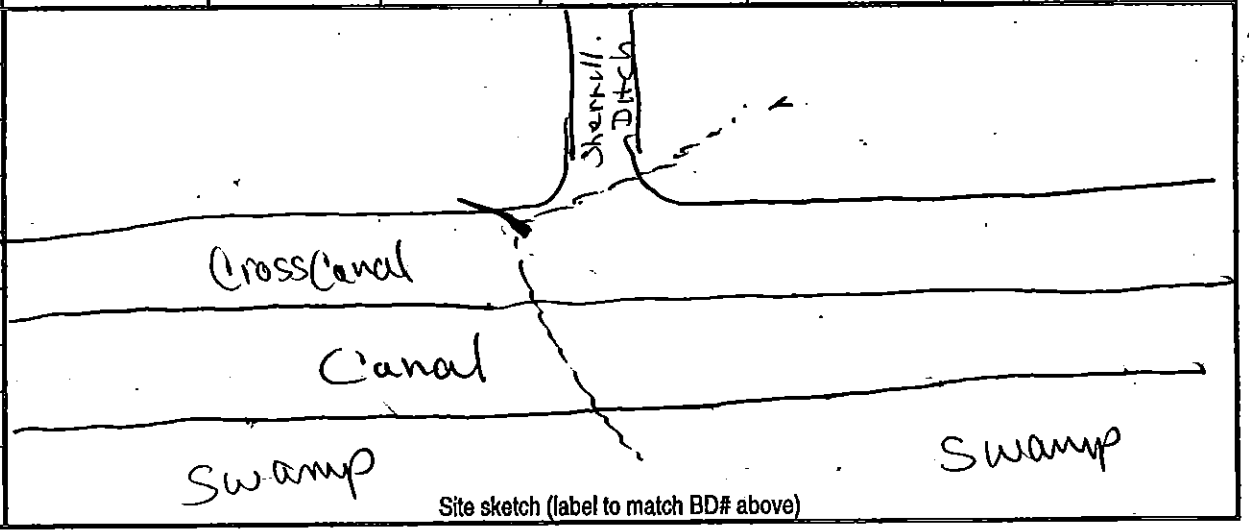
Land Use: Urban / Agriculture / (Forest) / (Water) / (Wetland) / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
011	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.51204	-76.52354	24

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
011	Yes	East	104°	10 ft	low 5%	7	16/8	NA	✓

Habitat & Site Description:
mixed Hardwood/pine forest swamp in GDS. AB set up at intersection of Sherrill Ditch + Cross Canal. Mature forest with high quality Bat habitat

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NCWRRI Research	Proj #: 42262	County: Gates	Site#: ABGDS1a	Night#: 2	Site Name: Sherrill Ditch
Start Date: 11/17/15		End Date: 11/18/15	Start Time: 1920		End Time: 0720
Nearest town: Corapeake		Biologists/observers Present: Bottie Brown, Jennifer Starvetsky			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0720	51.5	0	0	0/72	0200	48.5	0	0	0/72

Moon Effect: First Quarter — Start: 1133 — Stop: 2227

Land Use: Urban / Agriculture / (Forest) / (Water) / (Wetland) / Barren/ Other (describe):

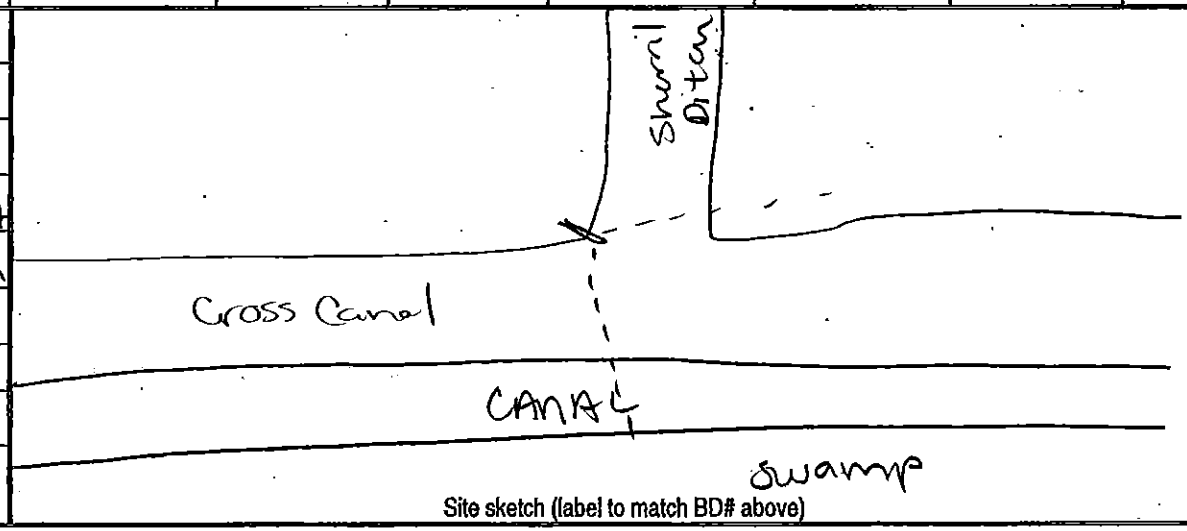
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB011	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.51204	-76.52354	24

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB011	Yes DB	E	104	10 ft	low 50%	7	16/8	NA	taken 11-16

Habitat & Site Description:

mixed hardwood/pine forest swamp in GDS. AB set up at intersection of Sherrill Ditch + Cress Canal. Mature forest with high quality Bat habitat

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NCDOT NC research	Proj #: 4/2262	County: Gates	Site#: ABGDS1a	Night#: 3	Site Name: Sherrill Ditch
Start Date: 11-28-15		End Date: 11/29/15		Start Time: 16:15	End Time: 7:15
Nearest town: Suffolk VA		Biologists/observers Present: Dottie Brown, Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	40	0	0	0/91	0715	40	0	0	0/91

Moon Effect: Waning gibbous 90% Start: 1951 Stop: 0918

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

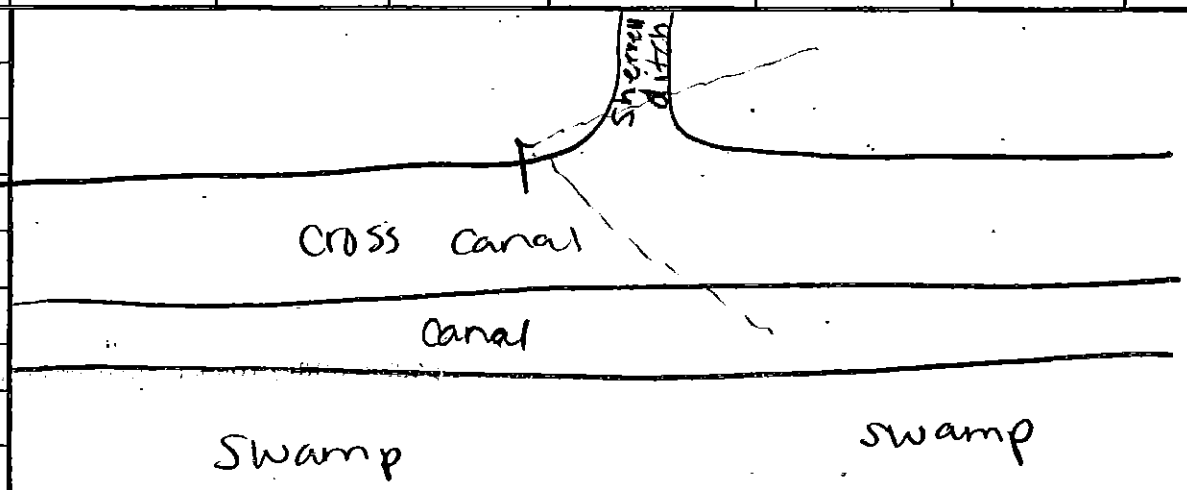
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB011	Anabat SD2	4062g	green	tackle box weatherproofed + trash bag	36.51204	-76.52354	24

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB011	Yes KL	E	990	10 ft	low	7	16/8	NA	✓

Habitat & Site Description:

- mixed hardwood/pine and swamp area
- Set up at intersection of Sherrell ditch & Cross Canal
- high quality habitat

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

ABGDS2a

Cross Canal

Project Name: Bat Acoustic Research	Proj #: 42262	County: Camden	Site#: V	Night#: 1	Site Name: Forest Ditch
Start Date: 11-16-15		End Date: 11/17/15	Start Time: 1615		End Time: 715
Nearest town: Corapeake		Biologists/observers Present:			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	42.5	0	0	0/28%	0130	39	0	0	0/69%

Moon Effect: waxing crescent 24% Start: 1047 Stop: 2125

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

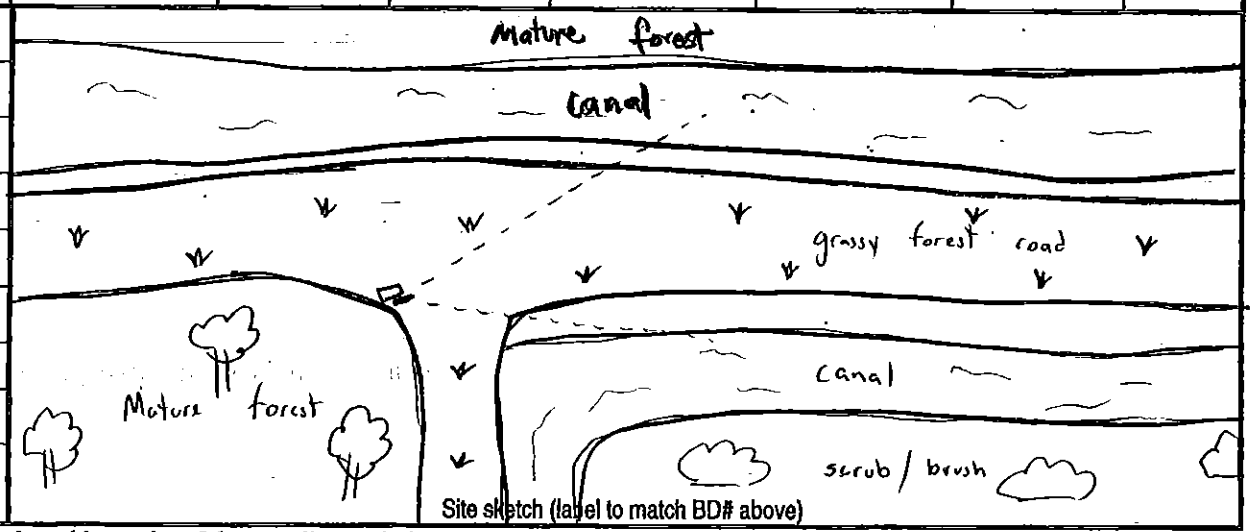
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB005	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.51481	-76.46775	7'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB005	Yes DP	W	2830	10 ft	low	7	16/8	NA	Yes

Habitat & Site Description:

- Intersection of two grassy forest road
- Canals running along side road
- scrub / brush with mixed hardwood

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
IVC NLEB Research	42262	Camden	ABcrosda	2	Cross Canal / Forest Ditch
Start Date:	**End Date:**	**Start Time:**	**End Time:**		
11/17/15	11/18/15	1620	0720		
Nearest town:	**Biologists/observers Present:**				
Coinjock	Dottie Brown Jennifer Starvetsky				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	51.5	0	0	0/72	0000	48.5	0	0	0/72

Moon Effect:	Start: 1133	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):
First Quarter	Stop: 2327	

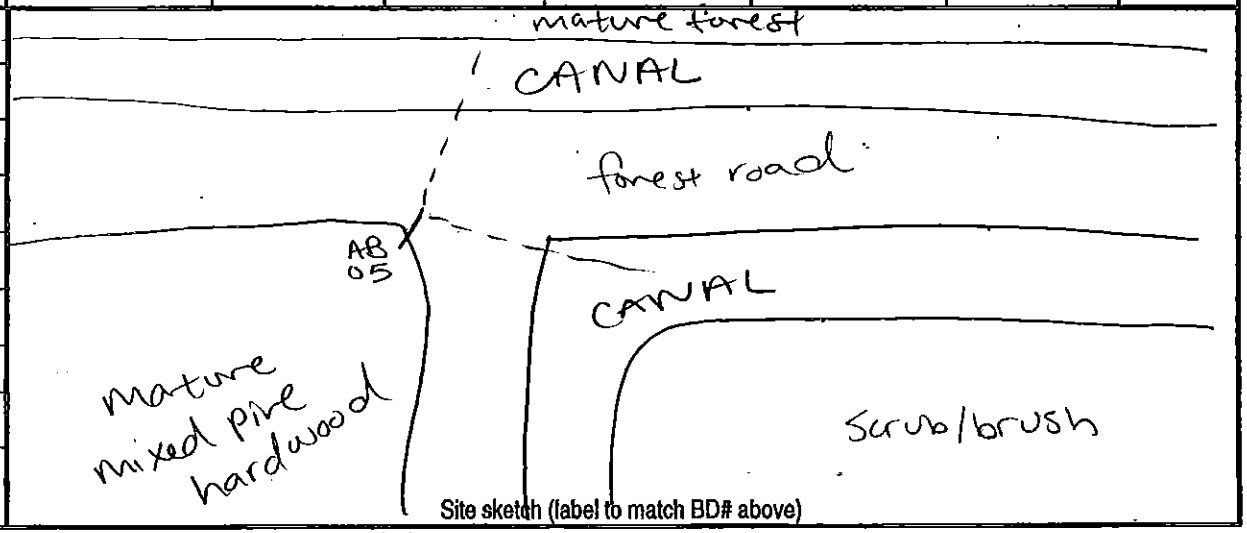
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB005	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.51481	-76.46775	7'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB005	yes JS	W	283	10 ft	lo	7	16/8	NA	taken 11/16

Habitat & Site Description:

Intersection of 2 grassy forest roads. Canals running parallel. Scrub/brush with mixed pine/hardwood. Mature trees with roosting characteristics

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NEER Research	Proj #: 47262	County: Camden	Site#: ABCDS2a	Night#: 3	Site Name: Cross Canal/Forest Ditch
Start Date: 11/28/15	End Date: 11/29/15	Start Time: 1615	End Time: 715		
Nearest town: Coraopeake	Biologists/observers Present: Dottie Brown, Kelly Lutsch				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	40	0	0	0/91%	0715	40	0	0	0/91%

Moon Effect: waning gibbous 90% — Start: 1951 — Stop: 0918

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

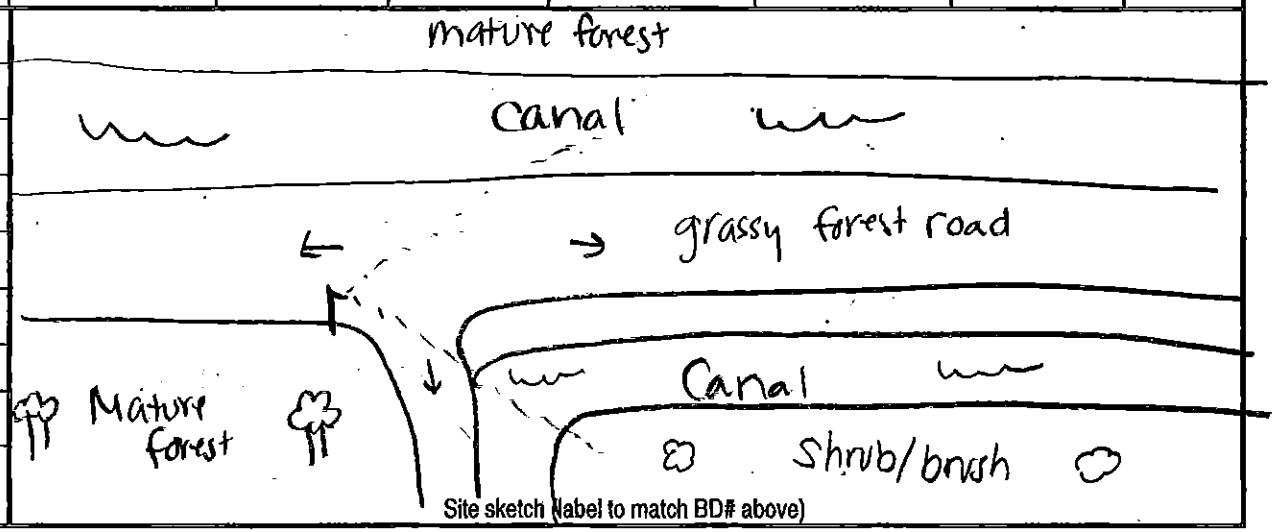
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABOO7	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.51481	-76.46775	7

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABOO7	Yes FL	W	276°	12 ft	low	7	16/8	NA	✓

Habitat & Site Description:

- Intersection of two grassy forest roads
- Canals running along side
- Scrub/brush with mixed hardwood

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Insurance

Project Name: NC Bat Research	Proj #: 42262	County: Pasquotank	Site#: ABG053a	Night#: 1	Site Name: Ditch Intersection
Start Date: 11/17/15		End Date: 11/18/15	Start Time: 1620		End Time: 0720
Nearest town: South Mills	Biologists/observers Present: Jennifer Starvetsky				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	720	51.5	2	8	0/73	0200	48.5	1	0	0/77

Moon Effect: first Quarter — Start: 1133 — Stop: 2227

Land Use: Urban / Agriculture / ~~Forest~~ / ~~Water~~ / Wetland / Barren/ Other (describe):

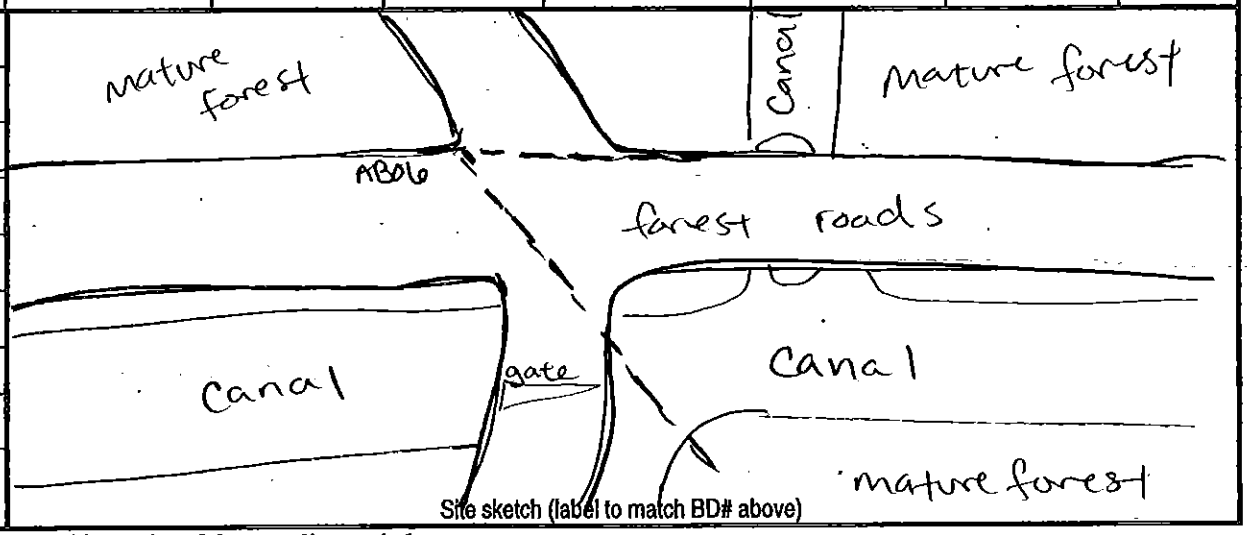
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB006	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.47639	-76.45253	24'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB006	yes JS	NW	228	12 ft	lo	7	16/8		taken 11-16

Habitat & Site Description:

Intersection of 4 grassy forest roads. Mixed hardwood forest with sparse pine. Canals running along roadside. Mature trees with roosting characteristics

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NLEB project	Proj #: 42262	County: Pasquotank	Site#: ABC053a	Night#: 2	Site Name: Insurance ditch intersection
Start Date: 11/28/15	End Date: 11/29/15	Start Time: 16:15	End Time: 7:15		
Nearest town: South Mills	Biologists/observers Present: Dottie Brown, Kelly Lutsch				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	42	0	3	0/87%	0530	42	0	0	0/87%

Moon Effect: waning gibbous 90% — Start: 1921 — Stop: 0918

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

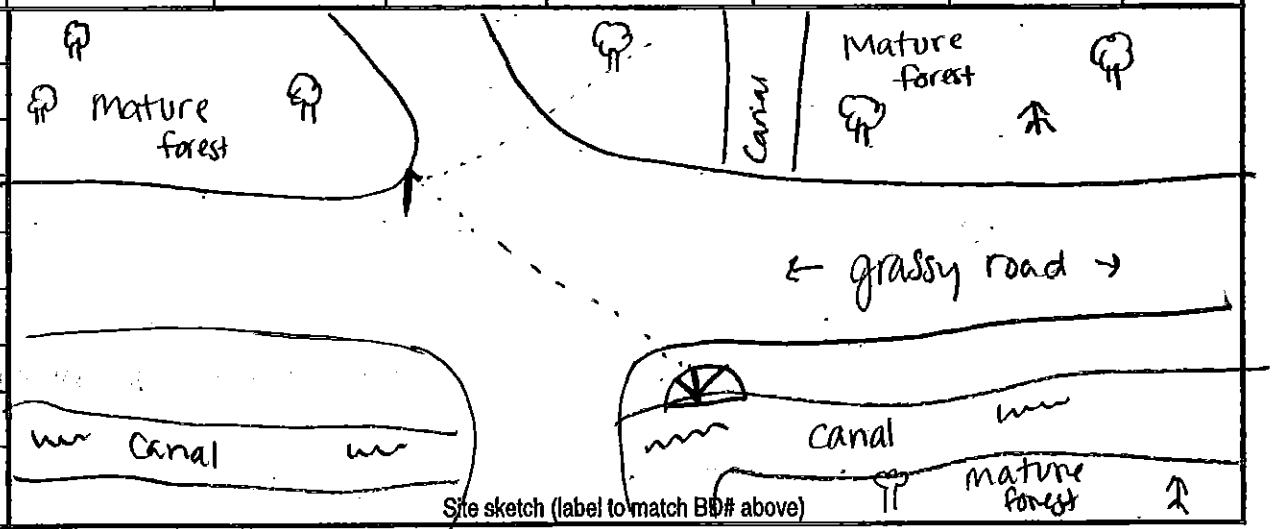
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB003	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.47139	-76.45253	24
		J					

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB003	Yes KL	S	140°	10 ft	low	7	16/8		✓

Habitat & Site Description:

- intersection of four grassy forest roads
- mixed hardwood forest with sparse pine
- canals running along road

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

ABGDS3b

Project Name: NLEB Project	Proj #: 42262	County: Camden	Site#: ABGDS3b	Night#: 1	Site Name: Intersection Corapeake + Sherrill Ditch
Start Date: 12/2/15		End Date: 12/3/15	Start Time: 1615		End Time: 715
Nearest town: South Mills	Biologists/observers Present: Dottie Brown, Drew Powell				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	48	1	0	0/100%	0215	47.5	1	0	0/100%

Moon Effect: New 2% | Start: 0753 | Stop: 1819

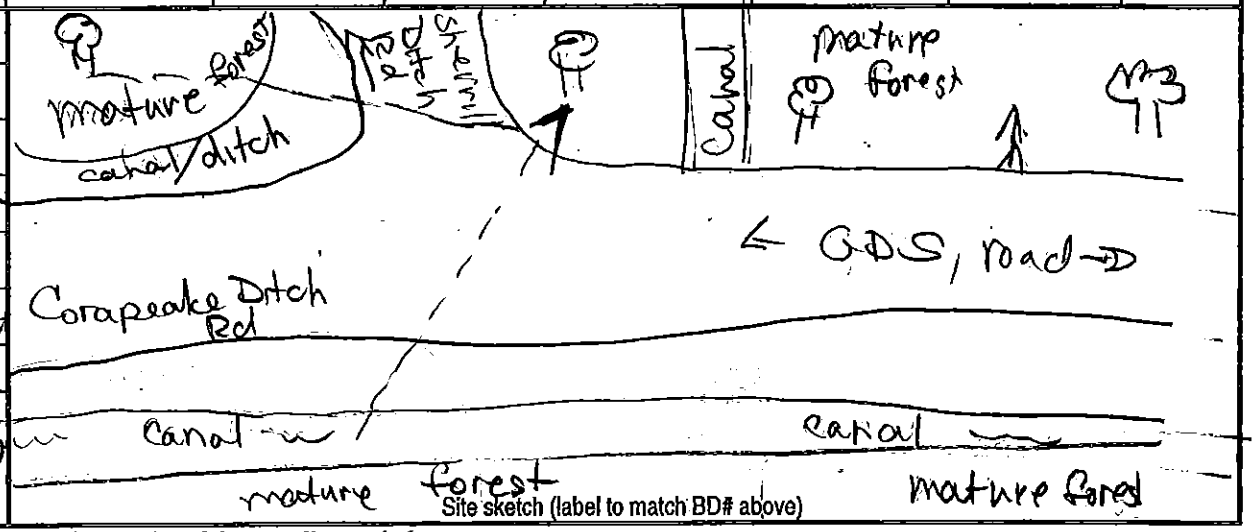
Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB011	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.54666	-76.52563	25'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB011	Yes DP	E	72°	12 ft	NO	7	16/8	N/A	yes

Habitat & Site Description: AB set up @ - intersection of forest roads Corapeake + Sherrill Ditch - Mixed hardwood forest bottomland - canals running along road

Remarks: Corridors include roads, canals, forest edge



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

AB6DS4a

Weyerhauser

Project Name: NC NLEB research	Proj #: 42262	County: Bates	Site#:	Night#: 1	Site Name: Ditch
Start Date: 11/16/15		End Date: 11/17/18	Start Time: 16:15		End Time: 07:15
Nearest town: Corapeake		Biologists/observers Present: Drew Powell, DottieBrown			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	42.5	0	0	0/72 %	0130	39	0	0	0/69 %

Moon Effect: waxing crescent 24% — Start: 1047 — Stop: 2125

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

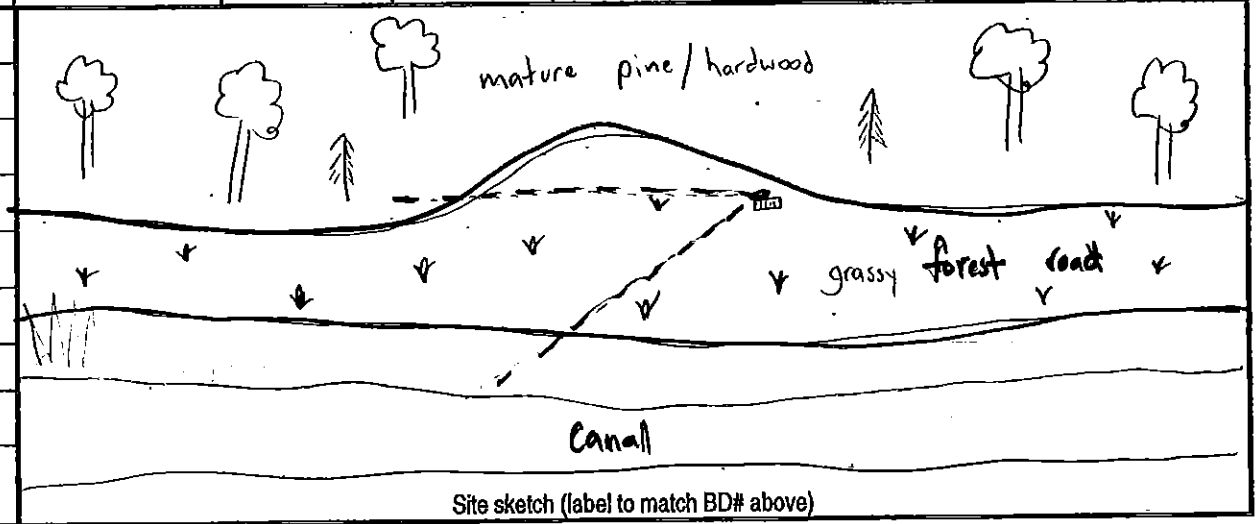
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB007	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.43978°	-76.49689°	47ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB007	yes	N	355	10 ft	lows	7	16/8	NA	Yes

Habitat & Site Description:

- Mixed mature / hardwood forest
- Deep canal running along side of road
- All canopy 50-60 ft high

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC. NWR Research	Proj #: 42202	County: GATES	Site#: ABGDS4a	Night#: 2	Site Name: Weyerhauser Ditch
Start Date: 11-17-15		End Date: 11-18-15	Start Time: 1620		End Time: 0720
Nearest town: Corapeake		Biologists/observers Present: Jennifer Starvetsky			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	51.5	0	0	0/72	0200	48.5	0	0	0/72

Moon Effect: First quarter — Start: 1133 — Stop: 2207

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

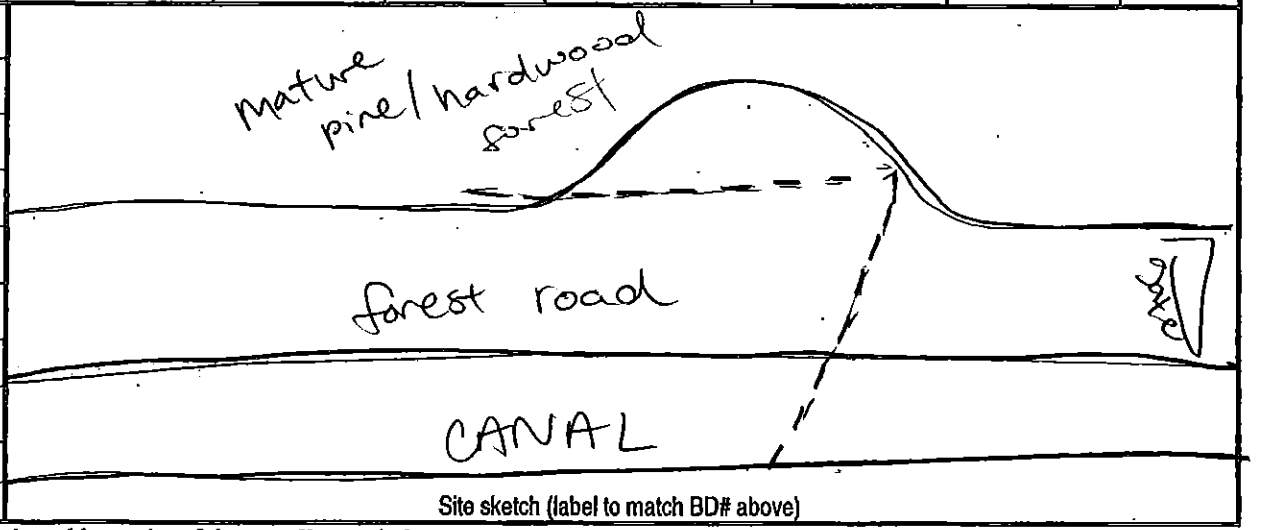
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABD7	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.43975	-76.49689	47'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABD7	Yes JS	N	355	12 ft	lo	7	16/8	NA	taken 11-16

Habitat & Site Description:

Mixed mature pine/hardwood forest. Dup canal running along side of road. All canopy 50-60 ft. high. Trees with roosting characteristics

Remarks:



* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC NLEB Research	Proj #: 42262	County: Gates	Site#: ABGDS4a	Night#: 3	Site Name: Weyer Hauser ditch
Start Date: 11/28/15		End Date: 11/29/15	Start Time: 16:15		End Time: 7:15
Nearest town: Corapeake		Biologists/observers Present: Dottie Brown, Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	40	0	0	0/91%	0715	40	0	0	0/91%

Moon Effect: waning gibbous 90% — Start: 1951 — Stop: 0918

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

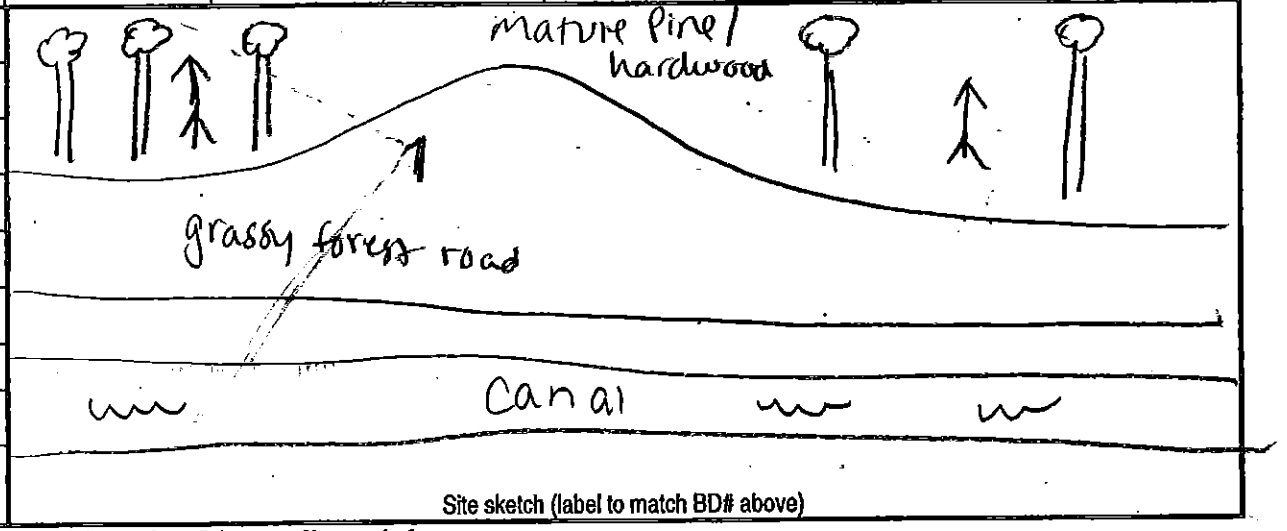
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABOO4	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.43975	-76.49689	47

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABOO4	Yes		210°	12 ft	low	7	16/8	NA	✓

Habitat & Site Description:

- Mixed mature / hardwood
- deep canal running along side of road
- All canopy 50-60 ft high

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

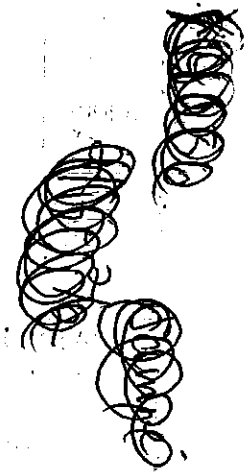
Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped



Appendix G

Murrayville Mitigation Site, Session 1

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 1	Night#: 1	Site Name: Murrayville Mitigation
Start Date: 11/5/15		End Date: 11/6/15	Start Time: 16:45		End Time: 07:05
Nearest town: Murrayville		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:59	68.5°F	calm	overcast	0/93%	6:59	68.5°F	calm	overcast	0/93%

Moon Effect:	Start: 1:04	Land Use: Urban / Agriculture / ~~Forest~~ / Water / ~~Wetland~~ / Barren / Other (describe):
waning crescent (30%)	Stop: 2:07	

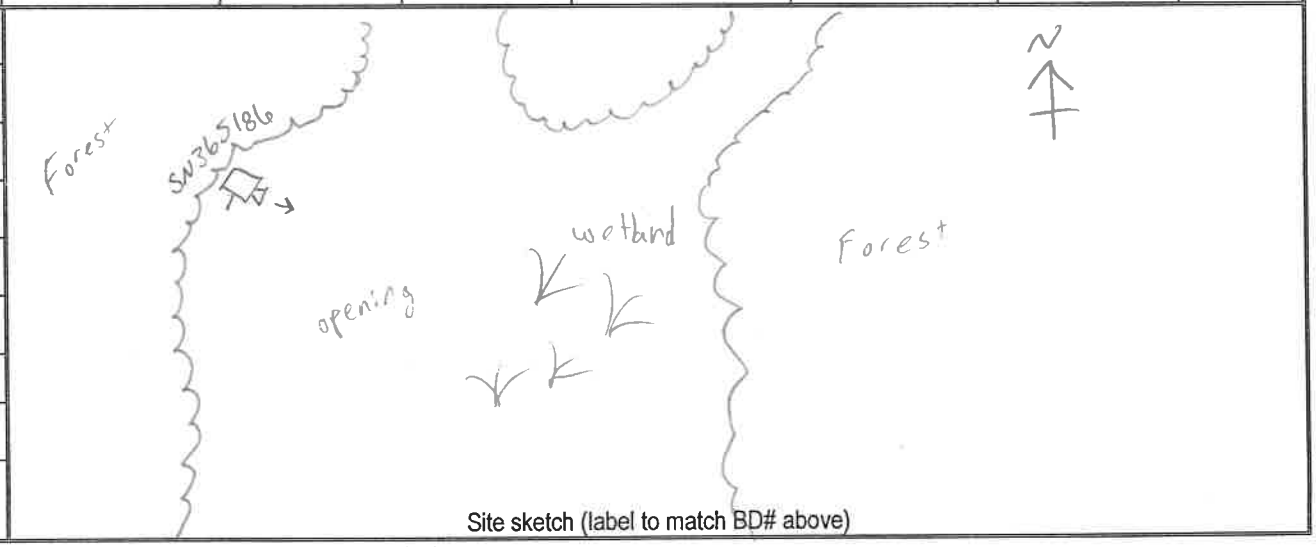
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN36518b	Anabat SD2	V4062g	Green "High"	Angled PVC	N34°18.699'	W77°51.161'	33ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN36518b	Yes	East	45	10ft	Lo	6	8		Yes

Habitat & Site Description:

Forested edge at opening along ORV trail. opening contains wetlands.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of small clearing within pond pine forest/pocosin. Dominant *Pinus serotina* but not large trees. Dense understory includes *Cyrilla racemiflora*, *Ilex coriacea*, *Ilex glabra*, *Lyonia lucida*, *Morella cerifera*, *Persea palustris*, and *Gordonia lasianthus*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 1	Night#: 2	Site Name: Murraysville Mitigation
Start Date: 11/6/15		End Date: 11/7/15	Start Time: 16:45		End Time: 07:05
Nearest town: Murrayville		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:04	54.0°F	calm	overcast	0 / 100%	5:04	53.5°F	0.6 mph	overcast	0 / 97%

Moon Effect:	Start: 1:57	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
waning crescent (21%)	Stop: 2:40	

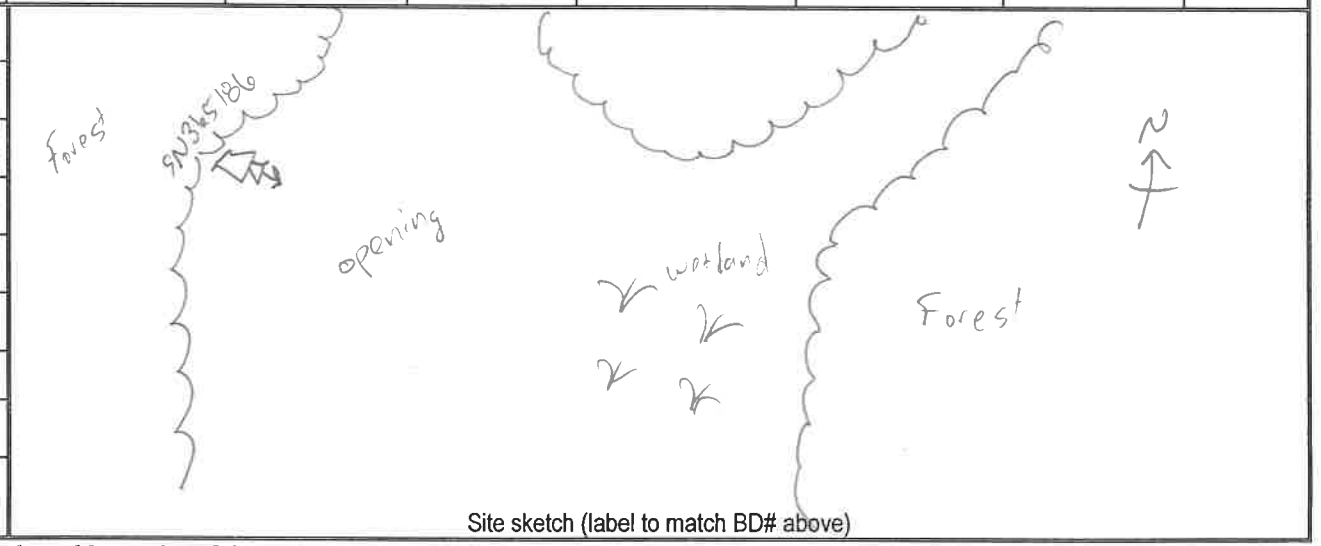
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365186	Anabat SD2	U4062g	Green "High	Angled PVC	N34°18.699'	W77°51.161'	33 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365186	Yes	East	45	10 ft	Lo	6	8		Yes

Habitat & Site Description:

Forest edge at opening along ORV trail. Opening contains wetlands.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of small clearing within pond pine forest/pocosin. Dominant *Pinus serotina* but not large trees. Dense understory includes *Cyrilla racemiflora*, *Ilex coriacea*, *Ilex glabra*, *Lyonia lucida*, *Morella cerifera*, *Persea palustris*, and *Gordonia lasianthus*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 1	Night#: 3	Site Name: Murrayville Mitigation
Start Date: 11/10/15		End Date: 11/11/15	Start Time: 16:45		End Time: 07:05
Nearest town: Murrayville		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:58	58.5°F	3.5mph	Clear	0/93%	5:38	55.0°F	5.8mph	clear	0/96%

Moon Effect:	Start: 5:35	Land Use: Urban / Agriculture / ~~Forest~~ / Water / Wetland / Barren/ Other (describe):
waning crescent (19%)	Stop: 6:51	

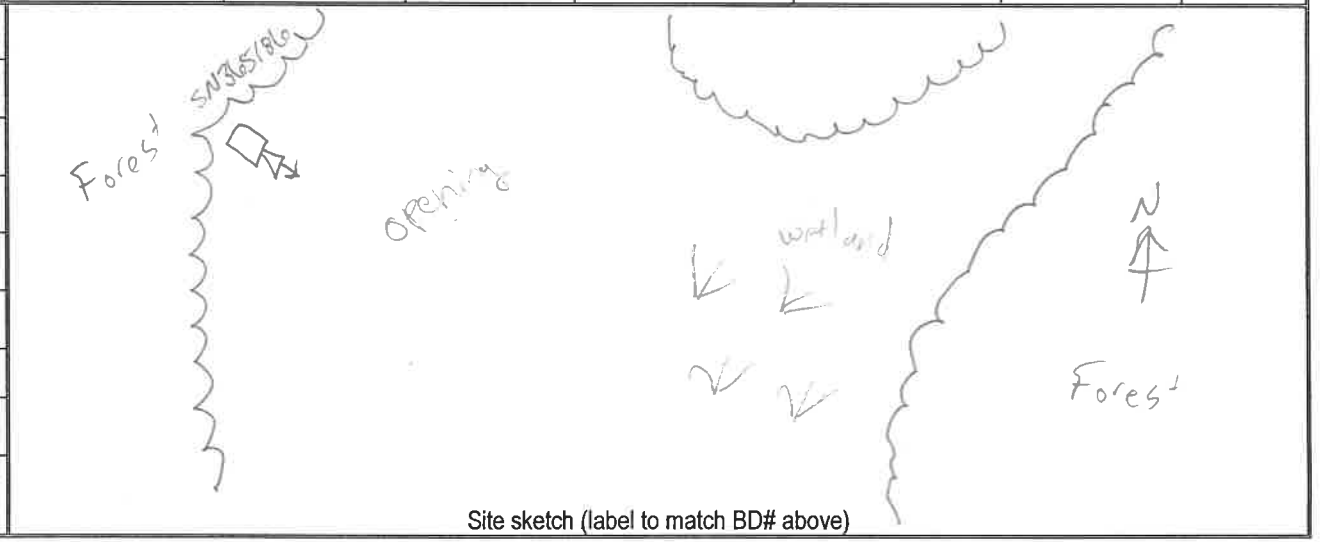
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365186	Anabat SD2	V4062g	Green "High	Angled PVC	N34°18.699'	W77°51.161'	~33ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365186	Yes	East	45	10ft	Lo	6	8		Yes

Habitat & Site Description:

Forested edge at opening along ORV trail. Opening contains wetlands

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of small clearing within pond pine forest/pocosin. Dominant *Pinus serotina* but not large trees. Dense understory includes *Cyrilla racemiflora*, *Ilex coriacea*, *Ilex glabra*, *Lyonia lucida*, *Morella cerifera*, *Persea palustris*, and *Gordonia lasianthus*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 2	Night#: 1	Site Name: Murrayville Mitigation
Start Date: 11/5/15		End Date: 11/6/15	Start Time: 16:45		End Time: 07:05
Nearest town: Murrayville	Biologists/observers Present: James Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:59	68.5°F	calm	overcast	0/93%	6:59	68.5 °F	calm	overcast	0/93%

Moon Effect:	Start: 1:04	Land Use: Urban / Agriculture / ~~Forest~~ / Water / Wetland / Barren/ Other (describe):
waning crescent (30%)	Stop: 2:07	

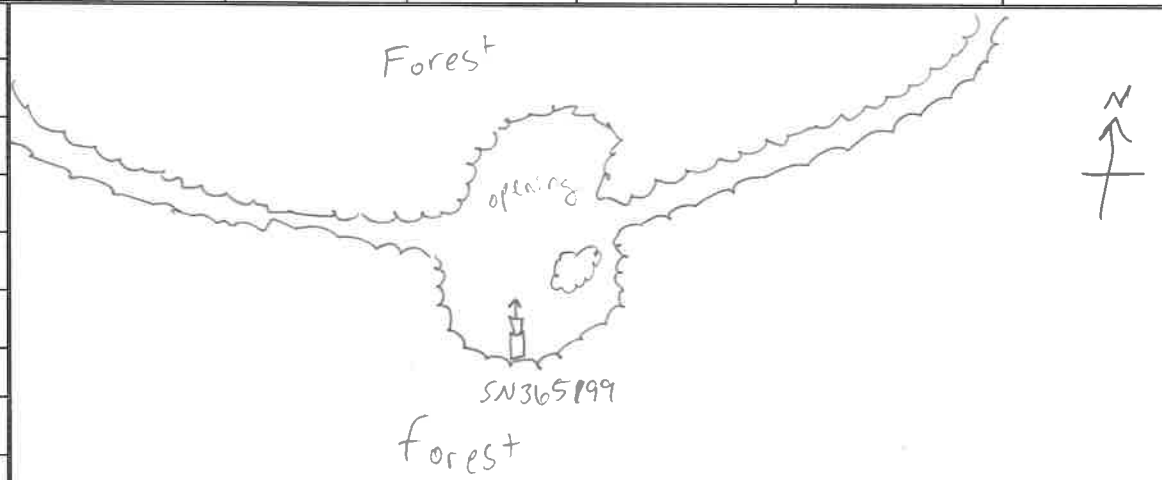
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365199	Anabat SD2	V4062g	Gree "High"	Angled PVC	N34°18.456'	W077°48.641'	33 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365199	Yes	E	45	10 ft	Lo	6	8		Yes

Habitat & Site Description:

Forested edge at an opening in the forest.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of small clearing within pond pine forest/pocosin. Dominant *Pinus serotina* but not large trees. Dense understory includes *Cyrilla racemiflora*, *Ilex coriacea*, *Morella cerifera*, *Persea palustris*, and *Ilex verticillata*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 2	Night#: 2	Site Name: Murrayville Mitigation
Start Date: 11/6/15		End Date: 11/7/15	Start Time: 16:45		End Time: 07:05
Nearest town: Murrayville		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:04	54.0°F	Calm	overcast	0/100%	5:04	53.5°F	4.6 mph	overcast	0/97%

Moon Effect:	Start: 1:57	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
waning crescent (21%)	Stop: 7:40	

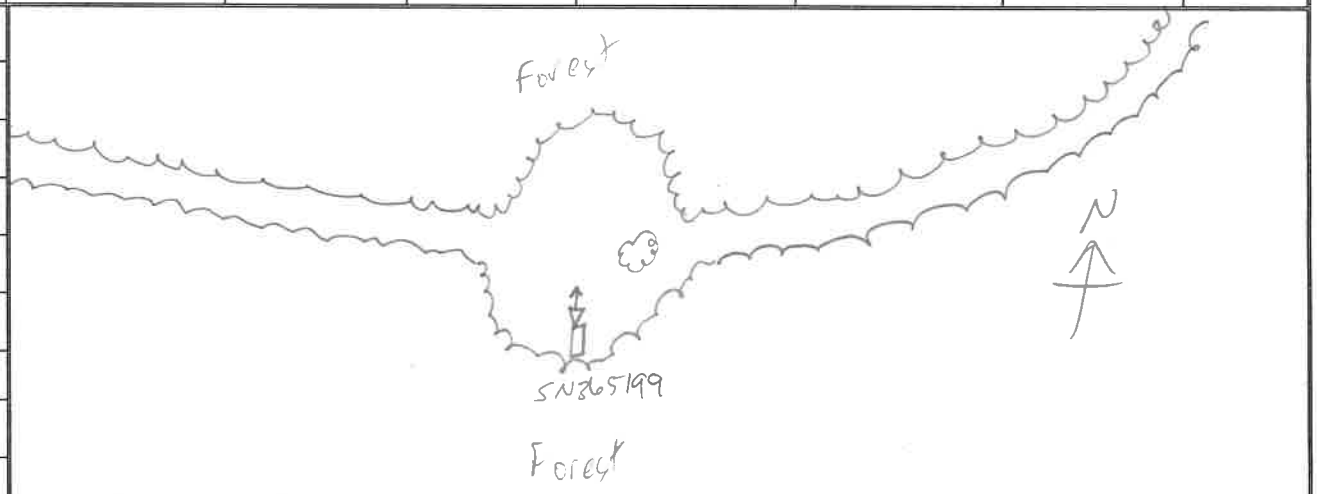
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365199	Anabat SD2	V4.0.6.2g	Green "High"	Angled PVC	N34°18.456'	W077°48.641'	33 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365199	Yes	E	45	10 ft	Lo	6	8		Yes

Habitat & Site Description:

Forest edge at an opening in the forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of small clearing within pond pine forest/pocosin. Dominant *Pinus serotina* but not large trees. Dense understory includes *Cyrilla racemiflora*, *Ilex coriacea*, *Morella cerifera*, *Persea palustris*, and *Ilex verticillata*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 2	Night#: 3	Site Name: Murrayville Mitigation
Start Date: 11/10/15		End Date: 11/11/15	Start Time: 18:45		End Time: 07:05
Nearest town: Murrayville		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	6:58	58.5°F	3.5mph	clear	0 / 93%
	5:38	55.0°F	5.8mph	clear	0 / 96%

Moon Effect:	Start:	Stop:	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
waning crescent (15%)	5:30	4:54	

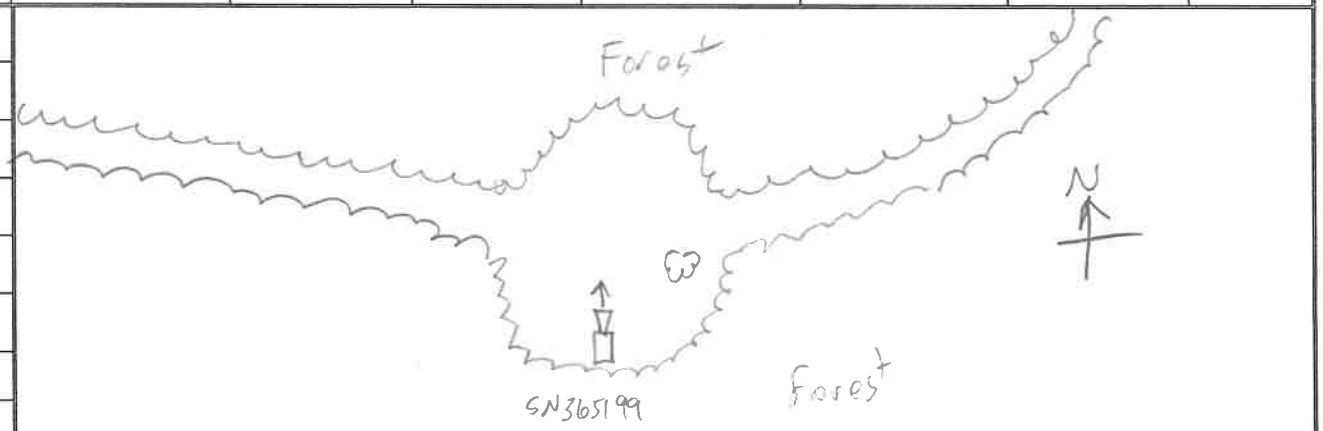
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365199	Anabat SD2	V4062g	Green "High"	Angled PVC	N. 34°18.456'	W077°48.641'	33ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365199	Yes	E	45	10 ft	Lo	6	8		Yes

Habitat & Site Description:

Forest edge at an opening in the forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is at edge of small clearing within pond pine forest/pocosin. Dominant *Pinus serotina* but not large trees. Dense understory includes *Cyrilla racemiflora*, *Ilex coriacea*, *Morella cerifera*, *Persea palustris*, and *Ilex verticillata*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 3a	Night#: 1	Site Name: Murraville Mitigation
Start Date: 11/10/15		End Date: 11/11/15	Start Time: 16:40		End Time: 07:10
Nearest town: Murrayville		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	16:58	58.5°F	3.5mph	clear	0 [illegible]	5:38	55.0°F	5.8mph	clear	0 [illegible]

Moon Effect:	Start: 5:30	Land Use: Urban / Agriculture / ~~Forest~~ / ~~Water~~ / Wetland / Barren/ Other (describe):
waning crescent (19%)	Stop: 6:51	

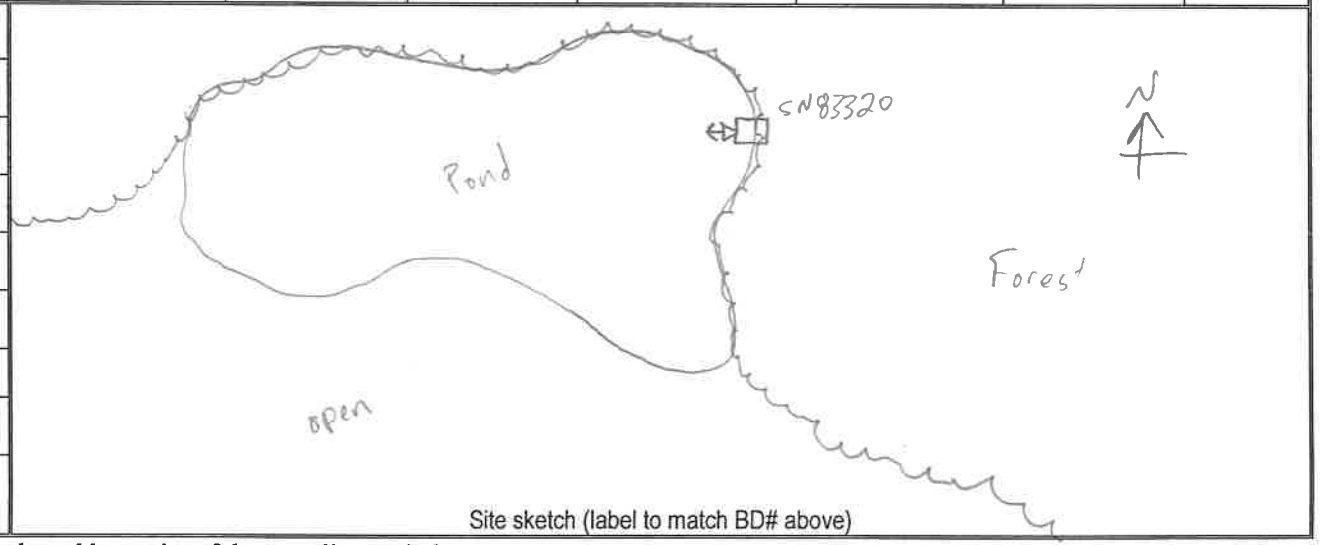
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83320	Anabat SD2	V4062g	Green "High	Angled PVC	34.306122	-77.791419	33 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83320	Yes	W	45	10 ft	NO	6	8		Yes

Habitat & Site Description:

Forest at edge of pond

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is in thin strip of upland between a large pond and a dense, relatively mature swamp forest. Edge species include 30+ year old *Pinus taeda*, *Ilex coriacea*, *Ilex opaca*, and seedlings of *Quercus nigra*. Swamp forest species include *Acer rubrum*, *Lyonia lucida*, *Ilex coriacea*, *Gordonia lasianthus*, *Nyssa sylvatica*, and *Clethra alnifolia*. Vines common including *Smilax laurifolia*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 3a	Night#: 2	Site Name: Murrayville Mitigation
Start Date: 11/11/15		End Date: 11/12/15	Start Time: 16:40		End Time: 07:10
Nearest town:		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	5:38	55°F	calm	clear	0 / 96%	6:58	58.5°F	calm	clear	0 / 93%

Moon Effect:	Start: 6:24	Land Use: Urban / Agriculture / ~~Forest~~ / ~~Water~~ / Wetland / Barren/ Other (describe):
waning crescent (6%)	Stop: 5:28	

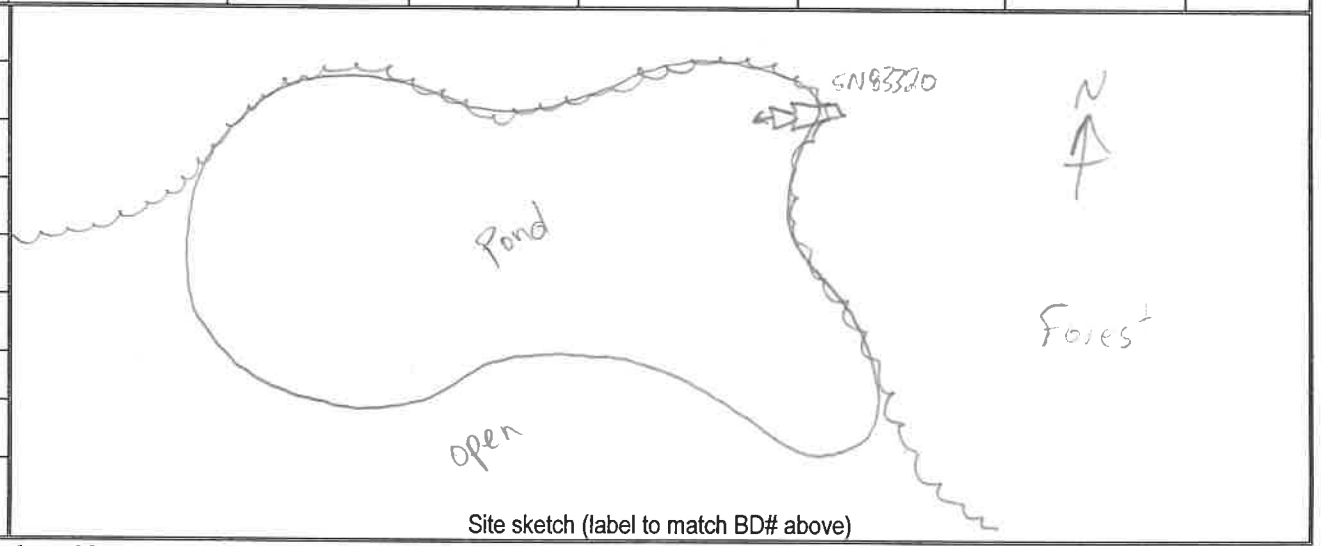
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83320	Anabat SD2	V4062g	Green "High"	Angled PVC	34.306122	-77.791419	33ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83320	Yes	W	45	10ft	NO	lo	8		Yes

Habitat & Site Description:

Forest at edge of pond

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is in thin strip of upland between a large pond and a dense, relatively mature swamp forest. Edge species include 30+ year old *Pinus taeda*, *Ilex coriacea*, *Ilex opaca*, and seedlings of *Quercus nigra*. Swamp forest species include *Acer rubrum*, *Lyonia lucida*, *Ilex coriacea*, *Gordonia lasianthus*, *Nyssa sylvatica*, and *Clethra alnifolia*. Vines common including *Smilax laurifolia*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 3b	Night#: 3	Site Name: Murrayville Mitigation
Start Date: 11/12/15		End Date: 11/13/15	Start Time: 16:40		End Time: 07:10
Nearest town:		Biologists/observers Present: Jamie Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	16:33	51°F	5.8 mph	clear	0 / 93%	7:03	51°F	5.8 mph	clear	0 / 93%

Moon Effect:	Start: 8:14	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
Waxing crescent (4%)	Stop: 16:54	

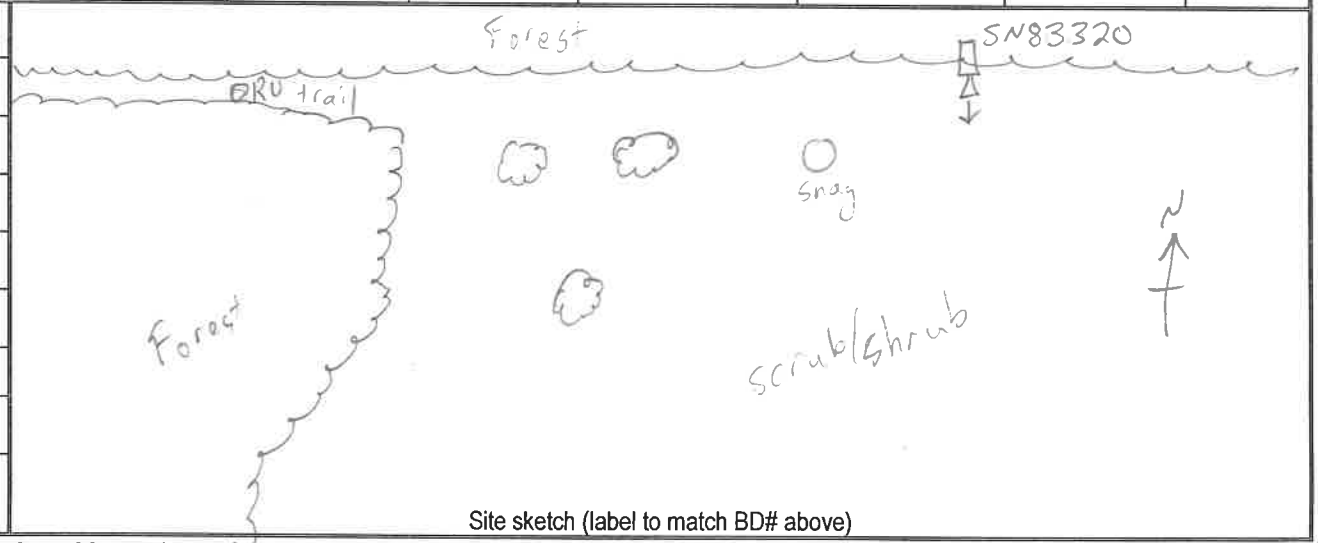
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83320	Anabat SD2	V4062g	Green "High"	Angled PVC	34.312996	-77.850602	~33ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83320	Yes	S	45	10ft	Lo	6	8		Yes

Habitat & Site Description:

open ORV trail adjacent to scrub/shrub area surrounded by forest. Several snags visible

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover / Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is along grassy mowed path within pond pine/pocosin. Typical species include *Acer rubrum, Morella cerifera, Ilex coriacea, Persea palustris,* and *Gordonia lasianthus*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 4	Night#: 1	Site Name: Murrayville Mitigation
Start Date: 11/5/15		End Date: 11/6/15	Start Time: 16:45		End Time: 07:05
Nearest town: Murrayville		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	16:59	68.5°F	calm	overcast	D/ 93%	6:59	68.5°F	calm	Overcast	D/ 93%

Moon Effect:	Start: 1:04	Land Use: Urban / Agriculture / ~~Forest~~ / Water / Wetland / Barren/ Other (describe):
waning crescent (30%)	Stop: 7:07	

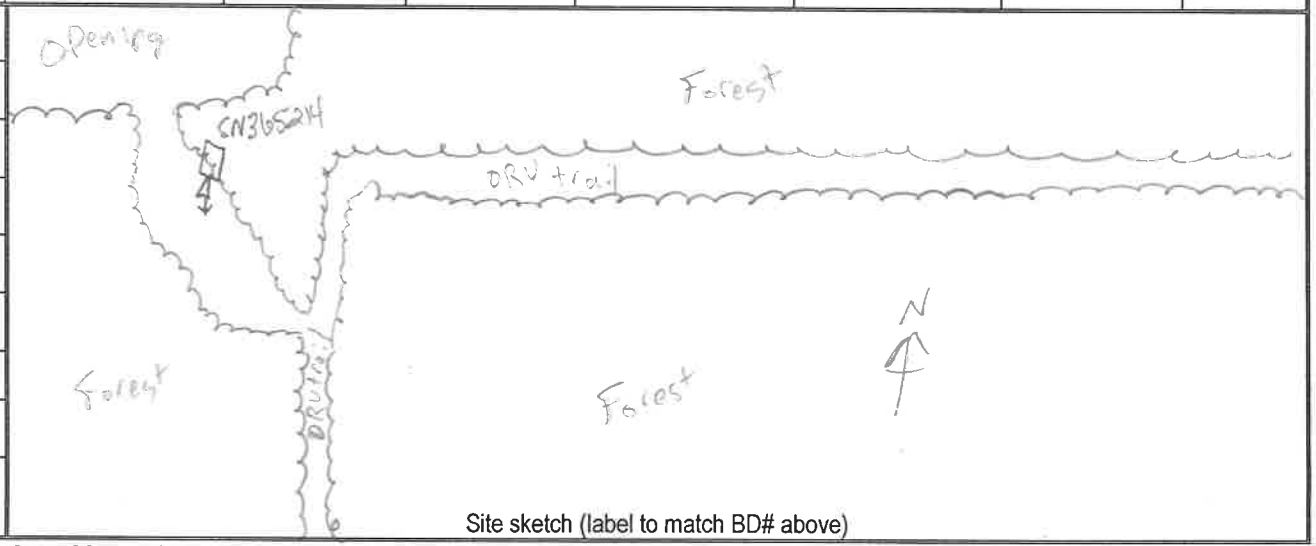
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365214	Anabat SD2	V4062g	Green "High"	Angled PVC	34.325081	-77.854671	~33 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365214	Yes	S	45	10ft	Med	6	8		Yes

Habitat & Site Description:

Opening in forest Between ORV trail and Forest opening.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is along grassy mowed path within pine/pocosin. Dominant canopy species *Pinus palustris*, *Pinus serotina.* Dense understory approx. 10ft high, includes *Ilex coriacea, Persea palustris, Gordonia lasianthus*, *Cyrilla racemiflora*, *Lyonia lucida,* and a few *Acer rubrum*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 4	Night#: 2	Site Name: Murrayville Mitigation
Start Date: 11/6/15		End Date: 11/7/15	Start Time: 16:45		End Time: 07:05
Nearest town: Murrayville		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:04	54.0°F	calm	overcast	0 / 100%	5:04	53.5°F	4 l.e.mph	overcast	0 / 97%

Moon Effect:	Start: 1:57	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
waning crescent (71%)	Stop: 7:45	

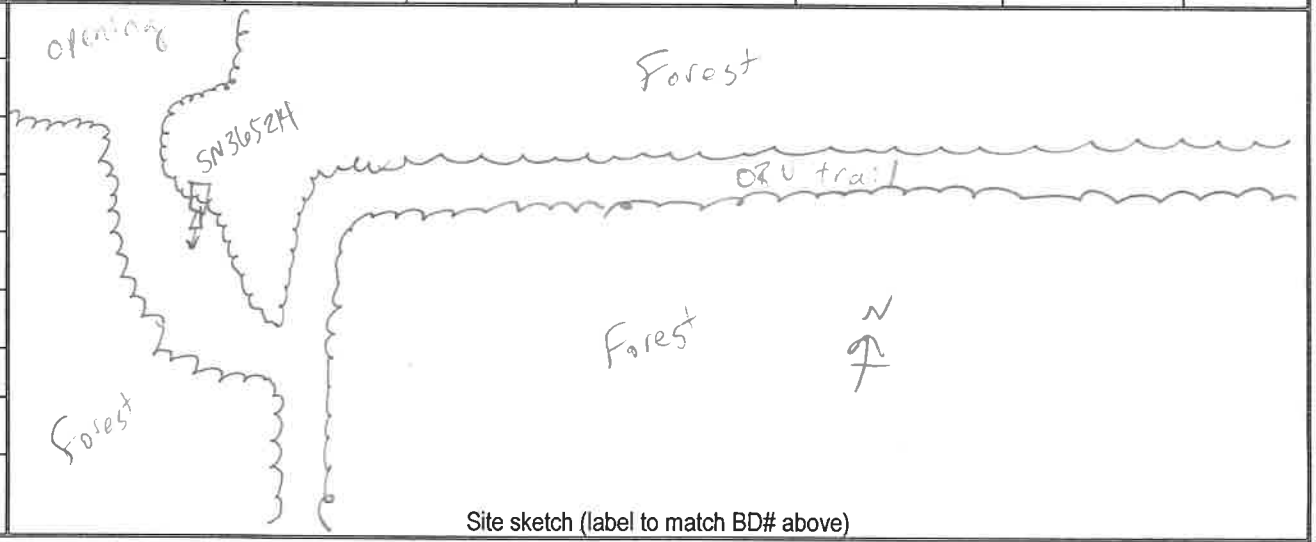
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365214	Anabat SD2	V406 2g	Green "High"	Angled PVC	34.325081	-77.854671	~33ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365214	Yes	S	45	10ft	Med	6	8		Yes

Habitat & Site Description:

Opening in forest between ORV trail and forest opening

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is along grassy mowed path within pine/pocosin. Dominant canopy species *Pinus palustris*, *Pinus serotina.* Dense understory approx. 10ft high, includes *Ilex coriacea, Persea palustris, Gordonia lasianthus*, *Cyrilla racemiflora*, *Lyonia lucida,* and a few *Acer rubrum*.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County: New Hanover	Site#: 4	Night#: 3	Site Name: Murrayville Mitigation
Start Date: 11/10/15		End Date: 11/11/15	Start Time: 16:40		End Time: 07:10
Nearest town: Murrayville		Biologists/observers Present: James Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	16:58	58.4°F	3.5 mph	clear	0/92%	5:38	55°F	5.8 mph	clear	0/96%

Moon Effect:	Start: 5:30	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
waning crescent (10%)	Stop: 4:51	

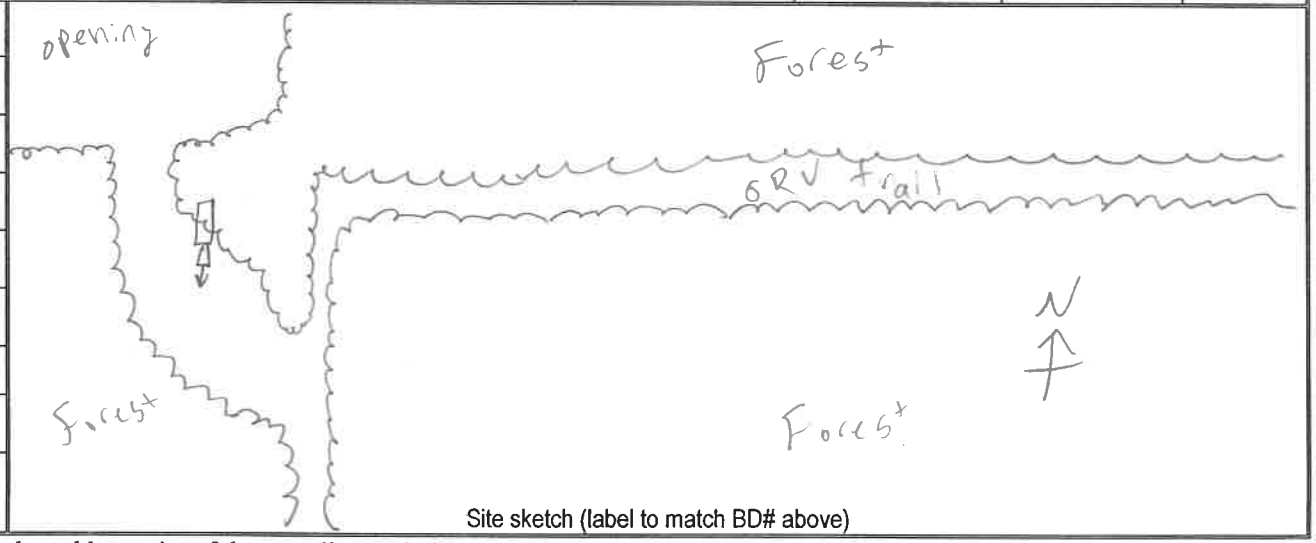
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN365214	Anabat SD2	V4062g	Green "High"	Angled PVC	34.325081	-77.854671	~33 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN365214	Yes	S	45	10 ft	Med	6	8		Yes

Habitat & Site Description:

Opening in forest between ORV trail and forest opening

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:
Site is along grassy mowed path within pine/pocosin. Dominant canopy species *Pinus palustris*, *Pinus serotina.* Dense understory approx. 10ft high, includes *Ilex coriacea, Persea palustris, Gordonia lasianthus*, *Cyrilla racemiflora*, *Lyonia lucida,* and a few *Acer rubrum*.

Appendix G

North River Game Land, Sessions 1 & 2

NCDOT Acoustic Survey Data Form

NOTE: This night was re-sampled on 11/20.

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
WF NLEB Research Proj	42262	Camden	ABNR1a	1	Blind Spot
Start Date: 11/16/15		End Date: 11/17/15	Start Time: 16:20		End Time: 0715
Nearest town: Shiloh		Biologists/observers Present: Jennifer Starvetsky			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	47				0300	43	0	0	0/84%

Moon Effect: waxing crescent 24% Start: 1045 Stop: 2125

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB01	Anabat SD2	4062g	green	tackle box weatherproofed + trash bag	36.28582	-75.98373	13'

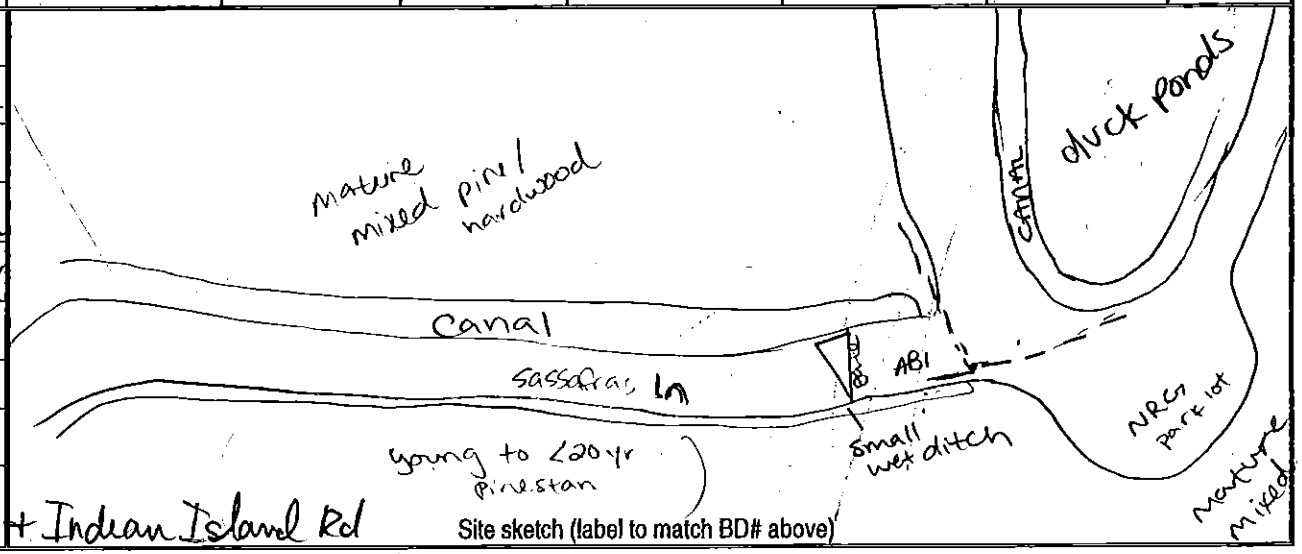
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB1	Yes JS	S	165	10 ft	lo	7	16/8	NA	Yes

Habitat & Site Description:

intersection of multiple mowed forest roads with canals parallel. Mature mixed pine/hardwood forest, Mowed agriculture field adjacent. Trees w/ Roosting characteristics present.

Remarks:

AB placed at intersection of 2 forest Roads w/ Sassafras Lane + Indian Island Rd



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest mature forest but with young pine stand further up, sassafras in on north side of rd

More open / more forested

Mostly developed / mostly undeveloped

NOTE: This is now night 1

NCDOT Acoustic Survey Data Form

Project Name: NC_NHEB_Research	**Proj #:** 12262	**County:** Camden	**Site#:** ABNR1a	**Night#:** 2	**Site Name:** Blind Spot
Start Date: 11/17/15		**End Date:** 11/18/15	**Start Time:** 1325		**End Time:** 0940
Nearest town: Shiloh		**Biologists/observers Present:** Kim Romano, Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	46.5	2	3	0/93%	2030	58.5	3	0	0/87%

Moon Effect:	Start: 12:13	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):
First quarter	Stop: 23:29	

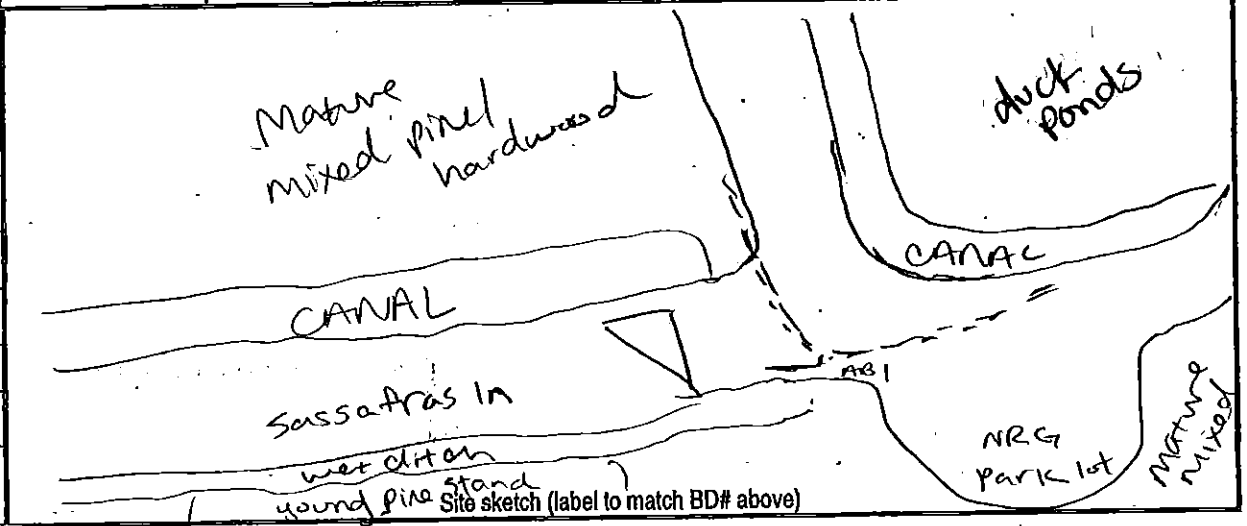
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB01	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.28582	-75.98373	13'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB01	Yes KL	S	165	10 ft	lo	7	4/8	NA	take 11-16

Habitat & Site Description:

intersection of multiple mowed forest roads with canal parallel. Mature mixed pine/hardwood forest with coast characteristics. Mowed agriculture field adjacent.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest mature w/ young pine stand farther up Sassafras lane on north side of road

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

NOTE: This is now night 2

Project Name: NLEB Research	Proj #: 42262	County: Camden	Site#: ABNR-1a	Night#: 3	Site Name: Blind Spot
Start Date: 11/18/15		End Date: 11/19/15		Start Time: 1615	End Time: 0715
Nearest town: Shiloh		Biologists/observers Present: Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	64.5	3	5	rain/84%	2200	62.5	2	0	0/87

Moon Effect: waxing crescent 44 — Start: 1213 — Stop: 2329

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

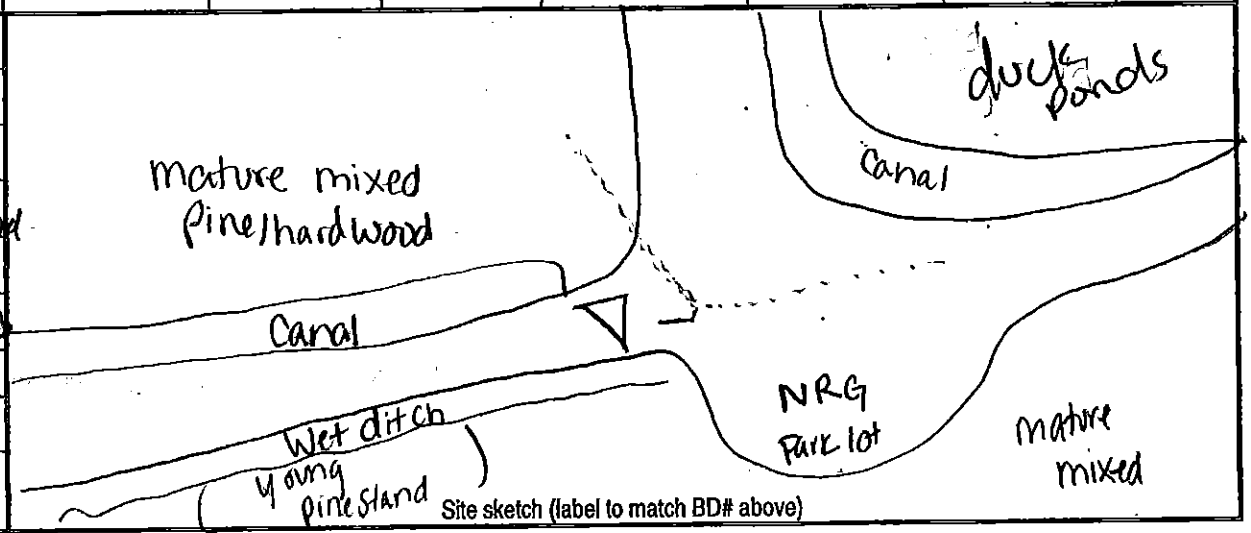
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB01	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.20582	-75.98373	13ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB01	KL yes	S	165°	10 ft	lo	7	16/8	NA	Faxon 11c-Ne

Habitat & Site Description:

intersection of multiple mowed forest roads with canal parallel. Mature mixed pine/hardwood forest with roost characteristics. Duck pond impoundment adjacent

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest mature forest w/ young pine stand further up Sassafras Lane on North side of road

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

NOTE: This is now night 3

Project Name: NC NHEB Research	Proj #: 42262	County: Camden	Site#: ABNR1a	Night#: 4 (edo)	Site Name: Blind Spot
Start Date: 11/20/15	End Date: 11/21/15	Start Time: 1620	End Time: 720		
Nearest town: Shiloh	Biologists/observers Present: Jennifer Stanvetsky, Kelly Lutsch				

*Conditions:	Time 720	Temp 47°	Wind 0	Clouds 0	Precip/humidity 0 / 75%	Time 2200	Temp 43°	Wind 0	Clouds 0	Precip/humidity 0 / 75%

Moon Effect: Waxing gibbous 77% Start: 14:11 Stop: 1:40

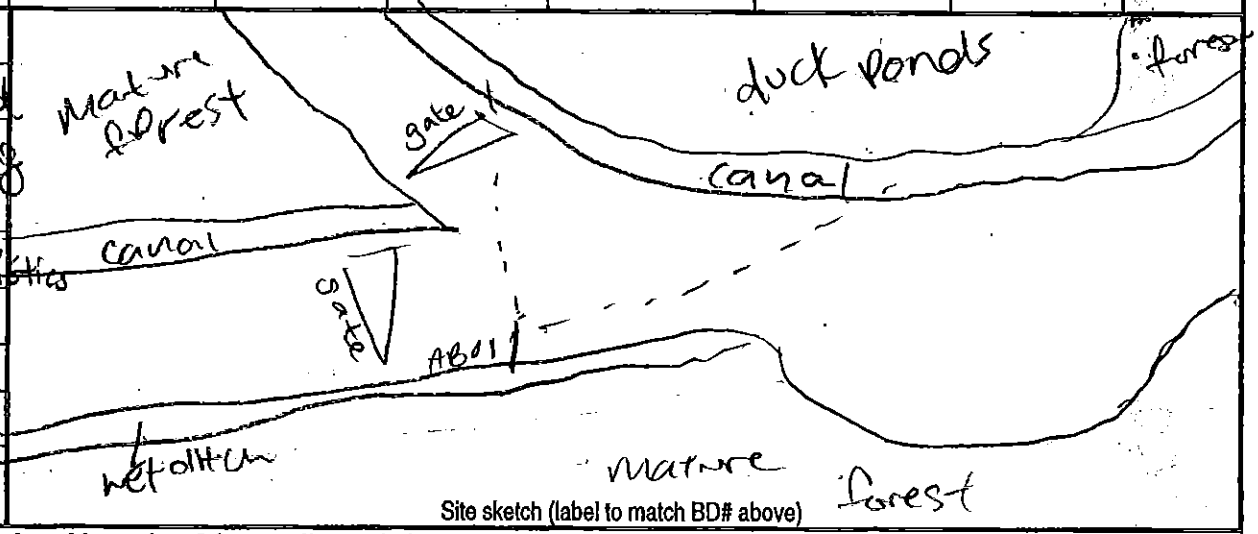
Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABD01	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.28582	-75.98873	13

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABD01	yes KL	S	170	12 ft	low	7	16/8	NA	taken 9-16

Habitat & Site Description:
intersection of multiple mowed forest roads with canals running parallel. Mature mixed pine/hardwood forest w/ roost characteristics. Duck Pond impoundment adjacent

Remarks: resurvey of 1st night



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest Mature w/ young pine stand on N side of Sassafras Lane

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research	Proj #: 42262	County: Camden	Site#: ABNR2a	Night#: 1	Site Name: End of Sassafras Ln
Start Date: 11/16/15		End Date: 11/17/15	Start Time: 16:20		End Time: 07:15
Nearest town: Shiloh		Biologists/observers Present: Kim Romano Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	47	0	0	0/73%	0200	43	0	0	0/84%

Moon Effect: Waxing crescent 24% Start: 1045 Stop: 0125

Land Use: Urban / Agriculture / (Forest) / Water / (Wetland) / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB002	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.28909	-75.97963	25ft

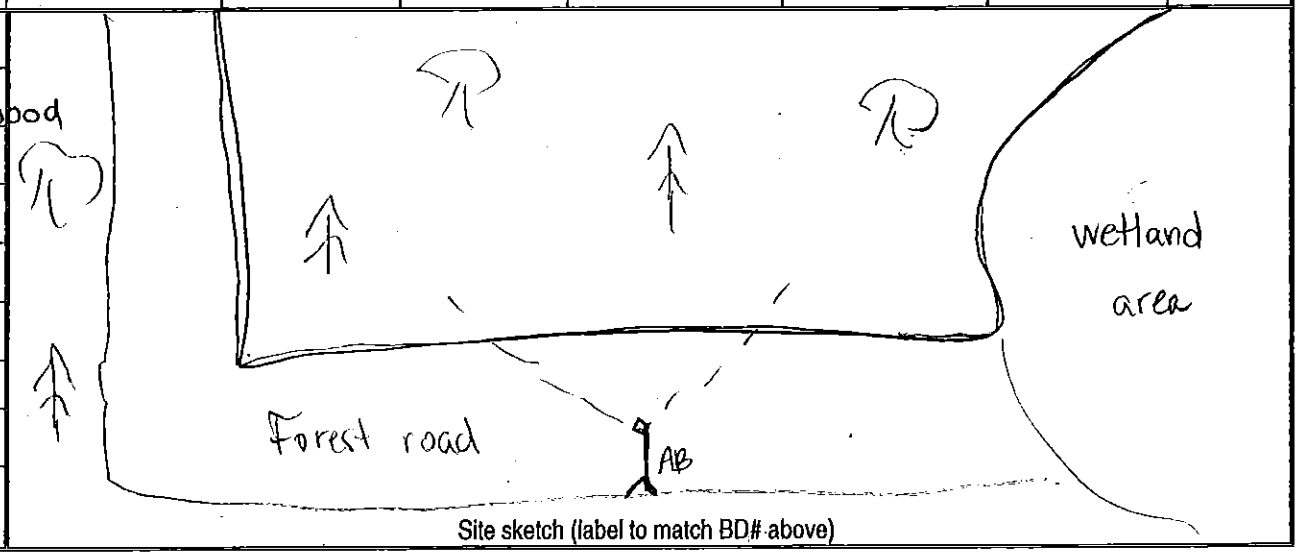
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB002	Yes KL	W	295°	10 ft	10	7	16/8	NA	✓

Habitat & Site Description:

Early successional mixed pine-hardwood forest bordering a wetland and waterfowl water ponds. Anabat set up along forest road, 60 yds from wetland capturing bats flying from

Remarks: Wetland through forest road corridor

AB placed a small wide area on Forest Rd off Sassafras Lane



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research	Proj #: 47762	County: Camden	Site#: ABNR2a	Night#: 2	Site Name: End of Sassafras Ln
Start Date: 11/17/15		End Date: 11/18/15	Start Time: 16:15		End Time: 7:15
Nearest town: Shiloh		Biologists/observers Present: Kim Romano, Drew Powell			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	61.5	2	3	0/93%	2030	58.5	3	0	0/97%

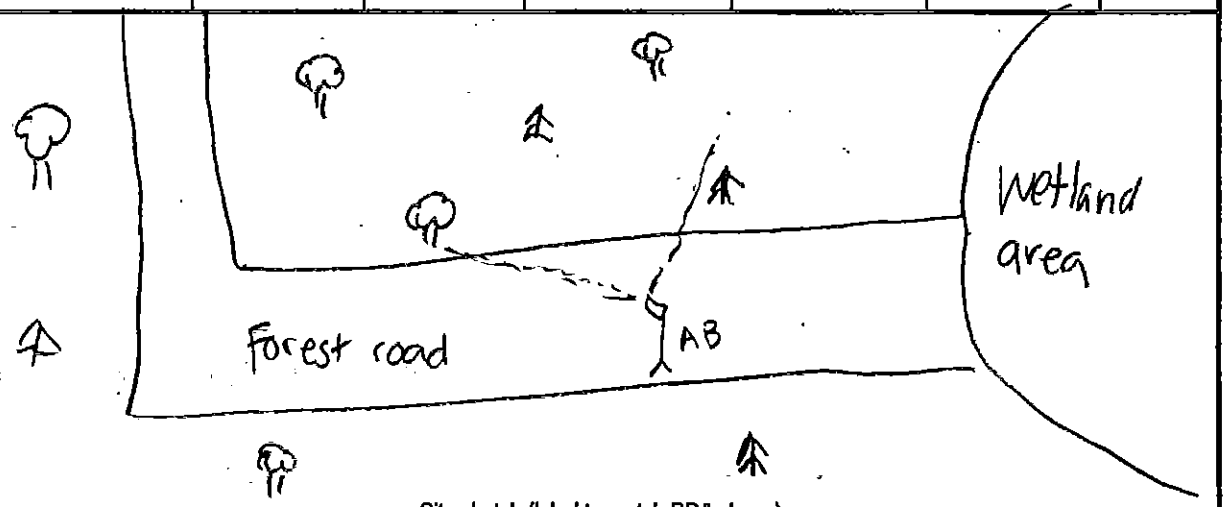
Moon Effect:	Start: 1213	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
First quarter	Stop: 2329	

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB002	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.28909	-75.97963	25 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB002	Yes DP	W	295°	10 ft	0	7	16/8	NA	✓

Habitat & Site Description:
Early successional mixed pine-hardwood Forest bordering wetland and waterfowl water ponds. Anabat set up along forest road, 60yds from wetland capturing bats flying

Remarks: from wetland through forest road corridor



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

Forest Rd
Off Indian

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research	Proj #: 42262	County: Camden	Site#: AB2b	Night#: 1	Site Name: Forest Road #1
Start Date: 11/18/15		End Date: 11/19/15	Start Time: 1615		End Time: 0715
Nearest town: Shiloh		Biologists/observers Present: Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	64.5	3	5	rain/84%	2200	62.5	2	0	0/81

Moon Effect: Waxing crescent 4% Start: 2213 Stop: 2329

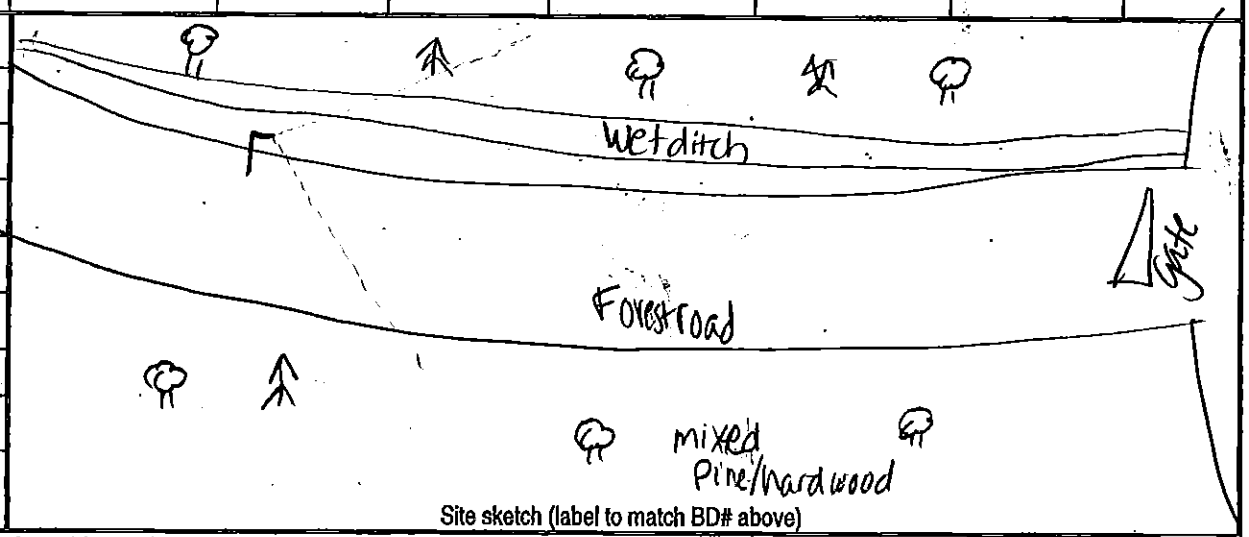
Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB02	Anabat SD2	4062g	Green	Tackle box weatherproofed + trash bag	36.27949	-75.99554	3'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB02	Yes KL	W	300	12 ft	lo	7	16/8	NA	✓

Habitat & Site Description:
Mixed Pine + hardwood. Wide forest road bordered by wet ditches / wetland.

Remarks:
AB placed on 1st forest road to right of Sassafras lane



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.
**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NCSU Research	Proj #: 42262	County: Currituck	Site#: ABNR3a	Night#: 1	Site Name: Pond/Water Treatment
Start Date: 11/16/15		End Date: 11/17/15	Start Time: 1620		End Time: 0715
Nearest town: Maple		Biologists/observers Present: Kim Romano, Jennifer Starvetsky, Kelly Lutch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	47	0	0	0/81%	0300	43	0	0	0/94%

Moon Effect: waxing crescent 24% Start: 1044 Stop: 2125

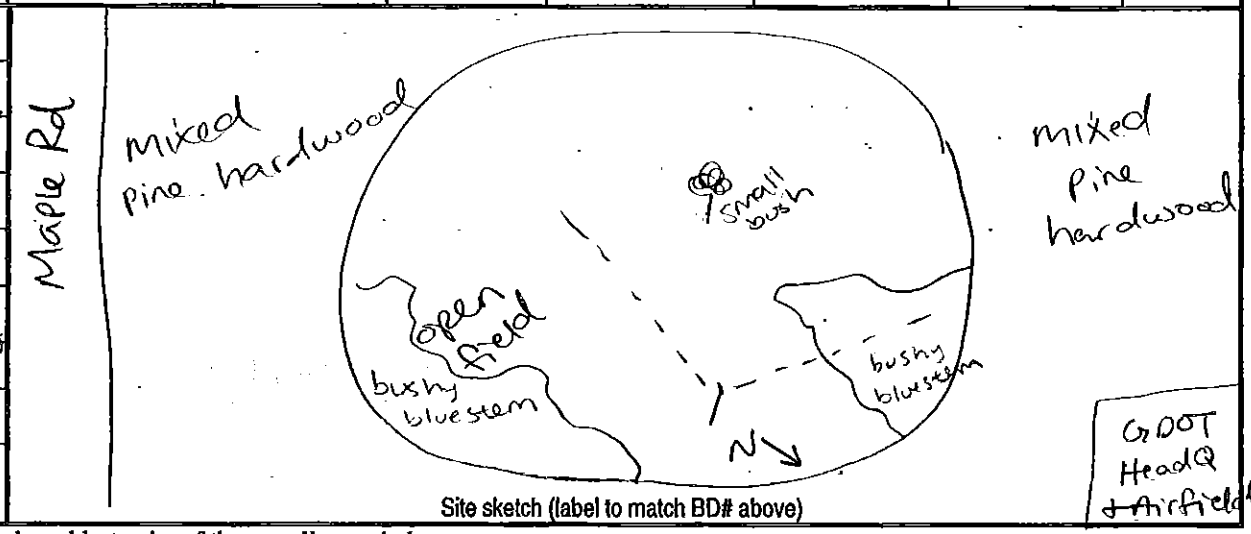
Land Use: Urban / Agriculture / (Forest) / Water / (Wetland) / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB03	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.391648	-76.02155	6'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB03	Yes KR	NW	300	10 ft	lo	7	16/8	NA	Yes

Habitat & Site Description:
Small round open, wetland, field surrounded by mature, mixed pine/hardwood forest. To South Maple Rd. Trees with roosting characteristics AB set on edge of wetland facing

Remarks: open field
AB placed at edge of wetland behind water treatment plant



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research	Proj #: 422162	County: Currituck	Site#: ABWR3a	Night#: 2	Site Name: Pond/Water Treatment
Start Date: 11/17/15	End Date: 11/18/15	Start Time: 1615	End Time: 0715		
Nearest town: Maple	Biologists/observers Present: Kelly Lutsch				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	61.5	~1	3	0/98%	2030	58.5	0	0	0/83%

Moon Effect: First Quarter — Start: 12:13 — Stop: 23:29

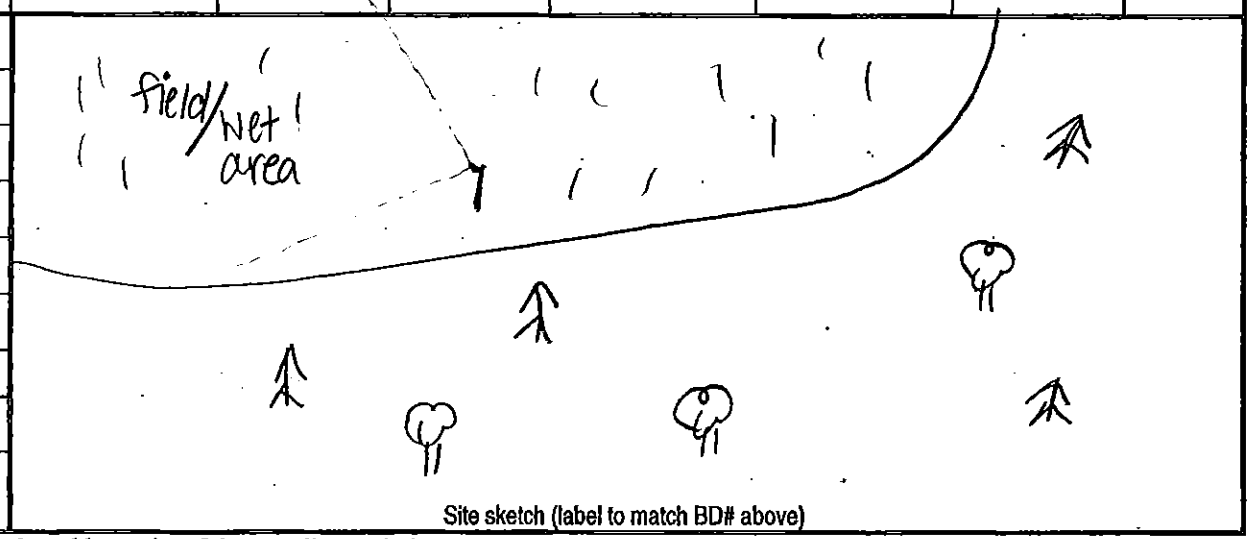
Land Use: Urban / Agriculture / (Forest) / Water / (Wetland) / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB03	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.39648	-76.02155	6'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB03	Yes	NW	300	10 ft	lo	7	16/8		taken 11/16

Habitat & Site Description:
AB is at the edge of a wet tall grass field opening into it. It is bordered by mixed forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged on gameland property, but no evidence of disturbance or management

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

NOTE: This night was re-sampled on 11/20 due to battery error.

Project Name: NLEB Research	Proj #: 2262	County: Currituck	Site#: ABNR3a	Night#: 3	Site Name: Pond/water treatment
Start Date: 11/18/15		End Date: 11/19/15	Start Time: 1615		End Time: 0715
Nearest town: Maple		Biologists/observers Present: Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	64.5	2	5	rain/89%	2200	62.5	0	0	0/84%

Moon Effect: waxing crescent +44% | Start: 1213 | Stop: 2328

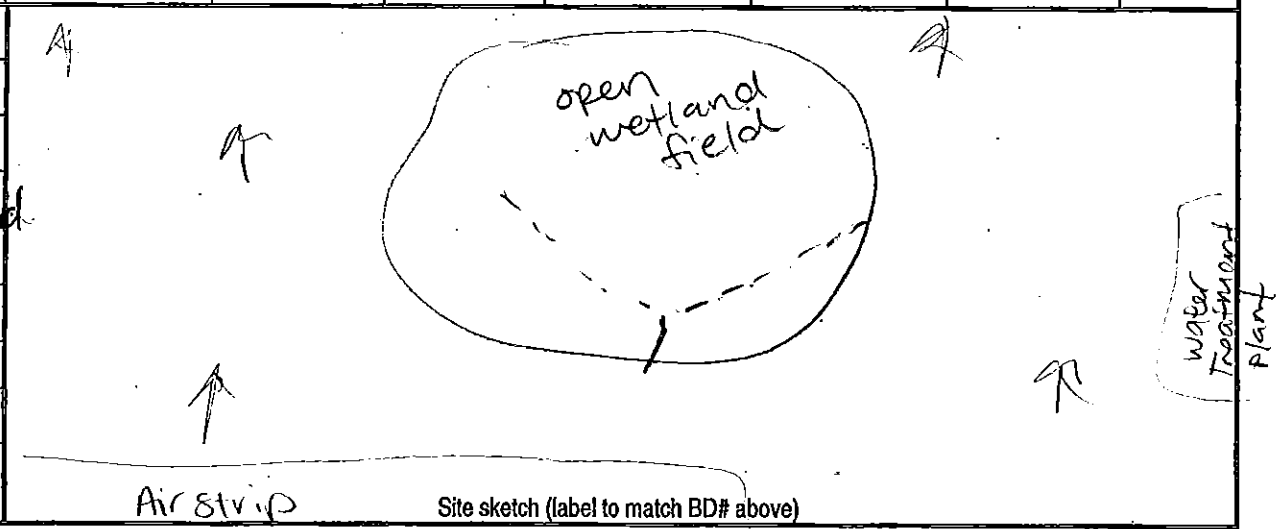
Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB03	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.39648	-76.02155	6 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB03	yes KL	NW	300	12 ft	lo	7	16/8	NM	trkpt 11-12

Habitat & Site Description:
AB set at the edge of a wet tall grass field opening. Bordered by mixed pine/hardwood forest

Remarks: resurvey due to battery error



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NOTE: This is now night 3

NCDOT Acoustic Survey Data Form

Project Name: NC NLEB Research	Proj #: 42262	County: Currituck	Site#: ABNR3a	Night#: 4 (rad 0)	Site Name: Pond / Water Treatment
Start Date: 11/20/15		End Date: 11/21/15		Start Time: 1620	End Time: 720
Nearest town: Maple		Biologists/observers Present: Jennifer Starversky, Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	700	54°	0	0	0 / 73%
	1:30	49°	0	0	0 / 75%

Moon Effect: 77% Waxing Gibbous — Start: 1411 — Stop: 140

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

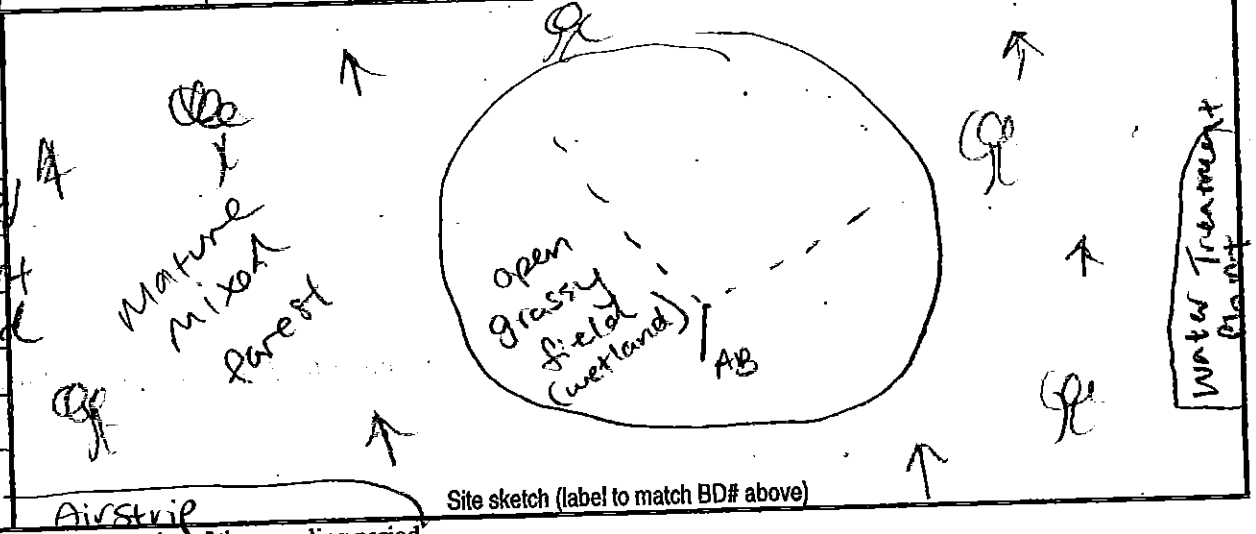
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB03	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.39648	-76.02155	6'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB03	yes	NW	308	10 ft	low	7	16/8	NA	taken 11-16

Habitat & Site Description:

Small round open wetland field surrounded by mature, mixed pine/hardwood forest. To South Maple/Pine trees w/ roosting characteristics present. AB set on edge of wetland facing field

Remarks: resurvey of 3rd night



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NCNHP Research	Proj #: 42862	County: Currituck	Site#: ABNR4a	Night#: 1	Site Name: Billboard/Airport
Start Date: 11/16/15		End Date: 11/17/15	Start Time: 1620		End Time: 0715
Nearest town: Maple		Biologists/observers Present: Kim Romano Jennifer Starvetsky Kelly Lusch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	47	0	0	0/81%	0300	43	0	0	0/94%

Moon Effect: waxing crescent 24% Start: 1044 Stop: 2125

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

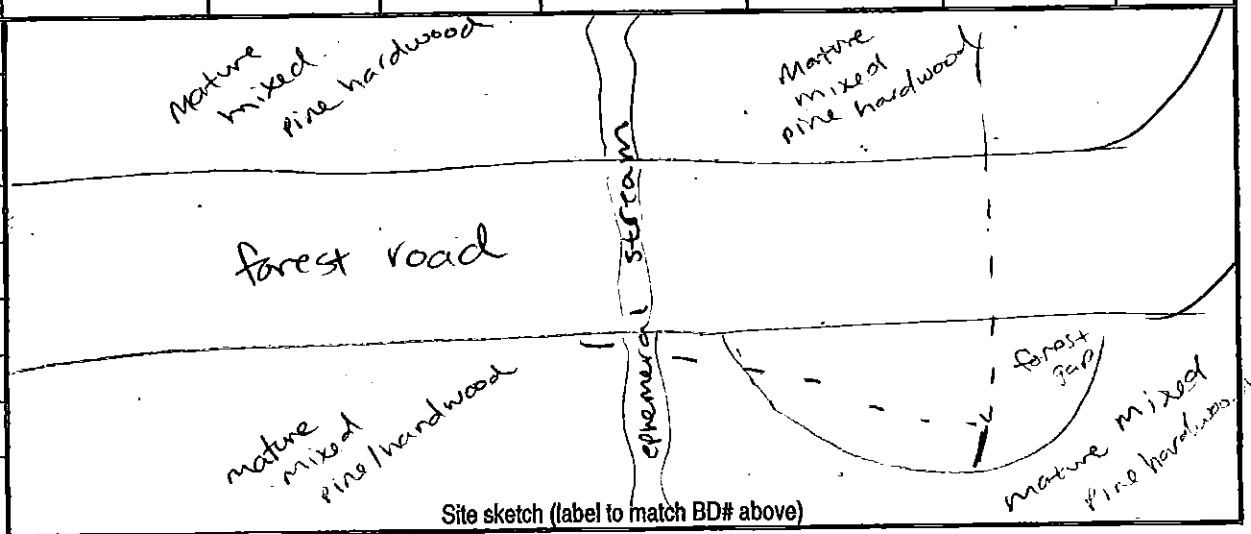
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB04	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.38181	-76.00674	55'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB04	Yes KR	N	20	10 ft	med	7	16/8	N/A	Yes

Habitat & Site Description:

AB set off of forest road in small forest gap facing toward small ephemeral stream

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC NLEB Research	Proj #: 4224a	County: Currituck	Site#: ABNR4a	Night#: 2	Site Name: Billboard/Airport
Start Date: 11/17/15		End Date: 11/18/15	Start Time: 1615		End Time: 0715
Nearest town: Maple		Biologists/observers Present: Kim Romano			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	61.5	1	3	0/98%	2030	58.5	0	0	0/85%

Moon Effect: First quarter — Start: 12:13 — Stop: 23:29

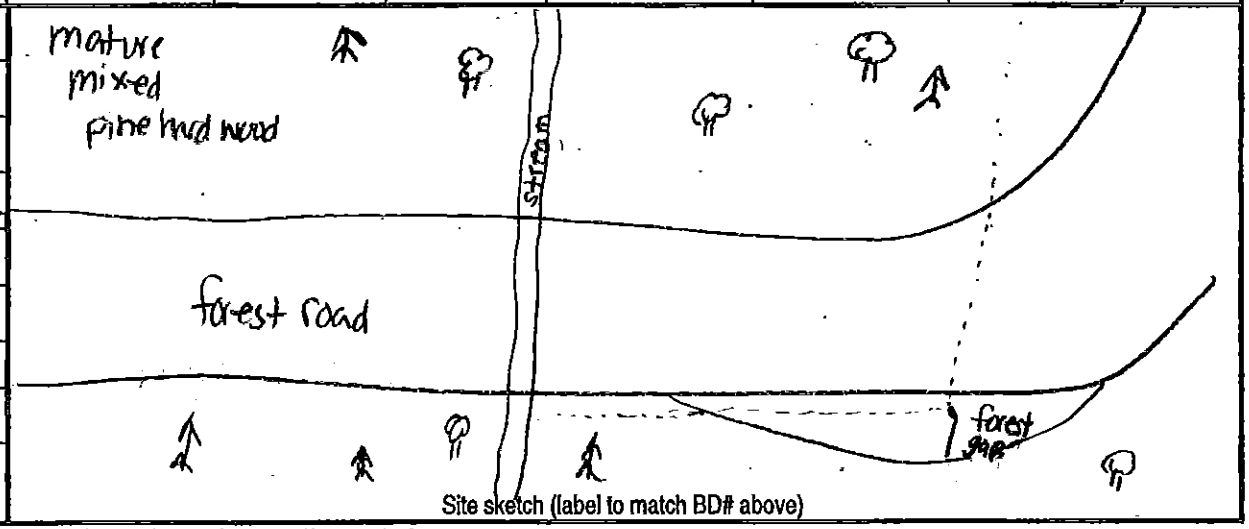
Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB04	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.38181	-76.00674	55 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB04	Yes	N	20	10 ft	med	7	16/8	NA	✓

Habitat & Site Description:
AB set off forest road in small forest gap facing toward small ephemeral stream

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

10

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research	Proj #: 42262	County: Gimlet	Site#: ABNP4a	Night#: 4	Site Name: Billboard/Aimee
Start Date: 12/12/15	End Date: 12/13/15	Start Time: 16:15	End Time: 7:15		
Nearest town: Maple	Biologists/observers Present: Dottie Brown, Drew Powell				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	07:15	48	1	0	0/100%
	18:15	47.5	1	0	0/100%

Moon Effect: New 27o

Start: 0753
Stop: 1819

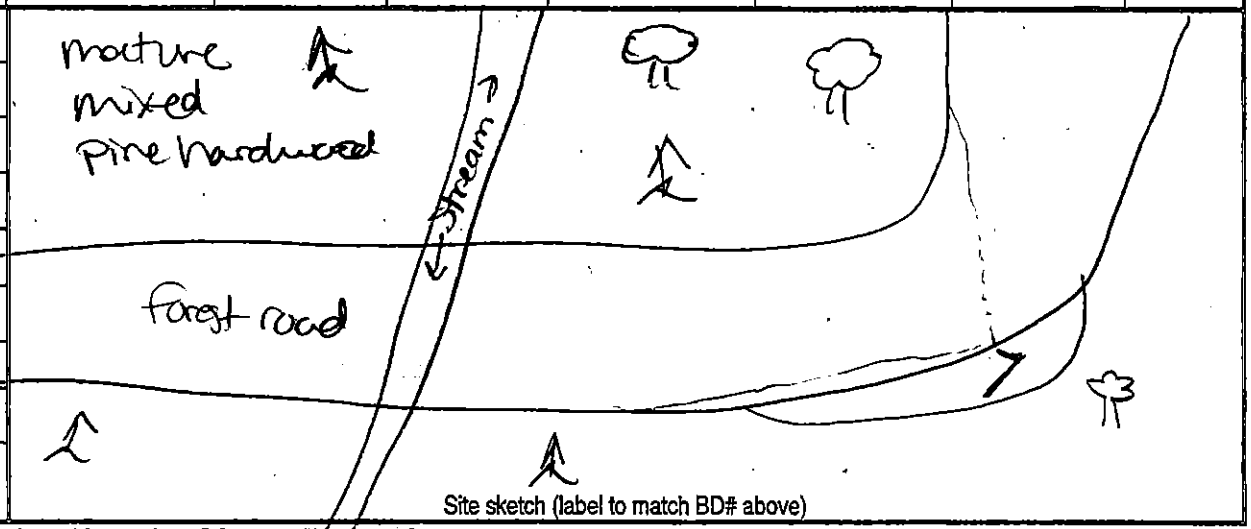
Land Use: Urban / Agriculture / (Forest) Water / (Wetland) / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABOO4	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.38181	-76.01674	55 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABOO4	yes DB	E	87°	10 ft	low	7	10/8	NA	yes

Habitat & Site Description:
AB set off forest road in small forest gap facing towards small ephemeral stream.

Remarks: located in where 4a has been



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NOTE: This site was discarded due to consistent damage to acoustic equipment. Site 4a was re-sampled instead.

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research	Proj #: 42762	County: Currituck	Site#: ABNR46	Night#:	Site Name: Billboard/Airport
Start Date: 11/18/15		End Date: 11/19/15	Start Time: 1615		End Time: 715
Nearest town: Maple		Biologists/observers Present: Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0700	64.5	2	5	rain/89%	2200	62.5	0	0	0/84%

Moon Effect: waxing crescent 44 — Start: 1213 — Stop: 2328

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB04	Anabat SD2	4062g	green	tackle box weatherproofed + trash bag	36.38262	-76.00568	4

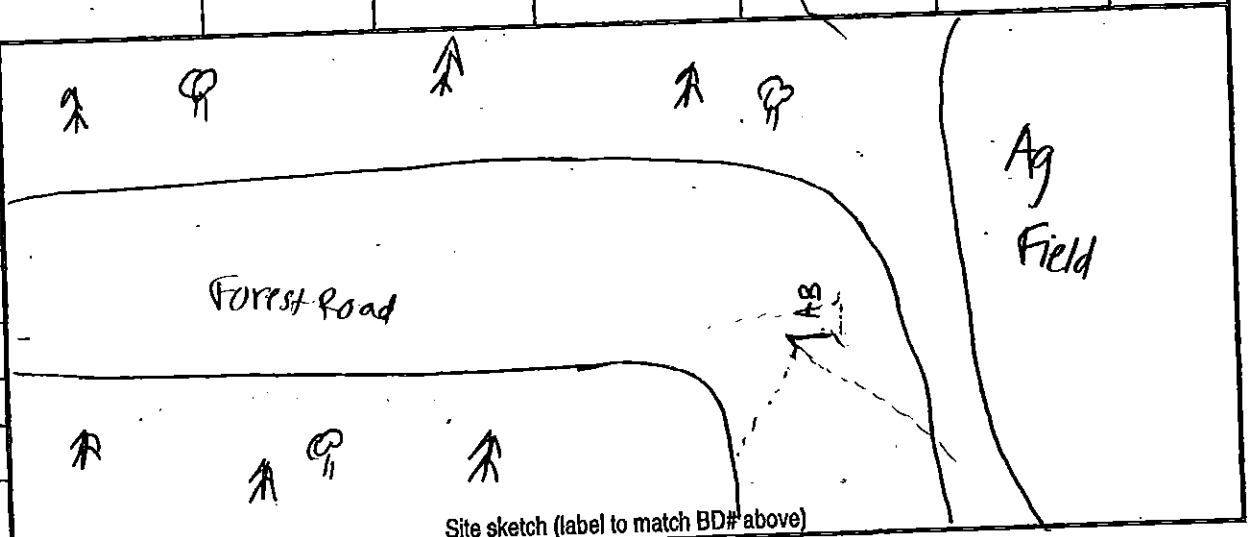
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB04	Yes	E	145°	10 ft	med	7	1&8		✓

Habitat & Site Description:

- Mature mixed pine/hardwood
- AB is next to a field
- opens into a corridor

Remarks:

moved AB down road past ditch in curve near field



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

Session 2, only night of sampling

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Project	Proj #: 42262	County: Currituck	Site#: ABNR4	Night#: 1	Site Name: Billboard / Airport
Start Date: 2/29/16		End Date: 2/29/16		Start Time: 17:45	End Time: 23:05
Nearest town: Maple	Biologists/observers Present: Kelly Watson				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	1745	60	1	3	0 %	2305	51	1	3	0 %

Moon Effect: Last quarter — Start: 23:28 — Stop: 10:23

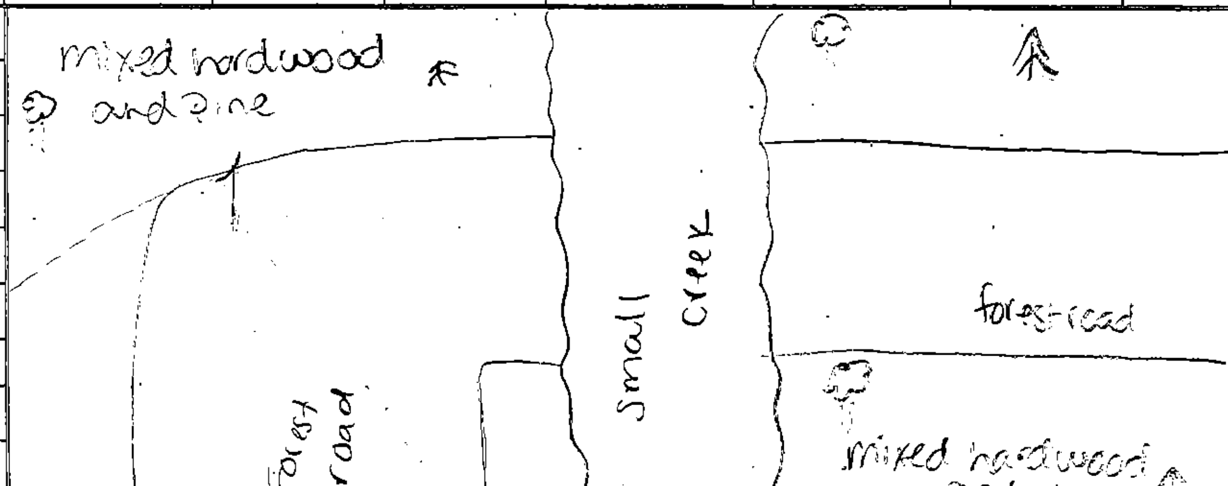
Land Use: Urban / Agriculture / Forest (circled) / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB001	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.38181	-76.006940	55

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB001	KL	N	20°	12 ft	med	7	16/3	NA	✓

Habitat & Site Description:
Mixed mature forest, some shrub vegetation
forest road near a canal
that backs up to swamp
water tupelo/peat moss/cypress

Remarks: good way to detect
calls as [illegible] used
corridor and used water source



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.
**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

Appendix G

Old Waynesborough Park, Session 1

11/17 1 ok; 11/18 - 2x rained out; 11/19 - 2x rained out; 11/20 - 2 okay; 11/21 - 3x rained out; 11/22 - 3 ok

NCDOT Acoustic Survey Data Form

Project Name: NCEB Research Proj. E. NC	Proj #:	County: Wayne	Site#: WB1	Night#: 1	Site Name: #1 Old Waynesborough Park
Start Date: 11/17/2015		End Date: 11/18/2015	Start Time: 4:30p.m.		End Time: 7:20a.m.
Nearest town: Goldsboro		Biologists/observers Present: J. Storm, C. Olsen, R Storm, C. Boyd			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	5:32am	43.0°F	4.6 mph	clear	0 / 100%	7:12a.m	45.0°F	3.5mph	mostly cloudy	0 / 100%

Moon Effect: waxing crescent (33%) Start: 11:36pm Stop: 10:34pm

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren / Other (describe): (Park)

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
199	SD2	V4D67g	high	Angled PVC	35.37216700	-78.01605300	~180 ft.

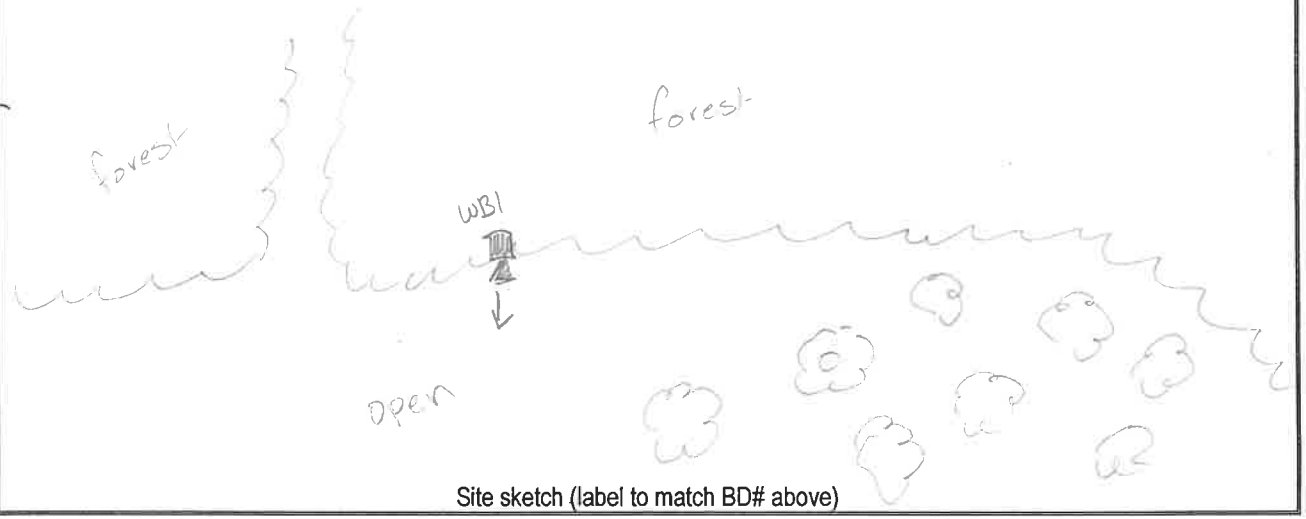
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
199	Yes	W	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Open parkland w/ scattered trees (pines) adj. to forest.

Remarks:

Dap. honeysuckle dom. forest



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB1

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Scattered mature trees in young forest with dense understory and gap honeysuckle in understory and groundcover.
Open mowed field w/ scattered small trees in park.

11/17 ok, 11/18-rained out, 11/19-rained out, 11/20-okay, 11/21-rained out, 11/22-ok

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Wayne	Site#: WB1	Night#: 2-rain out	Site Name: #1 old Waynesborough Park
Start Date: 11/18/2015		End Date: 11/19/2015	Start Time: 14:30p.m.		End Time: 7:20a.m.
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen, R Storm, C. Boyd				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	12:58pm	63.5°F	5.8mph	Scattered	0/99%
	6:58am	67.5°F	5.8mph	Overcast	0.01in/99%

Moon Effect: waxing crescent (44%) Start: 12:19 Stop: 11:37

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren / Other (describe): (Park)

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
199	SD2	V4D62g	high	Angled PVC	35.37216700	-78.01605300	~180 ft.

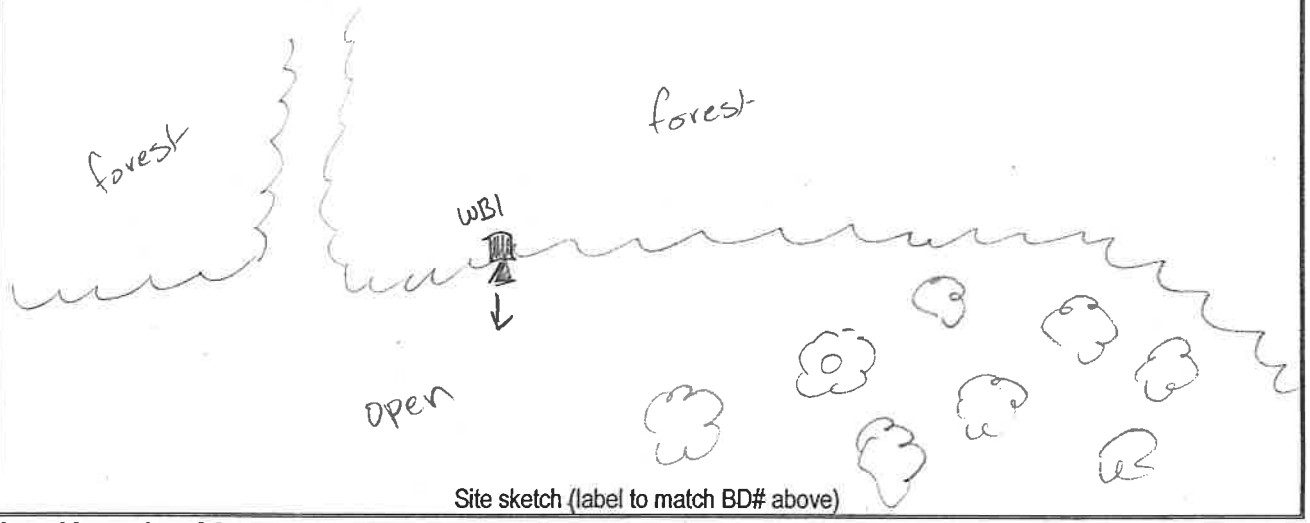
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
199	Yes	W	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Open parkland w/ scattered trees (pines) adj. to forest.

Remarks:

Dop. honeysuckle dom. forest



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB1

Habitat Info – please circle the option that best fits

Pine / Hardwood / (Mixed) / Unforested

(Upland) / Bottomland

(Managed) (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover / (Immature Forest) / Mature Forest

(Open) / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / (Mixed)

Habitat Notes:

Scattered mature trees in young forest with dense understory and gap honeysuckle in understory and groundcover.
Open mowed field w/ scattered small trees in park.

11/17 ok, 11/18-rained out, 11/19-rained out, 11/20-okay, 11/21-rained out, 11/22-ok

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E. NC	Proj #:	County: Wayne	Site#: WB1	Night#: 2-rain out	Site Name: #1 old Waynesborough Park
Start Date: 11/19/2015		End Date: 11/20/2015	Start Time: 14:30p.m.		End Time: 7:20a.m.
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen & Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:05a.m	51.0F	6.9mph	clear	0/81%	7:05am	51°F	6.9mph	clear	0/81%

Moon Effect: First Quarter (55%) Start: 1:00pm Stop: no set

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren / Other (describe): (Park)

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
199	SD2	V4D62g	high	Angled PVC	35.37216700	-78.01605300	~180 ft.

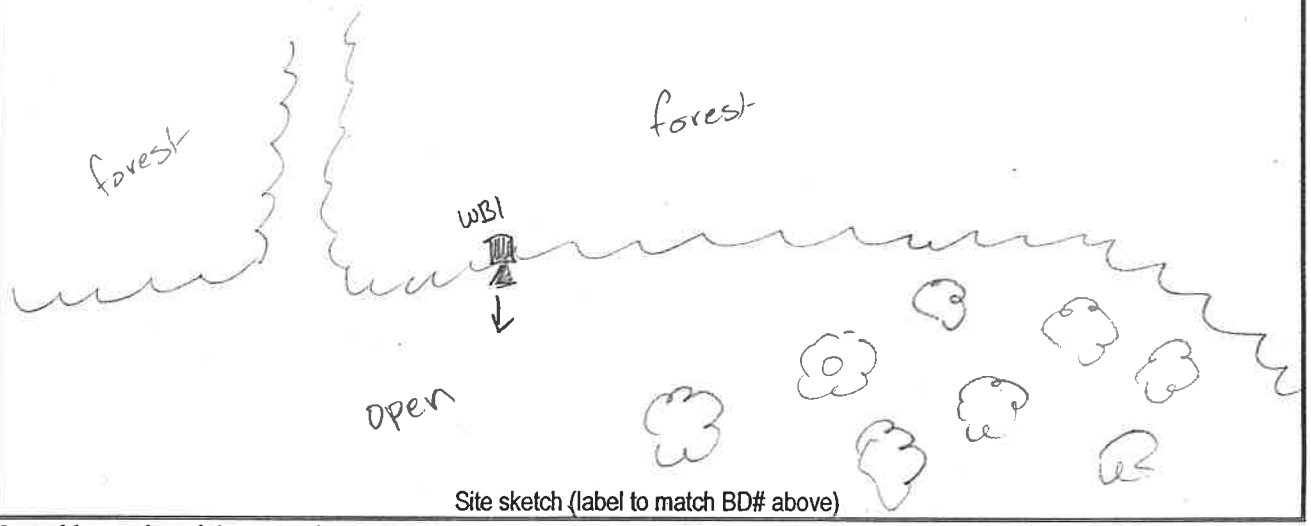
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
199	Yes	W	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Open parkland w/ scattered trees (pines) adj. to forest.

Remarks:

Jap. honeysuckle dom. forest



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB1

Habitat Info – please circle the option that best fits

Pine / Hardwood / (Mixed) / Unforested

(Upland) / Bottomland

(Managed) (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/(Immature Forest) / Mature Forest

(Open) / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / (Mixed)

Habitat Notes:

Scattered mature trees in young forest with dense understory and gap honeysuckle in understory and groundcover.
Open mowed field w/ scattered small trees in park.

11/17 ok, 11/18 - rained out, 11/19 - rained out, 11/20 - okay, 11/21 - rained out, 11/22 - ok

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E. NC	Proj #:	County: Wayne	Site#: WB1	Night#: 2	Site Name: #1 Old Waynesborough Park
Start Date: 11/20/2015		End Date: 11/21/2015	Start Time: 14:30p.m.		End Time: 7:20a.m.
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen & Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	6:44am	37.0°F	3mph	clear	0/91%
	7:14 a.m	37.0°F	4.6mph	Clear	0/80%

Moon Effect: waxing gibbous (66%) Start: 11:39 Stop: 12:42

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren / Other (describe): (Park)

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
199	SD2	V4D62g	high	Angled PVC	35.37216700	-78.01605300	~180 ft.

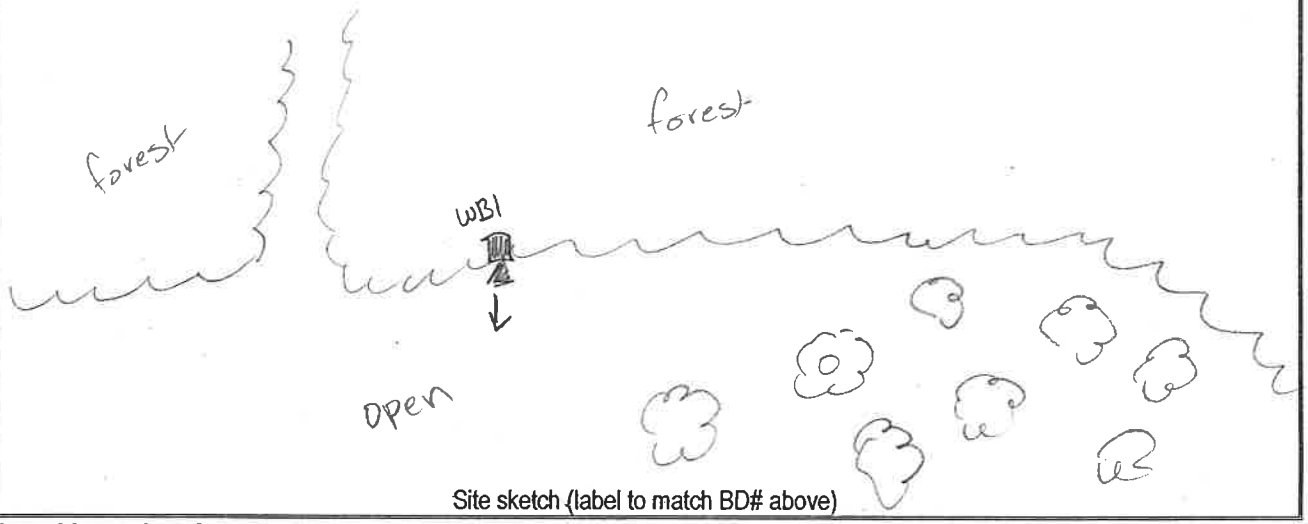
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
199	Yes	W	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Open parkland w/ scattered trees (pines) adj. to forest.

Remarks:

Dap. honeysuckle dom. forest



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB1

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Scattered mature trees in young forest with dense understory and gap honeysuckle in understory and groundcover.
Open mowed field w/ scattered small trees in park.

11/17 ok, 11/18-rained out, 11/19-rained out, 11/20-okay, 11/21-rained out, 11/22-ok

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Wayne	Site#: WB1	Night#: 3-rain out	Site Name: #1 old Waynesborough Park
Start Date: 11/21/2015		End Date: 11/22/2015	Start Time: 14:30p.m.		End Time: 7:20a.m.
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen R. Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	8:17p.m.	49.5°F	3.5mph	PartlyCloud	D / NA
	7:17am	53.9°F	5.8mph	overcast	0 / 100%

Moon Effect: waxing gibbous (77%) Start: 2:18 Stop: 1:47

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren / Other (describe): (Park)

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
199	SD2	V4D62g	high	Angled PVC	35.37216700	-78.01605300	~180 ft.

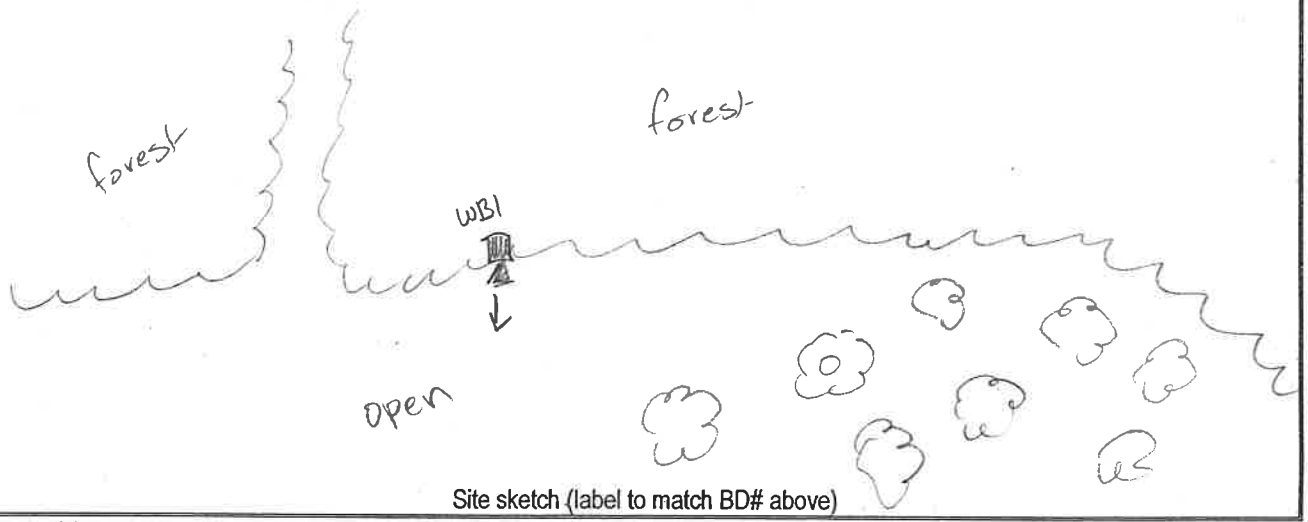
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
199	Yes	W	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Open parkland w/ scattered trees (pines) adj. to forest.

Remarks:

Jap. honeysuckle dom. forest



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB1

- Habitat Info – please circle the option that best fits

Pine / Hardwood / (Mixed) / Unforested

(Upland) / Bottomland

(Managed) (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/(Immature Forest) / Mature Forest

(Open) / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / (Mixed)

Habitat Notes:

Scattered mature trees in young forest with dense understory and gap. honeysuckle in understory and groundcover.
Open mowed field w/ scattered small trees in park.

11/17 ok, 11/18 - rained out, 11/19 - rained out, 11/20 - okay, 11/21 - rained out, 11/22 - ok

NCDOT Acoustic Survey Data Form

Project Name: NCEB Research Proj. E, NC	Proj #:	County: Wayne	Site#: WB1	Night#: 3	Site Name: #1 old Waynesborough Park
Start Date: 11/22/2015		End Date: 11/23/2015	Start Time: 14:30p.m.		End Time: 7:20a.m.
Nearest town: Goldsboro		Biologists/observers Present: C. Olsen, R Storey			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:11 am	32.5°F	4.6 mph	clear	0 / 88%	7:11 a.m.	32.5°F	4.6 mph	clear	0 / 82%

Moon Effect: waxing gibbous (86%) Start: 2:58 am Stop: 7:54 am

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren / Other (describe): (Park)

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
199	SD2	V4D62g	high	Angled PVC	35.37216700	-78.01605300	~180 ft.

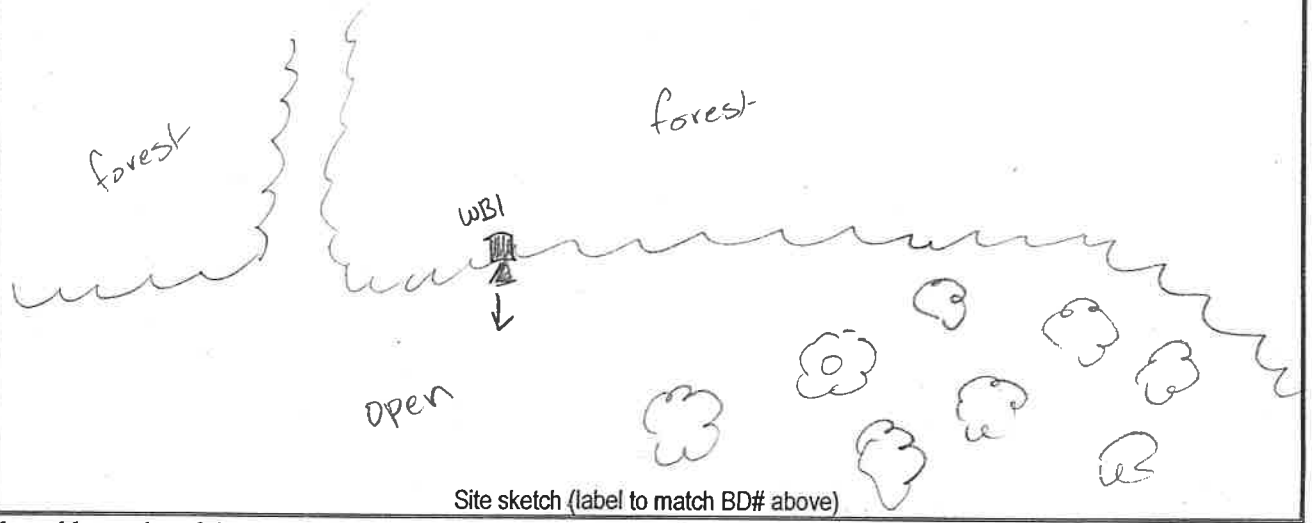
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
199	Yes	W	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Open parkland w/ scattered trees (pines) adj. to forest.

Remarks:

Dap. honeysuckle dom. forest



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB1

Habitat Info – please circle the option that best fits

Pine / Hardwood / (Mixed) / Unforested

(Upland) / Bottomland

(Managed) (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover / (Immature Forest) / Mature Forest

(Open) / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / (Mixed)

Habitat Notes:

Scattered mature trees in young forest with dense understory and gap. honeysuckle in understory and groundcover.
Open mowed field w/ scattered small trees in park.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NLEB Research Proj, E, NC		Wayne	WB2	1	#2 OLD Waynesborough Park

Start Date:	End Date:	Start Time:	End Time:
11/17/2015	11/18/2015	4:30 p.m.	7:20 a.m.

Nearest town:	Biologists/observers Present:
Goldsboro	J. Storm, C. Olsen, R. Storm, C. Boyd

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	5:12 a.m.	43.0°F	4 mph	clear	0 / 100%	7:12 a.m.	45.0°F	3.5 mph	mostly cloudy	0 / 100%

Moon Effect:	Start: 11:36 a.m.	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):
waxing crescent (33%)	Stop: 10:31 p.m.	

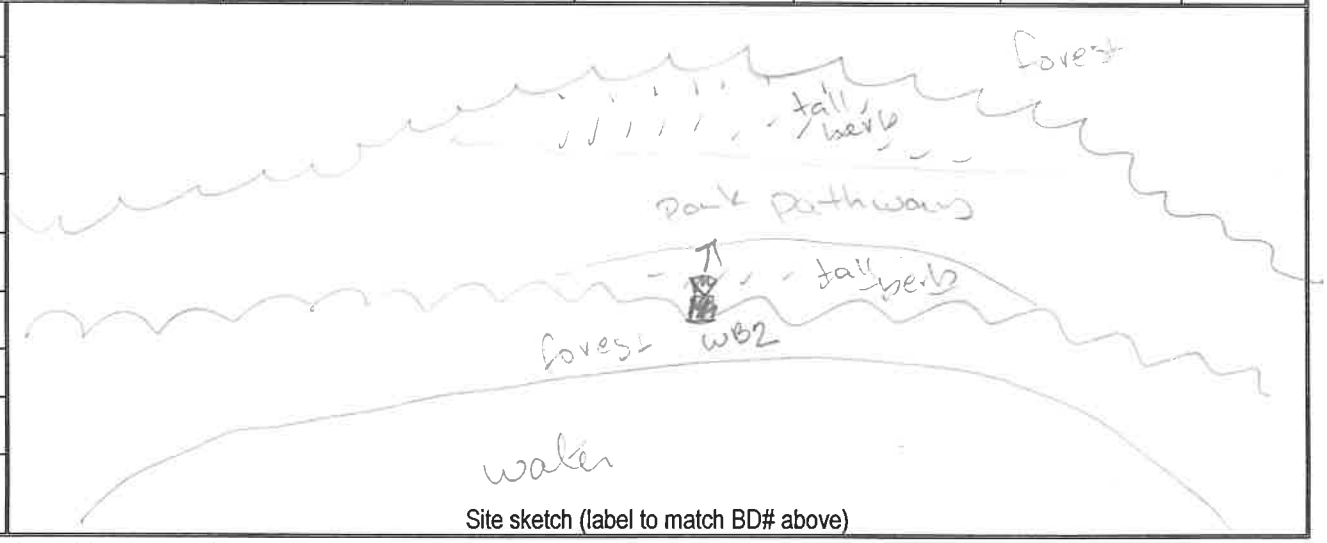
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
186	SD2	V4062g	high	Angled DVL	35.37350900	-78.01864700	~108 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
186	Yes	NE	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Edge of standing water and forest near clearing created by park path.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB2

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Mixed forest near open water with park trails creating openings

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NLEB Research Prg, E, NC		Wayne	WB2	2-rain out	#2 old Waynesborough Park

Start Date:	End Date:	Start Time:	End Time:
11/18/2015	11/19/2015	4:30 p.m.	7:20 a.m.

Nearest town:	Biologists/observers Present:
Goldsboro	[redacted], C. Olsen, R. Storm, C. Boyd

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	12:58 p.m.	63.5°F	5.8 mph	scattered	0/99%
	Time	Temp	Wind	Clouds	Precip/humidity
	6:58 a.m.	67.5°F	5.8 mph	overcast	0.01 in/99%

Moon Effect:	Start:	Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):
waxing crescent (44%)	17:19	
	Stop: 11:37	

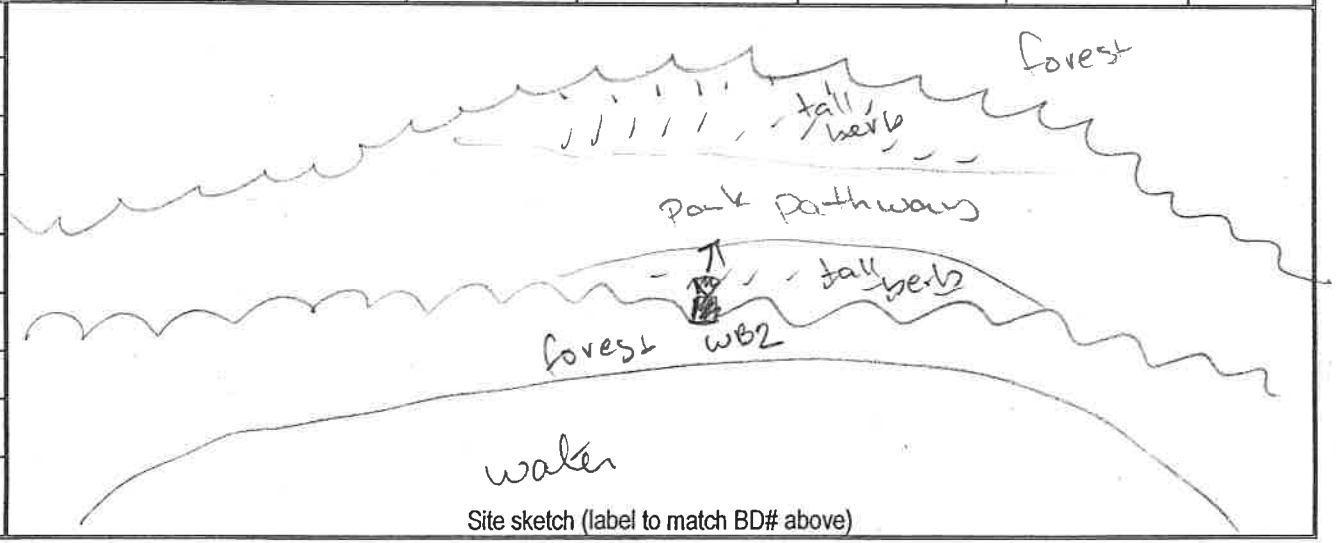
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
186	SD2	V4062g	high	Angled PVC	35.37350900	-78.01864700	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
186	Yes	NE	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Edge of standing water and forest near clearing created by dock path.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB2

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Mixed forest near open water with park trails creating openings

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj, E, NC	Proj #:	County: Wayne	Site#: WB2	Night#: 2 - rain out	Site Name: #2 OTD Waynesborough Park
Start Date: 11/19/2015		End Date: 11/20/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Goldsboro		Biologists/observers Present: [redacted], C. Olsen, R. Storm, [redacted]			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:05am	51°F	6.9mph	clear	0/81%	7:05a.m.	51°F	6.9mph	clear	0/81%

Moon Effect: First Quarter (55%) Start: 1:00pm Stop: no set

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

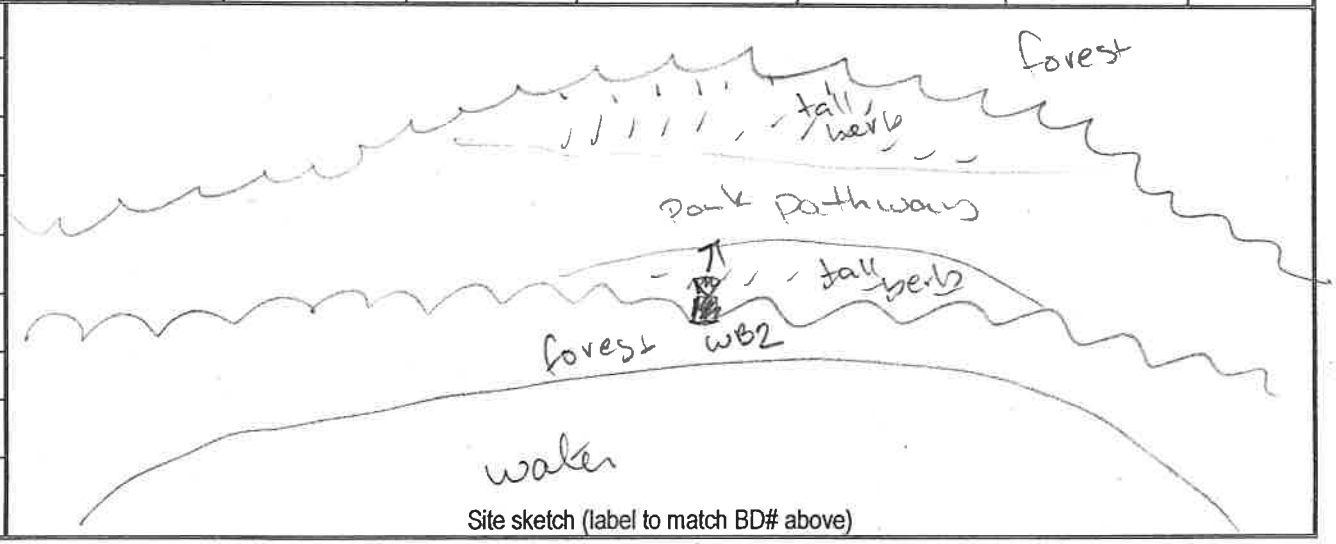
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
186	SD2	V406zg	high	Angled PVC	35.37350900	-78.01816700	~108 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
186	Yes	NE	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Edge of standing water and forest near clearing created by park path.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB2

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Mixed forest near open water with park trails creating openings

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Prg, E, NC	**Proj #:**	**County:** Wayne	**Site#:** WB2	**Night#:** 2	**Site Name:** #2 old Waynesboro Park
Start Date: 11/20/2015		**End Date:** 11/21/2015	**Start Time:** 4:30 p.m.		**End Time:** 7:20 a.m.
Nearest town: Goldsboro	**Biologists/observers Present:** [redacted], C. Olsen, R. Storm [redacted]				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	6:44 a.m.	37.0°F	2.3 mph	clear	0 / 91%
	7:14 a.m.	37.0°F	4.6 mph	clear	0 / 80%

Moon Effect: waxing gibbous (66%) Start: 11:39 Stop: 12:42

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

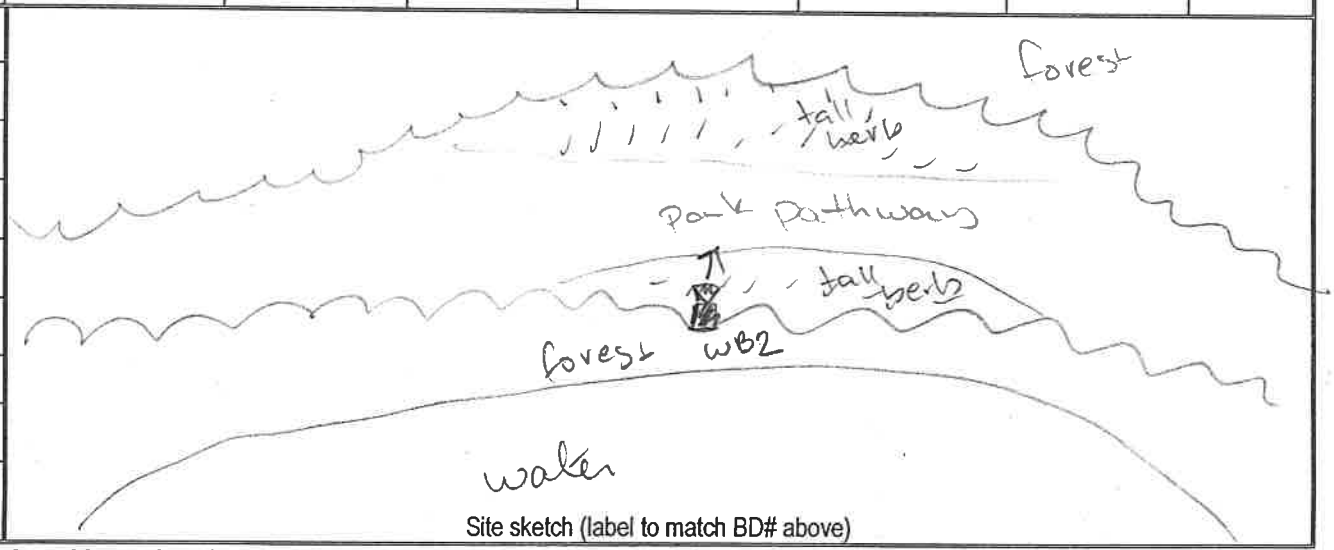
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
186	SD2	V4062g	high	Angled PVC	35.37250900	-78.01864700	~108 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
186	Yes	NE	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Edge of standing water and forest near clearing created by park path.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB2

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Mixed forest near open water with park trails creating openings

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Prg, E, NC	**Proj #:**	**County:** Wayne	**Site#:** WB2	**Night#:** 3-rain out	**Site Name:** #2 DIO Waynesborough Park
Start Date: 11/21/2015		**End Date:** 11/22/2015	**Start Time:** 4:30 p.m.		**End Time:** 7:20 a.m.
Nearest town: Goldsboro	**Biologists/observers Present:** [redacted], C. Olsen, R. Storm, [redacted]				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	8:17 p.m.	49.5°F	3.5 mph	Partly Cloudy	0 / NA
	7:17 a.m.	33.5°F	5.8 mph	Overcast	0 / 100%

Moon Effect: waxing gibbous (77%) Start: 2:18 Stop: 1:07

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe): + Pond

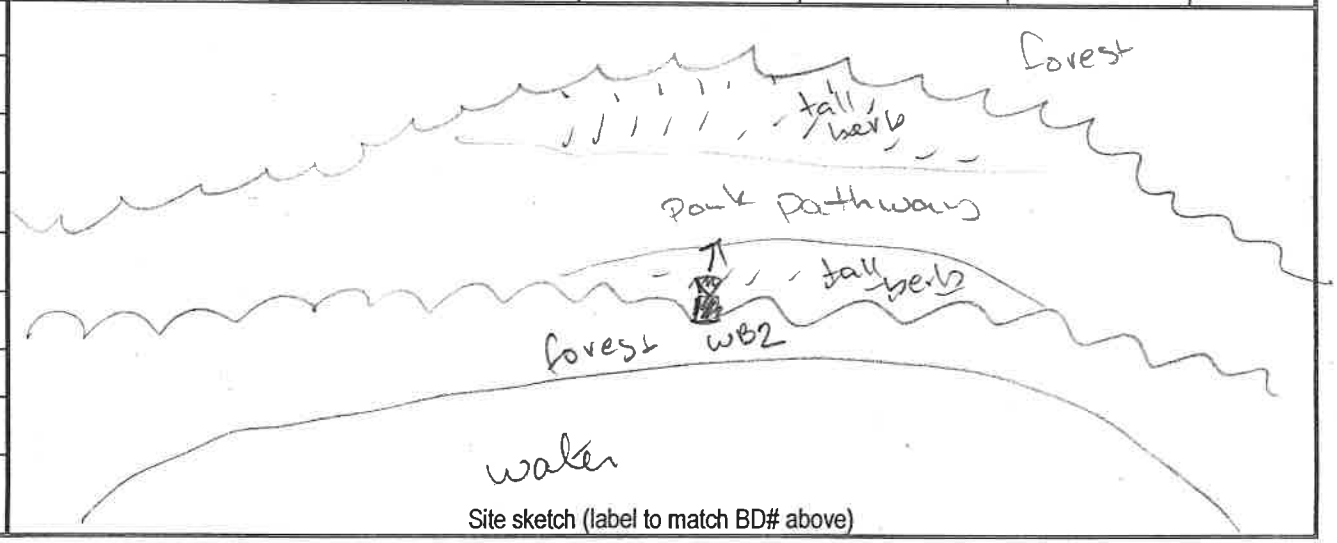
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
186	SD2	V406zg	high	Angled PVC	35.37350900	-78.01864700	~108 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
186	Yes	NE	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Edge of standing water and forest near clearing created by park path.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB2

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Mixed forest near open water with park trails creating openings

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NLEB Research Prg, E, NC		Wayne	WB2	3	#2 @ Waynesboro Park
Start Date:		**End Date:**	**Start Time:**		**End Time:**
11/22/2015		11/23/2015	4:30 p.m.		7:20 a.m.
Nearest town:		**Biologists/observers Present:**			
Goldsboro		[redacted], C. Olsen, R. Storm, [redacted]			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:11 a.m	32.5°F	4.6mph	clear	0 | 82%	7:11 a.m.	32.5°F	4.6mph	clear	0 | 82%

Moon Effect: waxing gibbous (86%) Start: 7:58pm Stop: 7:54am

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe): Park

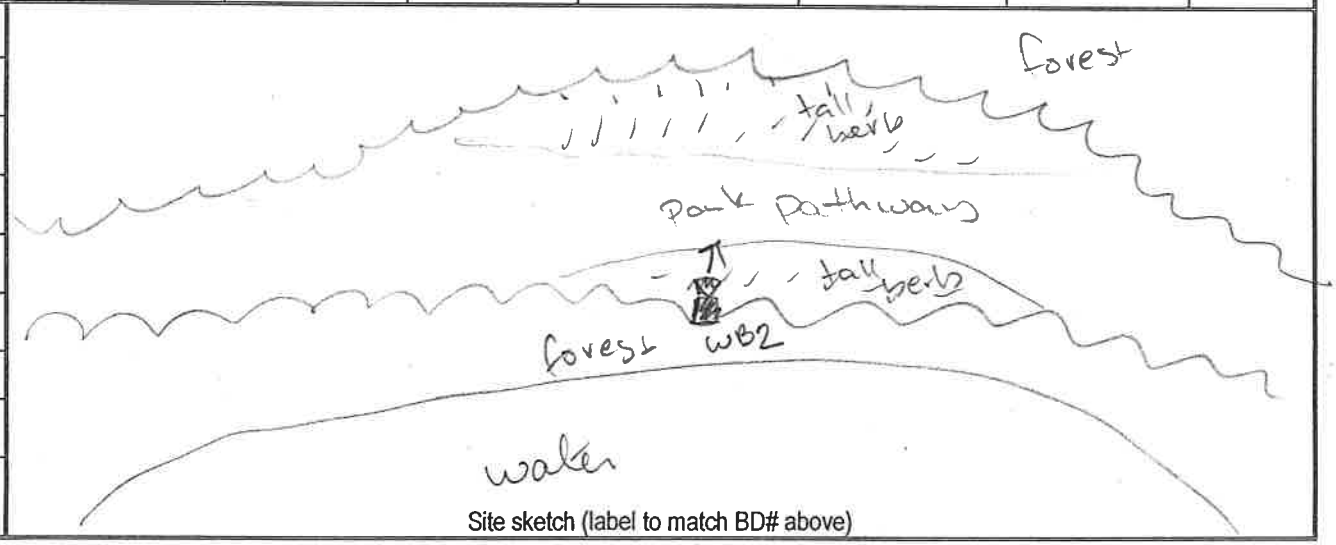
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
186	SD2	V4062g	high	Angled PVC	35.37350900	-78.01816470	~108 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
186	Yes	NE	45°	10'	lo	6	8		Yes

Habitat & Site Description:

Edge of standing water and forest near clearing created by park path.

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB2

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Mixed forest near open water with park trails creating openings

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NLEB Research Proj. E, NC		Wayne	WB3	1	#3 Old Waynesborough Park

Start Date:	End Date:	Start Time:	End Time:
11/17/2015	11/18/2015	4:30 p.m.	7:20 a.m.

Nearest town:	Biologists/observers Present:
Goldsboro	C. Olsen, R. Storm

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	5:32 a.m.	43.0°F	4.1 emph	clear	0/100%	7:12 a.m.	45.0°F	3.5 mph	mostly cloudy	0/100%

Moon Effect:	Start:	Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):
Waxing Crescent (33%)	Stop: 10:34 pm	

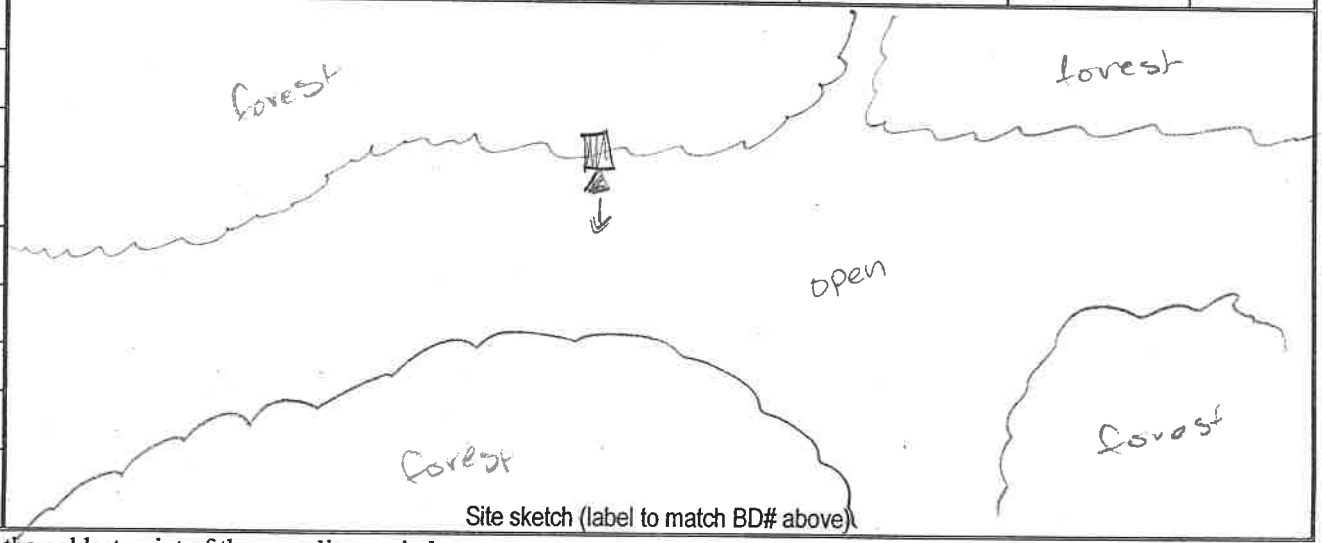
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN833216	SD2	V4.06.2g	high	PVC angled	35.37551300	-78.01981400	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN833216	Yes	SE	45°	10'	lo	6	8		Yes

Habitat & Site Description:

forest edge at mowed trails in park

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB3

Habitat Info – please circle the option that best fits

Pine / Hardwood / (Mixed) / Unforested

(Upland) / Bottomland

(Managed) (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover / (Immature Forest) / Mature Forest

(Open) / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / (Mixed)

Habitat Notes:

Openings created by mowed trails. Forest scrubby - mixed mature trees and shrubs.

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NLEB Research Proj. E, NC		Wayne	WB3	2-rain out	#3 Old Waynesborough Park
Start Date: 11/18/2015		**End Date:** 11/19/2015	**Start Time:** 4:30 p.m.		**End Time:** 7:20 a.m.
Nearest town: Goldsboro		**Biologists/observers Present:** C. Olsen, R. Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	12:58 pm.	63.5°F	5.8 mph	Scattered	0/99%	6:58 am	67.5°F	5.8 mph	overcast	0.01 in/99%

Moon Effect: waxing crescent (44%) Start: 12:19 Stop: 1:37

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):

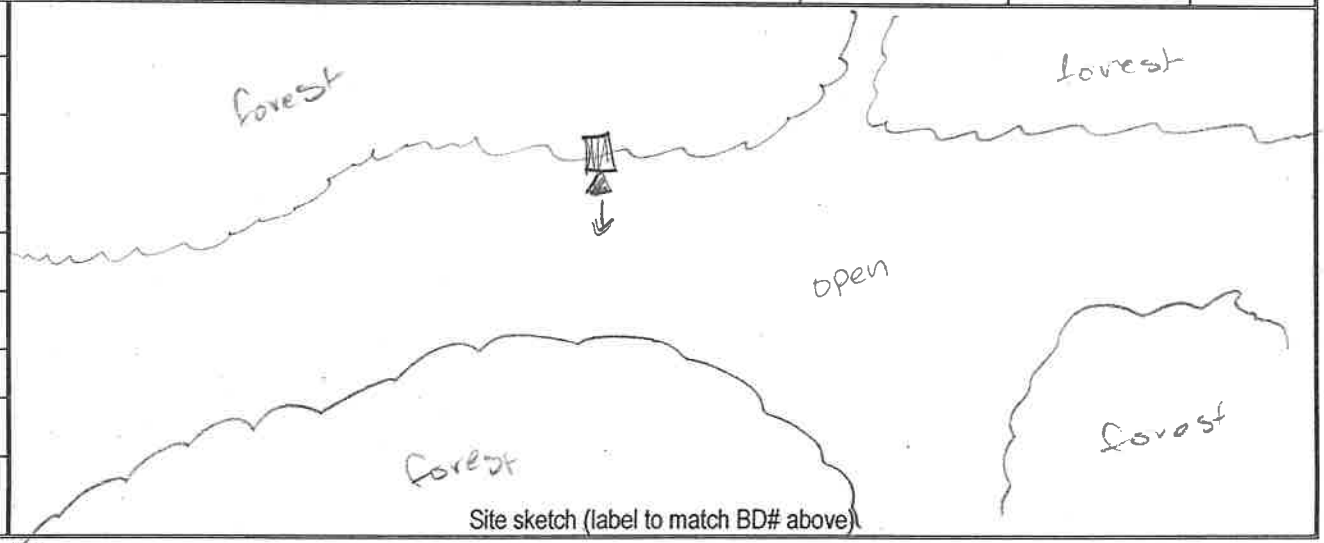
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83326	SD2	V4062g	high	PVC angled	35.37551300	-78.01981400	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83326	Yes	SE	45°	10'	lo	6	8		Yes

Habitat & Site Description:

forest edge at mowed trails in park

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB3

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover / Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Openings created by mowed trails. Forest scrubby - mixed mature trees and shrubs.

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E NC	Proj #:	County: Wayne	Site#: WB3	Night#: 2-rain out	Site Name: #3 Old Waynesborough Park
Start Date: 11/19/2015		End Date: 11/20/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Goldsboro		Biologists/observers Present: C. Olsen, R. Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:05a.m.	51°F	6.9mph	clear	0/81%	7:05a.m	51°F	6.9 mph	clear	0/81%

Moon Effect: First Quarter (55%) Start: 1:00 Stop: no set

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):

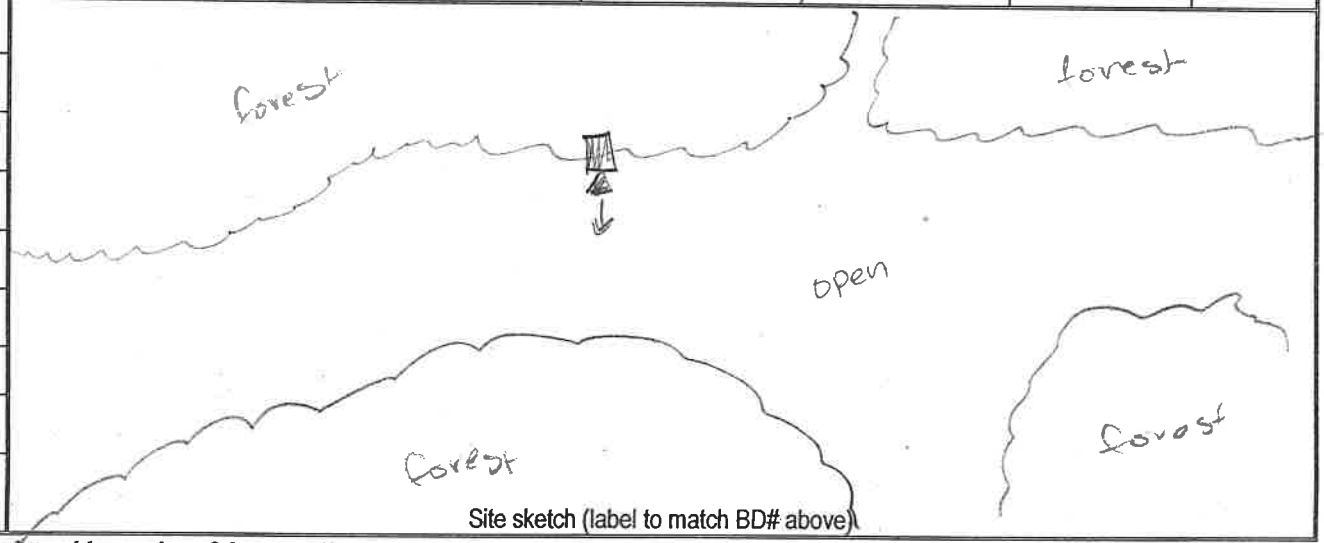
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83326	SD2	V4062g	high	PVC angled	35.37551300	-78.01981400	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83326	Yes	SE	45°	10'	lo	6	8		Yes

Habitat & Site Description:

forest edge at mowed trails in park

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB3

- Habitat Info – please circle the option that best fits

Pine / Hardwood / (Mixed) / Unforested

(Upland) / Bottomland

(Managed) (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover / (Immature Forest) / Mature Forest

(Open) / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / (Mixed)

Habitat Notes:

Openings created by mowed trails. Forest scrubby - mixed mature trees and shrubs.

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Wayne	Site#: WB3	Night#: 2	Site Name: #3 Old Waynesborough Park
Start Date: 11/20/2015		End Date: 11/21/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen, R. Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	6:44 a.m.	37.0°F	2.3 mph	clear	0
	7:14 a.m.	37.0°F	4.6 mph	clear	0

Moon Effect: waxing gibbous (66%) Start: 1:39 Stop: 12:47

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):

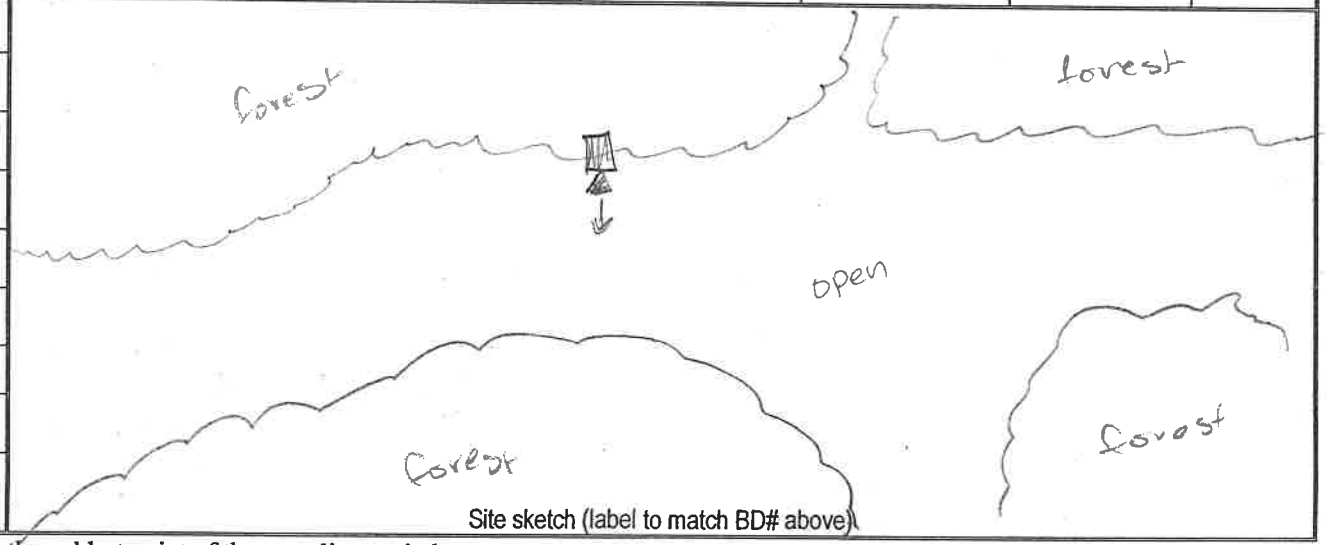
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83326	SD2	V4062g	high	PVC angled	35.37551300	-78.01981400	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83326	Yes	SE	45°	10'	lo	6	8		Yes

Habitat & Site Description:

forest edge at mowed trails in park

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB3

Habitat Info – please circle the option that best fits

Pine / Hardwood / (Mixed) / Unforested

(Upland) / Bottomland

(Managed) (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/(Immature Forest) / Mature Forest

(Open) / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / (Mixed)

Habitat Notes:

Openings created by mowed trails. Forest scrubby - mixed mature trees and shrubs.

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E. NC	Proj #:	County: Wayne	Site#: WB3	Night#: 3-rain out	Site Name: #3 OLD Waynesborough Park
Start Date: 11/21/2015		End Date: 11/22/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Goldsboro		Biologists/observers Present: C. Olsen, K. Storm			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	8:17 pm	49.5°F	3.5 mph	Partly Cloudy	0 / N/A
	7:17 am	53.5°F	5.8 mph	Overcast	0 / 100%

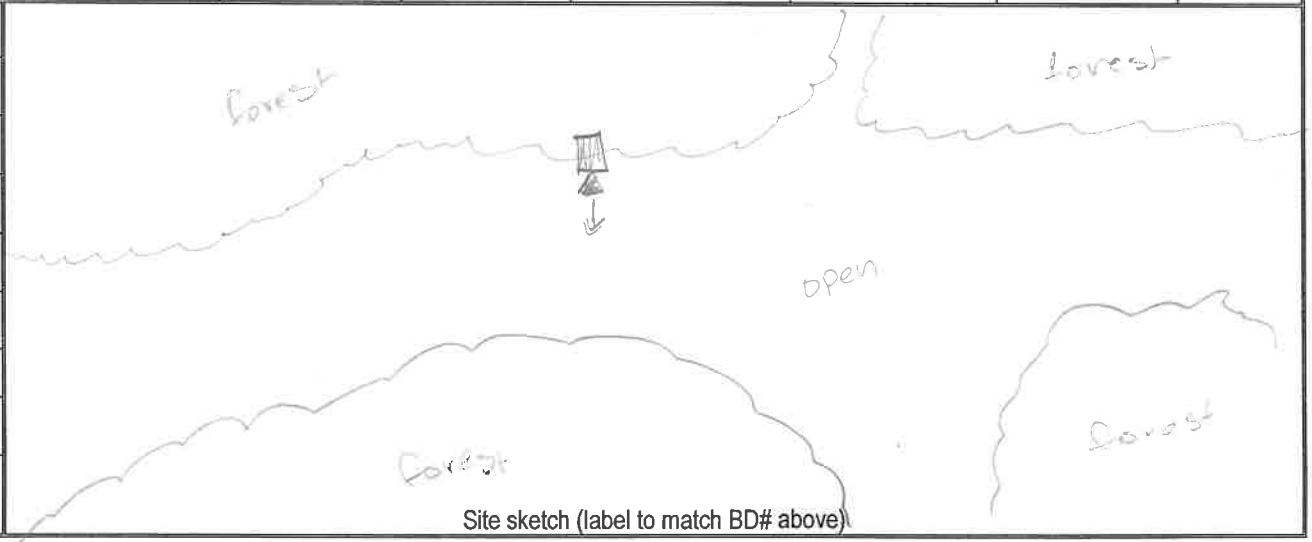
Moon Effect: waxing gibbous/77%
Start: 2:18
Stop: 1:47
Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83326	SD2	V4062g	high	DVC angled	35.37551300	-78.01981400	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83326	Yes	SE	45°	10'	10	6	8		Yes

Habitat & Site Description:
forest edge at mowed trails in park

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.
**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB3

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Openings created by mowed trails. Forest scrubby - mixed mature trees and shrubs.

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NL	Proj #:	County: Wayne	Site#: WB3	Night#: 3	Site Name: #3 Old Waynesborough Park
Start Date: 11/22/2015		End Date: 11/23/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen, R. Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:11 a.m.	32.5°F	0 mph	clear	0	7:11 a.m.	32.5°F	0 mph	clear	0

Moon Effect: waxing gibbous (86%) Start: 2:22 p.m. Stop: 2:51 a.m.

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe):

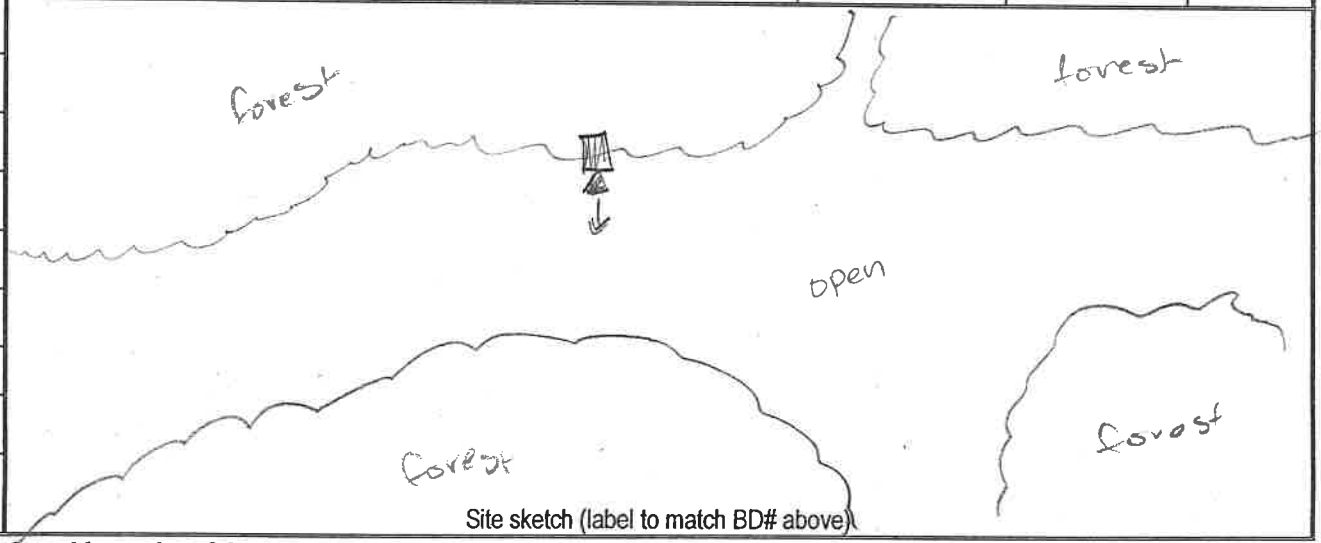
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
SN83326	SD2	V406Zg	high	PVC angled	35.37551300	-78.01981400	~108 ft.

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
SN83326	Yes	SE	45°	10'	lo	6	8		Yes

Habitat & Site Description:

forest edge at mowed trails in park

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB3

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Openings created by mowed trails. Forest scrubby - mixed mature trees and shrubs.

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Wayne	Site#: WB4	Night#: 1	Site Name: #4 old Waynesborough Park
Start Date: 11/17/2015		End Date: 11/18/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen, R. Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	5:32a.m	43°F	4.6mph	Clear	0/100%	7:12a.m.	45°F	3.5mph	mostly cloudy	0/100%

Moon Effect: Waning Crescent (33%) Start: 11:31pm Stop: 10:31p.m

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe): Dark

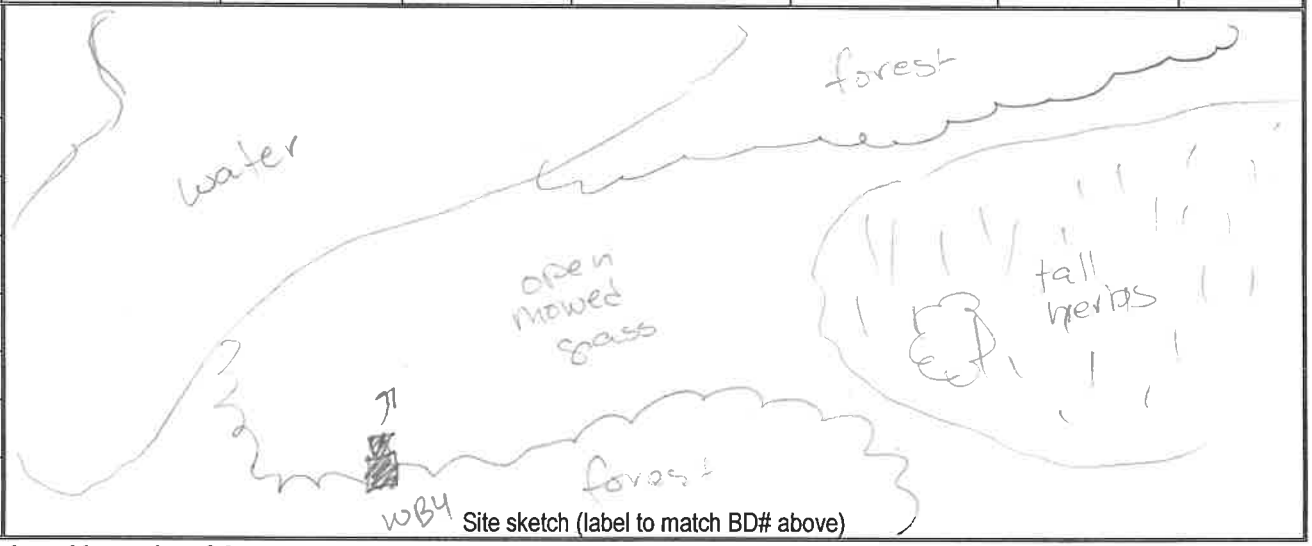
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
365214	SD2	V4062g	high	Angled PVC	35.37901200	-78.0228290	~180 ft
JOB 2985							
case 214							

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
365214	Yes	E	45°	10'	lo	6	8		Yes
Job 2985									
case 214									

Habitat & Site Description:

Opening in park adj. to forest and open water

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB4

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Wayne	Site#: WB4	Night#: 2 - rain out	Site Name: #4 old Waynesboro Park
Start Date: 11/18/2015		End Date: 11/19/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen, R. Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	12:58 pm	63.5°F	S 2. mph	Scattered	0 / 49%
	6:58 am	67.5°F	S 8 mph	Overcast	0.01 in / 99%

Moon Effect: waxing crescent (44%) Start: 12:19 Stop: 11:37

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren / Other (describe): Dark

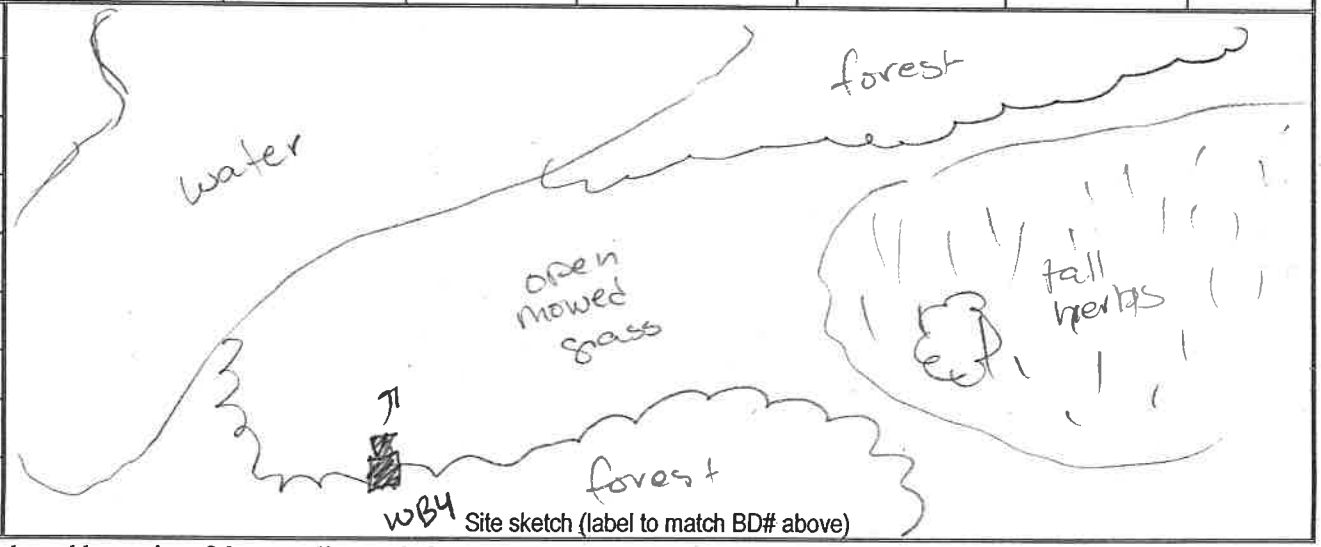
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
365214	SD2	V4062g	high	Angled PVC	35.37901200	-78.0228290	~180 ft.
JOB 2985							
case 214							

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
365214	Yes	E	450	10'	lo	6	8		Yes
Job 2985									
case 214									

Habitat & Site Description:

opening in park adj. to forest and open water

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB4

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Wayne	Site#: WB4	Night#: 2-rainout	Site Name: #4 old Waynesboro Park
Start Date: 11/19/2015		End Date: 11/20/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen, R. Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity
	7:05 a.m.	51°F	6.9 mph	clear	0	81%
	Time	Temp	Wind	Clouds	Precip/humidity
	7:05 am	51°F	6.9 mph	clear	0	81%

Moon Effect: First Quarter (55%) Start: 1:00 pm Stop: no set

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe): Park

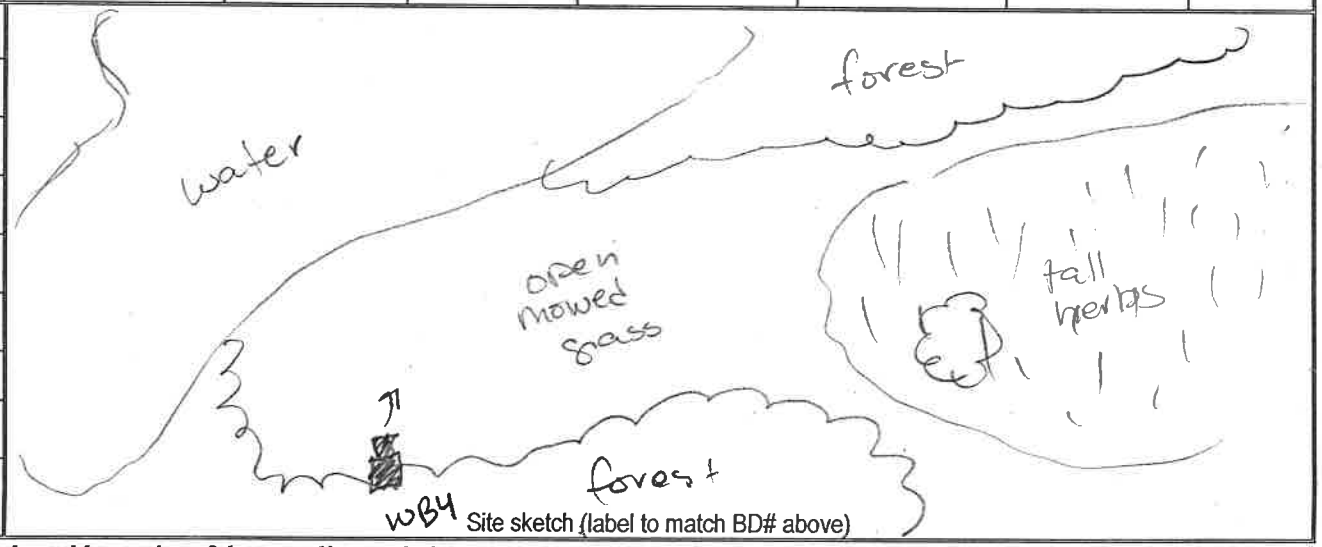
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
365214	SD2	V4062g	high	Angled PVC	35.37901200	-78.0228290	~180 ft.
JOB 2985							
case 214							

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
365214	Yes	E	450	10'	lo	6	8		Yes
Job 2985									
case 214									

Habitat & Site Description:

opening in park adj. to forest and open water

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB4

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Wayne	Site#: WB4	Night#: 2	Site Name: #4 old Waynesboro Park
Start Date: 11/20/2015		End Date: 11/21/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen, R. Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	6:44pm	37.0°F	2.3mph	clear	0/90%	7:14am	37.0°F	4.6mph	Clear	0/80%

Moon Effect: waxing gibbous (66%) Start: 1:39 Stop: 17:42

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe): Park

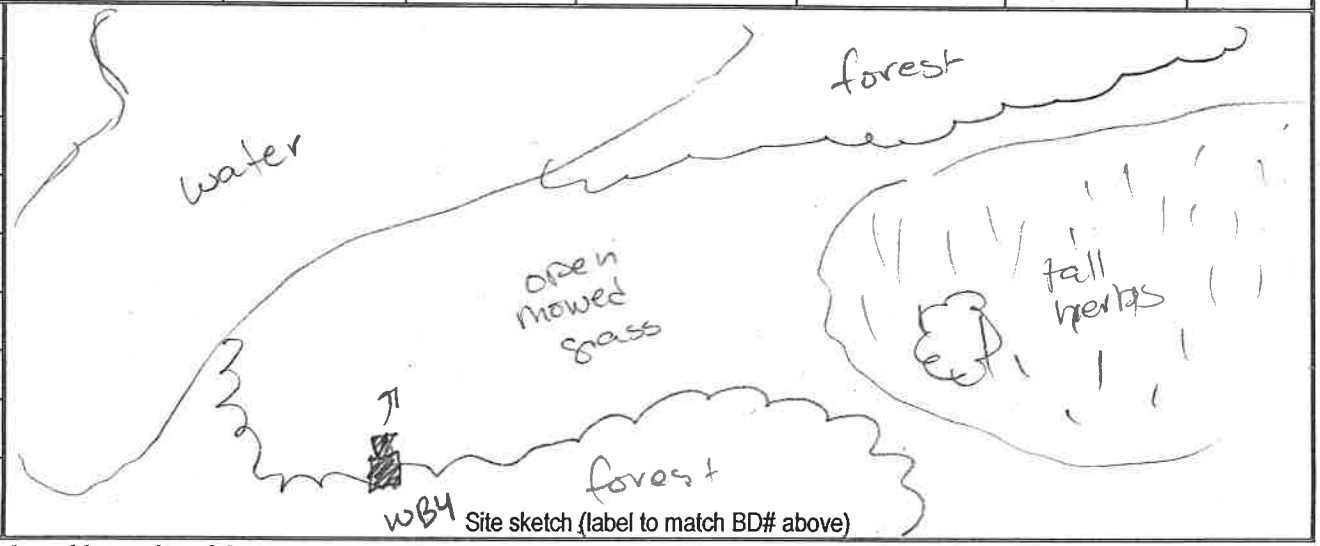
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
365214	SD2	V4062g	high	Angled PVC	35.37901200	-78.0228290	~180 ft
JOB 2985							
case 214							

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
365214	Yes	E	450	10'	lo	6	8		Yes
Job 2985									
case 214									

Habitat & Site Description:

opening in park adj. to forest and open water

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB4

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Wayne	Site#: WB4	Night#: 3-rain out	Site Name: #4 old Waynesboro Park
Start Date: 11/21/2015	End Date: 11/22/2015	Start Time: 4:30 p.m.	End Time: 7:20 a.m.		
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen, R. Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	8:17 pm	49.5F	3.5mph	Partly cloud	0/NA	7:17 am	53.9F	5.8 mph	Overcast	0/100%

Moon Effect: Waxing gibbous (77%) Start: 2:18 Stop: 1:47

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren/ Other (describe): Park

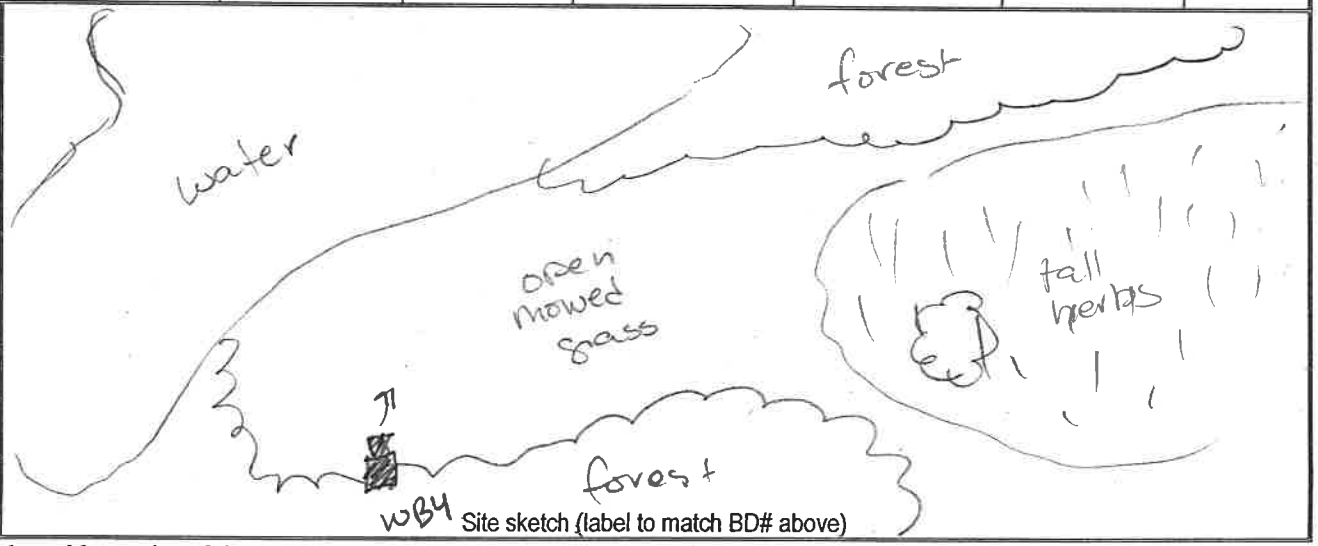
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
365214	SD2	V4062g	high	Angled PVC	35.37901200	-78.0228290	~180 ft
JOB 2985							
case 214							

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
365214	Yes	E	450	10'	lo	6	8		Yes
Job 2985									
case 214									

Habitat & Site Description:

opening in park adj. to forest and open water

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB4

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

NCDOT Acoustic Survey Data Form

Project Name: NLEB Research Proj. E, NC	Proj #:	County: Wayne	Site#: WB4	Night#: 3	Site Name: #4 old Waynesboro Park
Start Date: 11/22/2015		End Date: 11/23/2015	Start Time: 4:30 p.m.		End Time: 7:20 a.m.
Nearest town: Goldsboro	Biologists/observers Present: C. Olsen, R. Storm				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:11 a.m.	32.5°F	4.6 mph	clear	0	7:11 a.m.	32.5°F	4.6 mph	clear	0

Moon Effect: waxing gibbous — Start: 7:58pm — Stop: 7:54am

Land Use: Urban / Agriculture / (Forest) / Water / Wetland / Barren / Other (describe): Park

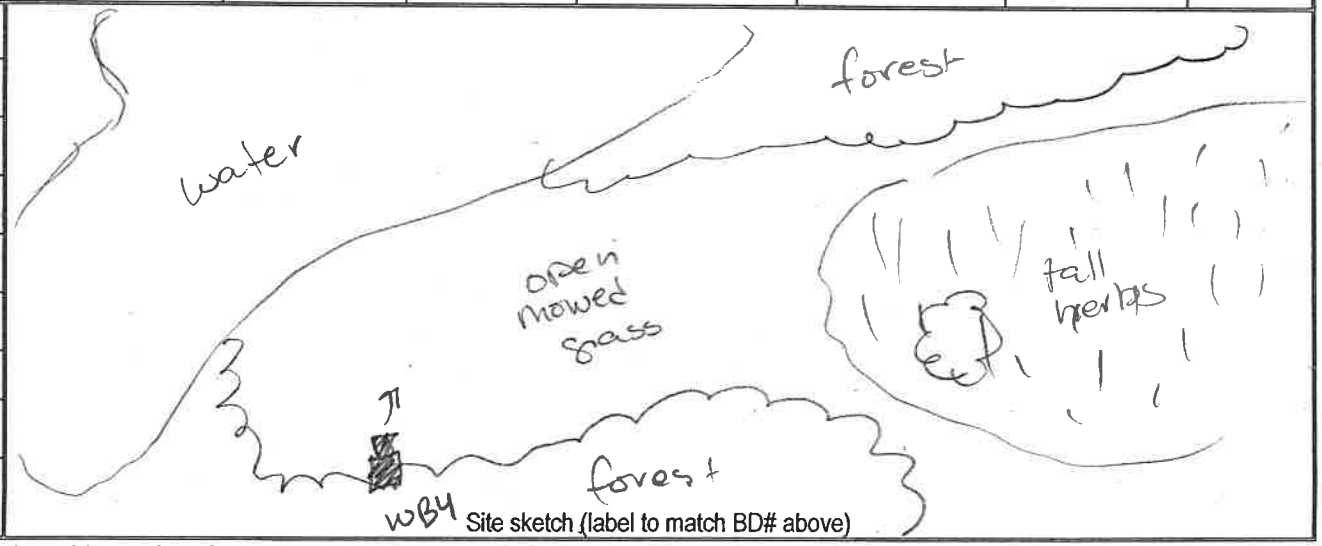
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
365214	SD2	V4062g	high	Angled PVC	35.37901200	-78.0228290	~180 ft.
JOB 2985							
case 214							

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
365214	Yes	E	450	10'	lo	6	8		Yes
Job 2985									
case 214									

Habitat & Site Description:

opening in park adj. to forest and open water

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

WB4

Habitat Info – please circle the option that best fits

Pine / Hardwood / Mixed / Unforested

Upland / Bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / Unmanaged

Cutover/Immature Forest / Mature Forest

Open / Cluttered (1-4 per Ford et al 2006)

Natural / Rural / Mixed

Habitat Notes:

Appendix G

Palmetto Peartree Preserve, Session 1

NCDOT Acoustic Survey Data Form

Project Name: NC NLEB research	Proj #: 42262	County: Tyrrell	Site#: ppp1a	Night#: 1	Site Name: Pat Licker
Start Date: 11-10-15		End Date: 11-11-15	Start Time: 16:30		End Time: 7:00
Nearest town: Columbia		Biologists/observers Present: Dottie Brown + Jennifer Stavretsky			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	55	1	0	0/83%	[illegible]	55	2	[illegible]	0/84%

Moon Effect: new moon 17% Start: 0526 Stop: 1642 **Land Use:** Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB01	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.98809	-76.14512	7'

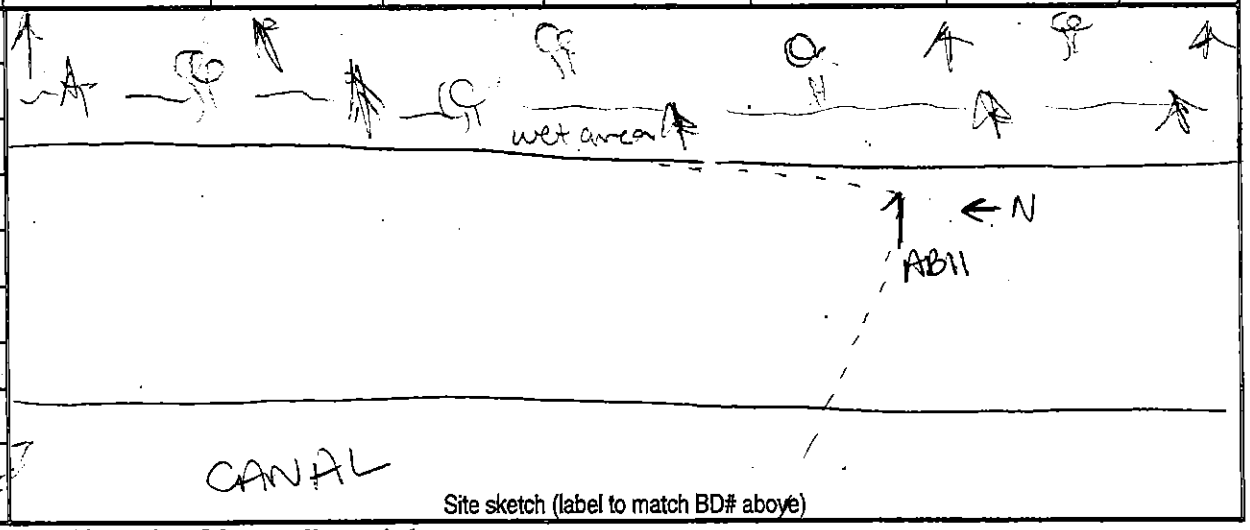
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB11	Yes JS	N	10	10 ft	lo W	7	16/8	NA	yes

Habitat & Site Description:

forested road with canal running parallel. Trees & Snags w/ roosting characteristics.

Remarks:

AB set on Forest Road off Pat Licker a few hundred feet behind CAT at open water canal area



Site sketch (label to match BD# above)

*Weather: record conditions at end of/sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Forest Rd off Pat Licker

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

to west mature forest with multiple snags
to east <20 yrs
dominate pine

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC WEB research	Proj #: 42262	County: Tyrrell	Site#: APP 1a	Night#: 2	Site Name: Potlicker
Start Date: 11-11-15		End Date: 11-12-15	Start Time: 16:30		End Time: 7:00
Nearest town: Columbia		Biologists/observers Present: Jennifer Starvetsky, Kelly Lotsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:00	54	2	0	~1895.	630	55	2	0	91%

Moon Effect: new moon 0% | Start: 0621 | Stop: 1718

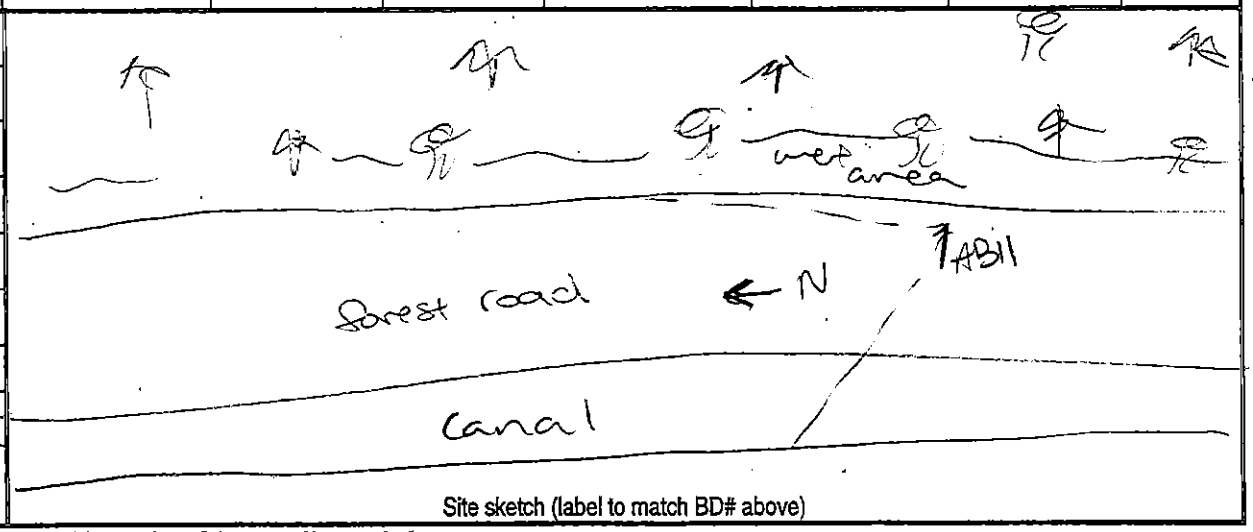
Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABO 11	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.98809	-76.14512	7'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABO 11	Yes KL	N	10	10 ft	low	7	16/8	NA	taken 11-10

Habitat & Site Description:
Forested road with canal running parallel. Mature trees + snags observed with roosting characteristics. Pine forest with some hardwood

Remarks:
forest Rd off Potlicker



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.
**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest both to west mature forest with multiple snags to east <20 yrs pine dominate

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NC NLEB Research	42262	Tyrrell	PPP 1a	1	Potlicker
Start Date:	**End Date:**	**Start Time:**	**End Time:**		
11/12/15	11/13/15	16:30	~~7:00~~		
Nearest town:	**Biologists/observers Present:**				
Columbia	Jennifer Starvetsky, Kelly Lutsch				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	71.5	2	0	0/59%	7:00	71.5	2	0	0/59%

Moon Effect: new moon 0% — Start: 07:16 — Stop: 1801

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB011	Anabat SD2	406 2g	green	Tackle box weatherproofed + trash bag	35.98809	-76.14512	7'

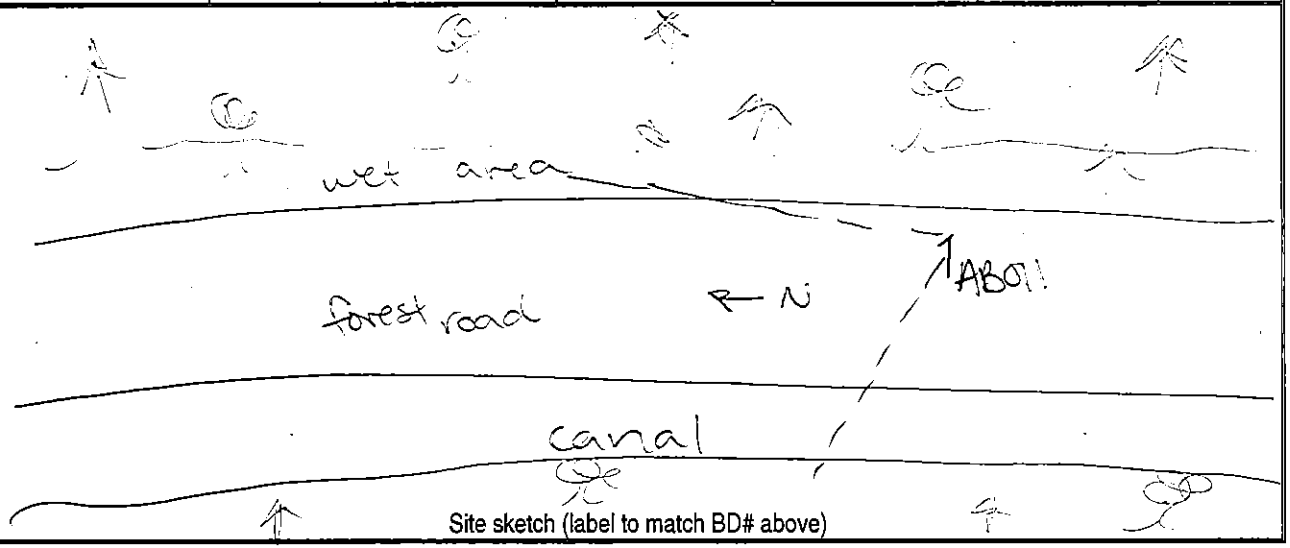
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB011	yes KL	N	10	10 ft	low	7	16/8	NA	[illegible]

Habitat & Site Description:

forested road with canal running parallel. Mature trees & snags observed with roosting characteristics. Pine trees with some hardwood

Remarks:

Forest Rd off Potlicker



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest both, to west nature forest with multiple snags to east, <20 yrs, pine dominant

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC NLEB research	Proj #: 12262	County: Tyrrell	Site#: ppp2a	Night#: 1	Site Name: Pledger Harbor
Start Date: 11-10-15		End Date: 11-11-15	Start Time: 16:30		End Time: 7:00
Nearest town: Columbia		Biologists/observers Present: Dottie Brown			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	55	1	0	0/83%	1700	55	2	0	0/84%

Moon Effect:	Start: 0526	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):
new moon 1%	Stop: 1642	

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ab003	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.97542	-76.09099	31'

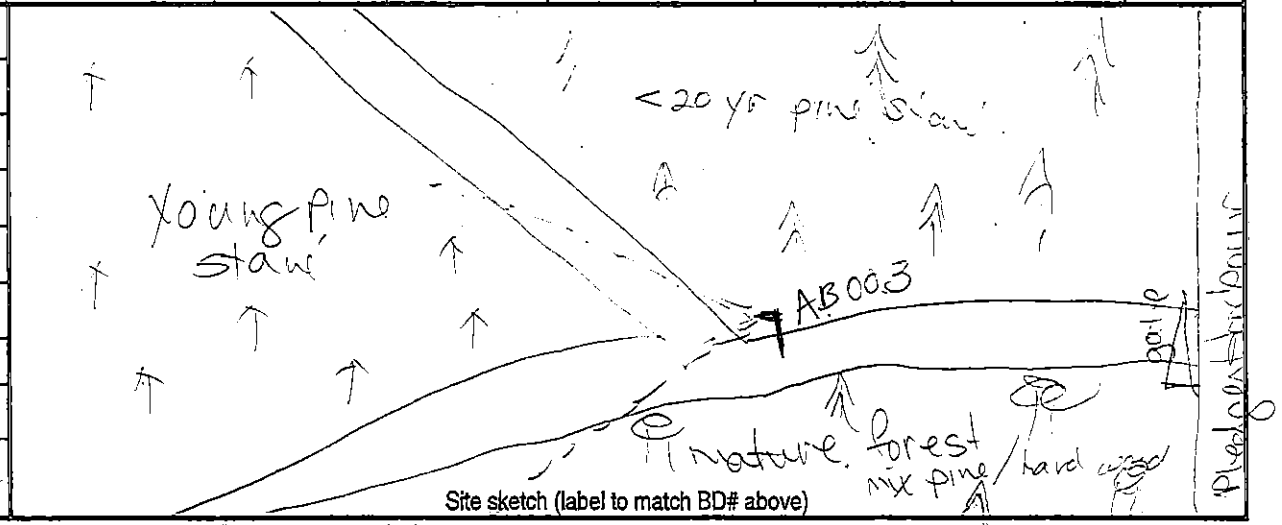
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB003	yes JS	N	335°	10 ft	lo	7	16/8	NA	yes

Habitat & Site Description:

mostly pine forest with some hard wood, Mature forest + trees
<20 yr pine stand.

Remarks:

AB placed on road with open where hunting trail + young pine stand



* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Forest Rd off Pledger Harbour

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC NHP research	Proj #: 42262	County: Tyrrell	Site#: ppp2a	Night#: 2	Site Name: Pledger Harbour
Start Date: 11-11-15		End Date: 11-12-15	Start Time: 1630		End Time: 700
Nearest town: Columbia		Biologists/observers Present: Jennifer Starvetsky, Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	54	2	0	0/89%	0630	52	2	0	0/91%

Moon Effect: new moon 0% — Start: 0621 — Stop: 1718

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB003	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.97542	-76.09099	31'

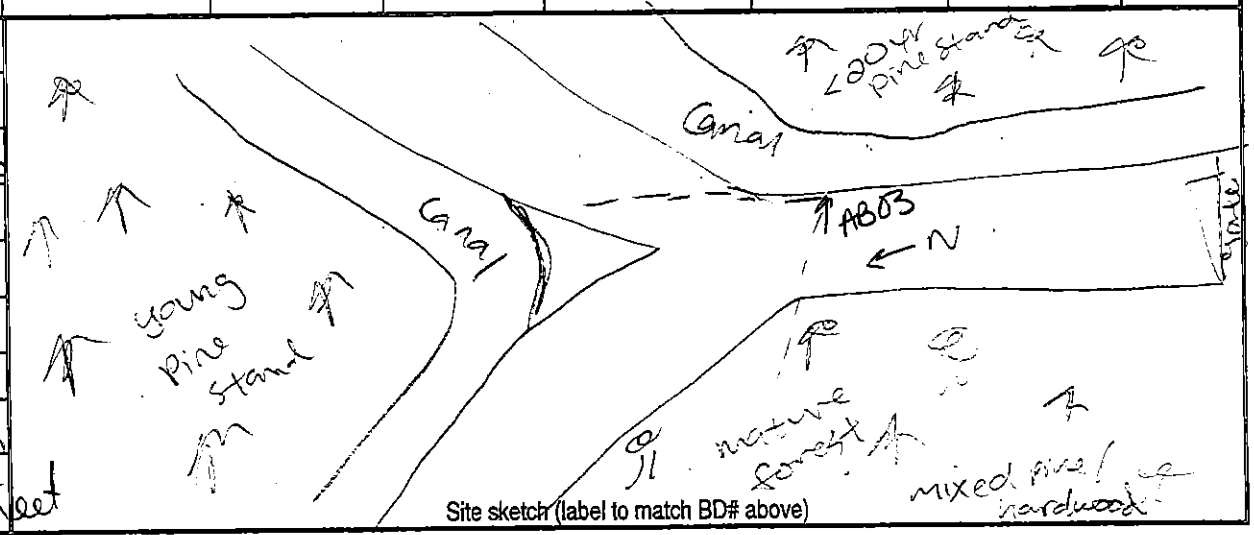
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB003	Yes KL	N	335	12 ft	lo	7	16/8	NA	taken 11-10

Habitat & Site Description:

mostly pine forest with few hardwood. Mature forest borders <20yr pine stand

Remarks:

AB placed on forest road intersection where mature forest + young pine forest meet



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Forest rd off Pledger Harbour

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NC NLEB Research	42262	Tyrrell	PPP26	1	Pledger Harbor
Start Date:	**End Date:**	**Start Time:**	**End Time:**		
11/12/15	11/13/15	16:30	7:00		
Nearest town:	**Biologists/observers Present:**				
Columbia	Jennifer Starvetsky, Kelly Lutsch				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	71.5	2	0	0/59%	1700	71.5	2	0	0/59%

Moon Effect: new moon 0% — Start: 0716 — Stop: 1801

Land Use: Urban / Agriculture / ~~Forest~~ / ~~Water~~ / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB003	Anabat SD2	4D62g	green	Tackle box weatherproofed + trash bag	35.97187	-76.08543	4'

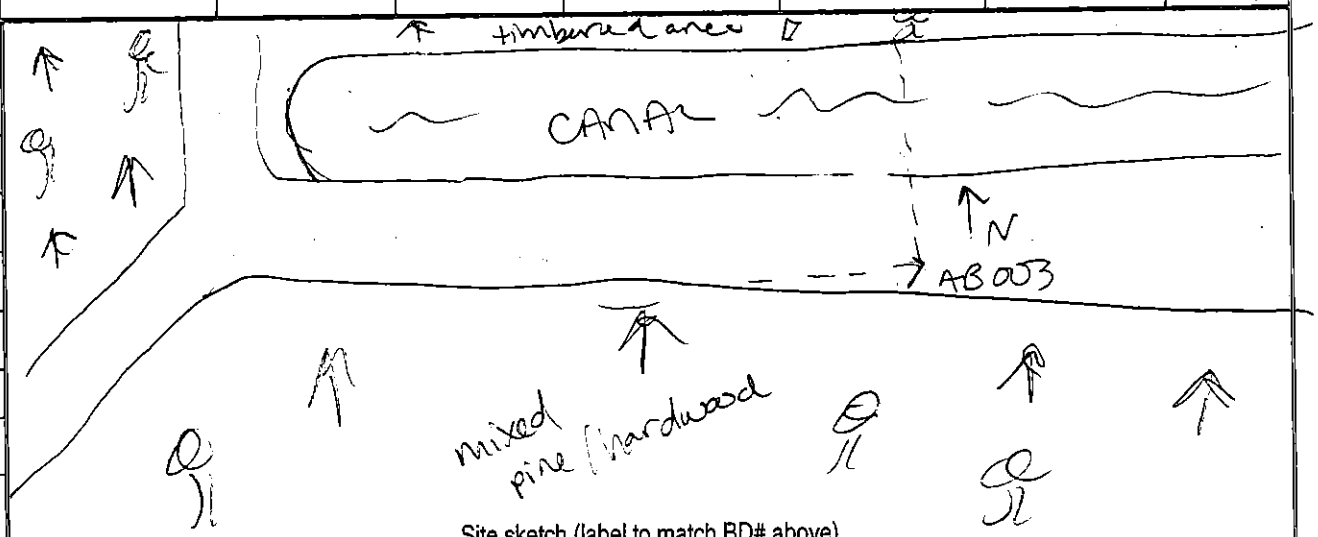
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB003	Yes KL	NW	310	10 ft	10	7	16/8	NA	Yes

Habitat & Site Description:

forested road off Pledger Harbor Rd. mixed pine/hardwood forest and canal running parallel with road. Slightly timbered area on North side with snags and trees with roosting

Remarks: Characteristics.

Site moved down road (toward Pledger Harbor) from site 2a



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

slightly open timbered mature forest to north, <20 yr mixed pine/hardwood forest to south

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC NLEB research	Proj #: 42262?	County: Tyrrell	Site#: PPP 3a	Night#: 1	Site Name: Pledger landing
Start Date: 11-10-15		End Date: 11-11-15	Start Time: 16:30		End Time: 7:00
Nearest town: Columbia	Biologists/observers Present: Dottie Brown + Jennifer Starwetsky				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	55	1	0	0/83%	[illegible]	55	2	0	0/84%

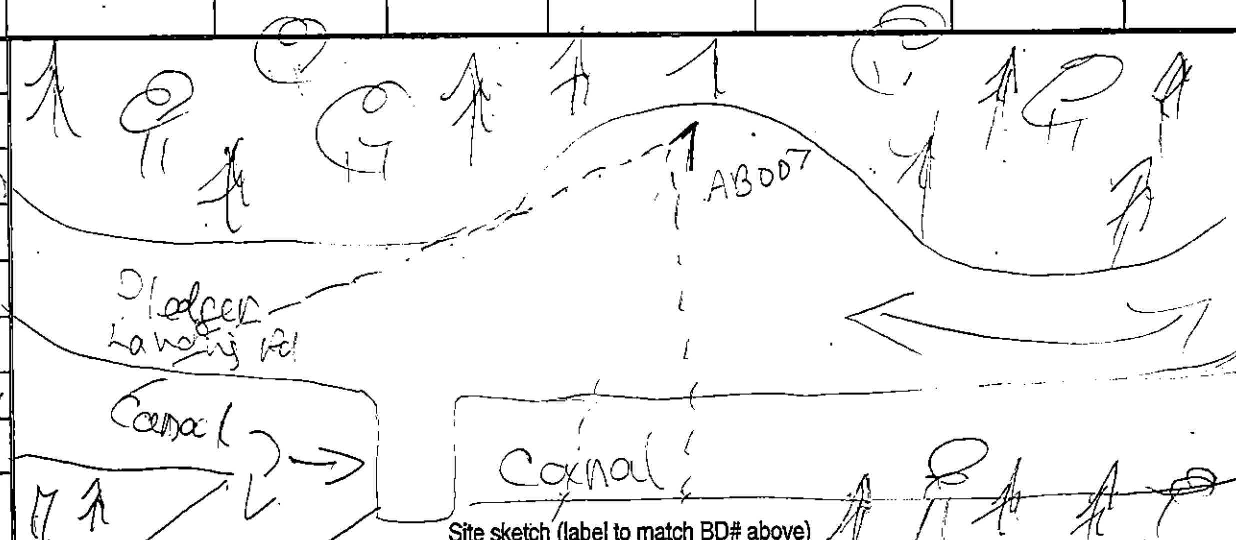
Moon Effect:	Start / Stop	Land Use
new moon 1%	Start: 0526; Stop: 1642	Land Use: Urban / Agriculture / (Forest) / (Water) / (Wetland) / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB007	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.986 8	-76.07333	27'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB007	yes JS	N	345°	10 ft	low	7	16/8	NA	yes

Habitat & Site Description: mixed pine/hardwood forest with more mature trees mixed in, forest opens to swamp area with numerous snags. Trees with roosting characteristics present

Remarks: AB set up a open area where two canals intersect + mature forest borders swamp



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.
**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Pledger Landing is off Pledger Harbour

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC NEEB research	Proj #: 42262	County: Tyrrell	Site#: PAP 3a	Night#: 2	Site Name: Pledger Landing
Start Date: 11/11/15	End Date: 11/12/15	Start Time: 16:30			End Time: 7:00
Nearest town: Columbia	Biologists/observers Present: Jennifer Starnesky, Kelly Lutsch				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	54	2	0	0/89%	1530	52	2	C	C/91%

Moon Effect:	Start: 1621	Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):
New moon 0%	Stop: 1715	

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB007	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	36.98618	-76.07333	27'

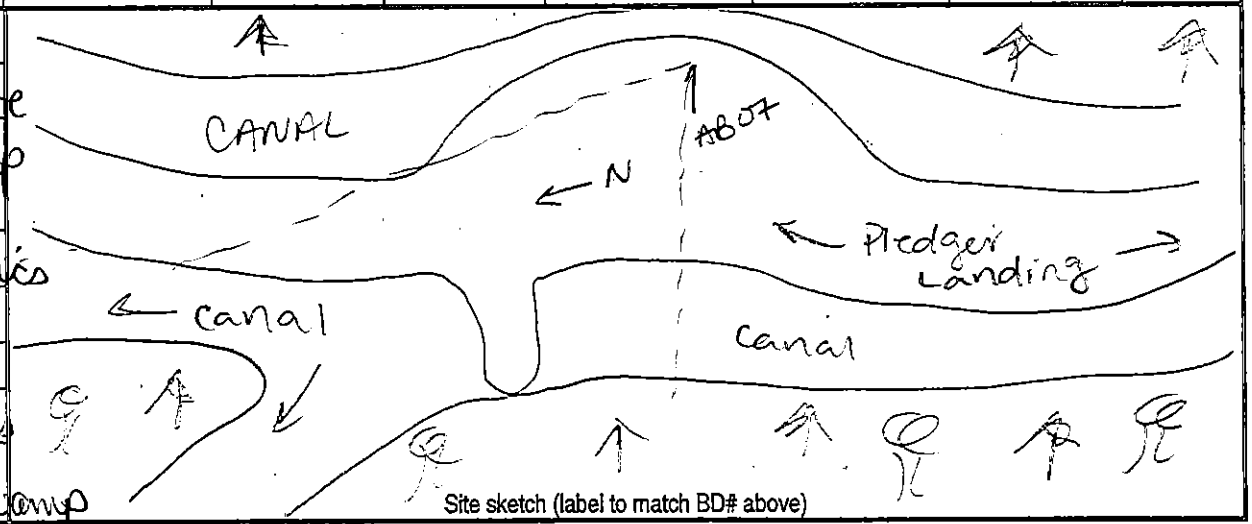
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB007	Yes KL	N	345	10 ft	low	7	16/8	NA	Taken 11-10

Habitat & Site Description:

Mixed pine/hardwood forest with more mature trees. Forest open to swamp area with numerous snags. Trees with roosting characteristics present

Remarks:

AB set up @ open area where 2 canals intersect & mature forest borders swamp



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Pledger Landing is off Pledger Harbour

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NCWRER Research	**Proj #:** 42362	**County:** Tyrrell	**Site#:** PP36	**Night#:** 1	**Site Name:** Goat Neck Forest Rd
Start Date: 11/12/15		**End Date:** 11/13/15	**Start Time:** 16:30		**End Time:** 07:00
Nearest town: Columbia		**Biologists/observers Present:** Jennifer Starvetsky Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	71.5	2	0	0/59%	07a	71.5	2	0	0/59%

Moon Effect: new moon 0% — Start: 0716 — Stop: 1801

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

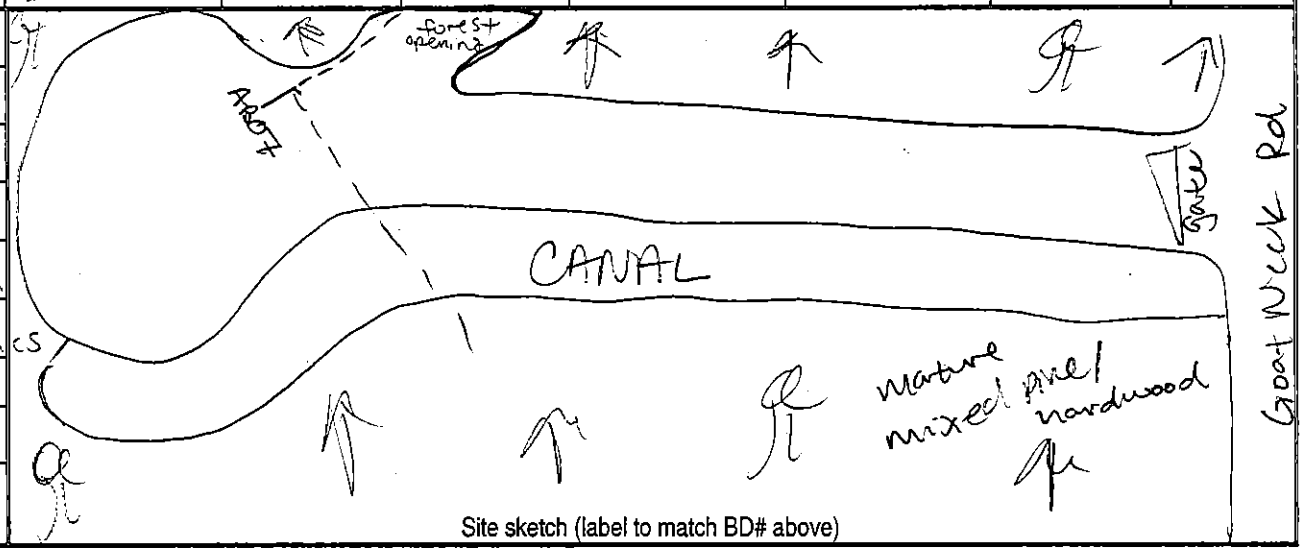
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABR07	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.98375	-76.06473	24ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABR07	yes JS	S	200	12 ft	lo	7	16/8	NA	yes

Habitat & Site Description:

Forest Rd off Goat Neck Rd in mature pine & hardwood forest. Canal running parallel. ~~AB~~ set in front of forest gap for foraging bats. Mature trees with roosting characteristics

Remarks: Anabat moved from Predator landing site



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NCNLEB research	Proj #: 42262	County: Tyrrell	Site#: PPP4a	Night#: 1	Site Name: Goat Neck
Start Date: 11-10-15		End Date: 11-11-15	Start Time: 16:30		End Time: 7:00
Nearest town: Columbia	Biologists/observers Present: Dottie Brown + Jennifer Starnetsky				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	55	1	0	0/83%	1000	55	2	0	0/84%

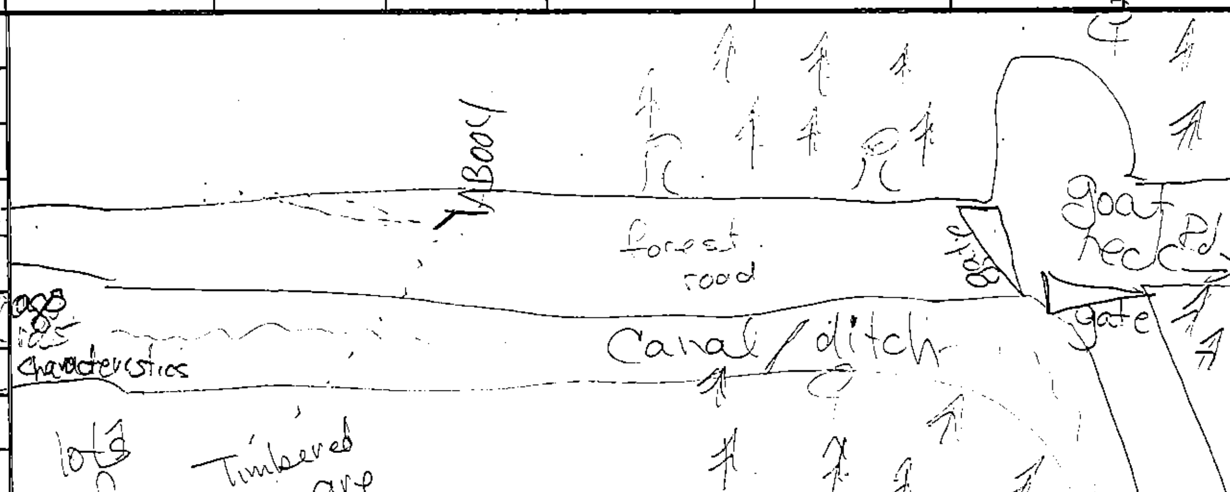
Moon Effect:		Land Use:
new moon 1%	Start: 0526 Stop: 1642	Urban / Agriculture / (Forest) / (Water) / (Wetland) / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB004	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.96914	-76.04610	24'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB004	Yes JS	East	100°	10 ft	low	7	16/8	NA	yes

Habitat & Site Description: MIX pine/hardwood - mostly loblolly pine Open timbered area and swamp. Have mature forest leads into open timbered area with multiple canals. mature trees + snags season/growing characteristics

Remarks: Down a messy forest road at end of Goat Neck road. loblolly, sweet gum



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

forest road off Goat Neck

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC NLEB research	Proj #: 42262	County: Turrell	Site#: PPP4a	Night#: 2	Site Name: Goat Neck
Start Date: 11-11-15		End Date: 11-12-15	Start Time: 16:30		End Time: 7:08
Nearest town: Columbia	Biologists/observers Present: Jennifer Stanosheck, Kelly Lotsch				

*Conditions:	Time 700	Temp 54	Wind 2	Clouds 0	Precip/humidity 0/84%	Time 1630	Temp 52	Wind 2	Clouds 0	Precip/humidity 0/91%

Moon Effect: new moon 0% Start: 0621 Stop: 1718

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

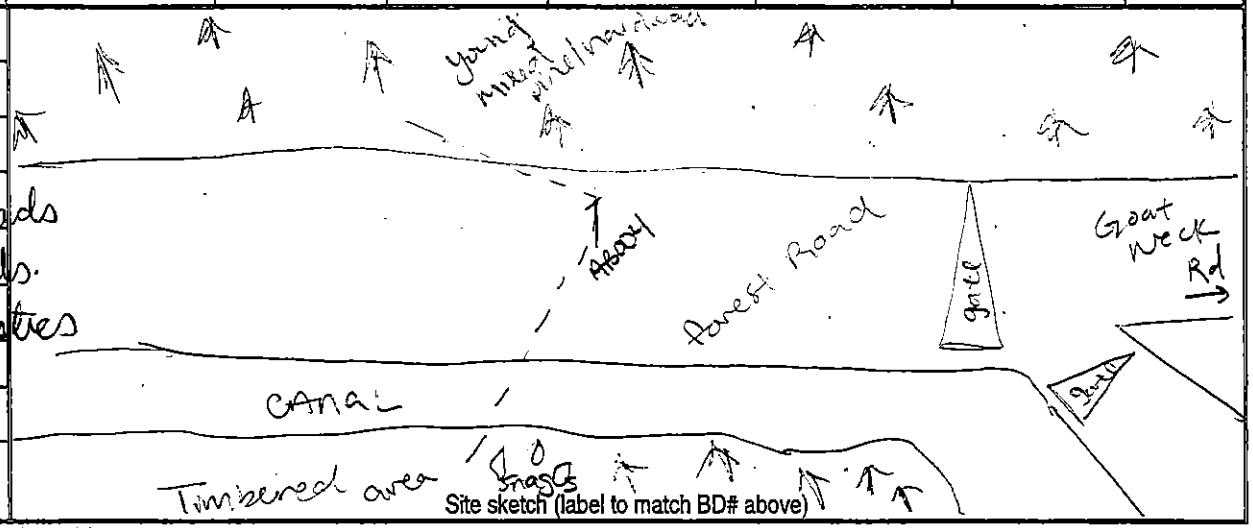
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB004	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.96914	-76.04610	24'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB004	Yes KL	E	100	10 ft	low	7	16/8	NA	taken 11-10

Habitat & Site Description:

mixed pine/hardwood - mostly loblolly pine/open ditched/drained swamp area. More mature forest leads into swamp area w/multiple canals. Trees observed w/roost characteristics

Remarks: AB set down grassy road from Goat Neck Rd end



* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

forest rd off Goat Neck rd

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NCNHEB: Research	42012	Tyrrell	PP-4a	3	Front Neck

Start Date:	End Date:	Start Time:	End Time:
11/12/15	11/13/15	16:30	07:00

Nearest town: Columbia

Biologists/observers Present: Jennifer Starvetsky, Kelly Lutsch

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	71.5	2	0	0/59%	700	71.5	2	0	0/59%

Moon Effect: new moon 0%

Start: 0716
Stop: 1801

Land Use: Urban / Agriculture / ~~Forest~~ / ~~Water~~ / ~~Wetland~~ / Barren / Other (describe):

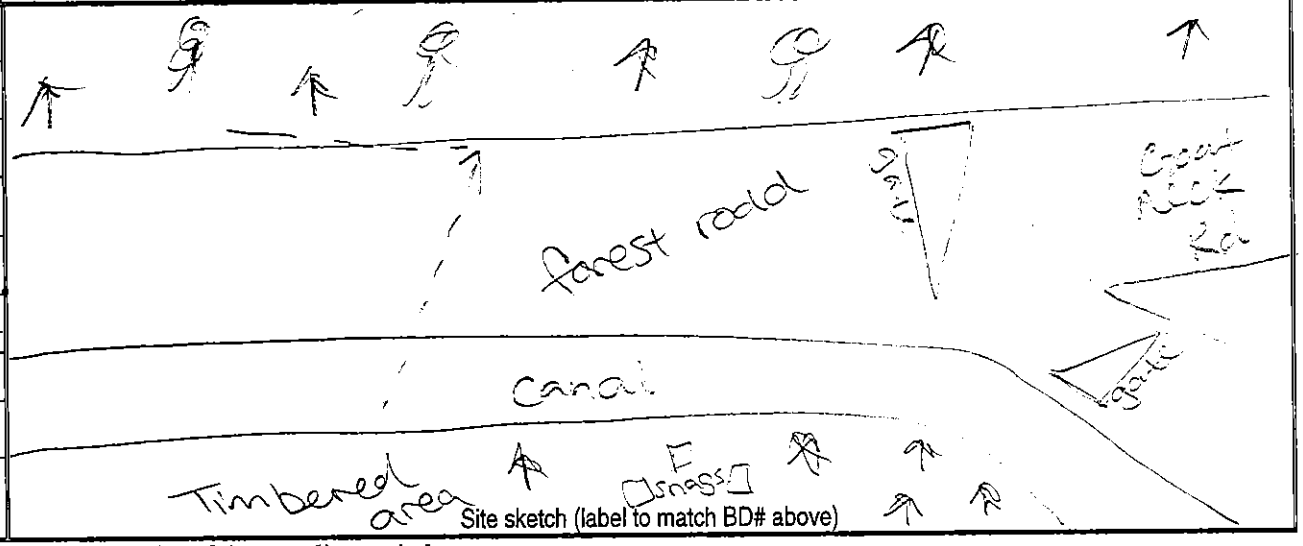
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB004	Anabat SD2	401629	green	Tackle box weatherproofed + trash bag	35.916914	-76.044610	24'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB004	yes KL	E	100	10 ft	low	7	6/8	NA	taken 11-10

Habitat & Site Description:

mixed pine/hardwood - mostly loblolly pine / open timbered or swamp area. Have main forest leads into swamp area w/ multiple canals. Trees observed w/ roost characteristics

Remarks: AB set down grassy road from Front Neck Rd end



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Across 2nd dirt road on Front Neck Rd

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

Appendix G

Pocosin Lakes NWR, Session 1

NCDOT Acoustic Survey Data Form

Project Name: NEEB NC Research	Proj #: 4262	County: Tyrrell	Site#: ABP01a	Night#: 1	Site Name: Bodwell Rd
Start Date: 11/5/15		End Date: 11/6/15	Start Time: 16:30		End Time: 7:00 am
Nearest town: Columbia		Biologists/observers Present: Kim Ramano + Drew Powell			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	7:00	66.5	3	2	0/83%	0430	66.5	3	1	0/74%

Moon Effect: Waning Crescent 30% | Start: 0057 | Stop: 1403

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

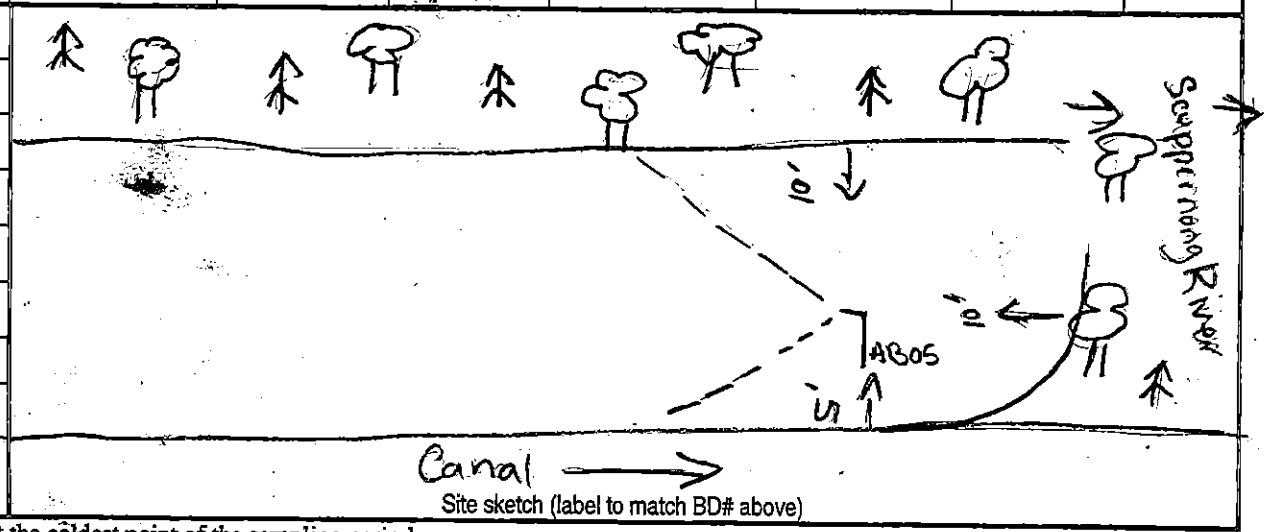
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABO5	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.88393	-76.31371	14 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABO5	Yes KR	S	160°	10 ft	30%	7	16/8	NA	✓

Habitat & Site Description:

bottomland mix pine/hardwood forest mostly <20 yrs, site very close to Scuppernong River

Remarks: located in Pocosin WR off Bodwell Rd on forest Rd



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name:	Proj #:	County:	Site#:	Night#:	Site Name:
NCSU NCResearch	42262	Tyrrell	ABP01a	2	Bodwell Rd
Start Date: 11-6-15		End Date: 11-7-15	Start Time: 16:30		End Time: 7:00 AM
Nearest town: Columbia		Biologists/observers Present: Dottie Brown, Drew Powell, Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	70	1	1	0/95%	0630	69	1	1	0/93%

Moon Effect: Waning Cresent 19% Start: 0151 Stop: 1435

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

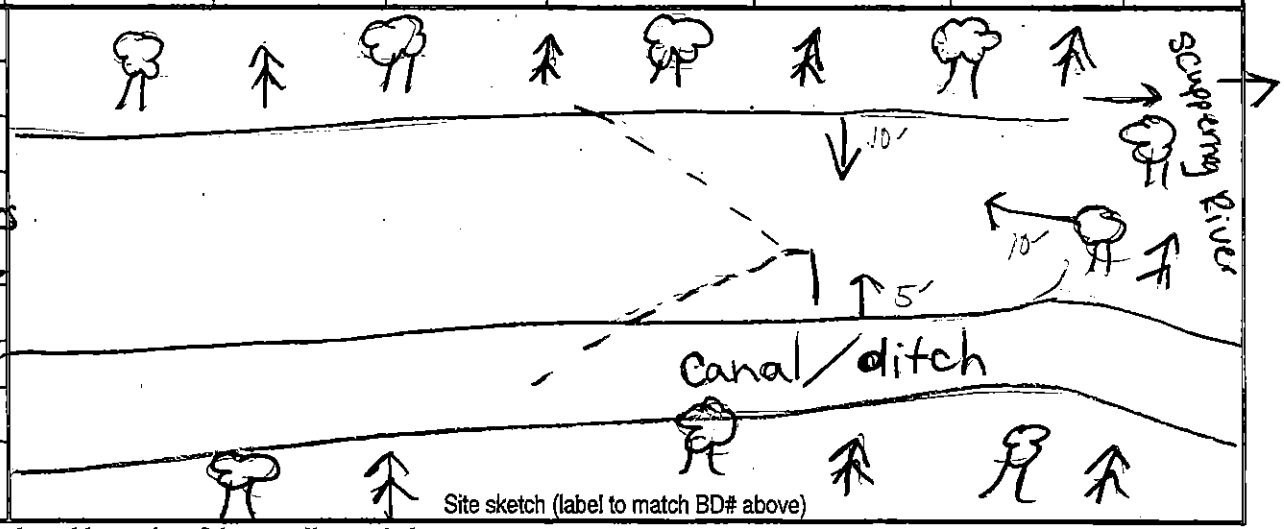
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB05	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.88393	-76.31371	14'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB05	yes DB	S	160°	10 ft	30%	7	16/8	NA	taken 11-5

Habitat & Site Description:

bottom land
mix pine/hardwood forest
Some mature trees, mostly Cadys
Site very close to Scuppernong River

Remarks: located in Pocosin NWR off Bodwell Rd on forest Rd



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC NLEB research	Proj #: 42262	County: Tyrrell	Site#: ABP01b	Night#: 1	Site Name: Nodwell Rd
Start Date: 11/8/15	End Date: 11-9-15	Start Time: 16:30	End Time: 7:00		
Nearest town: Columbia	Biologists/observers Present: Drew Powell, Kelly Lutsch				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	60	1	3	1/92%	1800	57	2	0	0/72%

Moon Effect: waning crescent 9% Start: 0337 Stop: 1535

Land Use: Urban / Agriculture / (Forest) / (Water) / (Wetland) / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB005	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.803614	-76.26884	4ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB005	Yes KL	W	277	10 ft	low	7	16/8	NA	✓

Habitat & Site Description:

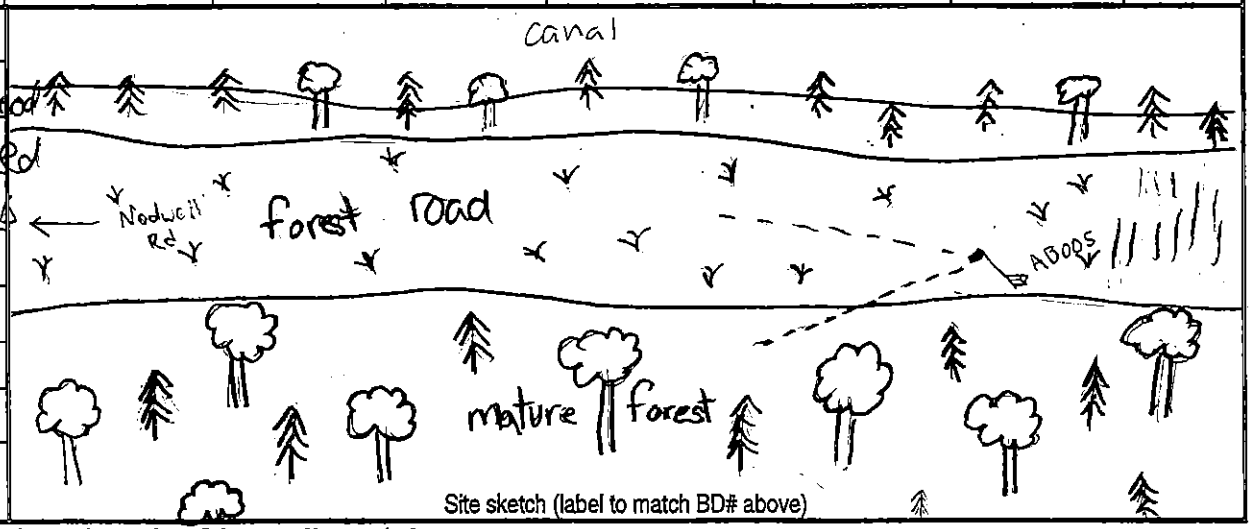
- hard wood mixed pine/hardwood
- Swamp forest rd off Nodwell Rd
- more mature forest w/ canals

Bat

No Calls so repeat Survey 9-10

Remarks:

canal divides swamp lands and mature forest



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC-NLEB Research	Proj #: 42262	County: Tyrrell	Site#: AB 005	Night#: 2	Site Name: Nodwell Rd
Start Date: 11/10/15	End Date: 11/11/15	Start Time: 16:30	End Time: 7:00		
Nearest town: Columbia	Biologists/observers Present: Drew Powell				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	51	1	0	0/83	600	51	2	0	0/84

Moon Effect: new moon — Start: 0526 — Stop: 1642

Land Use: Urban / Agriculture / (Forest) / (Water) / (Wetland) / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB005	Anabat SD2	40629	green	Tackle box weatherproofed + trash bag	35.80384	-76.26884	4ft

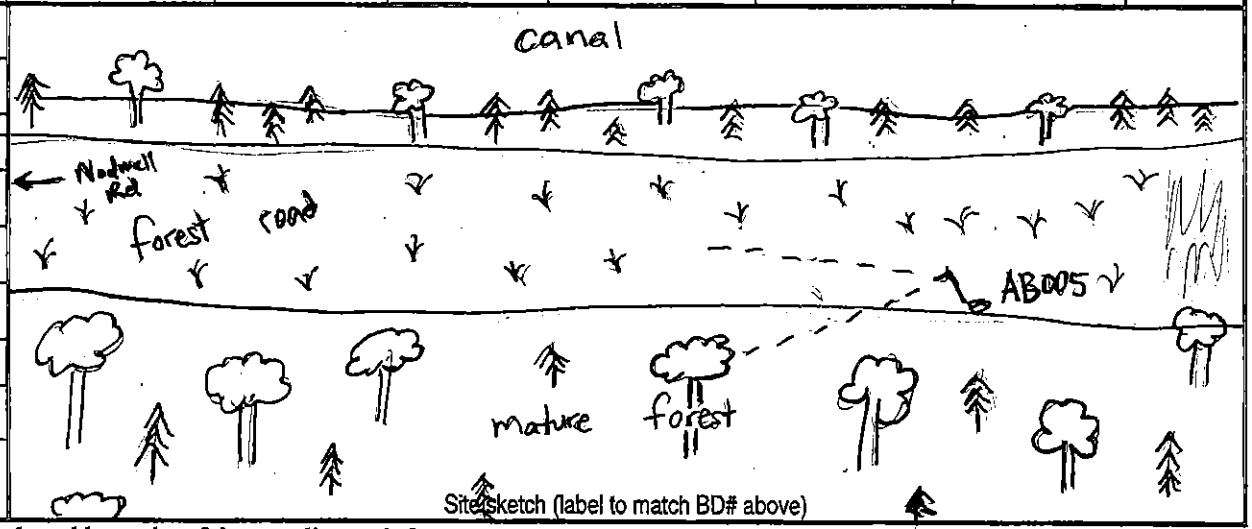
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB005	Yes DP	W	277°	10 ft	low	7	16/8	NA	taken 11/8

Habitat & Site Description:

- mixed pine / hardwood
- forest road off Nodwell Rd
- mature forest w/ canals

Remarks:

Canal divides swamp lands and mature forest



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC-NERR Research	Proj #: 42262	County: Tyrrell	Site#: ABP02a	Night#: 1	Site Name: Middle Rd
Start Date: 11/5/15		End Date: 11/6/15	Start Time: 16:30		End Time: 7:00
Nearest town: Columbia	Biologists/observers Present: Dottie Brown, Jennifer Starvetsky, Kelly Lutsch				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	66.5	3	2	0/83%	0430	66.5	3	1	0/74%

Moon Effect: waning crescent 30% — Start: 0057 — Stop: 1403

Land Use: Urban / Agriculture / (Forest) / Water / (Wetland) / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB007	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.77504	-76.24677	1

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB007	Yes KL	E	120°	10 ft	low (5%)	7	16/8	NA	✓

Habitat & Site Description:

hardwood/pine mixed with scrub

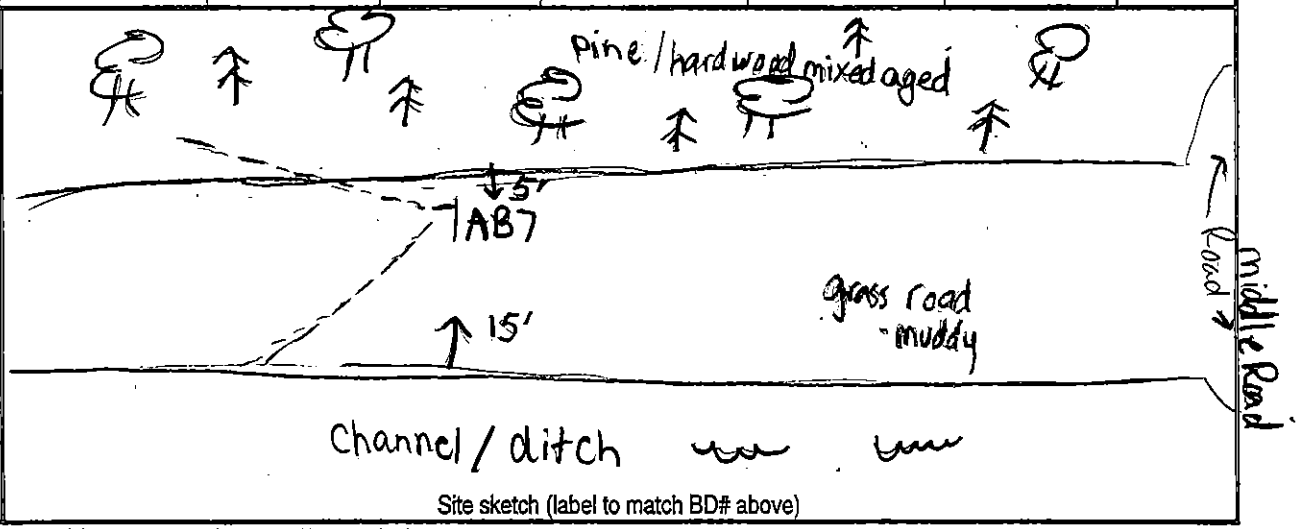
Anabat set in forest road corridor

road corridor

Remarks:

low Clutter (5%)

located in Pocosin NWR on Forest Rd off middle Road



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: Research NC-NLEB Project	Proj #: 42262	County: Tyrrell	Site#: ABP02a	Night#: 2	Site Name: Middle Rd
Start Date: 11/6/15		End Date: 11/7/15	Start Time: 16:30		End Time: 7:00
Nearest town: Columbia		Biologists/observers Present: Dottie Brown			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	70	1	1	0/95%	0630	69	1	1	0/93%

Moon Effect: waning crescent 19% — Start: 0151 — Stop: 1435

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
	Anabat SD2	4016 2g		Tackle box weatherproofed			
AB007			green	+ trash bag	35.77504	-76.24677	1

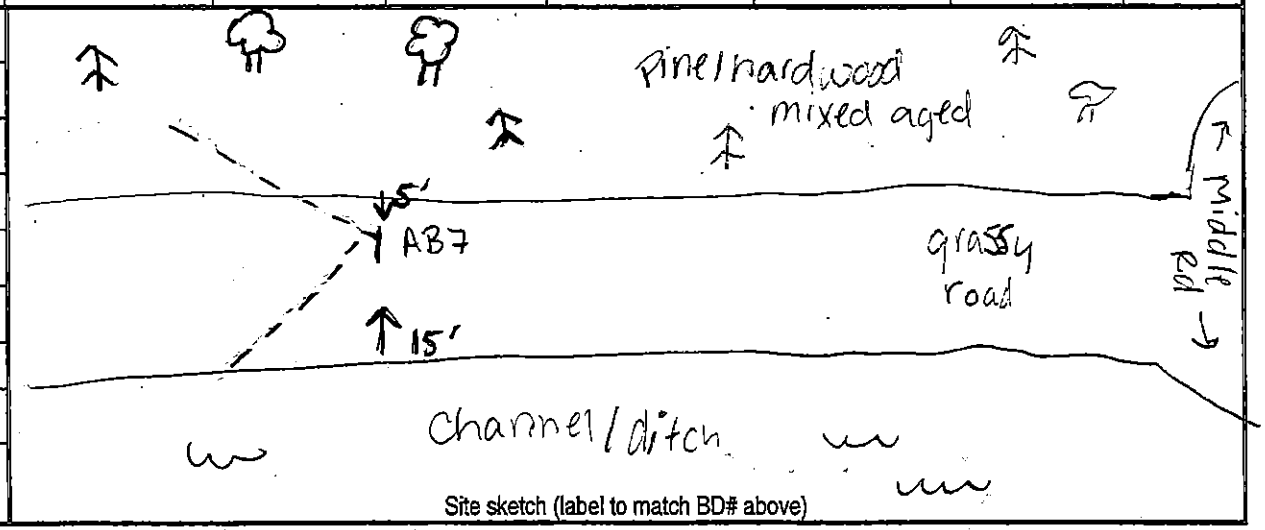
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
				10 ft					taken
AB007	Yes KL	E	120°		low (5%)	7	16/8	NA	11/5/15

Habitat & Site Description:

- hardwood/pine mixed with scrub
- Anabat set in forest road corridor

Remarks:

low clutter (5%)
located in Focosin WR on forest Rd off middle Rd



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC Research	Proj #: 12262	County: Tyrell	Site#: ABP026	Night#: 1	Site Name: Middle Rd
Start Date: 11/8/15		End Date: 11/9/15	Start Time: 16:30		End Time: 07:00
Nearest town: Columbia		Biologists/observers Present: Kim Romano			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	60	1	3	1/92%	1800	57	2	0	0/72%

Moon Effect: Waning crescent 9% — Start: 337 — Stop: 1535

Land Use: Urban / (Agriculture) / (Forest) / Water / (Wetland) / Barren / Other (describe):

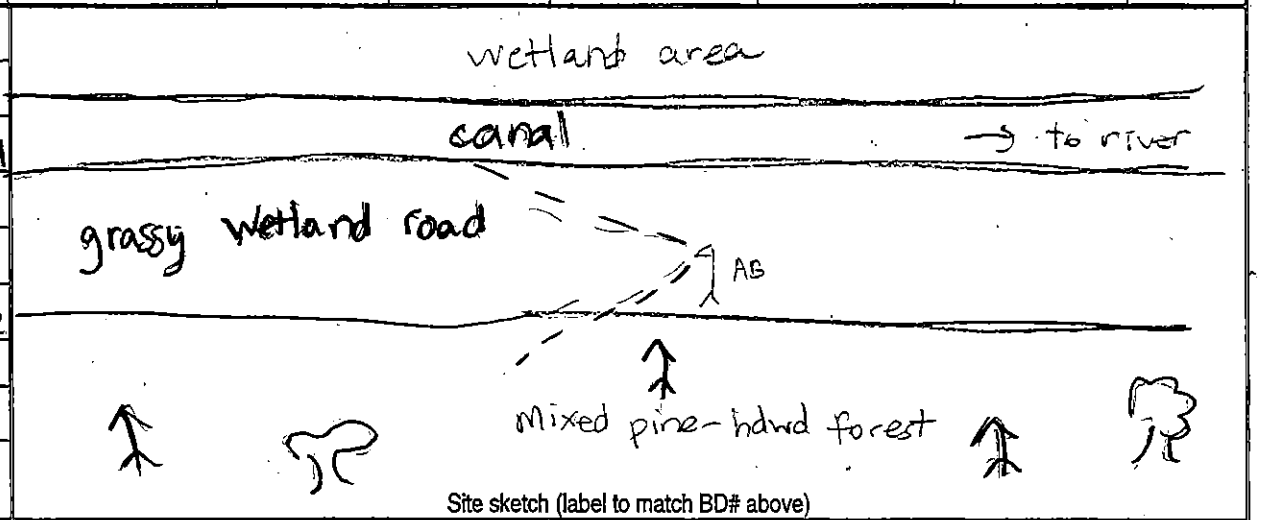
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB007	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.77367	-76.23139	1 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB007	Yes	W	290°	10 ft	lo	7	16/8	NA	✓

Habitat & Site Description:

Early successional mixed pine-hardwood forest paralleling a canal that leads to the river. Anabat positioned along wetland road facing down the road at the edge of the forest

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested scrub + few scattered Pine

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC Research	Proj #: 42262	County: Tyrrell	Site#: ABP026	Night#: 2	Site Name: Middle
Start Date: 12/11/15	End Date: 12/12/15	Start Time: 1615	End Time: 715		
Nearest town: Columbia	Biologists/observers Present: Keegan Chavka				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	46	2	0	fog/100%	0445	45	2	0	0/100%

Moon Effect: New 0% | Start: 0159 | Stop: 1729

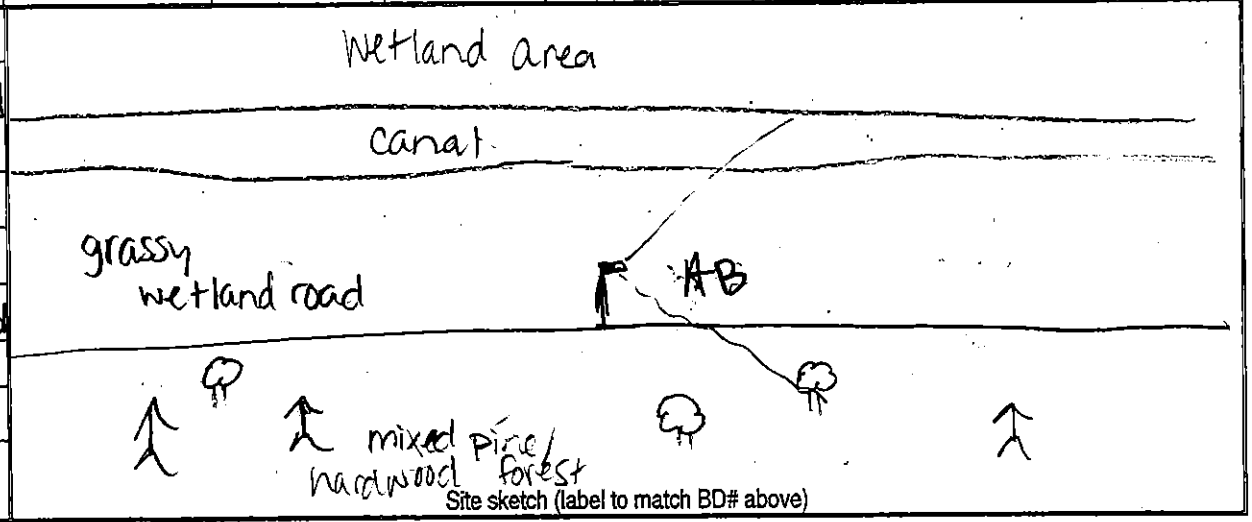
Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB007	Anabat SD2	401d2g	green	Tackle box weatherproofed + trash bag	35.77357°	-76.22781°	1 ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB007	Yes KC	East	94°	10 ft	low	7	16/8	N/A	Dottie Camera 12/11

Habitat & Site Description:
Early successional mixed pine-hardwood forest parralleling a canal that leads to the river. Anabat positioned along wetland road

Remarks: facing down the road at the edge of the forest



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.
**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits Scrub + few scattered Pine

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: Research Project	Proj #: 42262	County: Washington	Site#: ABP03a	Night#: 1	Site Name: Harvester
Start Date: 11/5/15		End Date: 11-6-15	Start Time: 1630		End Time: 7:00
Nearest town: Columbia		Biologists/observers Present: Dottie Brown, Jennifer Starvetsky, Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	66.5	3	2	0 83%	0430	66.5	3	1	0/74 %

Moon Effect: waning crescent 30% | Start: 0057 | Stop: 1403

Land Use: Urban / (Agriculture) / (Forest) / Water / (Wetland) / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB3	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.71428	-76.44784	15'

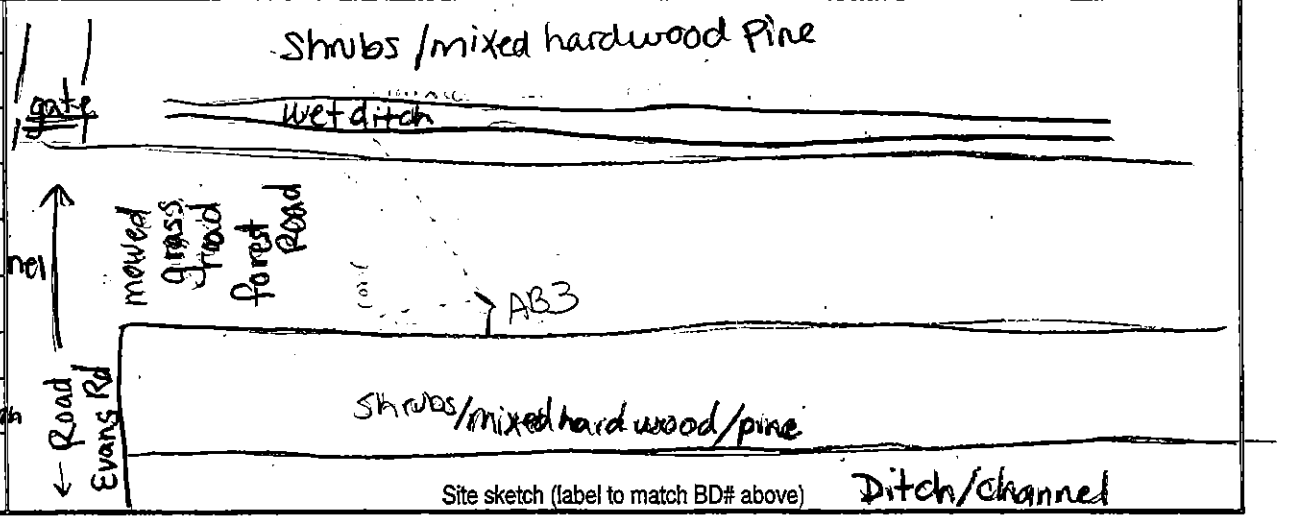
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB3	Yes KL	SE	140°	10 ft	low	7	16/8	NA	✓

Habitat & Site Description:

- mixed hardwood/Pine
- tall shrubs
- small amount of water in ditch
- forest road parallel ditch/channel

Remarks:

located in Pocosin WR @ intersection of Evans Rd / Harvester Rd



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / (mixed) / unforested

Upland / (bottomland)

(Managed) (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / (<20 years old forest)

(More open) / more forested

Mostly developed / (mostly undeveloped)

Timer

Set to start at 4:30 pm and end at 7:00 am

Site

- Veg. corridor with ditches along side
- mixed hard wood / Pine
- managed area

NCDOT Acoustic Survey Data Form

Project Name: NCMLB Research	Proj #: 42262	County: Washington	Site#: AB P03a	Night#: 2	Site Name: Harvester
Start Date: 11-6-15		End Date: 11-7-15		Start Time: 1630	End Time: 700 AM
Nearest town: Columbia		Biologists/observers Present: Bottie Brown, Drew Powell			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	70		1	0/95%	0630	69	1	1	0/93%

Moon Effect: Waning crescent 19% — Start: 0151 — Stop: 1435

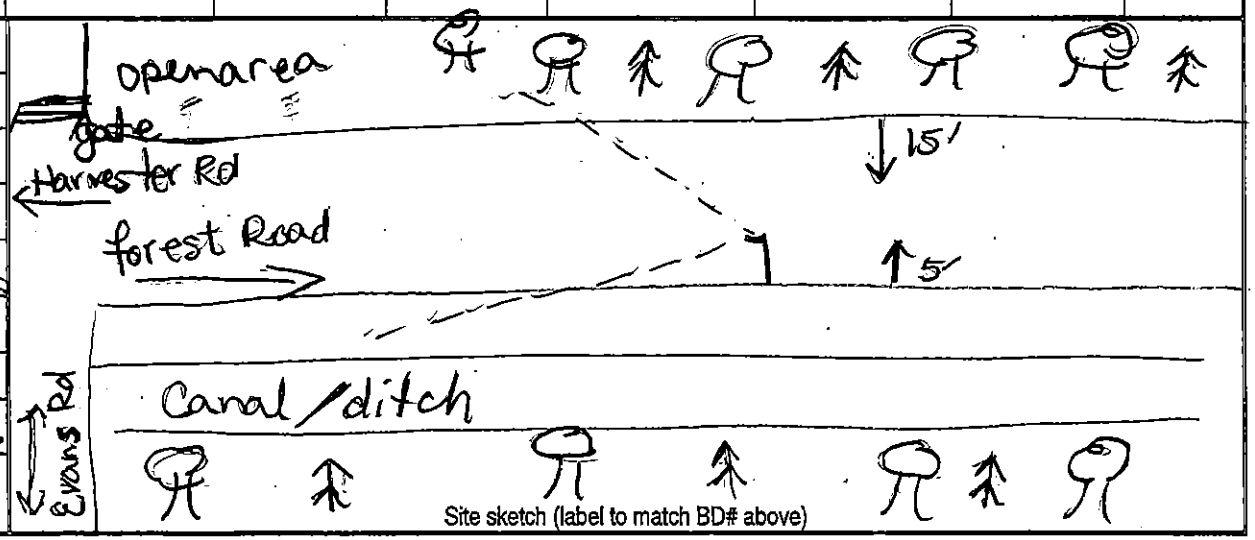
Land Use: Urban / (Agriculture) / (Forest) / Water / (Wetland) / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB3	Anabat SD2	40627	green	Tackle box weatherproofed + trash bag	35.71428	-76.44784	15'

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB3	yes DB	SE	140°	10 ft	low	7	16/8	NA	taken 11/5/15

Habitat & Site Description:
mixed pine/hrnd wood/scrub
canal runs along forest road
seeps + ditches with water
AB on forest road that connects to Ag fields

Remarks:
located in Pocosin WR @ intersection of Evans + Harvester Rd



*Weather: record conditions at end of sampling period & at the coldest point of the sampling period.
**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: Eastern NC NLEB Project	Proj #: 42262	County: Washington	Site#: AB003b	Night#: 1	Site Name: Harvester
Start Date: 11/8/15		End Date: 11/9/15	Start Time: 16:30		End Time: 7:00
Nearest town: Columbia		Biologists/observers Present: Drew Powell, Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	60	1	3	192%	1800	57	2	0	0/72%

Moon Effect: Waning crescent 9% | Start: 0337 | Stop: 1535

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

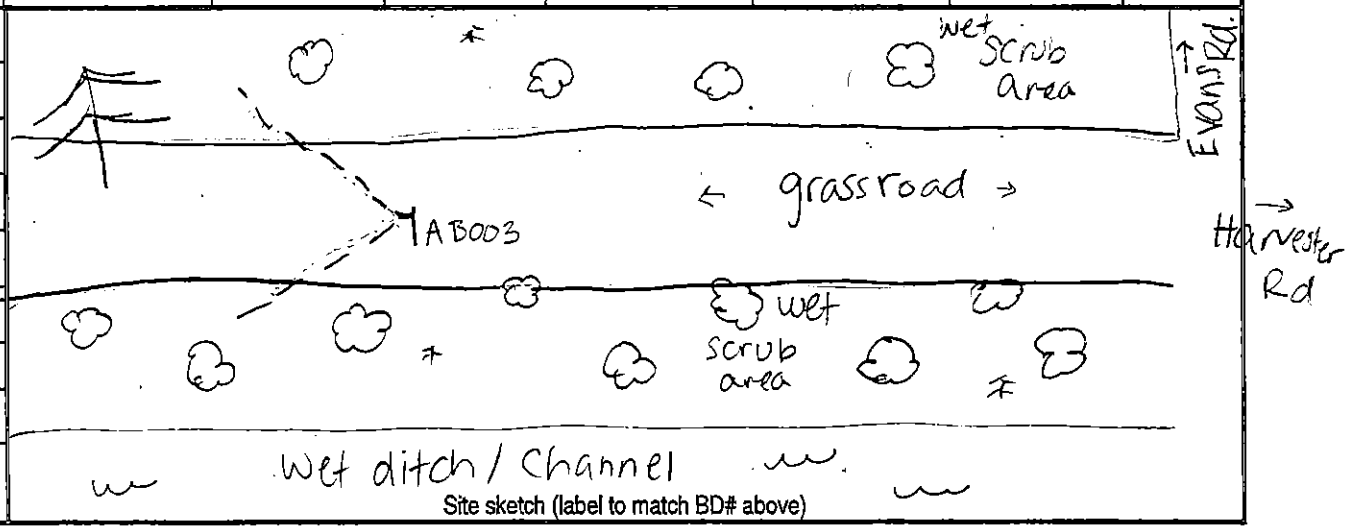
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB003	Anabat SD2	406Zg	green	Tackle box weatherproofed + trash bag	35.71500	-76.46276	10ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB003	Yes KL	W	292°	10 ft	low	7	16/8	NA	✓

Habitat & Site Description:

- flooded scrub area
- Some small pine/hardwood wetland area on grass road
- large pine creates small corridor

Remarks: 20 minute walk in anabat moved ↑



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

off Harvester & Evans Rd

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NCNLEB Research	Proj #: 42262	County: Washington	Site#: ABP03b	Night#: 2	Site Name: Harvester
Start Date: 12/11/15	End Date: 12/12/15	Start Time: 1615	End Time: 715		
Nearest town: Columbia	Biologists/observers Present: Keegan Chavka				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	0715	46	2	0	0 / 100%	0445	45	2	0	0 / 100%

Moon Effect: New Moon 0% — Start: 0659 — Stop: 1729

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

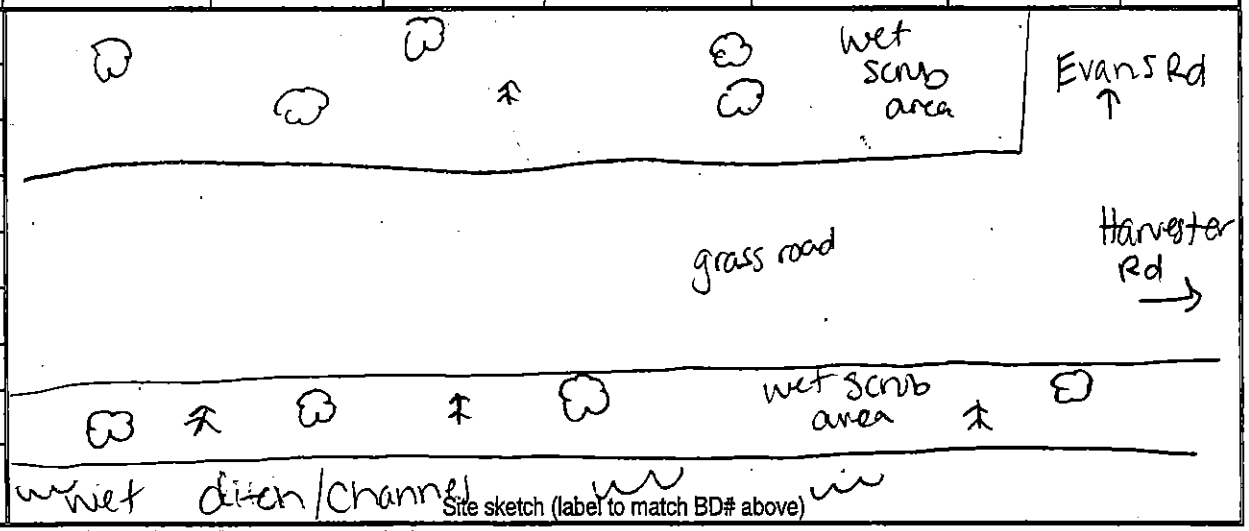
Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
ABOO5	Anabat SD2	401e2g	green	Tackle box weatherproofed + trash bag	35.71502°	-76.46250°	5ft

Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
ABOO5	Yes, KDC	W	290°	12 ft	med	7	16/8	NA	clothie 12/11 canvas

Habitat & Site Description:

- flooded scrub area
- Some small Pine/hardwood
- Wetland area on grass road
- large Pine Creates small corridor

Remarks:



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NCSU-EB research	Proj #: 42262	County: Washington	Site#: ABP04a	Night#: 1	Site Name: F2 road
Start Date: 11/5/15		End Date: 11/6/15	Start Time: 1630		End Time: 07:00
Nearest town: Columbia		Biologists/observers Present: Kim Romano + Drew Fowell			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	66.5	3	2	0/83%	430	66.5	3	1	0/74%

Moon Effect: Waning crescent 30%. Start: 0057 Stop: 1403

Land Use: Urban / ~~Agriculture~~ / ~~Forest~~ / ~~Water~~ / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB002	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.74699	-76.52778	14

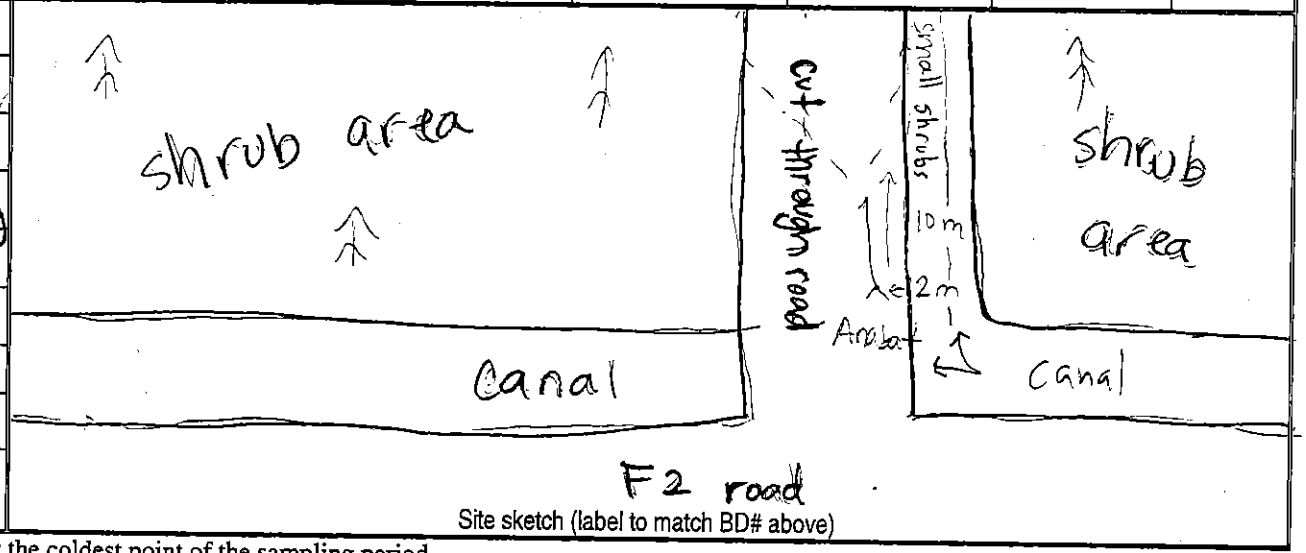
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB002	Yes	E	115	10 ft	lo	7	16/8	NA	Y

Habitat & Site Description:

Grass forest road with low shrub, mixed pine/hardwood with intermitant pine no taller than 30ft. Canal runs along right side of road surrounding forest

Remarks:

Data logger #2 11/6 + 11/7



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

surrounding forest mixed pine/hardwood bottomland - mostly loblolly, some long leaf pine, sweet gum, Red maple
canal/ditch runs along side of road
Site near the Scuppernong River

NCDOT Acoustic Survey Data Form

Project Name: NC NLEB Research	Proj #: 4226a	County: Washington	Site#: AB004a	Night#: 2	Site Name: F2
Start Date: 11-6-15	End Date: 11-7-15	Start Time: 1630	End Time: 7:00		
Nearest town: Columbia	Biologists/observers Present: Dottie Brown + Drew Powell				

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	70	1	1	0	1630	69	1	1	0

Moon Effect: waning crescent 19% — Start: 0151 — Stop: 1435

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB002	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.74699	-76.52778	14

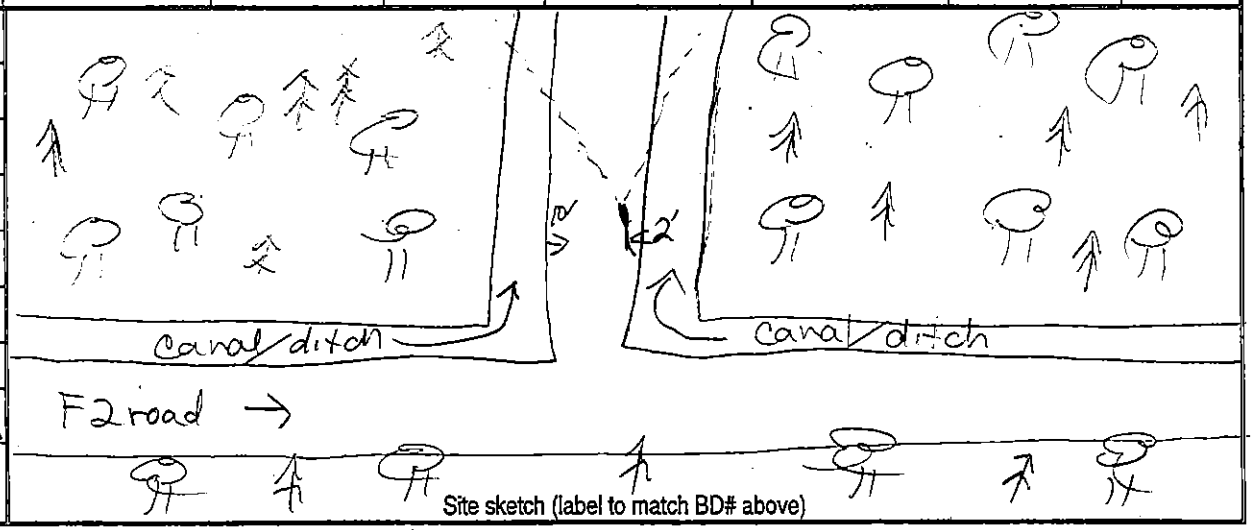
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB002	Yes DB	E	115	10 ft	10	7	16/8	NAT	taken 11/5

Habitat & Site Description:

Detector disturbed by bear on 11/6 AM
mixed pine / hardwood forest
Grass rd with low shrubs is where detector is set up

Remarks:

located in Pocosin WR on F2 road just off Shore DR.



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: Eastern NC NLEB Project	Proj #: 42262	County: Washington	Site#: ABP046	Night#: 1	Site Name: F2 road
Start Date: 11/8/15		End Date: 11/9/15	Start Time: 16:30		End Time: 7:00
Nearest town: Creswell		Biologists/observers Present: Drew Powell Kelly Lutsch			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	60	1	3	1192%	1800	57	2	0	0/72%

Moon Effect: waning crescent 9% — Start: 0337 — Stop: 1535

Land Use: Urban / Agriculture / Forest / Water / Wetland / Barren/ Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB002	Anabat SD2	4062g	green	Tackle box weatherproofed + trash bag	35.73410	-76.53812	26 ft

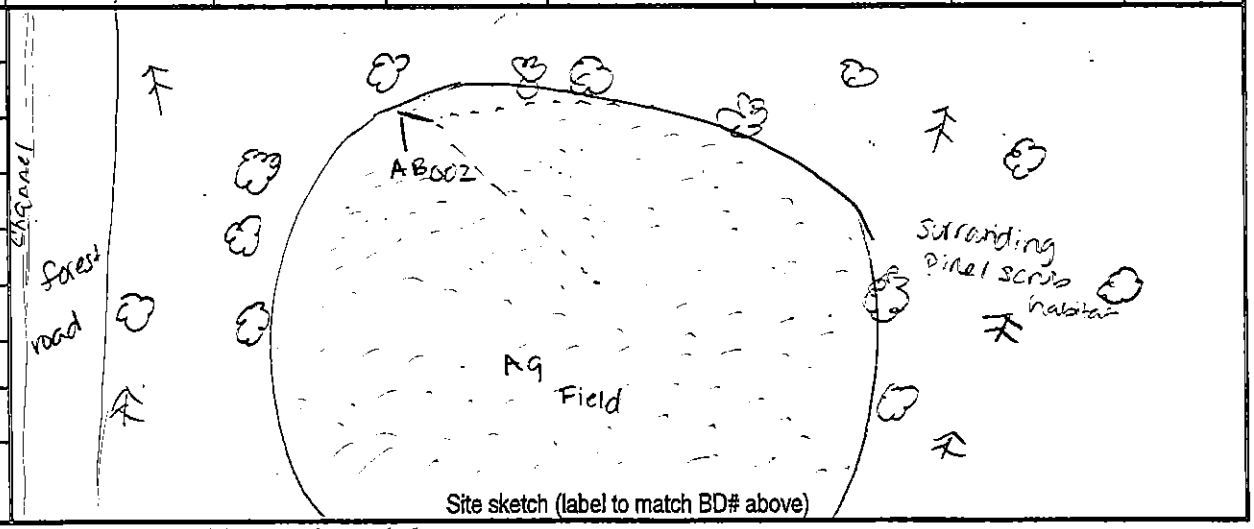
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB002	Yes KL	N	355°	10 ft	low	7	16/8	NA	√

Habitat & Site Description:

- Small round open field
- Cone is along edge
- Pine & scrub dominant

Remarks:

off F2 road @ end



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

NCDOT Acoustic Survey Data Form

Project Name: NC NHP research	**Proj #:** 42262	**County:** Washington	**Site#:** AB044b	**Night#:** 2	**Site Name:** F2 road
Start Date: 11/10/15		**End Date:** 11/11/15	**Start Time:** 16:30		**End Time:** 7:00
Nearest town: Columbia		**Biologists/observers Present:** Drew Powell			

*Conditions:	Time	Temp	Wind	Clouds	Precip/humidity	Time	Temp	Wind	Clouds	Precip/humidity
	700	51	1	0	0/83%	1000	51	2	0	0/84%

Moon Effect: new moon — Start: 0526 — Stop: 1642

Land Use: Urban / (Agriculture) / Forest / (Water) / Wetland / Barren / Other (describe):

Bat Detector #	Detector make & model	Firmware	Mic type	Weather-proofing type	Latitude	Longitude	Elevation
AB002	Anabat SD2	4062z	green	Tackle box weatherproofed + trash bag	35.73410	-76.53812	26ft

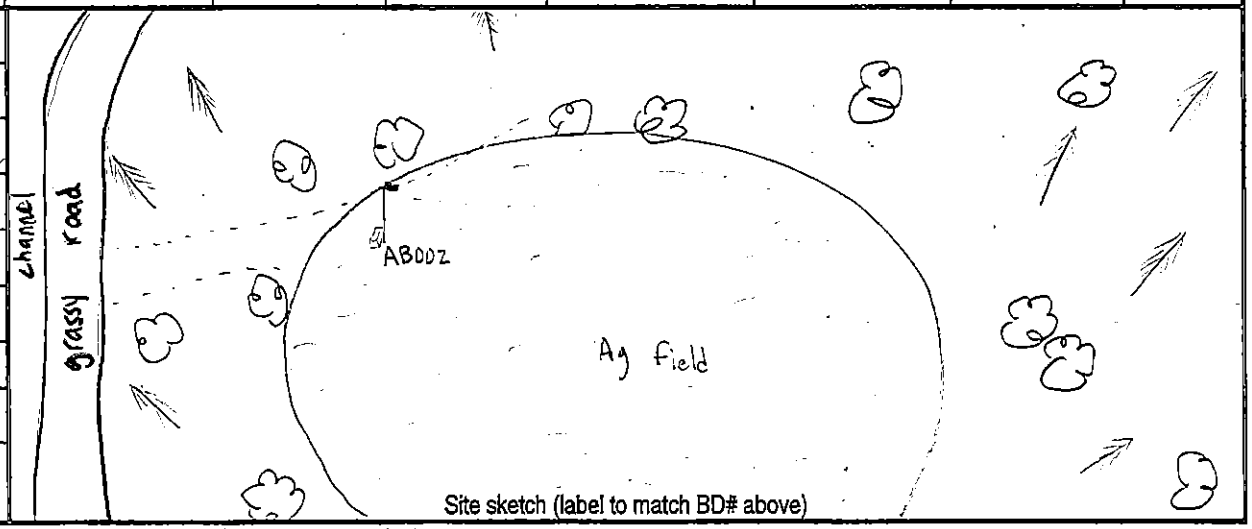
Bat Detector #	Functioning of detector verified?	Mic direction (N/S/E/W)	Mic orientation (degree of angle)	Mic height	Clutter** no/lo/med/hi	Sensitivity /gain	Div ratio/trigger	Interval	Photo?
AB002	Yes DP	N	355°	10 ft	low	7	16/8	NA	take in 11/8

Habitat & Site Description:

- Small round open field
- cone is along edge
- pine + scrub dominant

Remarks:

off F2 rd @ end



Site sketch (label to match BD# above)

* Weather: record conditions at end of sampling period & at the coldest point of the sampling period.

**Clutter: no = wide open for 100-m in all directions. lo = edge habitat with mic oriented outward. med = at least 10-m wide travel corridor, open above. hi = closed canopy & travel corridor < 10-m wide.

Habitat Info – please circle the option that best fits

Pine / hardwood / mixed / unforested

Upland / bottomland

Managed (thinned, burned, pine plantation or otherwise disturbed) / unmanaged

Mature forest / <20 years old forest

More open / more forested

Mostly developed / mostly undeveloped

Appendix H

Mist Net Data Sheets

Appendix H

Great Dismal Swamp NWR, Session 1

GDS

Page 1 of 1

Bat Survey Data Sheet

Site #: 1	Site Name: Cross Canal / County Line Ditch Intersect		PI#: 422162 1	Date: 11-16-15	
Location: Great Dismal Swamp Intersection Crosscanal/County line Ditch				County: Gates	
Observers: Dottie Brown & Drew Powell					
Lat/Long (DMS): N: 36.57429			W: -76.49741	Elevation (ft): 9'	
Nets Open: 16:42	Nets Closed: 20:00		Firm: ES / EE	ES Server Location: 91002-011	

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	17:24	LABO	A	M	NR	39	18.5	10.5	8	3m		OP	NCWRC A3192
2	19:40	MYAU	A	M	TD	36	18	10	8	7m		0	NCWRC A3170

Moon Phase: waxing crescent % 33

	Rise	Set
Moon:	10:46	21:26
Sun:	6:43	16:57

Time	Temp	Sky	Wind	# Bats
17:00	64.5	0	0	0
18:01	59.5	0	0	1
19:30	46	0	0	0
19:59	45	0	0	1
Ave				

Sky Code

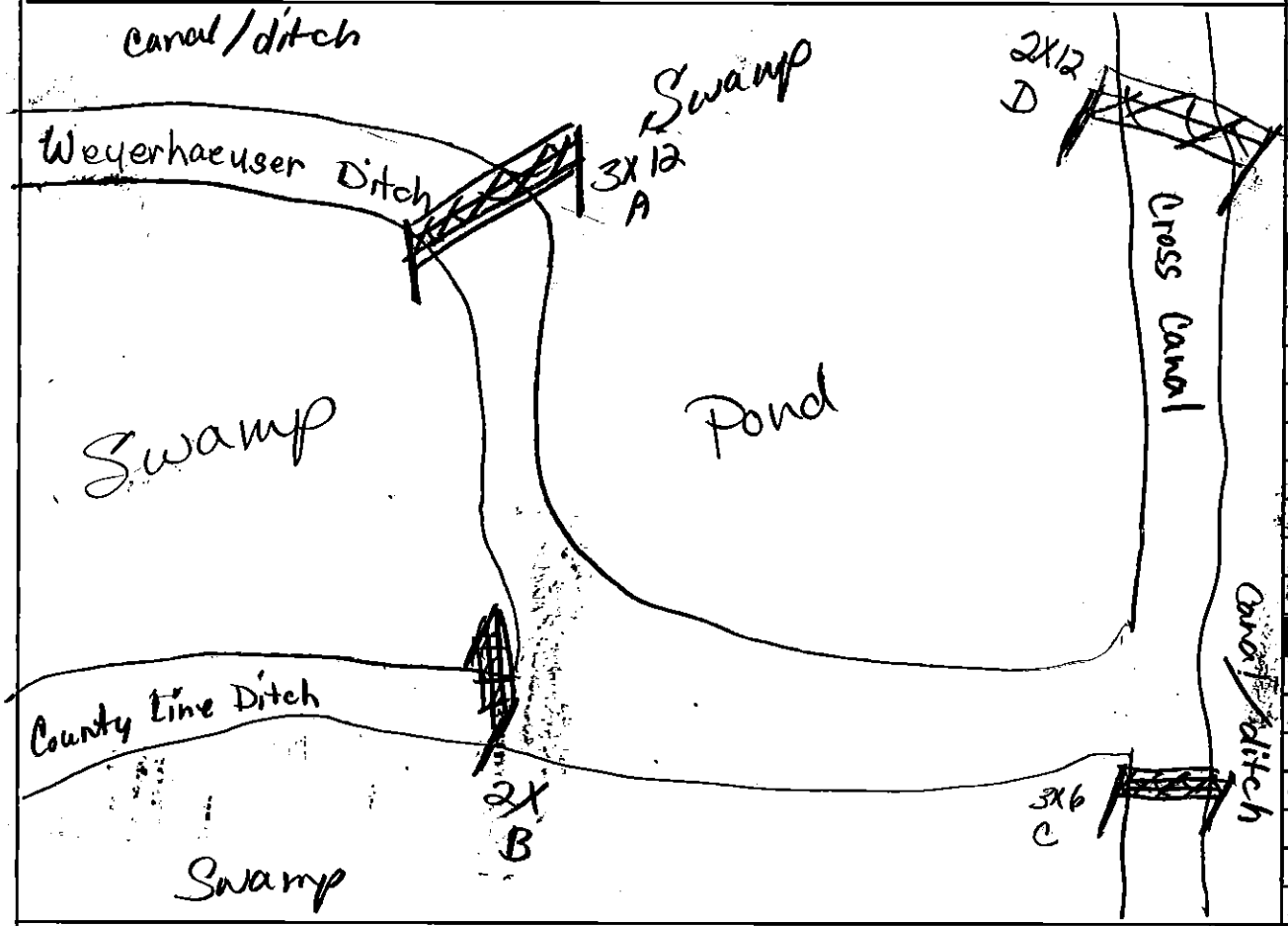
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation

1	Sweetgum
2	Bald cypress
3	Red maple
4	Swamp Chestnut Oak
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	✓	✓	✓	✓		
Cave/Mine						
Road						

No. of Poles X Net Length

A	3	X	12	=	36
B	2	X	9	=	18
C	3	X	6	=	18
D	2	X	12	=	24
E		X		=	
F		X		=	

Other Species

Comments & Site Description:

Data logger #5

Net A 36.51429 -76.49741
Net B 36.51456 -76.49693
Net C 36.51502 -76.49686
Net D 36.51492 -76.49783
Bat flew over Net D @ 17:30

Site Name: (ES/state/agency/location [i.e.ES_NC_WRC_AlarkaLaurel])

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Bat Survey Data Sheet

Site #: 1	Site Name: Cross Canal / County Line Intersection	PI #: 42262	Date: 11-17-15
Location: Great Dismal Swamp		County: Gates	
Observers: Dottie Brown, Jennifer Starvetsky		Project Name: NCNLEB Research	
Lat/Long (DMS) N: 36.51429	W: -76.49741	Elevation (ft): 9	Map #
Nets Open: 16:50	Nets Closed: 22:00	Firm: ES/EE	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	1749	LABO	A	M	NR	39	24	10	14	C/5	—	OP	NCWRC A3188
2	1823	LANO	A	M	NR	42	24	10	14	A/3	—	0	A3180
3	1823	LANO	A	M	NR	41	23.5	10	13.5	A/5.5	—	0	A3179
4	1840	CORA	A	F	NR	42	21	10	11	C/1	—	0	A3164
5	1843	LABO	A	M	NR	38	22	10	12	D/3	—	0	A3185

Moon Phase: waxing crescent % 38

	Rise	Set
Moon:	1133	2226
Sun:	1646	1655

Time	Temp	Sky	Wind	# Bats
1700	57.5	0	0	0
1800	57	1	0	1
1900	55	1	0	4
2000	53.5	1	0	0
2100	52	1	0	0
Ave 2200	51	1	0	0

Sky Code

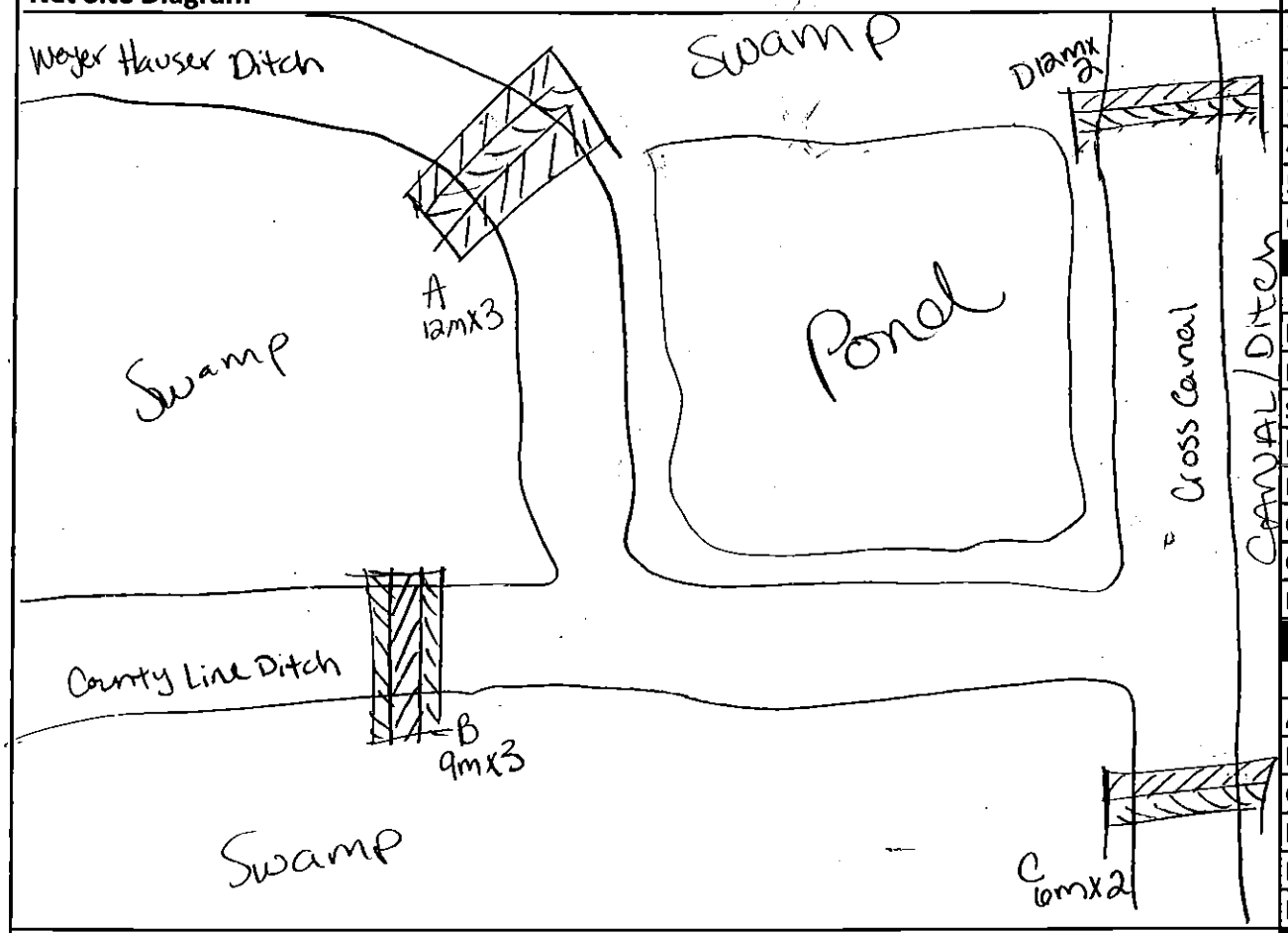
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	Sweetgum
2	Bald Cypress
3	Red Maple
4	Swamp Chestnut Oak
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	X	X	X	X		
Cave/Mine						
Road						

No. of Poles X Net Length

A	3	X	12	=	36
B	3	X	9	=	27
C	2	X	6	=	12
D	2	X	12	=	24
E		X		=	
F		X		=	

Other Species

Acoustic Recorder Type: Anabat # **Start Time:** **End Time:** **Start Sensitivity Setting:**

GPS: N: **W:** **Site/Location:**

Comments: 4 Robins in net

net A 36.51429, -76.49741 net B 36.51456, -76.49693

net C 36.51502 -76.49686 net D 36.51492, -76.49783

Data logger #5

Cknet

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Bat Survey Data Sheet

Site #: 1	Site Name: Cross Canal / County line intersection	PI #: 422162	Date: 11/28/15
Location: Great Dismal Swamp			County: Gates
Observers: Dottie Brown, Kelly Lutsch			
Lat/Long (DMS): N: 36.51429		W: -76.49741	Elevation (ft): 9
Nets Open: 16:51	Nets Closed: 21:55	Firm: ES / EE	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	18:08	MYHU	A	M	NR	34	22	10.5	9.5	B/5		0	No Band
													9/0 Band Replaced
2	19:02	MYAU	A	M	NR	35	18.5	10.25	8.25	C/1		0	NCWRC
													A3183
3	20:15	MYAU	A	m	TD	39	17.0	10.75	6.25	B/1		0	NCWRC
													A33196

Waning Gibbous — Moon Phase: % 91%

	Rise	Set
Moon:	1952	9:16
Sun:	16:55	16:51

Time	Temp	Sky	Wind	# Bats
18 00	56	0	0	0
19 00	53	0	0	1
20 00	52	0	0	1
21 00	50	0	0	1
22.00	49	0	0	0
Ave				

Sky Code

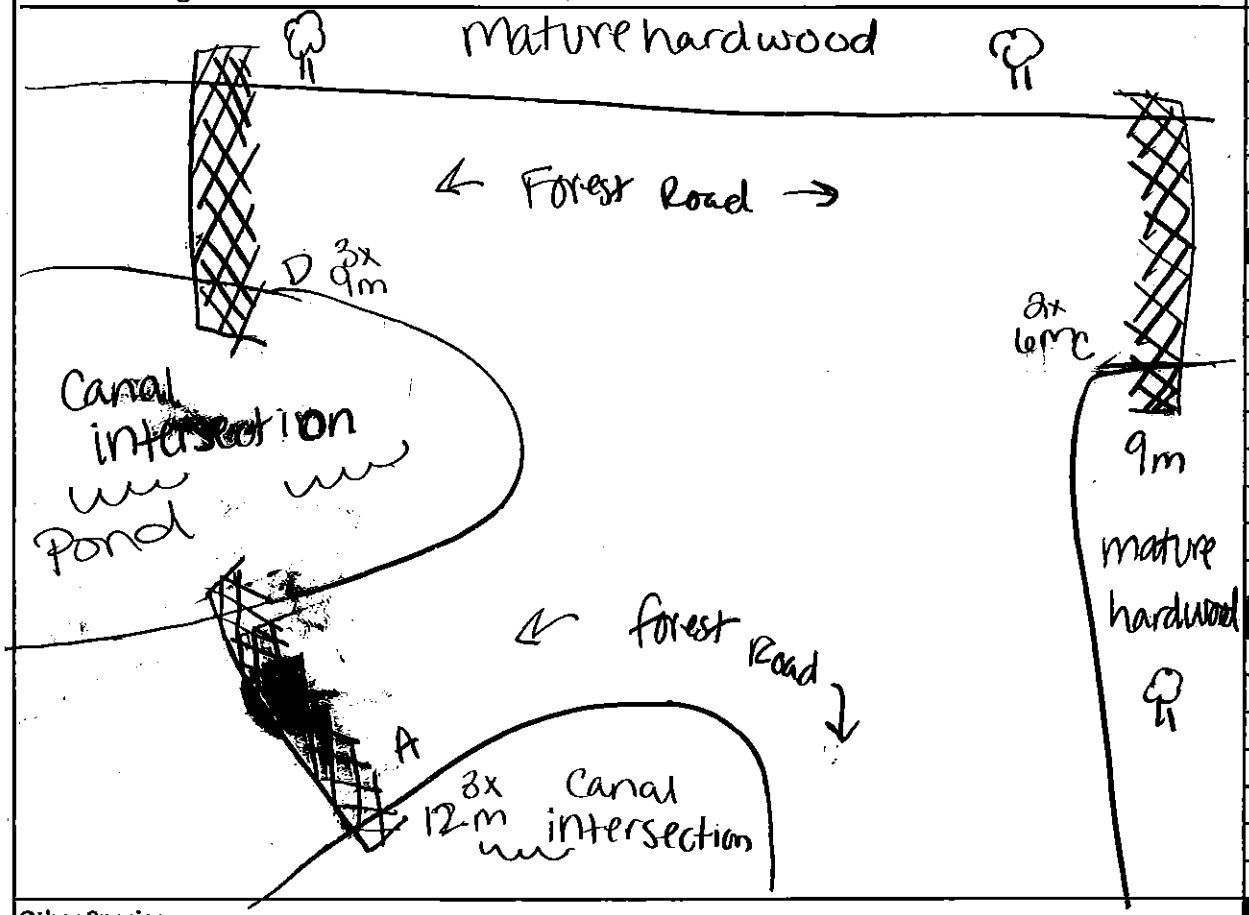
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Other Species

Dominant vegetation

1	Sweet gum
2	Bald Cypress
3	Red Maple
4	Swamp Chestnut Oak
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut			✓			
Corridor	✓	✓				
Cave/Mine						
Road						

No. of Poles X Net Length

A	3	X	12	=	
B	—	X	—	=	
C	2	X	6	=	
D	3	X	9	=	
E		X		=	
F		X		=	

Comments & Site Description:

intersection of 4 forest roads w/ pond in the middle

Net A - 36.51429, -76.49741
Net B - not set up
Net C - 36.51502, -76.49686
Net D - 36.51492, -76.49783

Bat Survey Data Sheet

Site #: 2	Site Name: Sherrill Ditch	PI #: 42262	Date: 11/18/15
Location: Great Dismal Swamp Nat'l Wildlife Refuge			County: Gates
Observers: Kim Romano Drew Powell			
Lat/Long (DMS): N: 36.51211°		W: -76.52334°	Elevation (ft): 60
Nets Open: 16:50	Nets Closed: 21:55	Firm: ES/EE	ES Server Location: 91022-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	19:00	NYHU	A	F	NR	36	19.5	7.5	12	A/1	—	0	—
2	19:05	NYHU	A	F	NR	37	19.5	7.5	12	A/3	—	0	—
3	21:14	MYAU	A	M	NR	36	15	7.5	7.5	C/4	G	0	NCWRC A3127

Waxing Crescent — Moon Phase: 47 %

	Rise	Set
Moon:	12:13	23:29
Sun:	06:46	16:55

Time	Temp	Sky	Wind	# Bats
17:00	57°	1	1	0
18:15	58°	2	1	0
19:30	59	3	1	2
20:45	57	3	1	0
21:55	57	3	0	1
Ave				

Sky Code

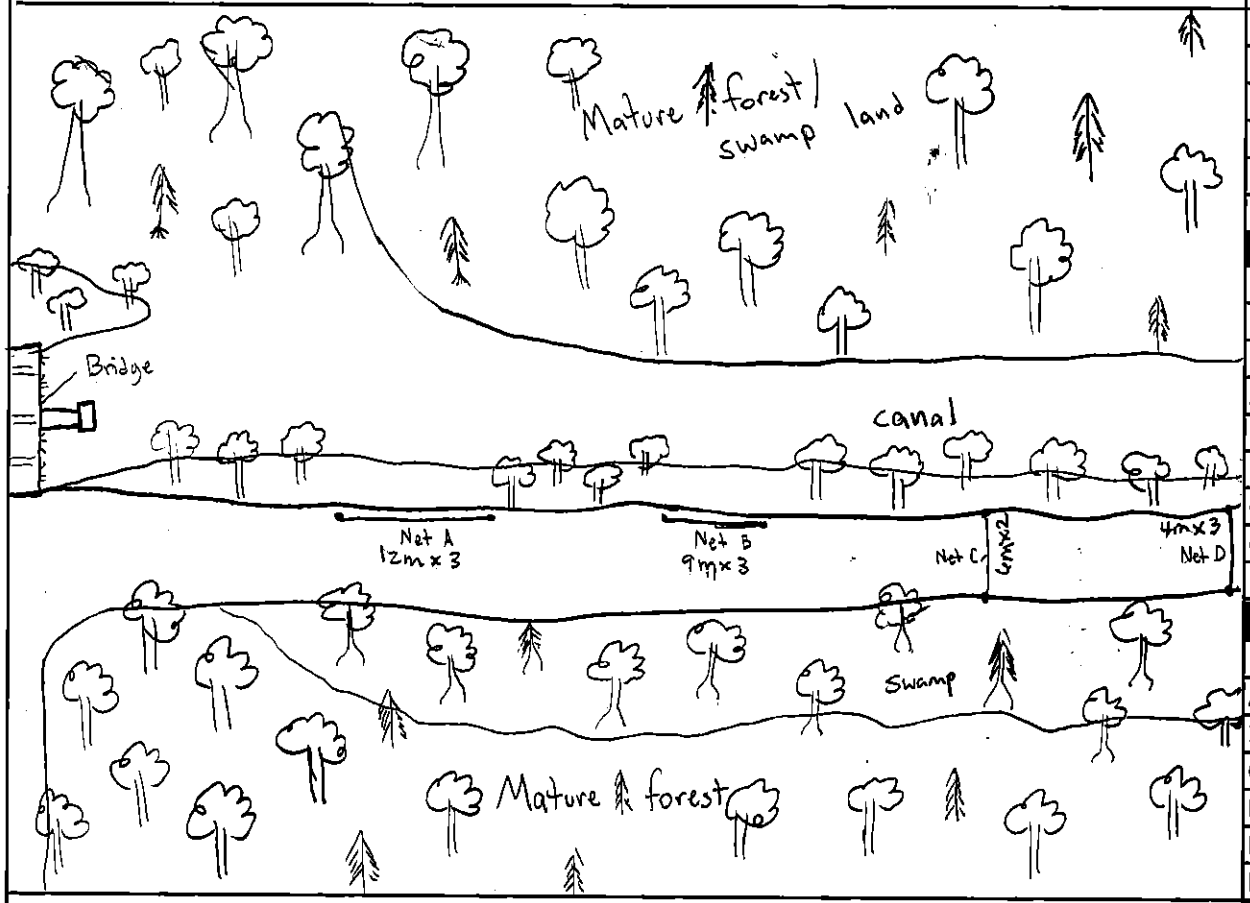
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Other Species

Dominant vegetation	
1	Bald cypress
2	Sweetgum
3	Swamp Chestnut Oak
4	Red Maple
5	Sycamore
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	✓	✓	✓	✓		
Cave/Mine						
Road						

No. of Poles X Net Length

A	3	X 12	=	36	
B	3	X 9	=	18	
C	2	X 6	=	12	
D	3	X 4	=	12	
E		X	=		
F		X	=		

Comments & Site Description:

Net A: 36.51194° -76.52444°
Net B: 36.51183° -76.52525°
Net C: 36.51176° -76.52583°
Net D: 36.51170° -76.52635°

- Secondary hardwood forest w/ a canal running parallel to the road
- Unknown species escape at 19:49, Net B, 5 m high. (Possible EPFU)

Page 1 of _____

Bat Survey Data Sheet

Site #: 2	Site Name: Shewill Ditch	PI #: 42262	Date: 11-29-15
Location: Great Dismal Swamp NWR-			County: Gates
Observers: Dottie Brown + Keegan Charka			
Lat/Long (DMS): N: 36.51211		W: -76.52334	Elevation (ft): 62
Nets Open: 16:45	Nets Closed: 21:55	Firm: ES / EE	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	NCWRC Band #
1	17:40	MYAU	A	M	TD	37	17.75	10.5	7.25	E/5		OP	A3180
2	17:48	MYAU	A	F	NR	36	18.5	10.5	8	A/2		OP	A3166
3	17:57	LACI	A	F	PL	54	36	10.5	25.5	D/4		O	A1800
4	18:12	EPFU	A	F	NR	47	28.75	10.75	18	D/4		OP	A1799
5	18:29	MYAU	A	M	TD	35	17.5	10.5	7	E/3		OP	A3168
6	19:16	MYAU	A	M						E/5	escape	from	net
7	19:55	MYAU	A	F	NR	40	16.75	7.25	9.5	E/3.5		O	A3167
8	20:20	MYAU	A							D/4	escape	from	net
9	21:27	NYHU	A	M	NR	34	17.75	7.25	10.5	B/6			A3193

Moon Phase: waning gibbous % 83

	Rise	Set
Moon:	20:50	10:06
Sun:	6:56	16:51

Time	Temp	Sky	Wind	# Bats
16:45		2	1	0
18:45		2	1	5
19:45		2	1	1
20:45		3	1	2
21:57		3	1	1
Ave				

Sky Code

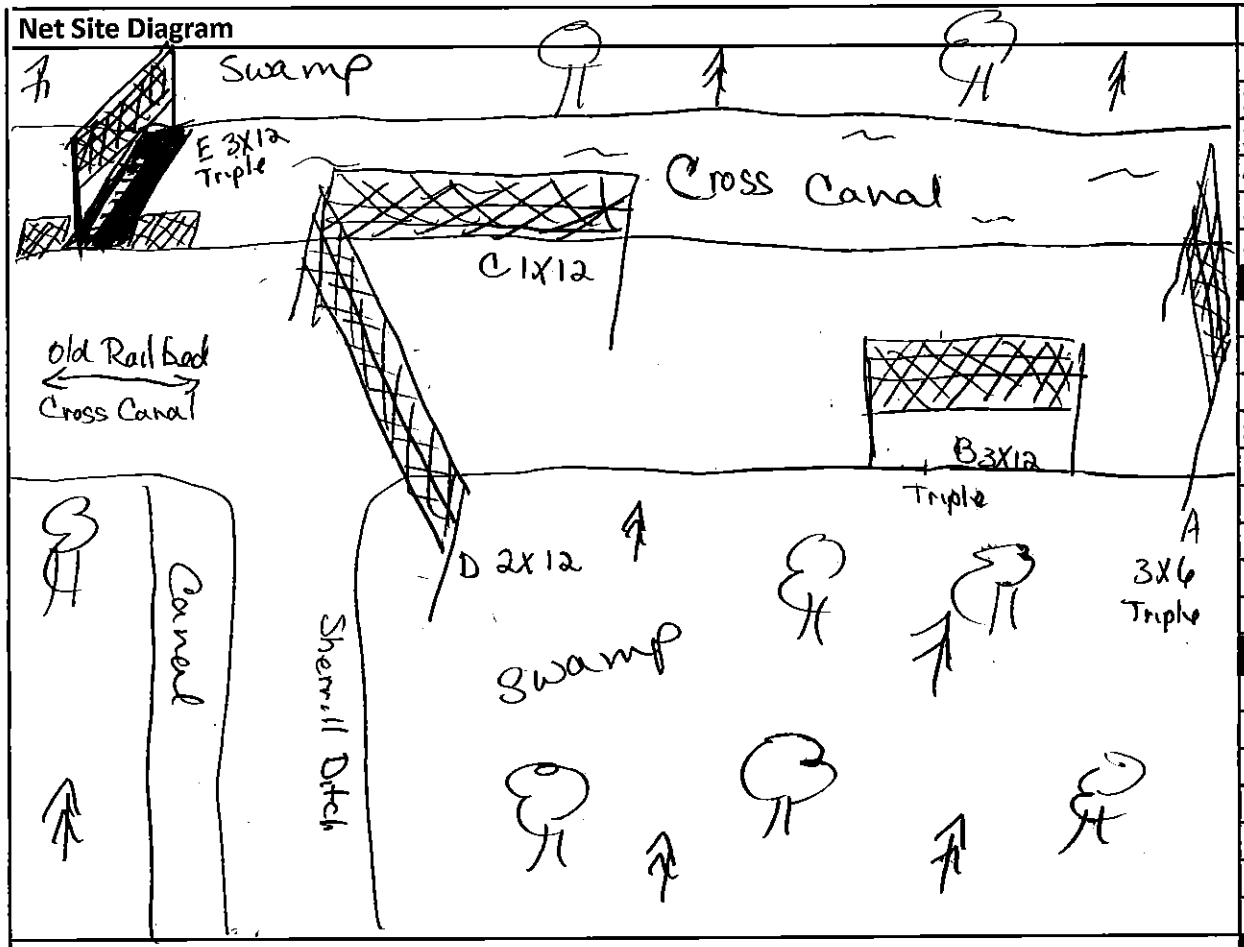
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation

1	Sweet gum
2	bald cypress
3	red maple
4	
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream					✓	
Pond						
Road Rut						
Corridor	✓	✓	✓	✓		
Cave/Mine						
Road						

No. of Poles X Net Length

A	3	X	6	=	
B	3	X	12	=	
C	1	X	12	=	
D	2	X	12	=	
E	3	X	12	=	
F		X		=	

Other Species

Comments & Site Description: Great Dismal Swamp National Wildlife Refuge. Nets placed along old railroad bed that parallels Cross canal. Net placed ~~across road~~, across canal, parallel road & swamp, and edge net in turn of road. Bats seen at flyway at dusk.

A 3X16 36.51184 -76.52586
B 3X12 36.51188 -76.52511
C 1X12 36.51206 -76.52357
D 2X12 36.51202 -76.52367
E 2X12 36.51207 -76.52337

Temp data logger did not work

Closed early due to fog

Site Name: (ES/state/agency/location [i.e.ES_NC_WRC_AlarkaLaurel])

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Bat Survey Data Sheet

Site #: 2	Site Name: Sherrill Ditch	PI #: 42262	Date: 12-1-15
Location: GDS NWR intersection of Sherrill Ditch + Cross Canal		County: Gates	
Observers: Dottie Brown + Drew Powell		Project Name: NC WLEB Research	
Lat/Long (DMS)	N: 36.51211	W: -76.52334	Elevation (ft): 60 / Map #
Nets Open: 16:46	Nets Closed: 21:57	Firm: ES/EE	ES Server Location: 9/002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	NCWRC Band #
1	19:10	MYAU	A	M	TD	38		11		A/		0	A3194

Moon Phase: waning gibbous % 75

	Rise	Set
Moon:	22:45	11:30
Sun:	6:58	16:51

Time	Temp	Sky	Wind	# Bats
17:00	56.5	3	0	0
18:00	56	3	0	0
19:00	55.5	3	1	6
21:00	55	4	1	1
22:45	55.5	4	1	0
Ave				

Sky Code

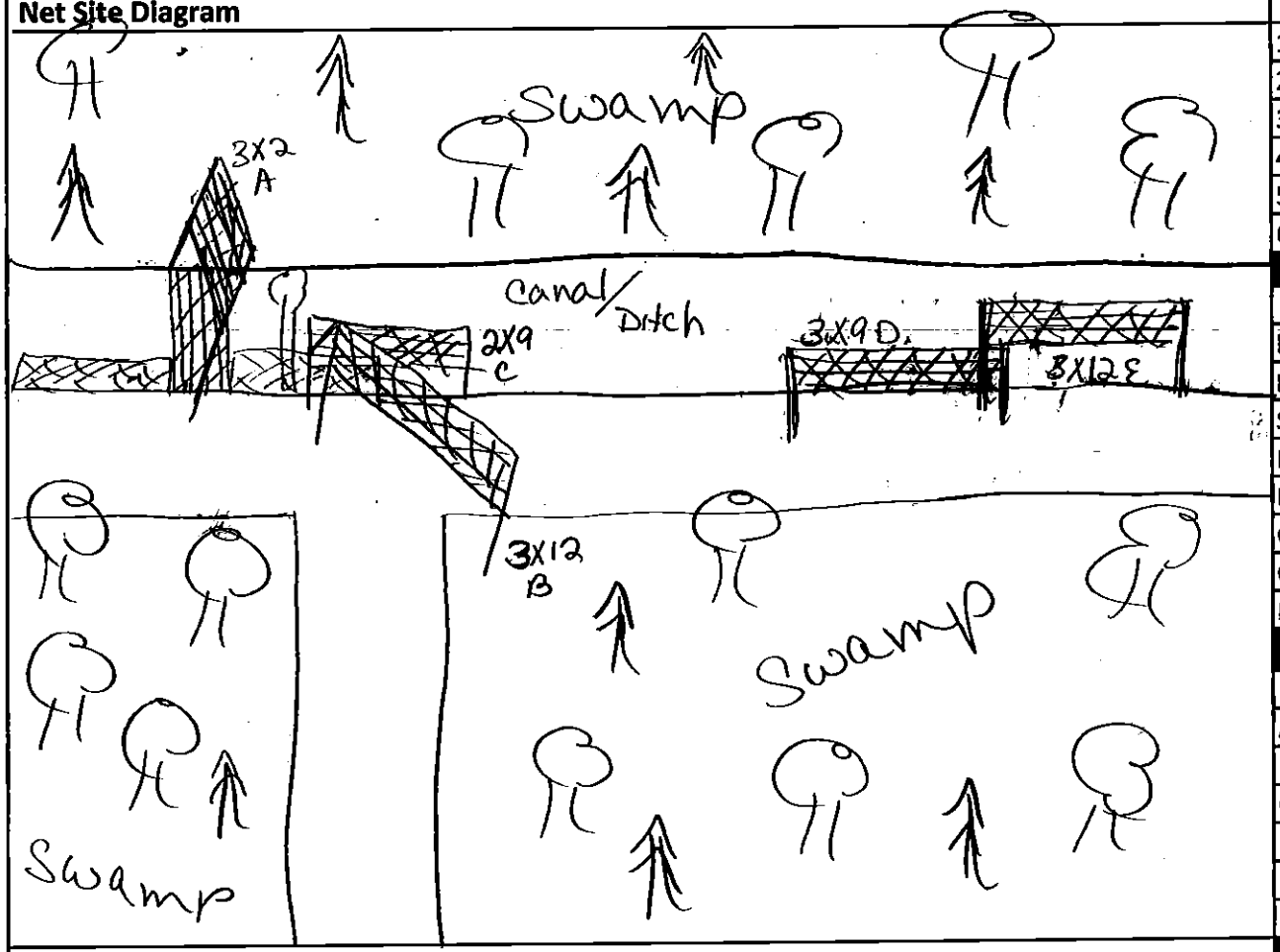
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	Sweet Gum
2	Bald Cypress
3	red maple
4	water Tupelo
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream	✓					
Pond						
Road Rut						
Corridor		✓	✓	✓	✓	
Cave/Mine						
Road						

No. of Poles X Net Length

A	3	X	12	=	36
B	3	X	12	=	36
C	2	X	9	=	18
D	3	X	9	=	27
E	3	X	12	=	36
F		X		=	

Other Species
Beaver
Barred owl

Acoustic Recorder Type: Anabat # **Start Time:** **End Time:** **Start Sensitivity Setting:**

GPS: N: **W:** **Site/Location:**

Comments: Net site same location as 11-30-15. Nets placed across old railroad bed that parallels cross Canal. Nets placed across road, across canal, parallel road + swamp, and edge net in turn of road.
Anabat #004 for activity "lots of calls + Bats seen @ dusk
Heavy fog around 21:41 pm

Bat Survey Data Sheet

Site #: 2	Site Name: Sherrill Ditch	PI #: 42262	Date: 12-12-15
Location: GDS		County: Gates	
Observers: Dottie Brown			
Lat/Long (DMS): N: 36.51204°	W: -76.52354°		Elevation (ft): 60
Nets Open: 16:40	Nets Closed: 21:40	Firm: ES/EE	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	NCWRC Band #
1	17:50	MYSE	A	F	NR	36	18	11	7	E/5m		OP	A3195
													172.603
2	17:51	MYSE	A	M	NR	35	15	7.5	7.5	E/1		OP	A3175
													172.541
3	17:52	MYAU	A	F	NR	38	19.25	10.5	8.75	A/2		OP	A3176
4	17:52	NYHU	A	M	NR	35	21	10.25	10.75	C/3		OP	A3178
5	18:50	NYHU	A	M	TD	35	21	10	11	B/5		O	A3177
6	18:55	MYAU	A	F	NR	37	18.5	11	7.5	D/2.5		OP	A3101
7	18:59	MYSE	A	M	NR	36	18.0	10.5	7.5	A/2		OP	A3125
													172.423
8	19:20	MYAU	A	F	NR	36	18.5	11	7.5	E/3		OP	not banded hole in wing
9	19:31	MYAU	escape from net							A/1			
10	19:39	CORA	A	F	NR	42	20.5	10.75	9.75	C/100'		OP	A3164
													recapture
11	19:48	NYHU	A	M	NR	34	20	10.5	9.5	C/2.5		OP	A3103
12	22:01	NYHU	A	F	PL	35	22.5	10.5	12	E/			A3124

Moon Phase:	New	2
	Rise	Set
Moon:	07:53	18:19
Sun:	07:07	16:48

Time	Temp	Sky	Wind	# Bats
16:40	65°	0	0	0
18:25	60°	0	0	4
19:45	57°	0	0	6
20:50	56°	0	0	1
22:01	56°	0	0	1
Ave				

Sky Code

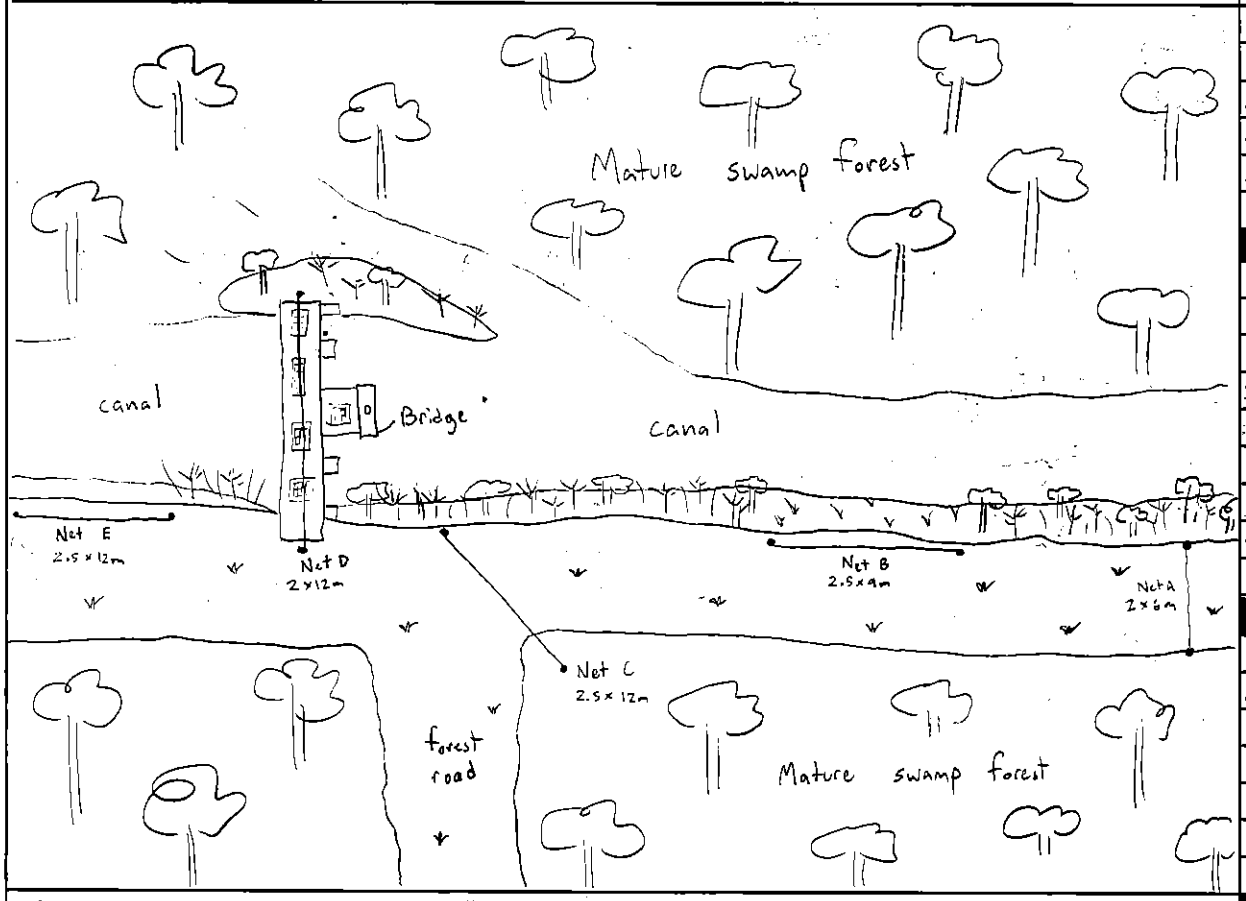
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	Swamp Chestnut oak
2	Bald Cypress
3	Red Maple
4	Sweetgum
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream				X		
Pond						
Road Rut						
Corridor	X	X	X	X	X	
Cave/Mine						
Road						

No. of Poles X Net Length

A	2	X	6	=	12
B	2.5	X	9	=	18
C	2.5	X	12	=	24
D	2	X	12	=	24
E	2.5	X	12	=	24
F		X		=	

Other Species

Comments & Site Description: Net site same location as 12/1/15. Nets placed across old railroad bed that parallels Cross Canal. Nets placed across road, across canal, and parallel with road and canal.

Appendix H

North River Game Land, Sessions 1 & 2

Robo #3

Bat Survey Data Sheet

Site #: 1	Site Name: Billboard / Airport	PI #: 42262	Date: 11/16/15
Location: North River			County: Currituck
Observers: Kim Romano, Jennifer Starvetsky, Kelly Lutsch			
Lat/Long (DMS): N: 36.38350	W: 76.00794		Elevation (ft): 78
Nets Open: 16:30	Nets Closed: 21:56	Firm: ES/EE	ES Server Location: 9002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	17:30	MYSE	M	A	NR	35.5	15	7	8	C/	H	0	NCWRC A3129 172.259

Moon Phase: Waxing crescent % 22%

	Rise	Set
Moon:	9:35	22:00
Sun:	6:43	16:56

Time	Temp	Sky	Wind	# Bats
17:00	58	0	0	0
18:00	55	0	0	1
19:20	51	0	0	0
20:30	48	0	0	0
21:50	46	0	0	0
Ave				

Sky Code

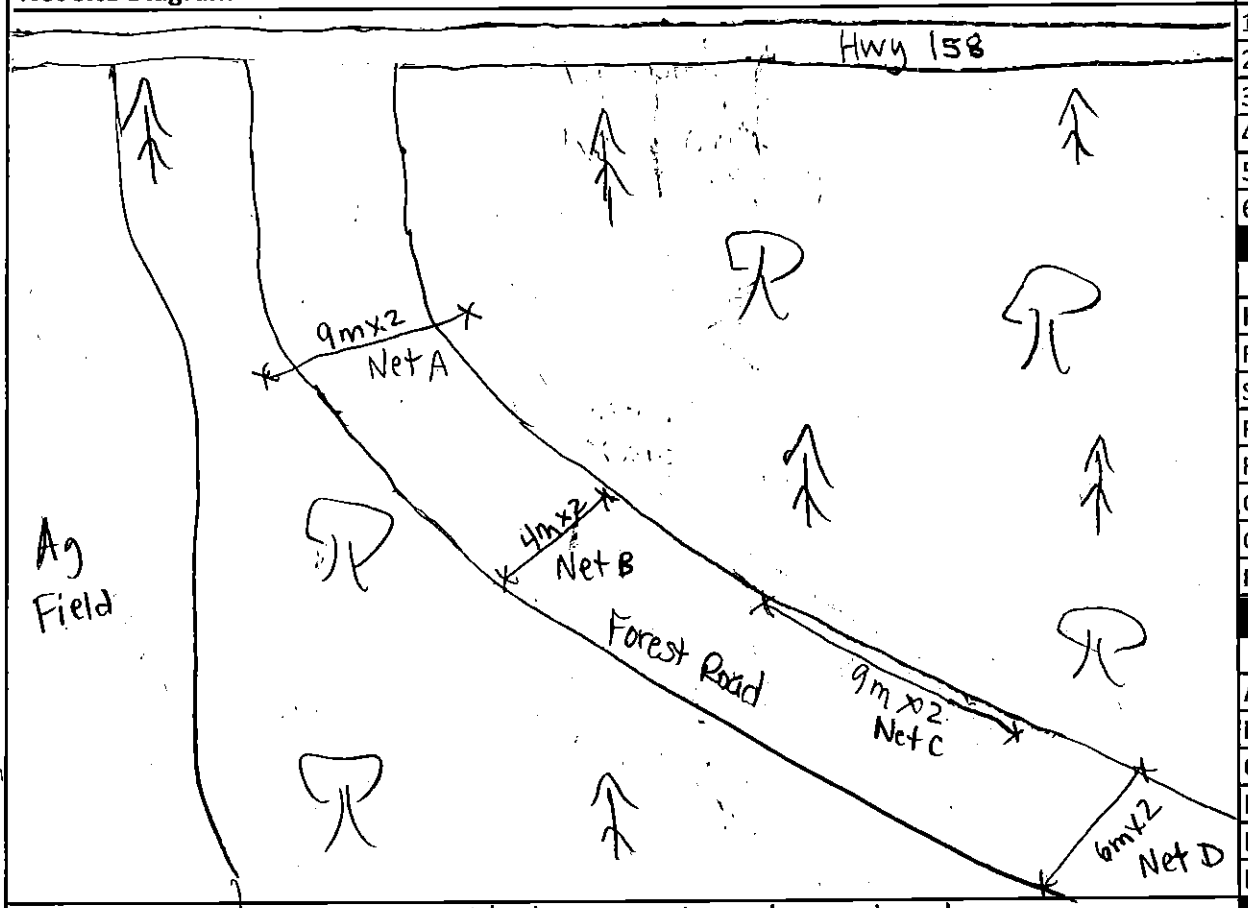
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	N + S red oak
2	red maple
3	loblolly pine
4	water oak
5	black cherry
6	sweetgum

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	X	X	X	X		
Cave/Mine						
Road						

No. of Poles X Net Length

A	2	X	9	=	18
B	2	X	4	=	8
C	2	X	9	=	18
D	2	X	6	=	12
E		X		=	
F		X		=	

Other Species flying squirrel, black bear, deer, barred owl

Comments & Site Description:

Mid successional pine-hdwd forest surrounding agricultural fields. Nets set along forest rd corridor.

Net A: 36.38387, -76.00806
Net B: 36.38326, -76.00780 Net C: 36.38306, -76.00762 Net D: 36.38300, -76.00749

Page _____ of _____

Bat Survey Data Sheet

Site #: 1	Site Name: Billboard/Airport	PI #: 42262	Date: 11/17/15
Location: North River			County: Currituck
Observers: Kim Romano, Kelly Lutsch			
Lat/Long (DMS): N: 36.38350		W: 76.00794	Elevation (ft): 78
Nets Open: 16:40	Nets Closed: 21:55	Firm: ES/EE	ES Server Location: 91002-011

four 8
ear 16

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	20:00	MYSE	A	F	NR	35	16	7.5	8.5	A/	hair	0	NCWRC A3128 1726062

Waxing Crescent

Moon Phase: % 32%

	Rise	Set
Moon:	11:31	22:26
Sun:	6:43	16:55

Time	Temp	Sky	Wind	# Bats
17:00	61	0	1	0
18:00	59	0	2	0
19:15	59	0	2	0
20:30	58	0	2	1
21:50	58	0	2	0
Ave				

Sky Code

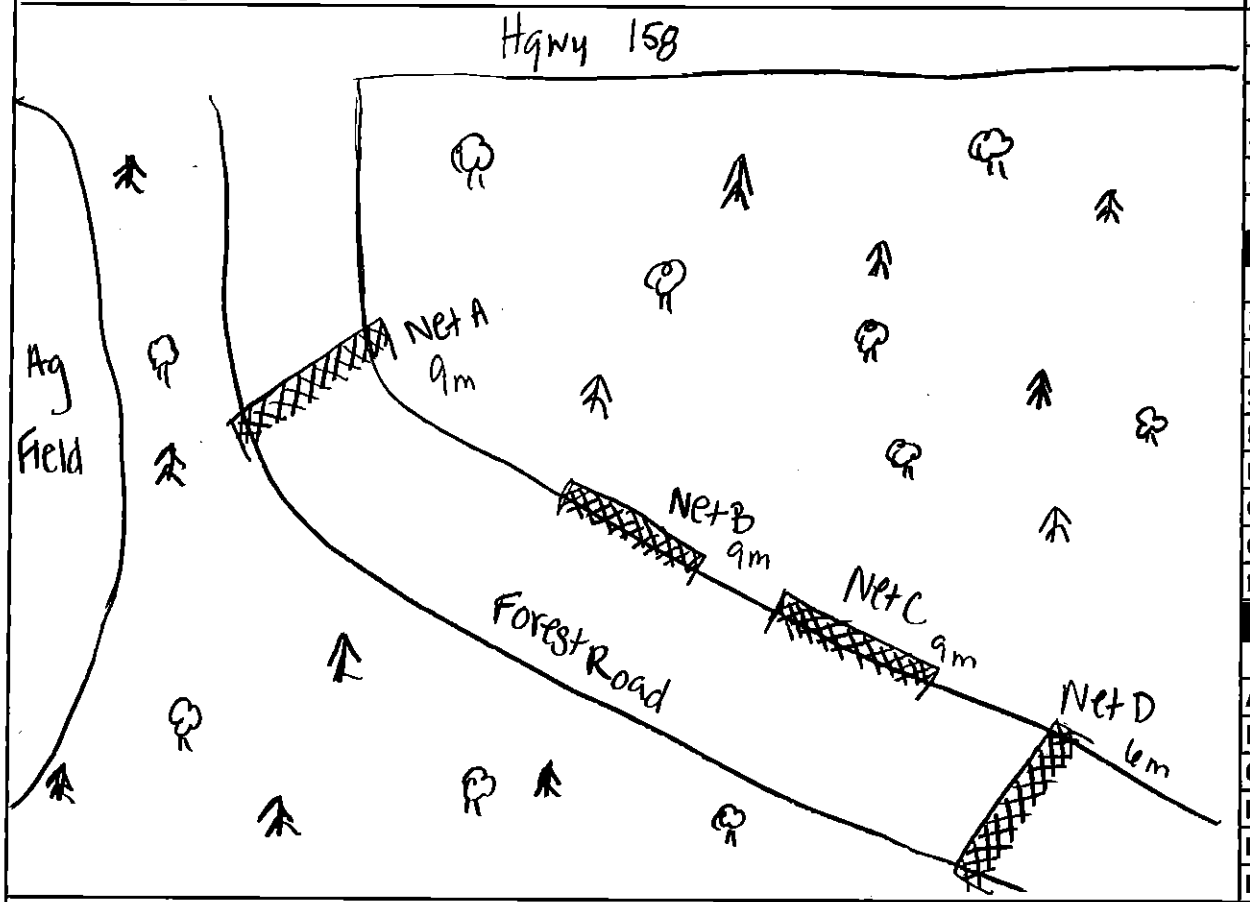
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation
1 N + S red oak
2 Red Maple
3 Loblolly Pine
4 Water Oak
5 Black Cherry
6 Sweet Gum

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	X	X	X	X		
Cave/Mine						
Road						

No. of Poles X Net Length

A	2	X	9	=	18
B	2	X	9	=	18
C	2	X	9	=	18
D	2	X	6	=	12
E		X		=	
F		X		=	

Other Species

Comments & Site Description:

Moved 4 m. from perpendicular to road to parallel to road

Net A -36.38387, -76.00806 Net B -36.38326
Net C -36.38306, -76.00762 Net D -36.38300, -76.00749

Page _____ of _____

Bat Survey Data Sheet

Site #: 1	Site Name: Billboard / Airport	PI #: 42262	Date: 11-18-15
Location: North River Cranelands			County: Currituck
Observers: Dottie Brown Jennifer Starvetsky Kelly Lutsch			
Lat/Long (DMS): N: 36.38218	W: -76.00708		Elevation (ft): 4'
Nets Open: 1155	Nets Closed:	Firm: ES/EE	ES Server Location: 19002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
	No bats												

Moon Phase: First quarter % 42

	Rise	Set
Moon:	1213	2329
Sun:	0645	1655

Time	Temp	Sky	Wind	# Bats
1700		0	0	0
1800		0	1	0
1900		0	0	0
2000	62	0	0	0
2100	62			
Ave				

Sky Code

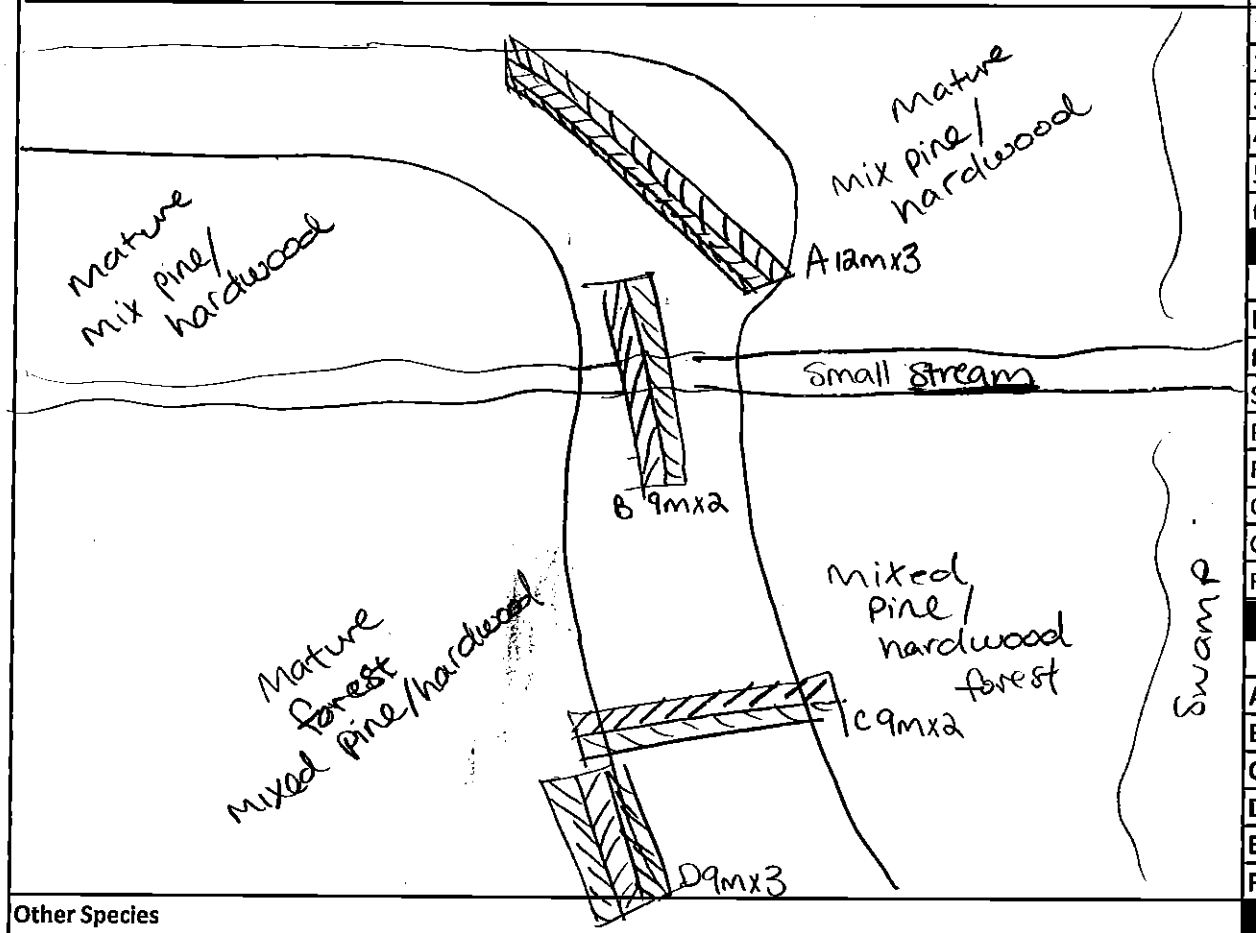
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	Sweetgum
2	Red Oak, Black Oak
3	[redacted] Tupelow
4	Swamp Chestnut Oak
5	White Oak
6	Loblolly Pine & Bald Cypress

Tulip Poplar

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream		✓				
Pond						
Road Rut						
Corridor	✓		✓	✓		
Cave/Mine						
Road						

No. of Poles X Net Length

A	3	X	12	=	36
B	2	X	9	=	18
C	2	X	9	=	18
D	3	X	9	=	27
E		X		=	
F		X		=	

Other Species

Comments & Site Description: forest road in upland hardwood forest with few pines - dominant in canopy - Bottomland Swamp to SW. Nets set on forest roads in N.R. Gameland property Bordered by agriculture fields.

Net A 36.38186 -76.00676
Net B 36.38188 -76.00688
Net C 36.38276 -76.00719
Net D 36.38287 -76.00726

moved nets slightly down road from 11-17 to small stream leading into the swamp

NR

Bat Survey Data Sheet

Site #: 1	Site Name: Billboard / Airport	PI #: 42262	Date: 11/26/15
Location: forest road off 158			County: Currituck
Observers: Dottie Brown, Keegan Chyrka			
Lat/Long (DMS): N: 36.38396°	W: -76.00809		Elevation (ft): 40
Nets Open: 16:51	Nets Closed: 21:55	Firm: ES / EE	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	17:48	MYSE	A	F	NR	36	18	10.25	7.76	A/25	hair	0p	NCWRC
													A3126
													172722
2	18:32	MYSE	A	M	NR	34	18.6	10.75	7.75	C/1.5	hair/tissue	0 p	NCWRC
													A3111
													172,842

Moon Phase: full moon % 99

	Rise	Set
Moon:	17:59	7:20
Sun:	6:53	16:57

Time	Temp	Sky	Wind	# Bats
17:00	60	0	0	0
18:00	58.5	0	0	1
19.00	58°F	0	1	1
20:00	56°F	0	1	0
21:09	56°F	0	1	0
Ave				

Sky Code

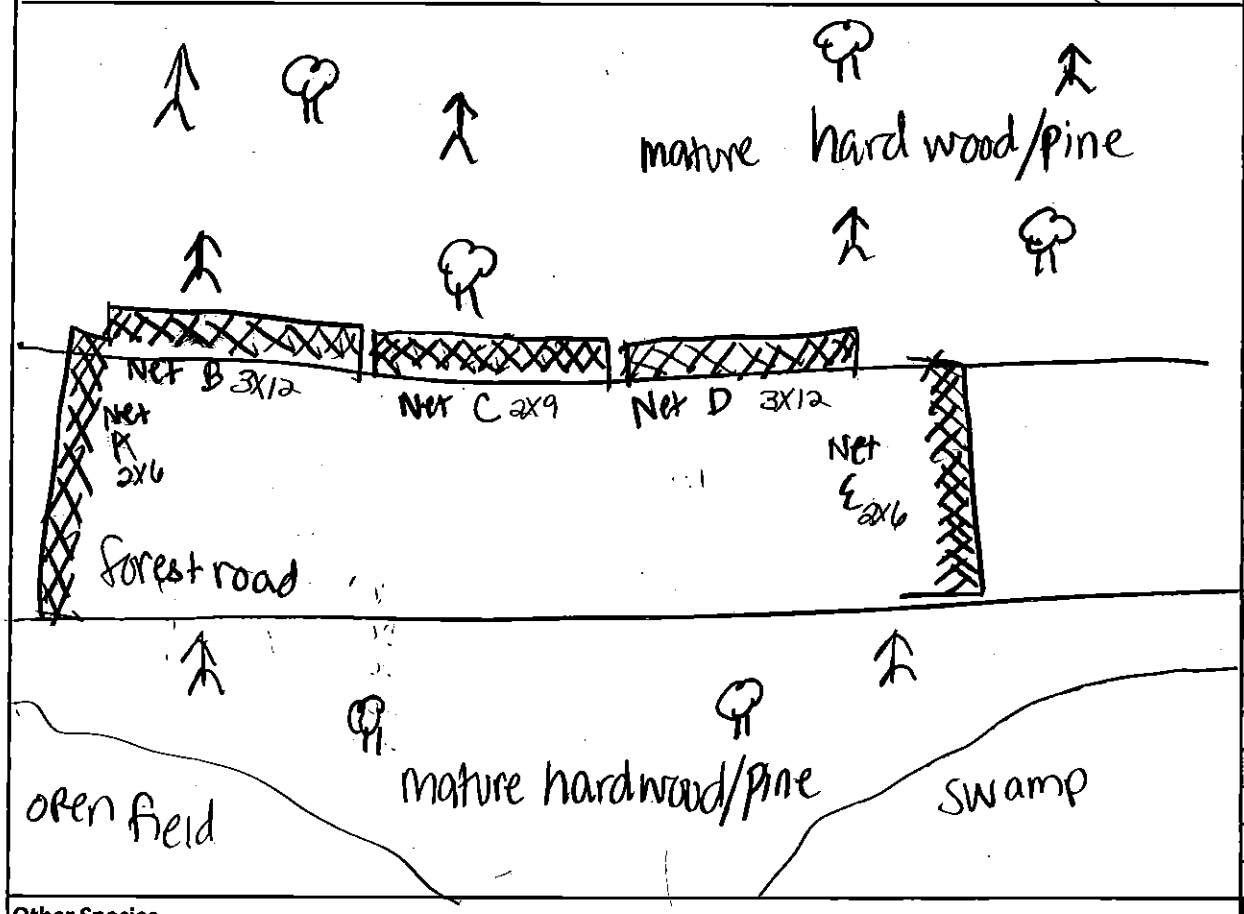
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation

1	Loblolly
2	Sweetgum
3	Tulip Poplar
4	Water Oak
5	White oak
6	Swamp Chestnut oak

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	✓	✓	✓	✓	✓	
Cave/Mine						
Road						

No. of Poles X Net Length

A	2	X	6	=	12
B	3	X	12	=	36
C	2	X	9	=	18
D	3	X	12	=	36
E	2	X	6	=	18
F		X		=	

Other Species

Comments & Site Description: Set up along forest road off of SR 158 and into North River Gameland

Net A 36.38396 -76.00809
Net B 36.38389 -76.00813
Net C 36.38377 -76.00803
Net D 36.38367 -76.00799
Net E 36.38341 -76.00775

Page _____ of _____

Bat Survey Data Sheet

Site #: 1	Site Name: Billboard / Airport	PI #: 42262	Date: 11-27-15
Location: Forest road off SR 158			County: Currituck
Observers: Dottie Brown + Drew Powell			
Lat/Long (DMS): N: 36, 38396		W: -76.00809	Elevation (ft): 40
Nets Open: 16:31	Nets Closed: 21:49	Firm: ES/EE	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	18:21	MYHu	A	M	NR	37	22	10.25	11.75	C/2m		0	NCWRC A3169
2	19:52	MYAU	A	F	NR	39	20.5	10.5	10	C/2m		0P	NCWRC A3181
3	20:55	MYSE	A	M	NR	36	18	10.75	7.25	A/2m	H	0	NCWRC A3182
4	20:57	MYAU	A	F	NR	39	21.75	10.5	11.25	E/3m		0P	NCWRC A3184
5	21:13	MYAU	A	F	NR	38	20	11	9	D/3m		0	NCWRC A3165

Moon Phase: Full moon % 100%

	Rise	Set
Moon:	18:53	8:20
Sun:	6:53	16:49

Time	Temp	Sky	Wind	# Bats
16:41	64	0	0	0
18:41	59	0	0	1
19:41	58.5	0	0	0
20:41	57.5	0	0	1
22:00	55	0	0	3
Ave				

Sky Code

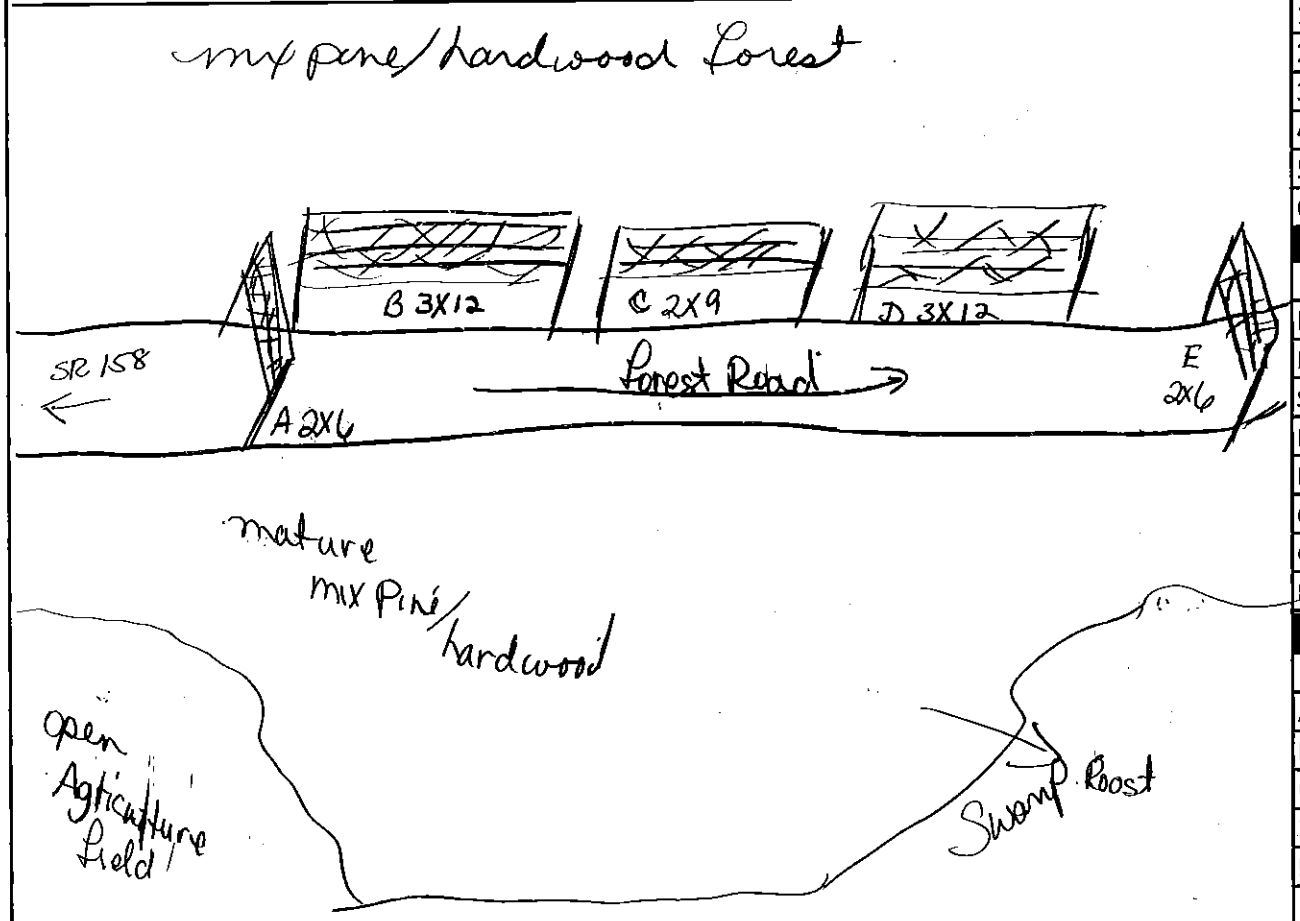
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	loblolly
2	Sweet gum
3	Tulip Poplar
4	Water oak
5	White Oak
6	Swamp Chestnut Oak

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	✓	✓	✓	✓	✓	
Cave/Mine						
Road						

No. of Poles X Net Length

A	2	X	6	=	12
B	3	X	12	=	36
C	2	X	9	=	18
D	3	X	12	=	36
E	2	X	6	=	18
F		X		=	

Other Species

Comments & Site Description: Set up along forest road off of SR 158 and into the North Prong Canebrake

Net A 36.38396 -76.00809
Net B 36.38389 -76.00813
Net C 36.38377 -76.00803
Net D 36.38367 -76.00799

NR site 2 11-21-15

Page _____ of _____

Bat Survey Data Sheet

Site #: 2	Site Name: Sassafrass lane /	PI #: 42262	Date: 11/21/15
Location: North River Gamelands / Sassafras Lane / Indian Island Rd			County: Currituck
Observers: Dottie Brown, Jennifer Starvetsky			
Lat/Long (DMS): N: 36.28532		W: -75.98422	Elevation (ft): 6"
Nets Open: 16:53	Nets Closed: 21:53	Firm: ES / EE	ES Server Location: 9/002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
No bats													

Moon Phase: Waxing Gibbous % 7.7

	Rise	Set
Moon:	1:40	14:40
Sun:	6:48	16:53

Time	Temp	Sky	Wind	# Bats
1700	58	0	0	0
1800	55	0	0	6
1900	54	6	6	0
2000	53	0	0	0
2143	57	0	0	0
Ave				

Sky Code

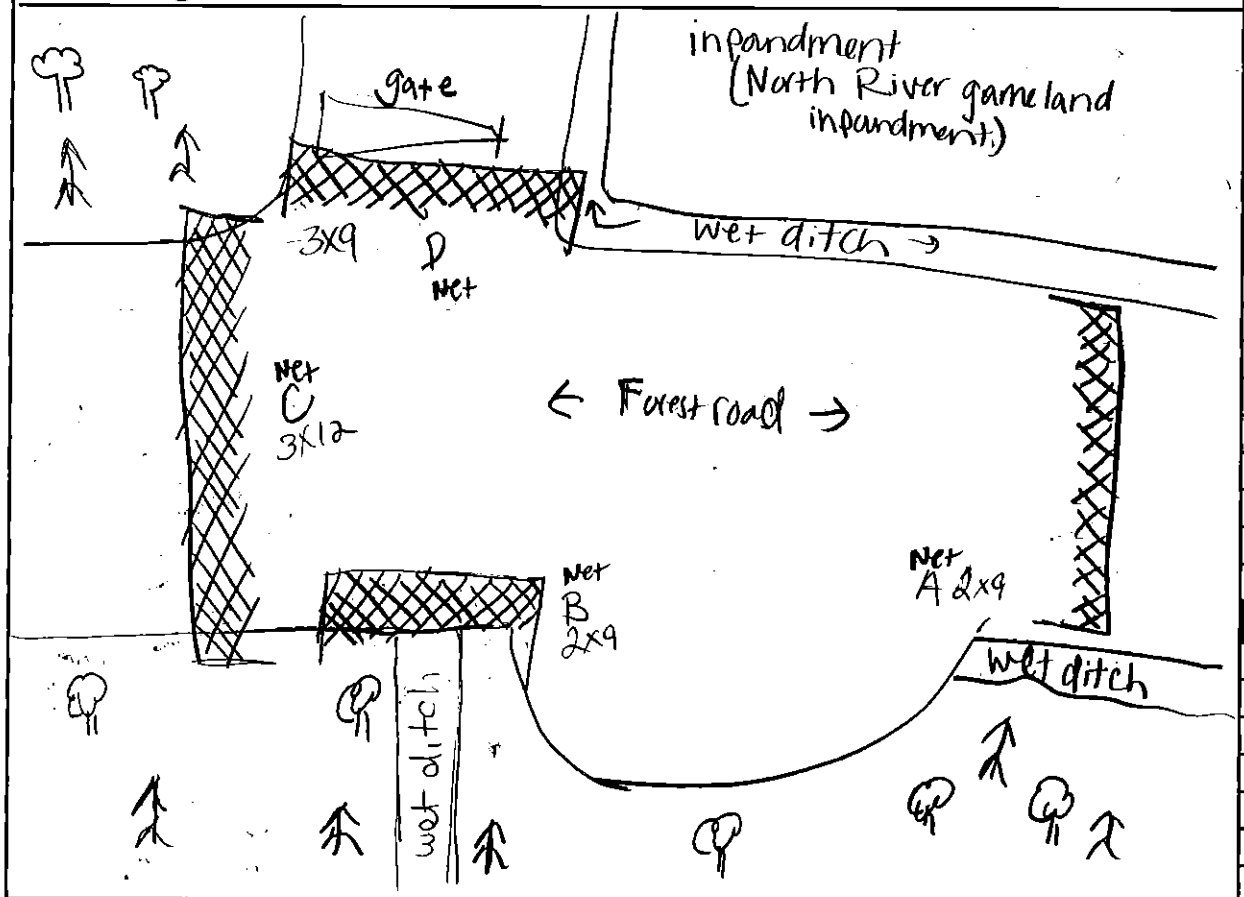
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	Loblolly Pine
2	Sweetgum
3	N Red Oak
4	Red Maple
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream		✓				
Pond						
Road Rut						
Corridor	✓		✓	✓		
Cave/Mine						
Road						

No. of Poles X Net Length

A	2	X	9	=	
B	2	X	9	=	
C	3	X	12	=	
D	3	X	9	=	
E		X		=	
F		X		=	

Other Species

Comments & Site Description: Mixed Pine/hardwood forest. Net site #1 and 2 on edge of Pond (Sassafras Lane) where North fowl impoundment is located. Nets placed across roads + in front of canal/ditch

Bat foraging in net area, at 1705.

Net A	36.28501	-75.98429	
Net B	36.28539	-75.98394	
Net C	36.28580	-75.98375	
Net D	36.28568	-75.98374	

Data logger #3

Session 2, only night of netting

Page 1 of 1

Bat Survey Data Sheet

Site #: 1	Site Name: Billboard / Airport	PI #: 42262	Date: 2/29/16
Location: Off Hwy 158 near the airport and across from Central Elem school			County: Currituck
Observers: Kim Romano, Kelly Lutch, Cheryl Gregory, Chris Manley			
Lat/Long (DMS): N: 36 23.058	W: 76 00.483		Elevation (ft): 78
Nets Open: 17:59	Nets Closed: 22:59	Firm: ES	ES Server Location: 910 02-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	22:30pm	MYSE	A	F	NR	34	14	7	7	C/1.5m	—	OP	NC-WRCA3300

Moon Phase: Waning Gibbous % 59.5

	Rise	Set
Moon:	23:28	10:23
Sun:	6:36	17:59

Time	Temp	Sky	Wind	# Bats
18:00	60	0	1	0
19:15	59	0	1	0
20:30	54	0	1	0
21:40	53	0	1	6
22:50	51	0	1	1
Ave				

Sky Code

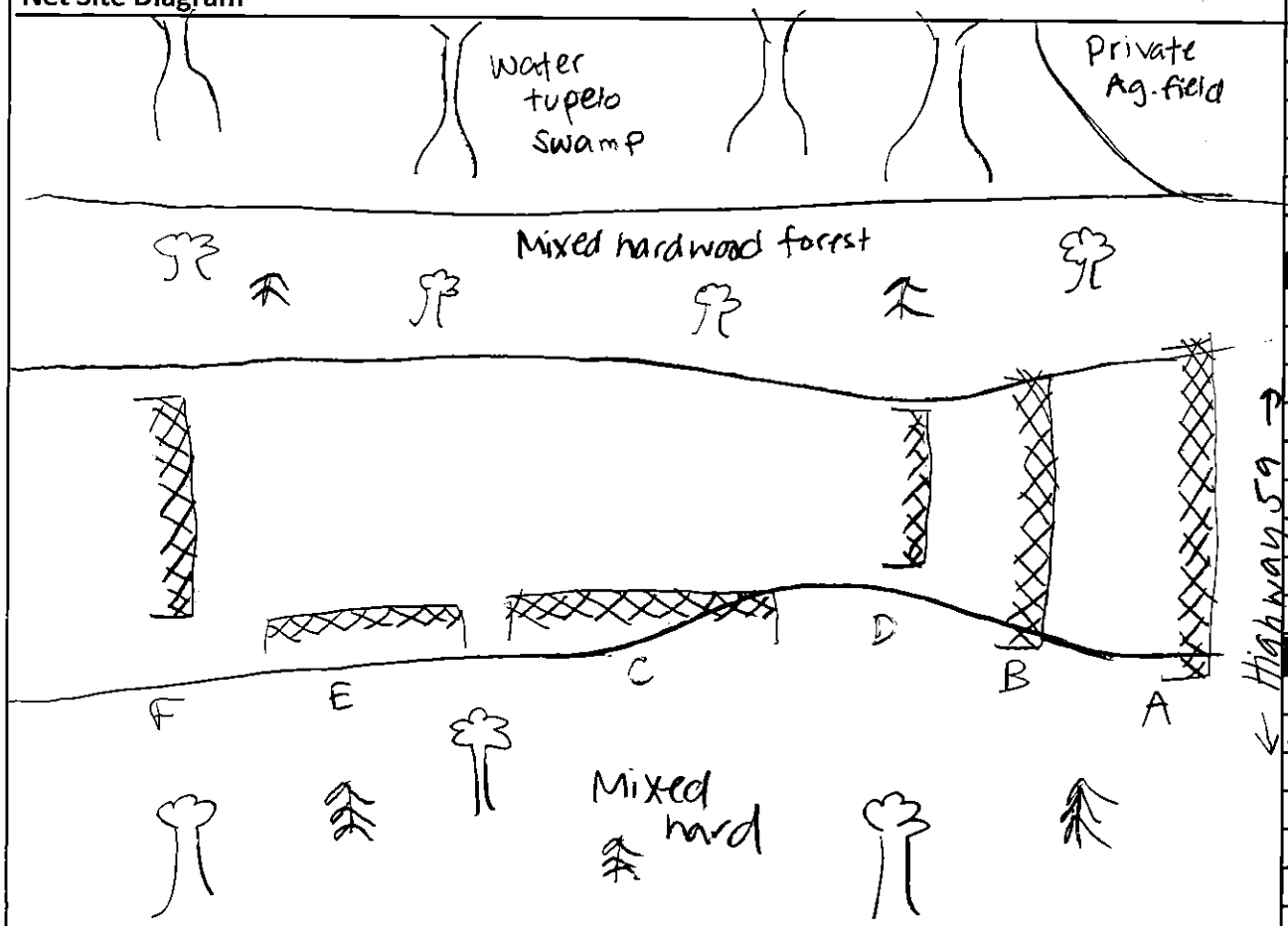
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	Loblolly Pine
2	Red Maple
3	water oak
4	sweetgum
5	N red oak
6	S red oak

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	✓	✓	✓	✓	✓	✓
Cave/Mine						
Road						

No. of Poles X Net Length

A	12	X	2	=	24
B	6	X	2	=	12
C	12	X	2	=	24
D	2	X	2	=	8
E	9	X	2	=	18
F	6	X	2	=	12

Other Species

Comments & Site Description:

Appendix H

Palmetto Peartree Preserve, Session 1

Eastern NC NHEB research Project

Bat Survey Data Sheet

Site #: 1	Site Name: Pledger Landing Rd	PI #: 42262	Date: 11/5/15
Location: Pledger Harbor Rd / Palmetto Peartree Preserve (P3)			County: Tyrrell
Observers: Dottie Brown, Jennifer Starvetsky, Kelly Lutash			
Lat/Long (DMS): N: 34.98428	W: -76.07234		Elevation (ft): 5ft
Nets Open: 17:00	Nets Closed: 22:04	Firm: ES/EE	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	16:30	LABO	A	M	NR	37	17.5	7.5	10.0	C/2m		OP	
2	19:06	EPFU	A	F	NR	42	29	7.5	21.5	A/6m		OP	
3	19:38	EPFU	A	F	NR	44	27.5	7.5	20	C/5		O	

Moon Phase: waning crescent % 30

	Rise	Set
Moon:	12:57	14:03
Sun:	6:31	17:04

Time	Temp	Sky	Wind	# Bats
1730	72	0	0	1
1830	71	0	0	0
1930	70	0	6	1
2030	68.5	0	0	1
2130	69	0	6	0
Ave				

DL-#3

Sky Code

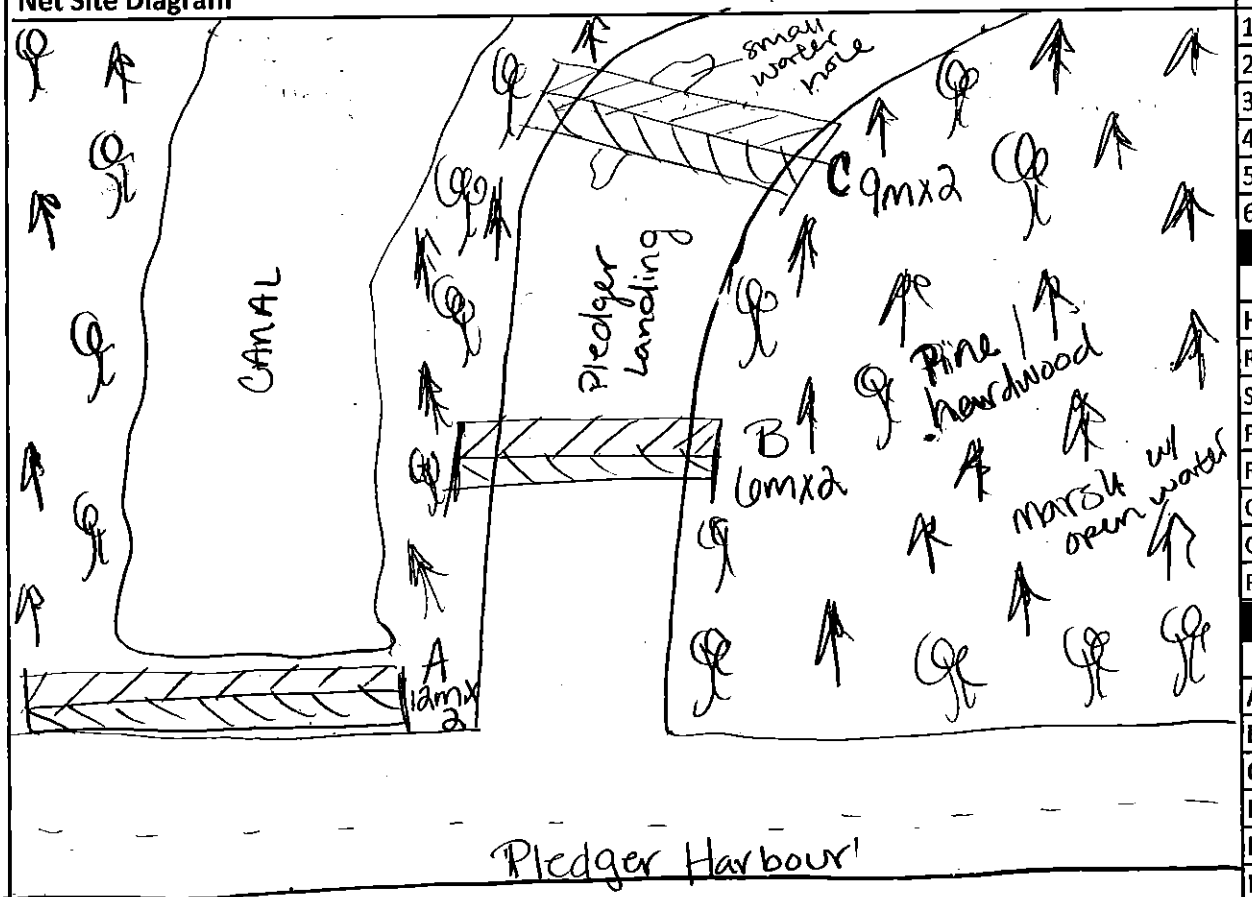
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	loblolly Pine (Pinus taeda)
2	Sweet gum Liquidambar Styraciflua
3	Red Maple (Acer Rubrum)
4	long leaf Pine (Pinus palustris)
5	Water Oak Quercus nigra
6	

Net Site(s) by Habitat						
Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	✓					
Cave/Mine						
Road		✓	✓			

No. of Poles X Net Length					
A	2	X	12	=	24
B	2	X	6	=	12
C	2	X	9	=	18
D		X		=	
E		X		=	
F		X		=	

Other Species
screech owl, Barred Owl

Comments & Site Description:
Net A 35.98428 -76.07234 set at end of Channel @ intersection of Pledger Landing + Pledger Harbor Rd.
Net B 35.98438 -76.07306 set across forest rd corridor = Pledger Landing.
Net C 35.98445 -76.07385 set across forest rd corridor = Pledger Landing
Site is located Palmetto Peartree Preserve off Pledger Harbour + Pledger Landing Rd. Habitat consist of bottomland/swamp; with ditchs + large tracts of forest. Mature trees with suitable roosting characteristics for NLEB.

AB 06 set up @ net site to assess bat activity = multiple calls of foraging bats in area

Eastern NC NLEB research project

Page _____ of _____

Bat Survey Data Sheet

Site #: 1	Site Name: Pledger Landing	PI #: 42262	Date: 7/6/15
Location: Pledger harbor Rd / Palmetto Pearatree Preserve CP3			County: Tyrrell
Observers: Dottie Brown, Jennifer Stervetsky, Kelly Lutsch			
Lat/Long (DMS): N: 35.98469	W: -76.07215		Elevation (ft): 59
Nets Open: 17:00	Nets Closed: 22:01	Firm: ES/ES	ES Server Location: 9/002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	19:56	LORA	A	F	NR	25	22	10	12	3/4		0	NCWRC
													A3187

Waning Crescent

Moon Phase: % 19%

	Rise	Set
Moon:	01:51	14:35
Sun:	6:32	17:04

Time	Temp	Sky	Wind	# Bats
1730	74.5	3	2	
1830	72.5	3	2	
1930	72	1	3	
2030	71.5	0	2	1
2130	71	1	1	
Ave				

DL#3

Sky Code

0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

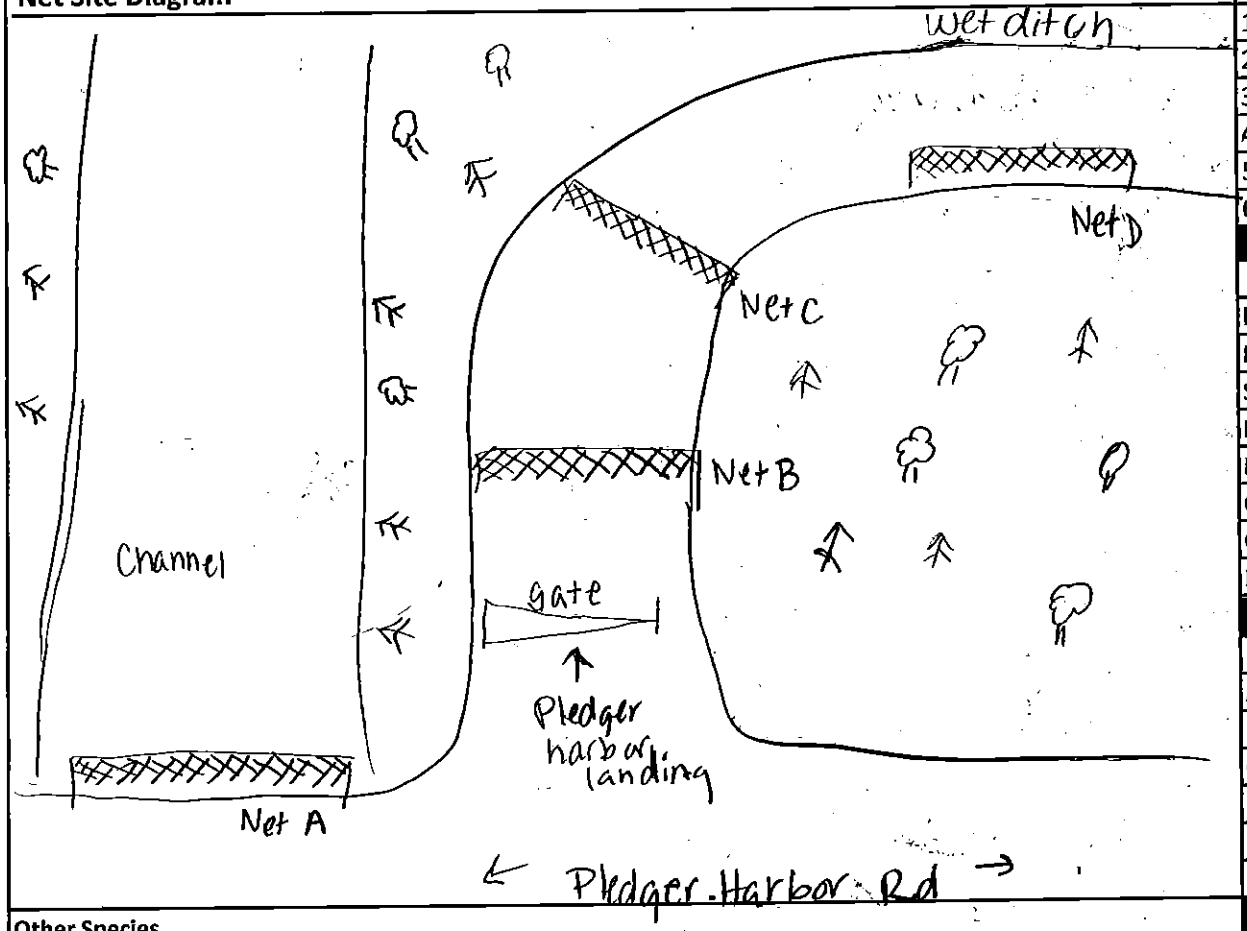
Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

AB06 ~ 20:20 Rat call = library

Net Site Diagram



Dominant vegetation
1 loblolly Pine
2 long leaf Pine
3
4 Water oak
5 Red maple
6

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	✓			✓		
Cave/Mine						
Road		✓	✓			

No. of Poles X Net Length

A	2	X	12	=	24
B	2	X	6	=	12
C	2	X	9	=	18
D	2	X	9	=	18
E		X		=	
F		X		=	

Other Species

Comments & Site Description:

Net A 35.98428 -76.07234
Net B 35.98438 -76.07306
Net C 35.98445 -76.07385
Net D 35.98486 -76.07409 net added to Pledger Landing just past Net C + run along forest edge

Eastern NC NLEB research Project

Site Name: (ES/state/agency/location [i.e.ES_NC_WRC_AlarkaLaurel])

Page _____ of _____

Bat Survey Data Sheet

Site #: 1 (1)	Site Name: Pledger Landing	PI #: 42262	Date: 11-8-15
Location: Pledger Harbor Rd / Pledger Landing Rd (P3)		County: Tyrrell	
Observers: Dottie Brown, Jennifer Starvetsky		Project Name:	
Lat/Long (DMS)	N: 34.98428	W: -76.07234	Elevation (ft): 5Ft / Map #
Nets Open: 17:00	Nets Closed: 22:02	Firm: ES/EE	ES Server Location: 9/002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	18:09	LABO	N/A	M	NR	N/A				B/25	escape from net		

waning crescent
Moon Phase: % 9

	Rise	Set
Moon:	3:36	15:35
Sun:	6:34	17:02

Time	Temp	Sky	Wind	# Bats
17:06	57.5	2	1	0
18:09	57.5	2	1	1
19:05	57.5	2	1	0
20:10	57.5	2	0	0
21:50	58	2	0	0
Ave				

DL #3

Sky Code

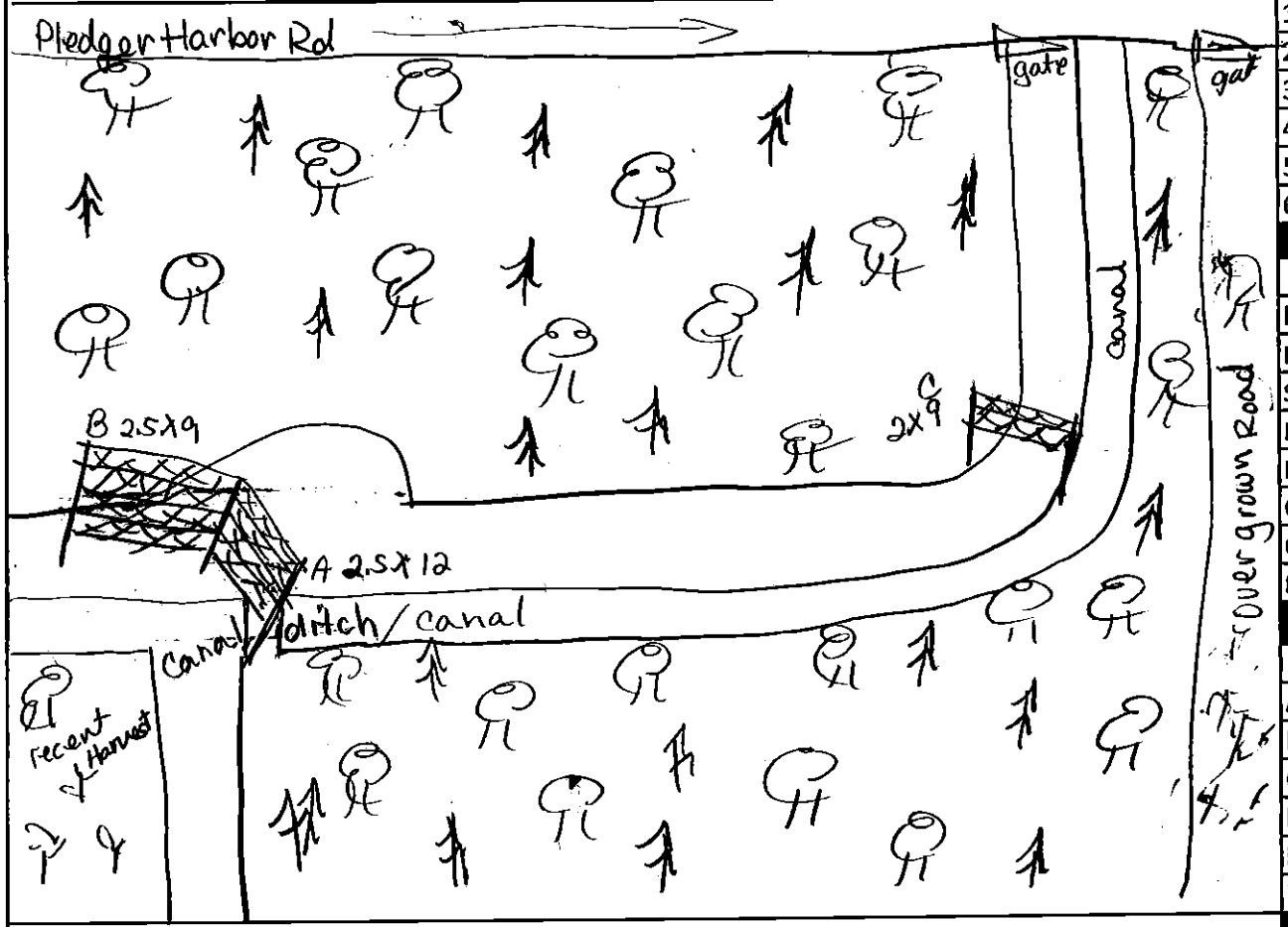
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	loblolly Pine
2	water oak
3	Red maple
4	longleaf pine
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor						
Cave/Mine						
Road	✓	✓	✓			

No. of Poles X Net Length					
A	2.5	X	12	=	30
B	2.5	X	9	=	22.5
C	2	X	9	=	18
D		X		=	
E		X		=	
F		X		=	

Other Species

Acoustic Recorder Type: Anabat # **Start Time:** **End Time:** **Start Sensitivity Setting:**

GPS: N: **W:** **Site/Location:**

Comments:

Net same as 11/6 + 11/7
Net A + B moved further down the road to an intersection of the road & 2 canals with mixed pine & hardwood forest/bottomland on edge of large timbered area
35.98628 -76.07339

Bat Survey Data Sheet

Site #: 2	Site Name: Goat Neck - PPP	PI #: 42262	Date: 11-10-15
Location: end of Goat Neck Road @ 2 Forest Rds (Palmetto Peartree Preserve P3)			County: Tyrrell
Observers: Dottie Brown, Jennifer Starvetsky			
Lat/Long (DMS):	N: 37.971164	W: -76.052451	Elevation (ft): 21'
Nets Open: 16:38	Nets Closed: 22:05	Firm: ES/EE	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Newire Band #
1	17:48	LASE	A	M	NR	39	20	10	10	A/7		OP	A3190
2	17:50	LABO	A	M	NR	40	18	7.5	10.5	B/5		0	A3163
3	18:10	EPFU	A	M	NR	43	27	7.5	19.5	B/5		0	A1770

Moon Phase: new moon %: 1

	Rise	Set
Moon:	0526	16:42
Sun:	0637	1701

Time	Temp	Sky	Wind	# Bats
1700	67.5	3	2	
1800	65.5	3	3	2
1900	63	0	2	1
2000	61	3	1	
2100	60.5	1	0	
Ave 22	61	2	0	

PL #4

Sky Code

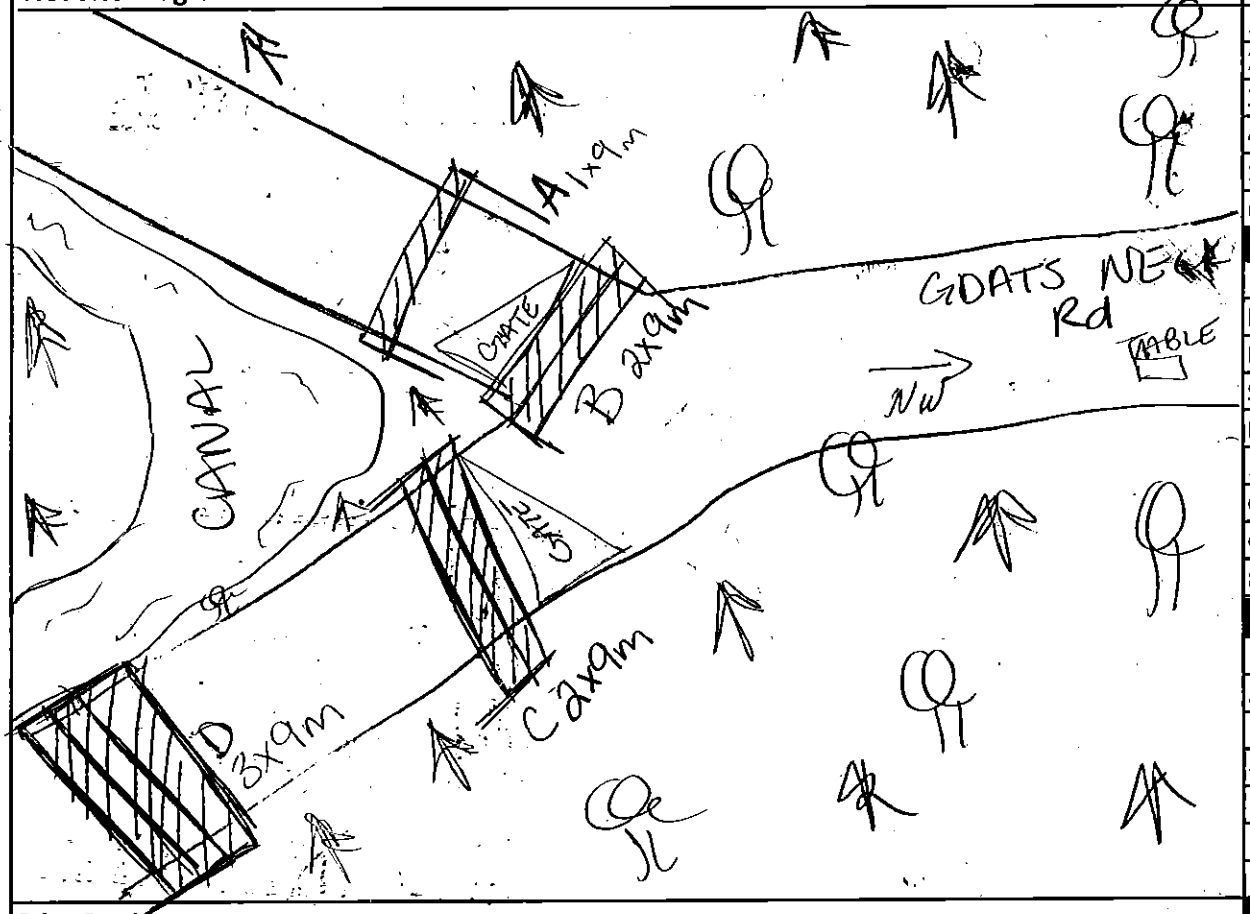
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation
1 Loblolly Pine
2 Sweetgum
3 Red Maple
4
5
6

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	X	X	X	X		
Cave/Mine						
Road						

No. of Poles X Net Length

A	25	X	9	=	225
B	2	X	9	=	18
C	2	X	9	=	18
D	25	X	9	=	225
E		X		=	
F		X		=	

Other Species

Comments & Site Description:

Net A 35.97149 -76.05238 Base canopy net
Net B 35.97143 -76.05254 Dbl at gate
Net C 35.97164 -76.05251 Dbl at gate
Net D 35.97187 -76.05218 Tplr in corridor
17:20 Observed 2 bats (reds) foraging around net site & over main road
net placed @ end of Goat Neck road where 2 Forest Rds travel N & E Net placed on @ forest road. Mature forest borders swamp & roads. Trees with potential roosting characteristics observed and lots of snags.

Page _____ of _____

Bat Survey Data Sheet

Site #: 2	Site Name: Goat Neck road, Palmetto Peartree preserve	PI #: 42262	Date: 11-11-15
Location: End of Goat Neck road (P3)			County: Tyrrell
Observers: Dottie Brown, Kelly Lutsch			
Lat/Long (DMS): N: 37.97164		W: -76.05251	Elevation (ft): 21'
Nets Open: 17:00	Nets Closed: 22:05	Firm: ES/EE	ES Server Location: 9/602.011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #

Moon Phase: New Moon % 0

	Rise	Set
Moon:	6:21	17:18
Sun:	6:37	17:50

Time	Temp	Sky	Wind	# Bats
17:30	59	0	0	0
18:29	58	0	0	0
19:30	56	0	0	0
20:30	56	0	0	0
21:25	55	0	0	0
Ave				

DLH4

Sky Code

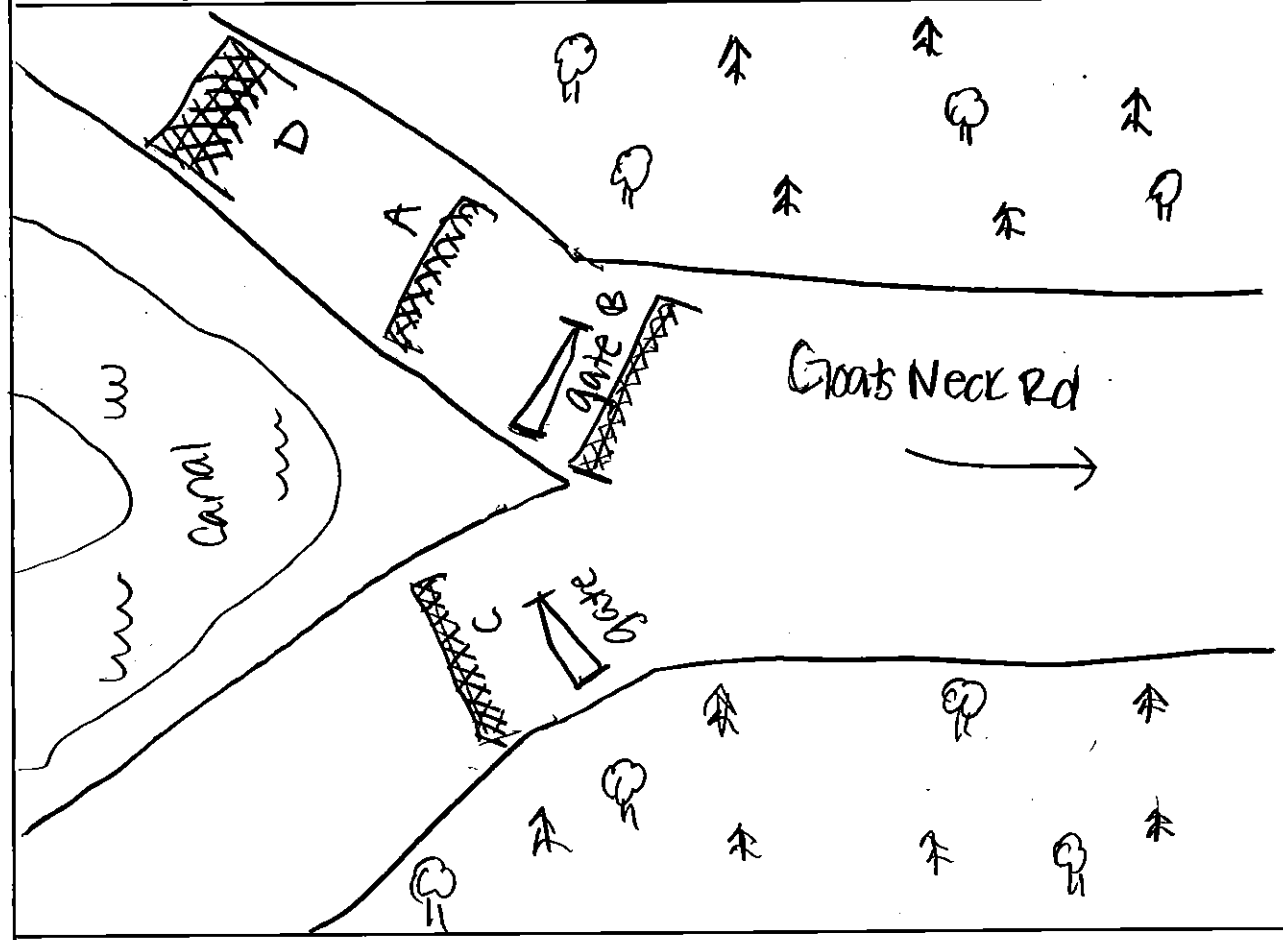
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	Sweetgum
2	loblolly
3	maple red
4	
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	✓	✓	✓	✓		
Cave/Mine						
Road						

No. of Poles X Net Length

A	25	X	9	=	22.5
B	2	X	9	=	18
C	2	X	9	=	18
D	2.5	X	9	=	22.5
E		X		=	
F		X		=	

Other Species

Comments & Site Description:

Net A 35.97144, -76.05238 false canopy
Net B 35.97143, -76.05254 DB1 at gate
Net C 35.97164, -76.05251 DB1 at gate
Net D *New* 35.97050, -76.04982 corridor moved to E road w/ 3 nets

moved net D to East facing road

Bats seen passing along road @ 17:10

Page 1 of 1

Bat Survey Data Sheet

Site #: 3 | Site Name: Potlicker Road | PI #: 422662 | Date: 11/12/15

Location: Palmetto Peartree Preserve (P3) | County: Tyrrell

Observers: Kim Romano, Kelly Lutsch

Lat/Long (DMS): N: 35.983167 | W: -76.14516 | Elevation (ft): 4

Nets Open: 16:55 | Nets Closed: 21:59 | Firm: ES / EE | ES Server Location: 91002-041

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	18:20	EPFU	A	F	NR	42	27	8	19	A		0	NC-WRC A3131
2	18:44	LABO	A	M	NR	34	19	7	12	A		0	NC-WRC A3180
3	18:44	PESU	A	M	NR	33	15.5	8	7.5	A			ES9A321

Moon Phase: New Moon | %: 0

	Rise	Set
Moon:	7:16	17:59
Sun:	6:38	16:59

Time	Temp	Sky	Wind	# Bats
19:05	69	0	2	0
18:30	66	0	2	1
19:45	64	0	2	2
20:45	64	0	2	0
21:55	62	0	2	0
Ave				

Sky Code

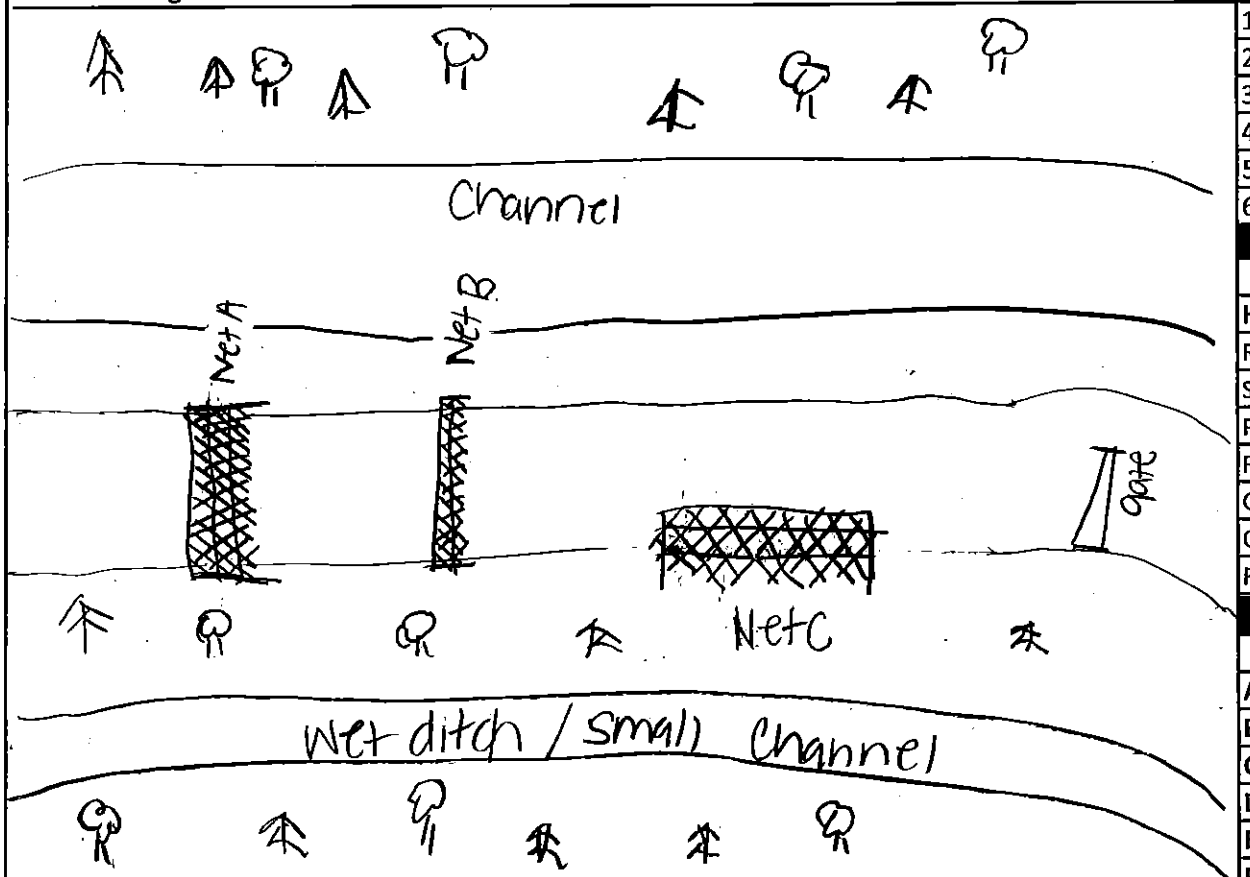
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	black cherry
2	loblolly pine
3	sweet gum
4	red maple
5	water oak
6	red oak (northern)

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	X	X	X			
Cave/Mine						
Road						

No. of Poles X Net Length

A	3	X	6	=	18
B	2	X	6	=	12
C	3	X	9	=	27
D		X		=	
E		X		=	
F		X		=	

Other Species coyote

Comments & Site Description:

Early succession mixed pine hardwood forest bordering the sound & swamp

Net A 35.98599, -76.14513 Net B 35.98454 -76.14516 Net C 35.98539 -76.14510

Data logger #4 failed and did not work

Appendix H

Pocosin Lakes NWR, Session 1

NC NHEB research

Bat Survey Data Sheet

Site #: 1	Site Name: Bodwell Rd	PI #: 422622	Date: 11/5/15
Location: Pocosin Nat'l Wildlife Refuge			County: Tyrrell
Observers: Kimberly Romano / Drew Powell			
Lat/Long (DMS): N: 35.87189		W: 76.30796	Elevation (ft): 10
Nets Open: 17:20	Nets Closed: 10:20	Firm: ES/EE	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
	No	bats											

Moon Phase: Waning Crescent % 26.2

	Rise	Set
Moon:	01:06	14:13
Sun:	6:42	17:15

Time	Temp	Sky	Wind	# Bats
05:45	77	3	0	0
07:15	69	1	0	0
08:15	69	0	0	0
09:15	68	0	0	0
10:20	69	0	0	0
Ave				

Sky Code

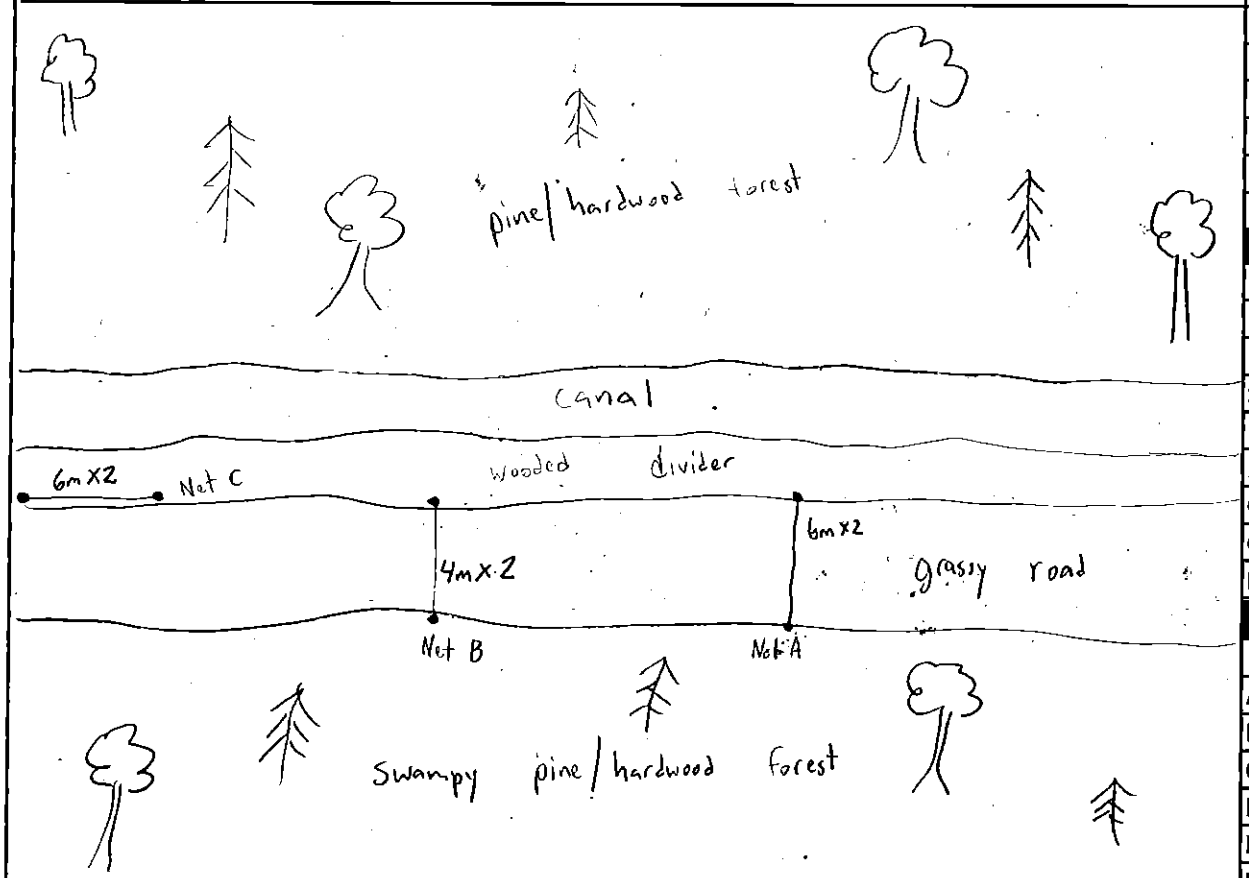
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	Loblolly Pine
2	Red Maple
3	Sweetgum
4	Black Cherry
5	Long Leaf Pine
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	X	X	X			
Cave/Mine						
Road						

No. of Poles X Net Length

A	2	X 6	=	12
B	2	X 4	=	8
C	2	X 6	=	12
D		X	=	
E		X	=	
F		X	=	

Other Species

Comments & Site Description:

Mixed pine/hardwood stand with water canal flowing down right side of site. Road and canal ending at large creek.

Net A: N35.87243 W76.30832 Net B: N35.87308 W76.30853 Net C: N35.87346 W76.30866

Bat Survey Data Sheet

Site #: 11	Site Name: Bodwell Rd	PI #: 42262	Date: 11/6/15
Location: Pocosin Natl Wildlife Refuge			County: Tyrrell
Observers: Kim Romano / Drew Powell			
Lat/Long (DMS): N: 35.87189		W: 76.30796	Elevation (ft): 10
Nets Open: 16:45	Nets Closed: 2205	Firm: ES/EE	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
	N	O	b	s	e	r	v	e	d				

Moon Phase: Waning Crescent % 19

	Rise	Set
Moon:	01:51	14:35
Sun:	06:32	17:04

Time	Temp	Sky	Wind	# Bats
17:12	76	0	0	0
18:35	73	0	1	0
19:50	73	0	2	0
21:00	72	0	2	0
22:00	73	0	2	0
Ave				

Sky Code

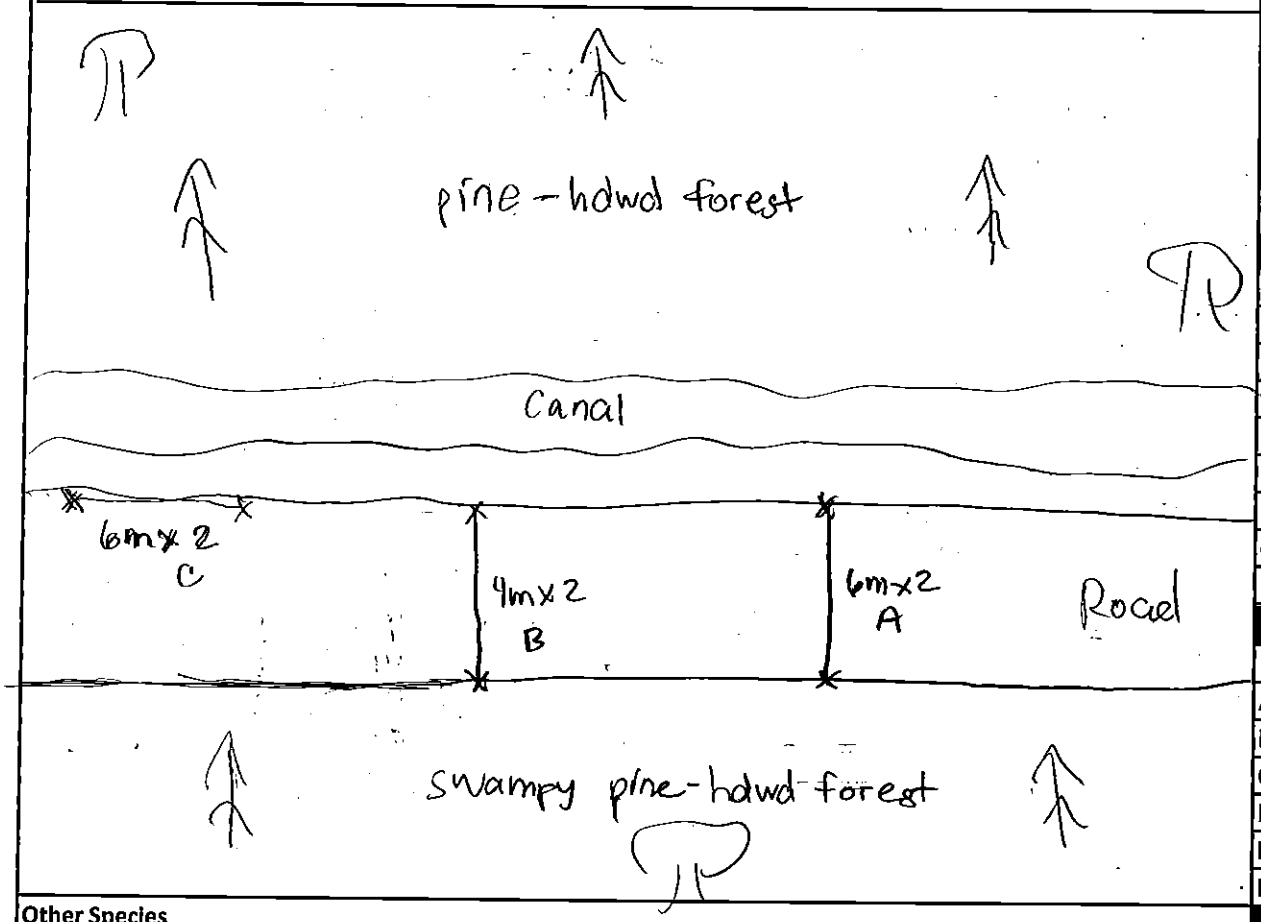
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	Loblolly Pine
2	Red maple
3	sweetgum
4	black cherry
5	long leaf pine
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	X	X	X			
Cave/Mine						
Road						

No. of Poles X Net Length

A	2	X	6	=	12
B	2	X	4	=	8
C	2	X	6	=	12
D		X		=	
E		X		=	
F		X		=	

Other Species

Comments & Site Description:

Net A: 35.87243 -76.30832 Net B: 35.87308 -76.30853 Net C: 35.87346 -76.30866

Bat Survey Data Sheet

Site #: 2	Site Name: Nodwell Rd.	PI #: 42262	Date: 11/8/15
Location: Pocosin National Wildlife Refuge			County: Tyrrell
Observers: Kim Romano, Kelly [illegible]			
Lat/Long (DMS): N: 35.80297		W: -76.27808	Elevation (ft): 28
Nets Open: 17:02	Nets Closed: 22:02	Firm: ES/EE	ES Server Location: 901002-001

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
	No bats												

Moon Phase: Waning Crescent % 9

	Rise	Set
Moon:	3:37	15:35
Sun:	6:35	17:02

Time	Temp	Sky	Wind	# Bats
17:20	56	0	2	0
18:40	54	0	2	0
20:00	52	0	1	0
21:00	52	0	2	0
22:00	51	0	1	0
Ave				0

Sky Code

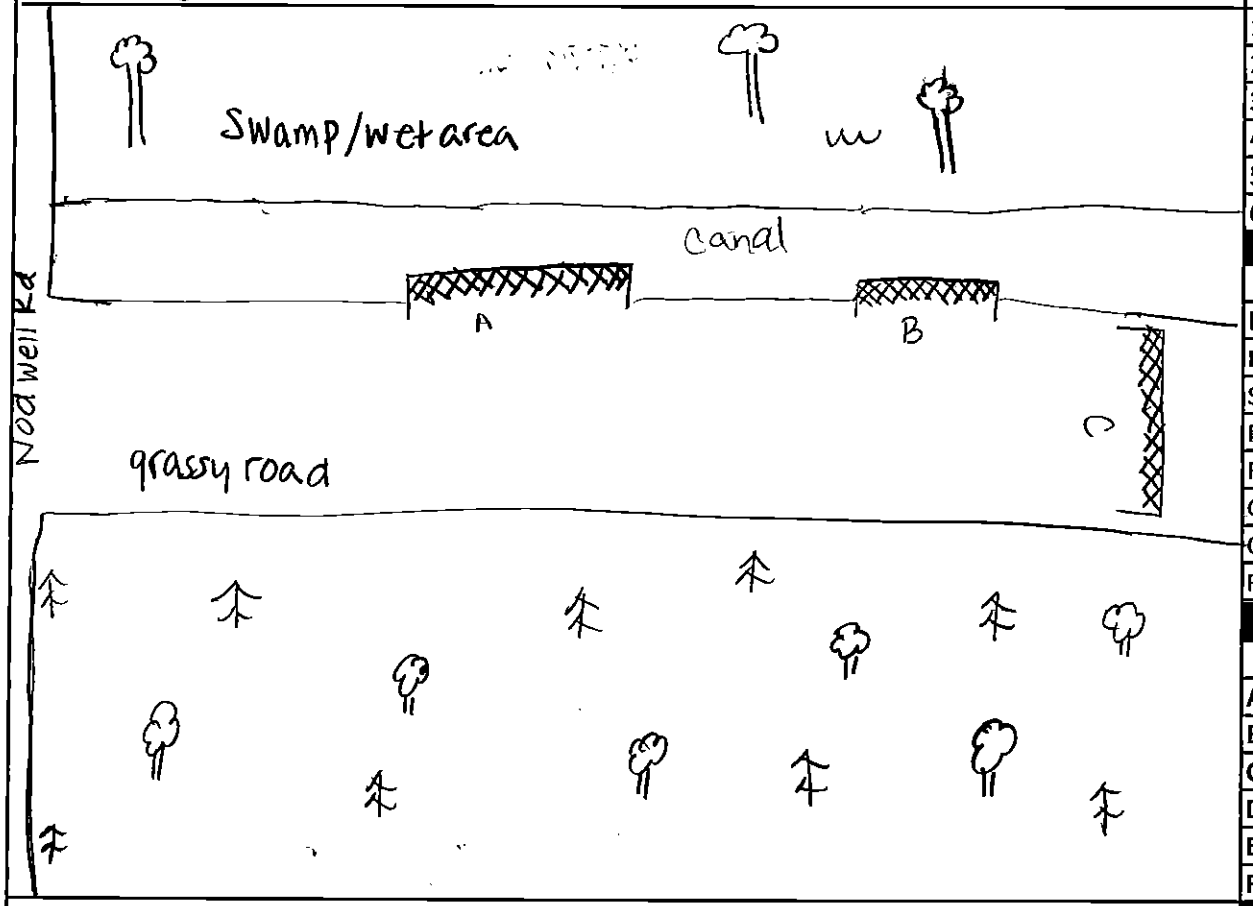
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	loblolly pine
2	Sweetgum
3	red maple
4	Water oak
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream	✓	✓				
Pond						
Road Rut						
Corridor			✓			
Cave/Mine						
Road						

No. of Poles X Net Length

A	2	X	12	=	
B	3	X	9	=	
C	2	X	9	=	
D		X		=	
E		X		=	
F		X		=	

Other Species

Comments & Site Description:

Mixed pine hardwood forest road that bordered a canal on one side. Mid succession forest

Net A: 35.80317, -76.27750 Net B: 35.80326, -76.27653 Net C: 35.80321, -76.27624

NCNLEBresearch

Page _____ of _____

Bat Survey Data Sheet

Site #: 2 Site Name: Nodwell PI #: 92262 Date: 11-12-15

Location: Forest Rd off Nodwell Rd in Pocosin NWR County: Tyrrell

Observers: Dottie Brown & Drew Powell

Lat/Long (DMS): N: 35.80328 W: -76.27543 Elevation (ft): 39

Nets Open: 17:00 Nets Closed: 22:00 Firm: ES/EE ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	17:39	PESU	A	M	NR	34	18.5	10.5	8	C/2.5		0	ESGA016
2	17:56	NYHU	A	M	NR	35	22	10.5	11.5	C/5		OP	NCWRC A3169
3	17:57	PESU	A	M	NR	33	18.5	10.5	8	A/2		0	ESGA018
4	18:10	EPFU	A	M	NR	46	29.5	10.5	19	A/2		OP	NCWRC A1771

Moon Phase: New Moon % 0

	Rise	Set
Moon:	07:16	18:01
Sun:	06:38	17:01

Time	Temp	Sky	Wind	# Bats
17:00	69°	1	1	0
18:00	69°	1	1	3
18:57	68°	0	1	1
20:31	67°	0	1	0
Ave				

Sky Code

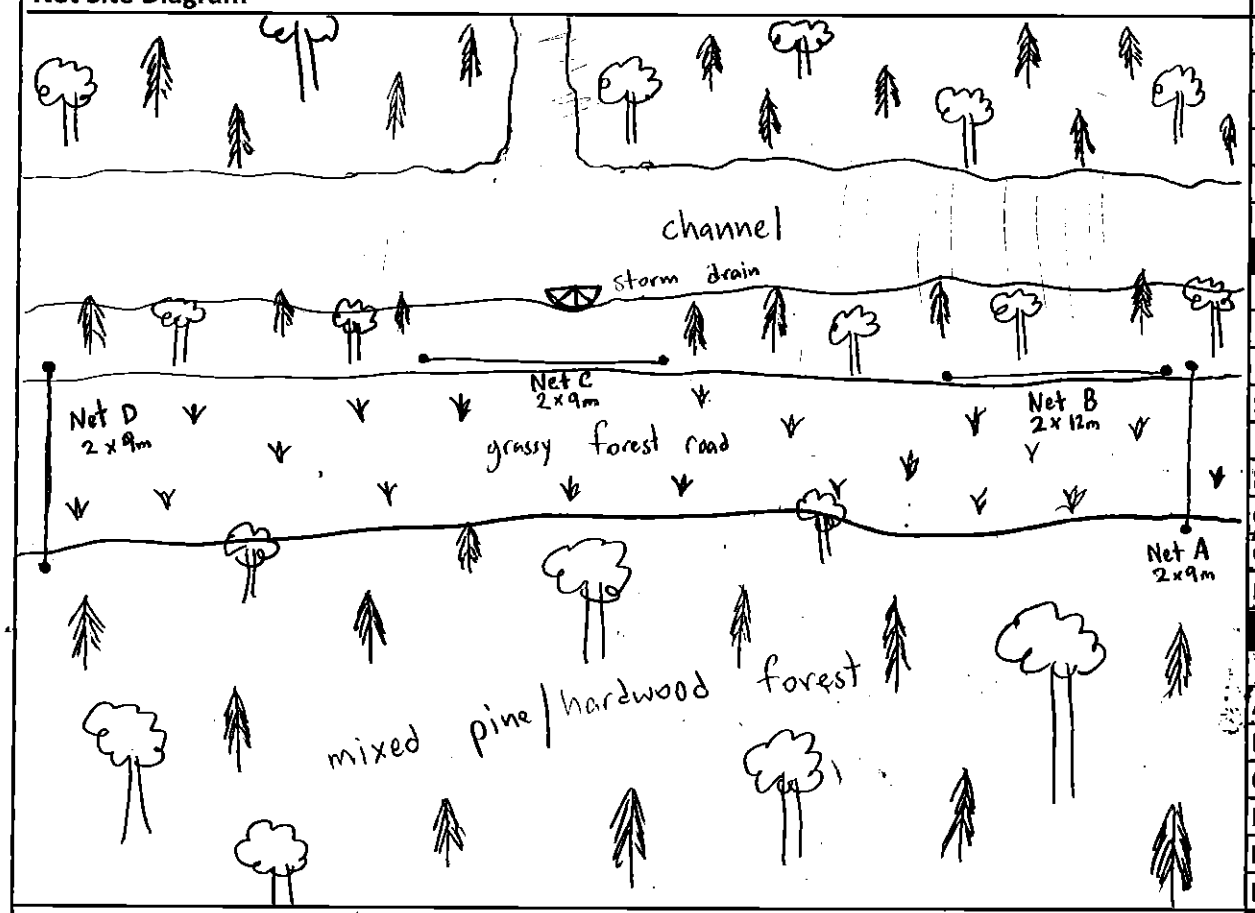
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	loblolly pine
2	Sweetgum
3	Red maple
4	Bald Cypress
5	
6	

Net Site(s) by Habitat						
Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	X	X	X	X		
Cave/Mine						
Road	X			X		

No. of Poles X Net Length					
A	2	X	9	=	18
B	2	X	12	=	24
C	2	X	9	=	18
D	2	X	9	=	18
E		X		=	
F		X		=	

Other Species barred owl, black bear,

Comments & Site Description:

Net A + B 35.80328 -76.27543 net A across forest road net B parallel to canal create funnel

Net C 35.80317 -76.27654 parallel to canal in large opening in vegetation that borders canal

Net D 35.80305 -76.27763 across forest rd

mix pine/hardwood forest with couple canals. Mature trees + snags with roosting potential
High quality NLEB habitat

Page _____ of _____

Bat Survey Data Sheet

Site #: 2	Site Name: Nodwell Rd	PI #: 91002-011	Date: 11/25/15
Location: Pocosin NWR Forest Rd off Nodwell Rd			County: Tyrrell
Observers: Dottie Brown, Kelly Lutsch			
Lat/Long (DMS): N: 35.80328	W: -76.27543		Elevation (ft): 39
Nets Open: 16:51	Nets Closed: 22:00	Firm: EE/ES	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
		No Bats											

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Moon Phase: Full	% 99
	Rise / Set
Moon:	17:02 / 6:14
Sun:	6:52 / 16.52

Time	Temp	Sky	Wind	# Bats
17:00	51	0	0	0
18:00	50	0	0	0
19:00	47	0	0	0
20:00	46	0	0	0
21:00	45	0	0	0
Ave				

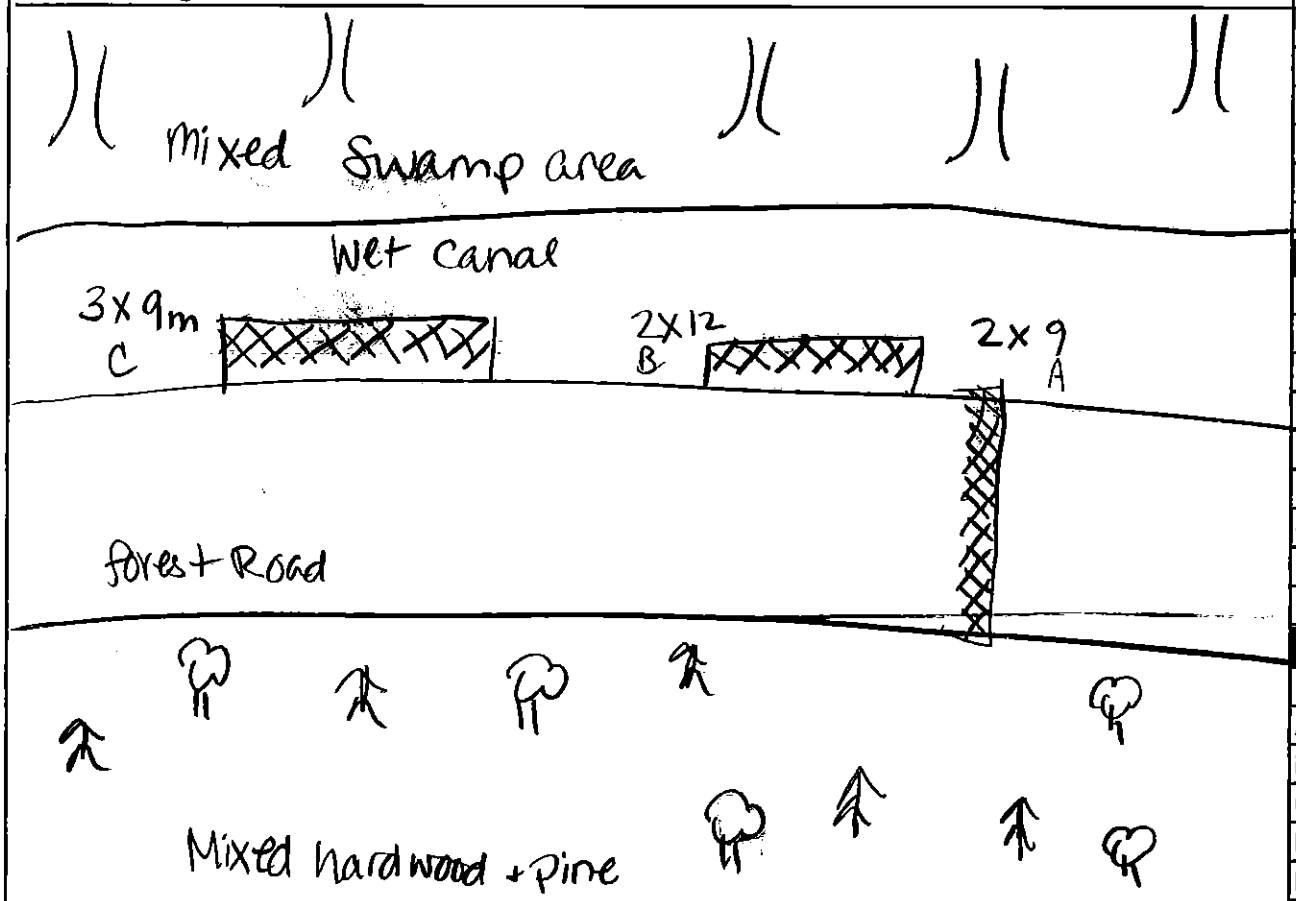
Sky Code

0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

Net Site Diagram



Dominant vegetation	
1	Sweetgum
2	loblolly pine
3	Bald Cypress
4	Red maple
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut		✓	✓	✓		
Corridor	✓	✓	✓			
Cave/Mine						
Road						

No. of Poles X Net Length

A	2	X 9	=	18	
B	2	X 12	=	24	
C	2.5	X 9	=	22.5	
D		X	=		
E		X	=		
F		X	=		

Other Species

Comments & Site Description:	
Moths + other insects seen flying	mixed pine/hardwood forest with multiple trees with potential roosting characteristics were observed. Net C and B were set parallel to canal/ditch and net A was set across the forest road. Large tract of mature forest and bottomland are present. Forest road/corridor leads out to open fields.
Net A	
Net C	
Net B	

Bat Survey Data Sheet

Site #: 3	Site Name: Evans + Harvester	PI #: 42262	Date: 11/10/15
Location: Pocosin Nat'l Wildlife Refuge			County: Washington
Observers: Kim Romano, Kelly Lutsch			
Lat/Long (DMS): N: 35.71420	W: -76.47765		Elevation (ft): 8ft
Nets Open: 16:45	Nets Closed: 17:45	Firm: ES/EE	ES Server Location: 91002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #

Moon Phase: New %: 1

	Rise	Set
Moon:	05:26	16:42
Sun:	06:37	15:01

Time	Temp	Sky	Wind	# Bats
17:00	66	0	3	0
18:00	64	0	3	0
Ave				

Sky Code

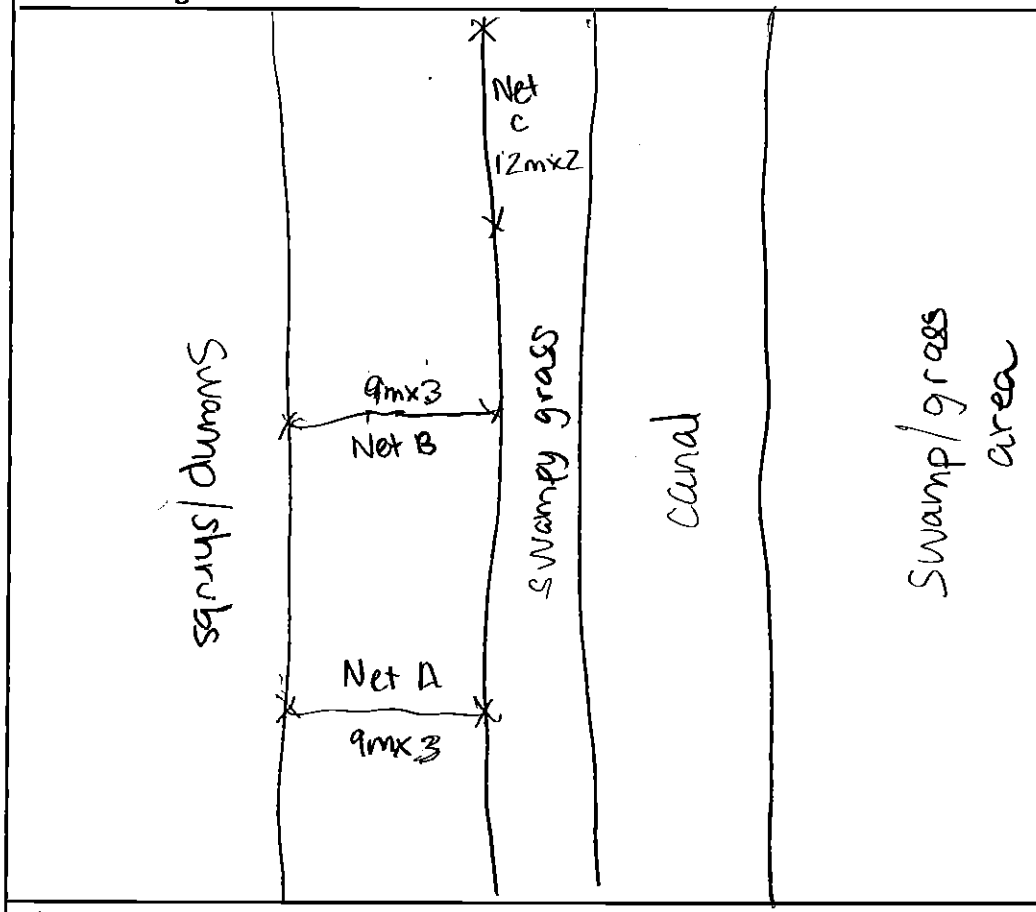
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	Willow
2	Magnolia
3	Water Oak
4	Red maple
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	X	X	X			
Cave/Mine						
Road						

No. of Poles X Net Length

A	3	X	9	=	27
B	3	X	9	=	27
C	2	X	12	=	24
D		X		=	
E		X		=	
F		X		=	

Other Species

Comments & Site Description:

Grassy shrub area bordering a canal on one side and wetland on the other. Closed early due to high winds

Net A: 35.71421, -76.44801 Net B: 35.71426, -76.44861 Net C: 35.71431, -76.44913

Had to shut down due to wind

Bat Survey Data Sheet

Site #: 3 | Site Name: Evans + Harvester | PI #: 42262 | Date: 11/11/15

Location: Pocosin Nat'l Wildlife Refuge | County: Washington

Observers: Kim Romano, Jennifer Starvetsky

Lat/Long (DMS): N: 35.71420 | W: -76.47765 | Elevation (ft): 8ft

Nets Open: 16:55 | Nets Closed: 20:30 | Firm: ES/EE | ES Server Location: 91062-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #
1	1910	LABO		es	cap	eo		ne	+	B/u			

Moon Phase: New Moon % 0

	Rise	Set
Moon:	06:21	17:18
Sun:	06:38	17:00

Time	Temp	Sky	Wind	# Bats
17:05	60	0	0	0
18:30	51	0	0	0
20:00	49	0	0	1
Ave				

Sky Code

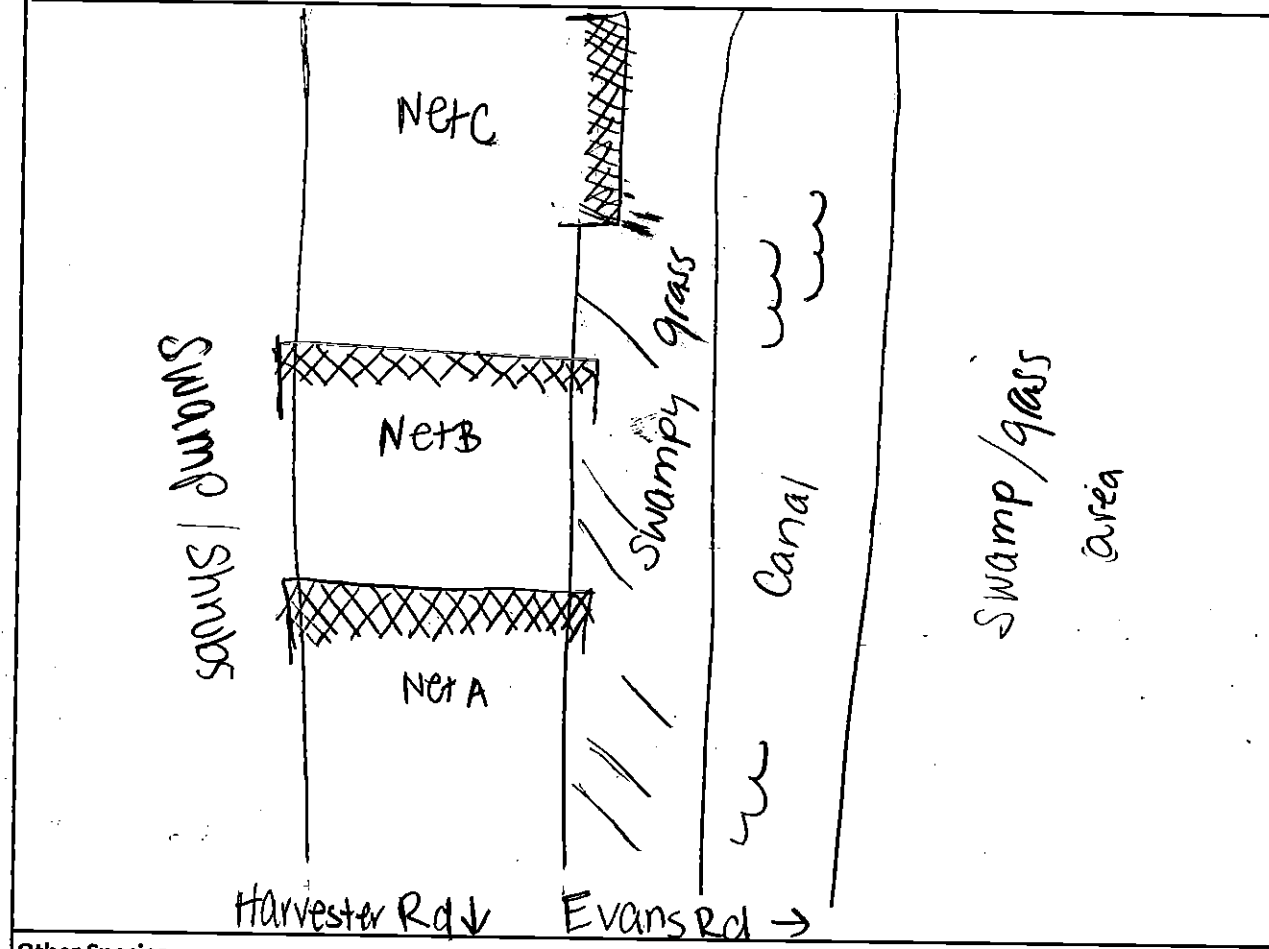
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Dominant vegetation	
1	Willow
2	Magnolia
3	Water oak
4	Red Maple
5	
6	

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	X	X	X			
Cave/Mine						
Road						

No. of Poles X Net Length					
A	3	X	9	=	27
B	3	X	9	=	27
C	2	X	12	=	24
D		X		=	
E		X		=	
F		X		=	

Other Species

Comments & Site Description:

Grassy-shrub area bordering a canal on one side and wetland on the other. Small shrubs that weren't over 30 ft in height. Closed early due to cold temps.

Net A: 35.71421, -76.44801 Net B: 35.71426, -76.44861 Net C: 35.71431, -76.44913

Had to shut down due to temps dropping below 50° F

Bat Survey Data Sheet

Site #: 3	Site Name: Harvester Road	PI #: 42262	Date: 12-11-15
Location: intersection Harvester & Evans Rd Pocosin NWR			County: Washington
Observers: Dottie Brown			
Lat/Long (DMS): N: 35.71415		W: -76.44661	Elevation (ft): 6
Nets Open: 16:41	Nets Closed: 21:41	Firm: ES/EE	ES Server Location: 9/002-011

Bat #	Time	Species	Age	Sex	Repro. Cond.*	RFA (mm)	Total mass w/ bag (g)	Mass of bag (g)	Bat Mass (g)	Net/ Ht	Guano/ Hair/ Tissue	Wing Score	Band #

Moon Phase: % 0

	Rise	Set
Moon:	06:58	17:30
Sun:	07:04	16:52

Time	Temp	Sky	Wind	# Bats
17:00	57.5	0	0	0
18:01	54.5	0	0	0
19:00	50	0	1	0
19:58	50	0	0	0
21:41	49.5	0	0	0
Ave				

Sky Code

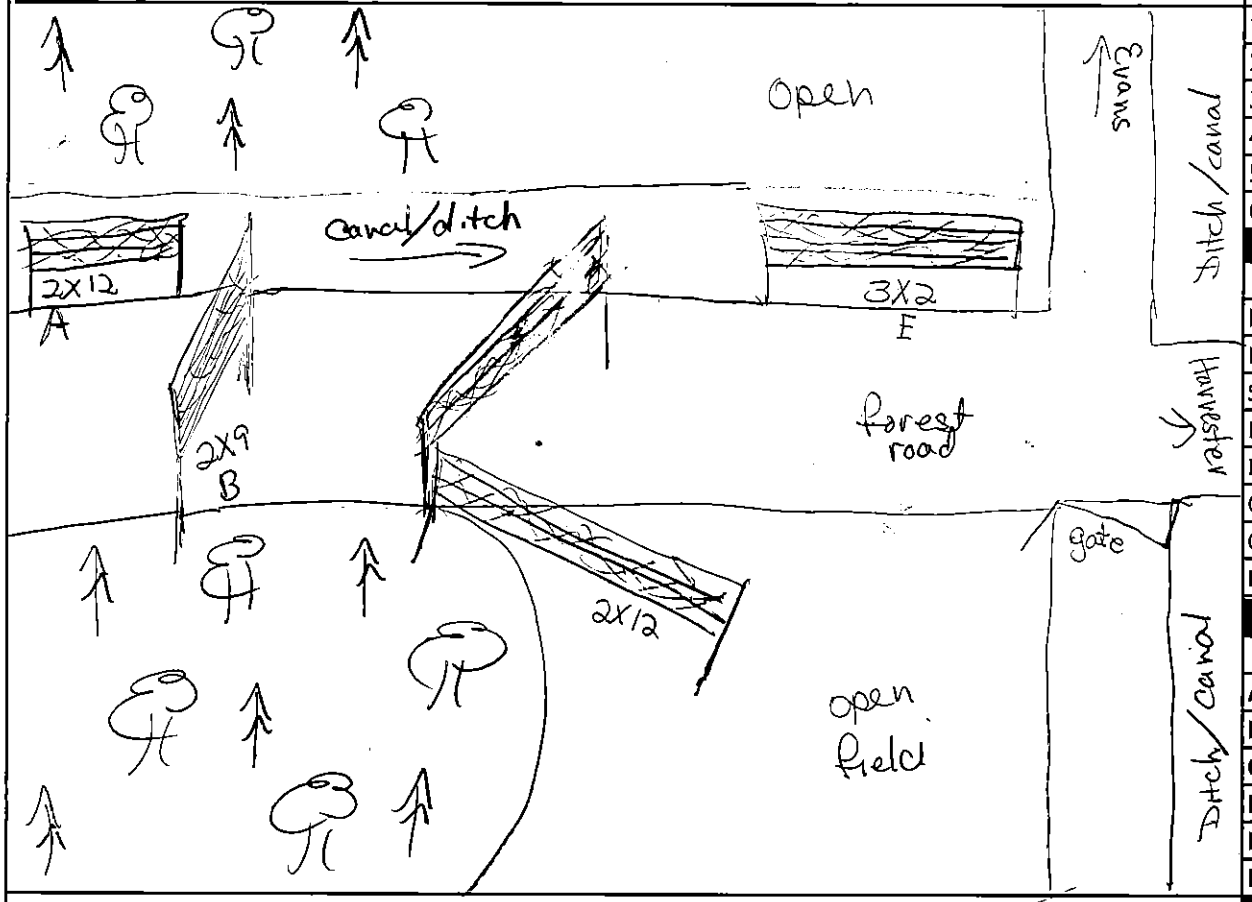
0	Clear	4	Smoke or fog
1	Few Clouds	5	Drizzle or light rain
2	Partly Cloudy	6	Thunderstorm
3	Cloudy/overcast		

Beauford Wind Code

0	Calm (0 mph)
1	Light wind (1 - 3 mph)
2	Light breeze (4 - 7 mph)
3	Gentle breeze (8 - 12 mph)
4	Moderate breeze (13- 18 mph)

* Repro. Cond (Reproductive Condition): (P)pregnant; (L)lactating; (PL)post-lactating; (NR)non-reproductive; (TD)testes descended

Net Site Diagram



Other Species

others

Dominant vegetation	
1	reed mace
2	Sweet gum
3	Bald Cypress
4	
5	
6	water primrose

Net Site(s) by Habitat

Habitat	A	B	C	D	E	F
River						
Stream						
Pond						
Road Rut						
Corridor	✓	✓	✓	✓	✓	
Cave/Mine						
Road						

No. of Poles X Net Length

A	2	X	12	=	24
B	2	X	9	=	18
C	1	X	12	=	12
D	2	X	12	=	24
E	3	X	12	=	36
F		X		=	

Comments & Site Description:

Nets placed along forest road zone. From the intersection of harvesting + Evans road. Open areas + canals with thicker vegetation some trees mostly high grass. Original acoustic site, that resulted in many calls and several species.

Net A	35.71425	-76.44733
B	35.71427	-76.44768
C	35.71418	-76.44722
D	35.71433	-76.44933
E	35.71434	-76.44951

Appendix I

NLEB Roost Data Sheets

Appendix I

Great Dismal Swamp NWR, Session 1

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell **Date:** 12/13/15

~~UTM: Zone~~ ~~Easting~~ ~~Northing~~ ~~OR~~

LAT 36.51260 **LONG** -76.52312

Property Owner: Great Dismal Swamp NWR **Phone#** (757) 986-3705

State NC **County** Gates **Site #** GDS2

Roost # 1 **Roost Name:** Be 172.541

Roost Tree Data

Species: Swamp tupelo **Live** ✓ **Snag** __ **Other** __

(if other, explain) _____

DBH (in or cm) 18.7 in **Total Height (ft or m)** 86.3 ft

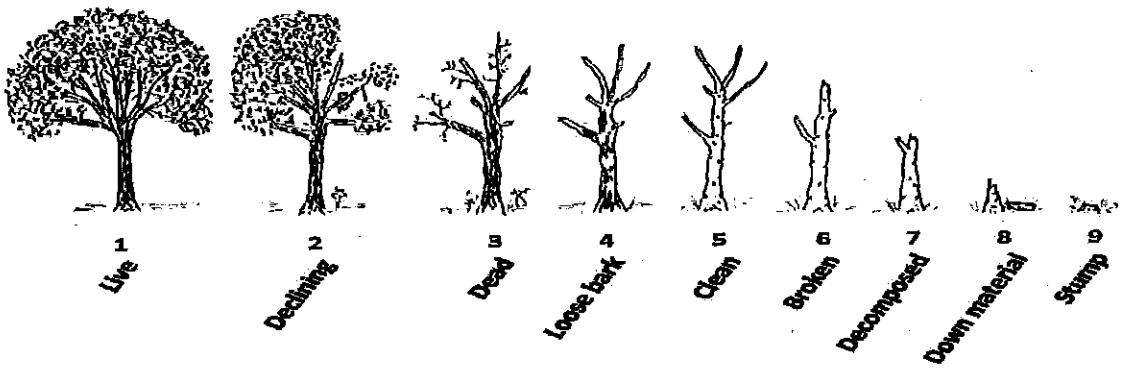
Height of roost area (if known) _____ **Dist. from capture site** 70 m

Roost position aspect (deg) 103°

Exfoliating bark on bole (%) 0 **Describe: sloughing** ✓ **platy** __ **tight** __

Cavities present? No **If so, describe:** _____

Roost Decay State: (1) 2 3 4 5 6 7 8 9 **Other**



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant ✓ **Co-Dominant** __ **Suppressed** __

Surrounding Habitat Condition

Canopy closure at roost (%) 75%

Approximate woodlot size (ac or ha) 17982 ha **Distance to non-forest (ft or m)** 38 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)

A mature hardwood forest in a mostly drained cypress swamp basin. Canals and forest roads separate forest lots.

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell, Kelly Lutsch, David Cooper **Date:** 12/16/15

UTM: Zone _____ **Easting** _____ **Northing** _____ ***OR***

LAT 36.51244 **LONG** -76.52301

Property Owner: Great Dismal Swamp NWR **Phone#** (757) 986-3705

State NC **County** Gates **Site #** GDS2

Roost # 2 **Roost Name:** 172.541

Roost Tree Data

Species: Swamp Tupelo **Live** ✓ **Snag** __ **Other** __

(if other, explain) _____

DBH (in or cm) 23.9 **Total Height (ft or m)** 96.5

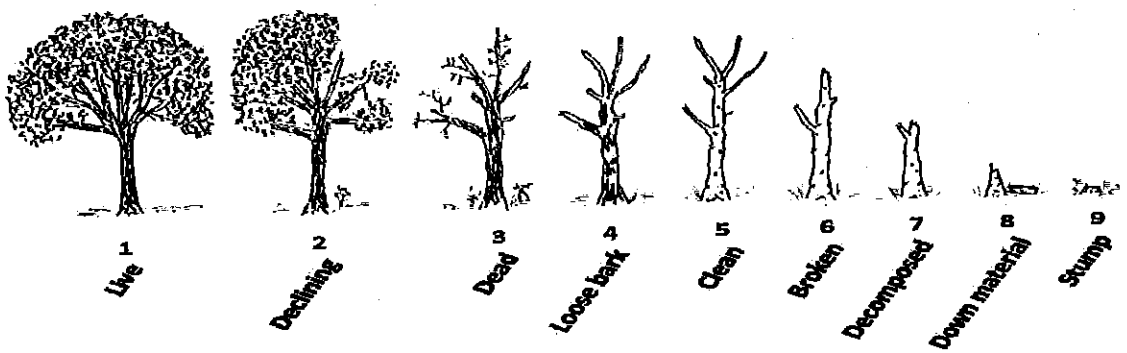
Height of roost area (if known) 38ft **Dist. from capture site** _____

Roost position aspect (deg) 37

Exfoliating bark on bole (%) 0 **Describe: sloughing** __ **platy** ✓ **tight** __

Cavities present? ✓ **If so, describe:** Broken branch cavity, suspected roost

Roost Decay State: 1 (2) 3 4 5 6 7 8 9 Other



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant ✓ **Co-Dominant** __ **Suppressed** __

Surrounding Habitat Condition

Canopy closure at roost (%) 55%

Approximate woodlot size (ac or ha) 17982 ha **Distance to non-forest (ft or m)** 40 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
Mature, maple, Cypress, Tupelo Swamp. Surrounding forest has low points with standing water.

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell / Keegan Chawka **Date:** 12/13/15

~~UTM: Zone~~ ~~**Easting**~~ ~~**Northing**~~ ~~**OR**~~

LAT 36.51301° **LONG** -76.52528°

Property Owner: Great Dismal Swamp NWR **Phone#** (757) 486-3705

State NC **County** Gates **Site #** GDS2

Roost # 1 **Roost Name:** 172.603

Roost Tree Data

Species: Red Maple **Live** ✓ **Snag** __ **Other** __

(if other, explain) _____

DBH (in or cm) 7 in **Total Height (ft or m)** 40 ft

Height of roost area (if known) 32 ft **Dist. from capture site** 191 m

Roost position aspect (deg) 325°

Exfoliating bark on bole (%) NO **Describe: sloughing** __ **platy** __ **tight** ✓

Cavities present? Yes **If so, describe:** Multiple cracks and cavities present

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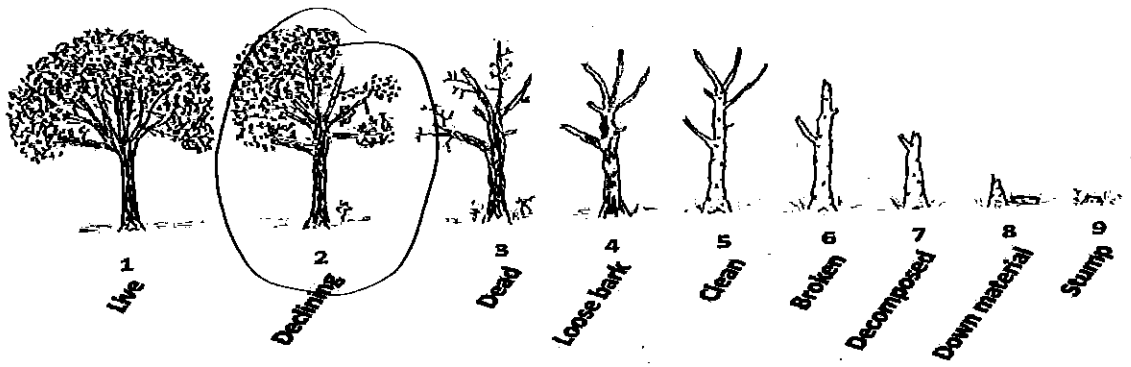
Roost Decay State: (1) 2 3 4 5 6 7 8 9 **Other**



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant __ Co-Dominant √ Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) 80%

Approximate woodlot size (ac or ha) 17982 ha **Distance to non-forest (ft or m)** 129 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
A mature hardwood forest in a mostly drained Cypress Swamp basin. Canals and forest roads separate forest lots.

Additional Comments

Appendix I

North River Game Land, Session 1

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell **Date:** 11/17/15

UTM: Zone_____ **Easting**_____ **Northing**_____ ***OR***

LAT 36.38227° **LONG** -76.01043°

Property Owner: NCWRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** 1

Roost # 1 **Roost Name:** 172.259

Roost Tree Data

Species: Water Tupelo (Nyssa aquatica) **Live** ✓ **Snag** __ **Other** __

(if other, explain) _____

DBH (in or cm) 7.3" **Total Height (ft or m)** 47'

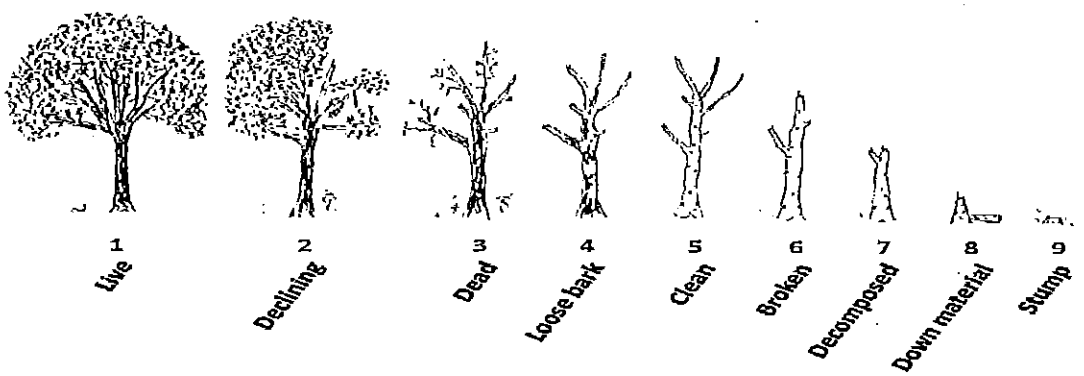
Height of roost area (if known) N/A **Dist. from capture site** 262m

Roost position aspect (deg) 135°

Exfoliating bark on bole (%) 0 **Describe: sloughing** __ **platy** ✓ **tight** __

Cavities present? N **If so, describe:**_____

Roost Decay State: (1) 2 3 4 5 6 7 8 9 Other



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant __ Co-Dominant ✓ Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) 25

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 237 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
Densly wooded Swamp with mixed mature hardwood
Water reaching 2ft deep

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Jen Starvetsky, Kelly Lutsch **Date:** 11/18/15

UTM: Zone ~~Easting~~ ~~Northing~~ ~~OR~~

LAT 36.38291 **LONG** -76.00970

Property Owner: NC WRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** 1

Roost # 2 **Roost Name:** 172.259

Roost Tree Data

Species: Water Tupelo **Live** ✓ **Snag** __ **Other** __

(if other, explain) _____

DBH (in or cm) 4.9 in **Total Height (ft or m)** 28.2 ft

Height of roost area (if known) _____ **Dist. from capture site** 171 m

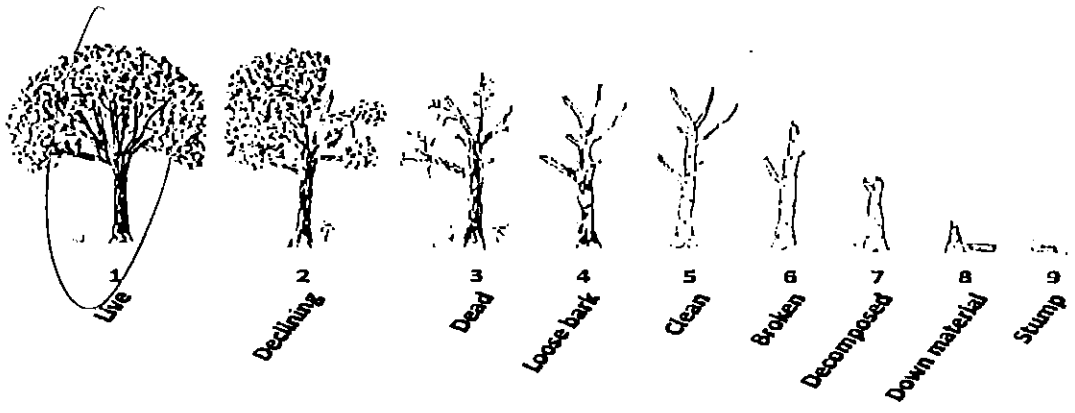
Roost position aspect (deg) 150° flat ground, swamp

Exfoliating bark on bole (%) 0 **Describe: sloughing** __ **platy** __ **tight** ✓

Cavities present? none **If so, describe:** _____

Roost Decay State: (1) 2 3 4 5 6 7 8 9 Other

No leaves



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant __ Co-Dominant __ Suppressed √

Surrounding Habitat Condition

Canopy closure at roost (%) 50 %

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 136 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
Mature, water tupelo dominated, Pine/hardwood forest within swamp. Standing water

Additional Comments
Live, thin Water tupelo. Mid canopy height.

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Jennifer Starvetsky, Kelly Luisi **Date:** 11/20/15

UTM: Zone ____ **Easting** ____ **Northing** ____ ***OR***

LAT 36.38264 **LONG** -76.01033

Property Owner: NCWRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** 1

Roost # 3 **Roost Name:** 172.259

Roost Tree Data

Species: Water Tupelo **Live** ✓ **Snag** __ **Other** __

(if other, explain) ____

DBH (in or cm) 45 in **Total Height (ft or m)** 47 ft

Height of roost area (if known) N/A **Dist. from capture site** 234 m

Roost position aspect (deg) 100° Flat ground, swamp

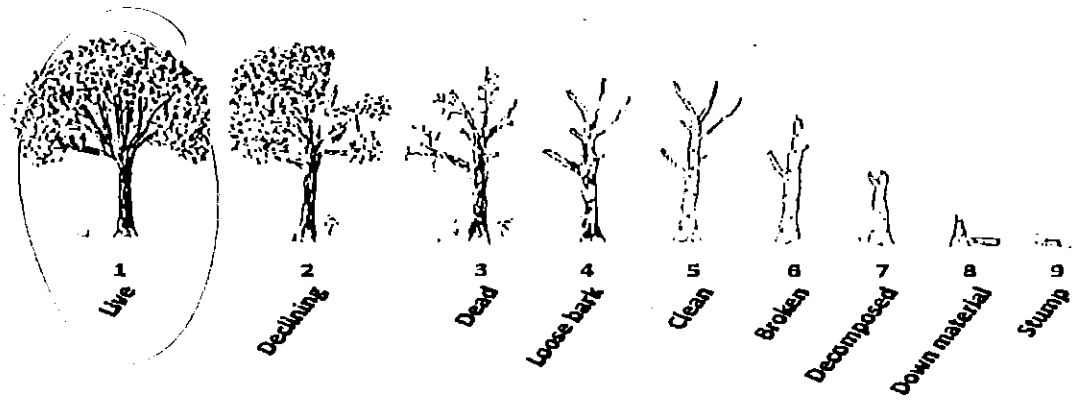
Exfoliating bark on bole (%) 0 **Describe: sloughing** __ **platy** __ **tight** ✓

Cavities present? No **If so, describe:** ____

Roost found

Roost Decay State: (1) 2 3 4 5 6 7 8 9 **Other**

Leaves have fallen



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant __ Co-Dominant X Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) 20%

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 200 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
Mature, water tupelo dominated, pine/hardwood forest within swamp. Standing water

Additional Comments
Thin live water tupelo, no cavities seen. Midcanopy height.

Roost 2
DBH 4.9 in
height 28.2
11% 0 light
suppressed
50% can. dos.

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Jennifer Slamerski Drew Powell Date: 11/23/15

UTM: Zone _____ Easting _____ Northing _____ *OR*

LAT 36.38263° LONG -76.01028°

Property Owner: NCWRC Phone# 919-707-0010

State NC County Currituck Site # 1

Roost # 4 Roost Name: 172.259

Roost Tree Data

Species: Sweetgum Live ✓ Snag __ Other __

(if other, explain) _____

DBH (in or cm) 11.5 Total Height (ft or m) 63 ft

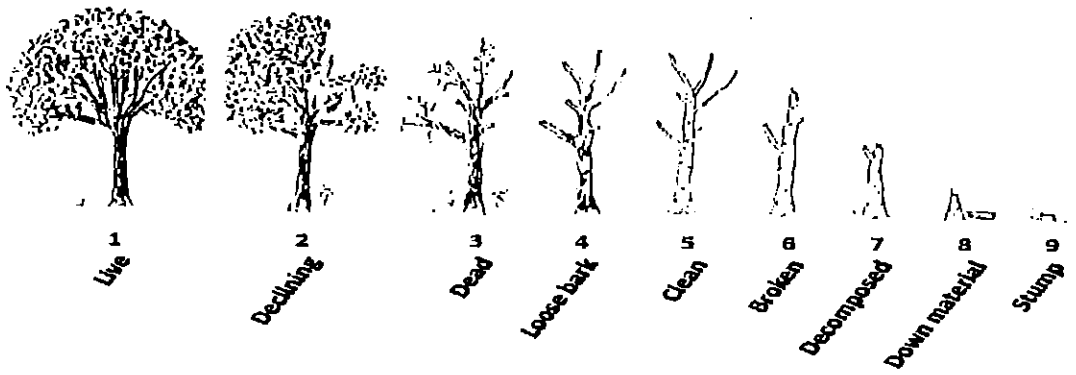
Height of roost area (if known) N/A Dist. from capture site 230m

Roost position aspect (deg) 175°

Exfoliating bark on bole (%) 0 Describe: sloughing __ platy ✓ tight __

Cavities present? N/A If so, describe: _____

Roost Decay State: (1) 2 3 4 5 6 7 8 9 Other



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant X **Co-Dominant** __ **Suppressed** __

Surrounding Habitat Condition

Canopy closure at roost (%) 15

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 199 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
A mature bald cypress swamp forest with mixed hardwoods. A few pines mixed in, water 3 ft at deepest depth.

Additional Comments Roost has a dead branch with little exfoliating bark 40-50 ft in the air. Cavities may be present but unable to see.

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST TREE DATASHEET

Biologists (Full Name): Drew Powell/Keegan Chavka **Date:** 11/27/15

UTM: Zone _____ **Easting** _____ **Northing** _____ ***OR***

LAT 36.38237° **LONG** -76.0947°

Property Owner: NC WRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** NR1

Roost # 5 **Roost Name:** 172.259

Roost Tree Data

Species: Swamp Tupelo **Live** ✓ **Snag** __ **Other** __

(if other explain) _____

DBH (note inches or cm) 3.4 in **Total Height (ft. or m)** 38 ft

Height of roost area (if known) _____ **Dist. from capture site** 259m

Roost position aspect (deg) 116°

Exfoliating bark on bole (%) 0 **Describe: sloughing** __ **platy** __ **tight** ✓

Cavities present? Yes **If so, describe:** Knot crack about 10 ft up

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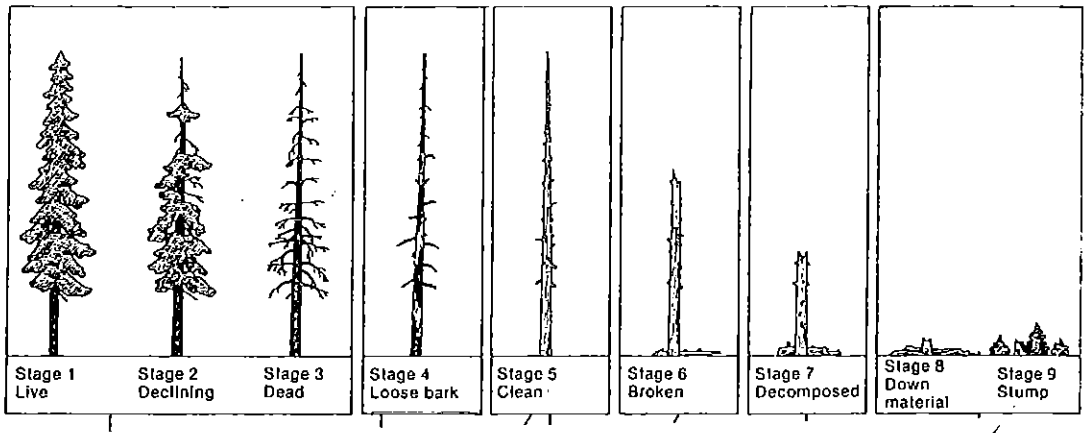
Roost Decay State: (1) 2 3 4 5 6 7 8 9 Other



Roost tree or snag canopy position: Dominant __ **Co-Dominant** __ **Suppressed** ✓

APPENDIX D
PHASE 4 RADIO-TRACKING

Surrounding Habitat Condition

Canopy closure at roost (%) 70

Approximate woodlot size (acres) 19,893 ac **Distance to non-forest (m)** 238 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
A mature mixed pine / hardwood forest in a bald cypress swamp. Water level around 3 ft at deepest depth.

Additional Comments Bat 259 was observed in a cavity half-way up the tree using a high powered light. Bat shared cavity with a large fishing spider.

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST TREE DATASHEET

Biologists (Full Name): Drew Powell/Keegan Chavka **Date:** 11/28/15

UTM: Zone _____ **Easting** _____ **Northing** _____ ***OR***

LAT 36.38222° **LONG** -76.00931°

Property Owner: NC WRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** NR1

Roost # 6 **Roost Name:** 172.259

Roost Tree Data

Species: Red Maple **Live** ✓ **Snag** __ **Other** __

(if other explain) _____

DBH (note inches or cm) 16 in **Total Height (ft. or m)** 16 ft

Height of roost area (if known) _____ **Dist. from capture site** 188 m

Roost position aspect (deg) 181°

Exfoliating bark on bole (%) 0 **Describe: sloughing** __ **platy** __ **tight** ✓

Cavities present? Yes **If so, describe:** small crack near bottom, extends upwards into sapling

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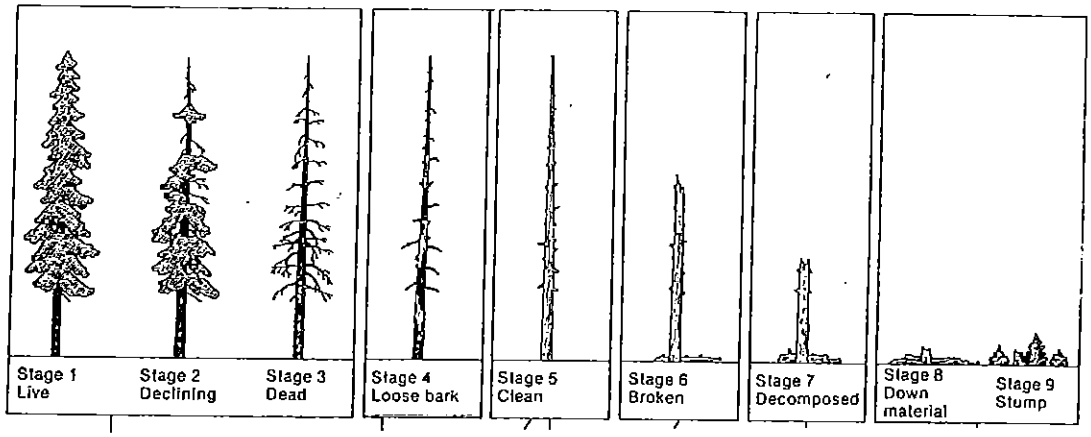
Roost Decay State: (1) 2 3 4 5 6 7 8 9 Other



Roost tree or snag canopy position: Dominant __ **Co-Dominant** __ **Suppressed** ✓

APPENDIX D
PHASE 4 RADIO-TRACKING

Surrounding Habitat Condition

Canopy closure at roost (%) 75

Approximate woodlot size (acres) 19893 ac **Distance to non-forest (m)** 189 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
A mature mixed pine / hardwood forest in a bald cypress swamp. Water level around ~~3ft~~ a deepest depth.

Additional Comments Sappling has a knot crack that extends upwards into the center of the tree. Used a high powered light to attempt and see in the cavity. Had signals with the gain at 1. with just the chord.

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Keegan Chavka / Drew Powell **Date:** 11/28/15

UTM: Zone _____ **Easting** _____ **Northing** _____ ***OR***

LAT 36.38266° **LONG** -76.01050°

Property Owner: NC WRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** NR 2

Roost # 1 **Roost Name:** tree next to 172.259 roost where 3 bats came out

Roost Tree Data

Species: Sweet gum **Live** ✓ **Snag** __ **Other** __

(if other, explain) _____

DBH (in or cm) 9.7 in **Total Height (ft or m)** 58.7 ft

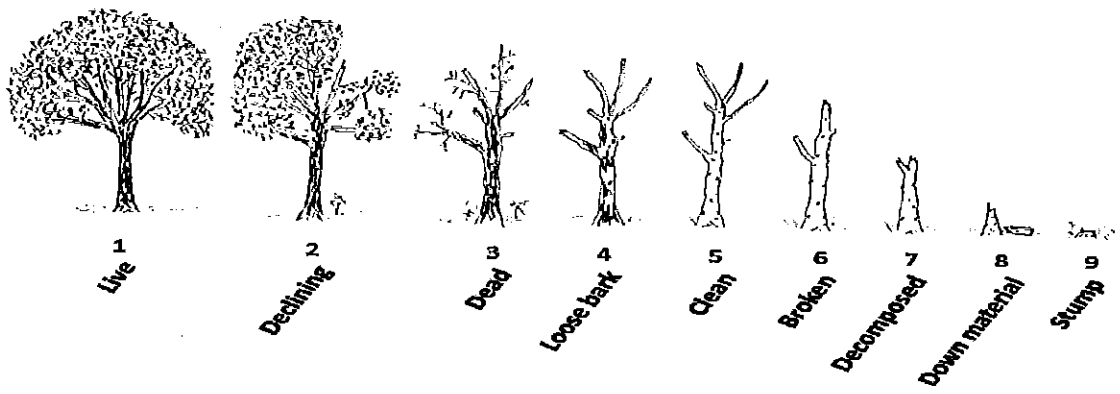
Height of roost area (if known) _____ **Dist. from capture site** 248 m

Roost position aspect (deg) 166°

Exfoliating bark on bole (%) 0 **Describe: sloughing** __ **platy** __ **tight** ✓

Cavities present? No **If so, describe:** _____

Roost Decay State: (1) 2 3 4 5 6 7 8 9 **Other**



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant __ Co-Dominant ✓ Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) 45%

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 214m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
Mature mixed pine/hardwood forest in a bald cypress swamp. Water level around 3ft at deepest depth.

Additional Comments During emergence on Bat 759 Roost 4 on 11/26/15, 3 bats were observed emerging from a tree in close proximity.

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Dottie Brown Drew Powell Date: 11-20-15

UTM: Zone_____ Easting _____ Northing_____ *OR*

LAT 36.38081 LONG -76.01275

Property Owner: NCWRC Phone# 919-707-0010

State NC County Currituck Site # 1

Roost # 1 Roost Name: 172.662

Roost Tree Data

Species: Bald Cypress (Live ✓ Snag__ Other__

(if other, explain) _____

DBH (in or cm) 18.2 Total Height (ft or m) 64'

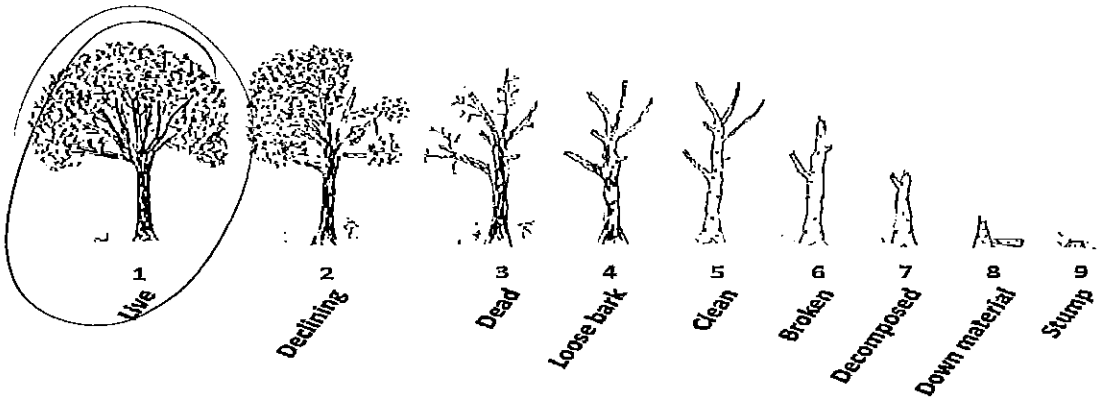
Height of roost area (if known) N/A Dist. from capture site 524m

Roost position aspect (deg) 160° flaky bark

Exfoliating bark on bole (%) NA Describe: sloughing__ platy__ tight__

Cavities present? No If so, describe: Broken limb small

Roost Decay State: (1) 2 3 4 5 6 7 8 9 Other



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant X Co-Dominant __ Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) 20%

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 498m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.) Bottomland/swamp on North Carolina Wildlife Resources Commission North River Gameland, mature forest with Bald cypres; water tupelo, loblolly Pine.

Additional Comments unable to find roost in tree. A broken limb, small cracks and crevices present. Flaky bark very small, but also present

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Keegan (Monika/ Drew) Powell **Date:** 11/27/15

UTM: Zone _____ **Easting** _____ **Northing** _____ ***OR***

LAT 36.38401° **LONG** -76.01202°

Property Owner: NC WRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** _____

Roost # 1 **Roost Name:** 172.722

Roost Tree Data

Species: Bald Cypress **Live** ✓ **Snag** __ **Other** __

(if other, explain) _____

DBH (in or cm) 17.4 in **Total Height (ft or m)** 81.5 ft

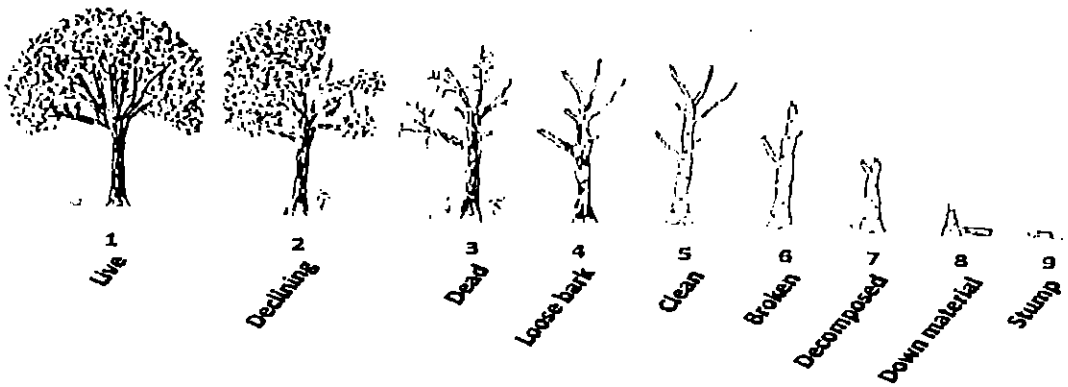
60 ft **Height of roost area (if known)** _____ **Dist. from capture site** 352 m

Roost position aspect (deg) 26°

Exfoliating bark on bole (%) 2 **Describe: sloughing** __ **platy** __ **tight** ✓

Cavities present? No **If so, describe:** _____

Roost Decay State: (1) 2 3 4 5 6 7 8 9 **Other**



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant __ Co-Dominant ✓ Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) 40

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 82m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)

Live cypress in mixed pine / hardwood swamp with water at 3ft deep

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell / Keegan Chanko **Date:** 11/28/15

~~**UTM: Zone**~~ ~~**Easting**~~ ~~**Northing**~~ ~~***OR***~~

LAT 36.38419° **LONG** -76.01254°

Property Owner: NC WRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** NR1

Roost # 2 **Roost Name:** 172.722

Roost Tree Data

Species: Bald cypress **Live** __ **Snag** __ **Other** ✓

(if other, explain) Tree splits into two, half live and half snag

DBH (in or cm) 28.5 in **Total Height (ft or m)** 72 ft

Height of roost area (if known) _____ **Dist. from capture site** 400 m

Roost position aspect (deg) 189°

Exfoliating bark on bole (%) 5% **Describe: sloughing** __ **platy** ✓ **tight** __

Cavities present? Yes **If so, describe:** Multiple dead limbs and little exfoliating bark

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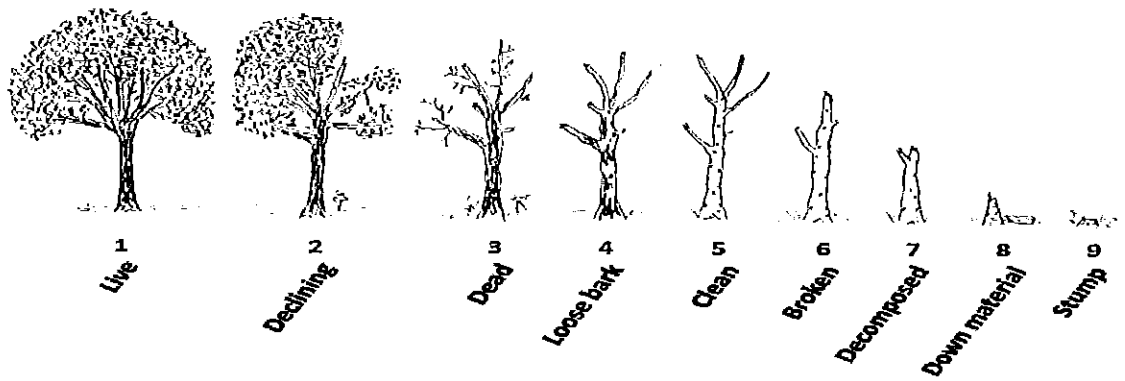
Roost Decay State: 1 (2) 3 4 5 6 7 8 9 **Other**



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant √ Co-Dominant __ Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) 20

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 73.14 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)

A mature pine/hardwood forest in a bald cypress swamp. Water level around 3 ft at deepest depth

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell Keegan Chavka Date: 12/3/15

UTM: Zone_____ Easting_____ Northing_____ OR

LAT 36.38401 LONG -76.01217

Property Owner: NR WRC Phone# 919-707-001

State NC County Currituck Site # NR1

Roost # 3 Roost Name: 172.722

Roost Tree Data

Species: Red Maple Live ✓ Snag__ Other__

(if other, explain)_____

DBH (in or cm) 13.1 Total Height (ft or m) 82 ft.

Height of roost area (if known) ±72 Dist. from capture site 350m

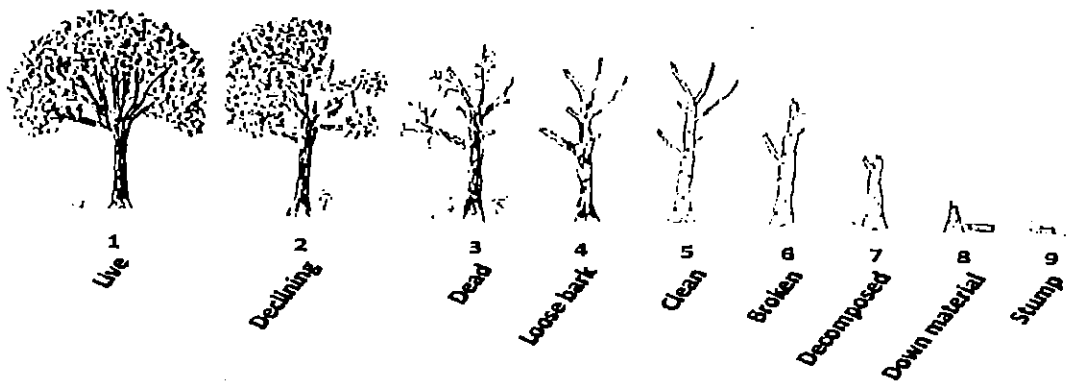
Roost position aspect (deg) 199°

Exfoliating bark on bole (%) 0% Describe: sloughing__ platy✓ tight__

Cavities present? ✓ If so, describe: lowest is about 15ft off ground there are at least 3, possibly more

Roost Decay State: 1 2 (3) 4 5 6 7 8 9 Other

*has multiple dead branches



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant __ Co-Dominant √ Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) 40%

Approximate woodlot size (ac or ha) 19,892ac **Distance to non-forest (ft or m)** 82m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
Tupelo, cypress dominant swamp, mature

Additional Comments bat is assumed to be very high in tree due to high bounce - back of the signal

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell, Keegan Clovis, Kelly Latsch **Date:** 12/9/15

UTM: Zone _____ **Easting** _____ **Northing** _____ ***OR***

LAT 36.38402° **LONG** -76.01233

Property Owner: NC WRC **Phone#** (919) 707-0010

State NC **County** Currituck **Site #** NR1

Roost # 4 **Roost Name:** 172.722

Roost Tree Data

Species: Red Maple **Live** √ **Snag** __ **Other** __

(if other, explain) _____

DBH (in or cm) 11.5 inches **Total Height (ft or m)** 80 ft

Height of roost area (if known) 55ft. **Dist. from capture site** 380 m

Roost position aspect (deg) 150°

Exfoliating bark on bole (%) 5 **Describe: sloughing** __ **platy** __ **tight** √

Cavities present? Yes **If so, describe:** Two cores of the tree split

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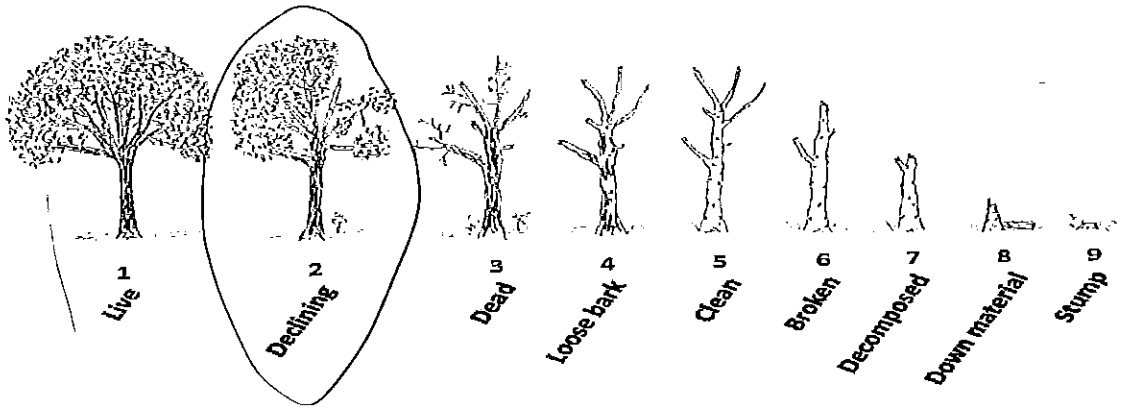
Roost Decay State: 1 (2) 3 4 5 6 7 8 9 Other



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant ✓ **Co-Dominant** __ **Suppressed** __

Surrounding Habitat Condition

Canopy closure at roost (%) 15%

Approximate woodlot size (ac or ha) 19893 ac. **Distance to non-forest (ft or m)** 89 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
A mixed pine/mature hardwood & Bald Cypress Swamp.

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell, Kelly Lutsch **Date:** 12/10/15

UTM: Zone ~~Easting~~ ~~Northing~~ *OR*

LAT 36.38166 **LONG** -76.01225

Property Owner: NCWRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** NR1

Roost # 5 **Roost Name:** 172.722

Roost Tree Data

Species: Live oak **Live** __ **Snag** ✓ **Other** __

(if other, explain) _____

DBH (in or cm) 14.5" **Total Height (ft or m)** 46 ft

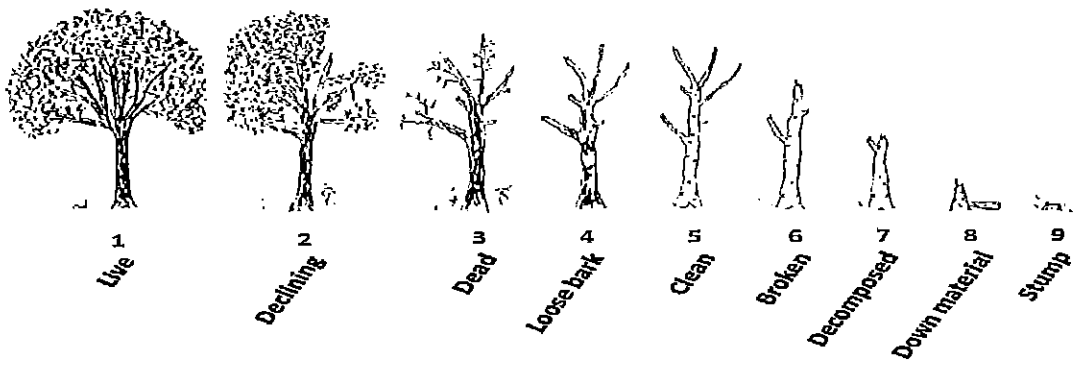
Height of roost area (if known) NA **Dist. from capture site** 452 m

Roost position aspect (deg) 237°

Exfoliating bark on bole (%) 68% **Describe: sloughing** / **platy** __ **tight** __

Cavities present? ✓ **If so, describe:** Multiple cavities on all sides of tree

Roost Decay State: 1 2 (3) 4 5 6 7 8 9 Other



Roost tree or snag canopy position: Dominant __ Co-Dominant / Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) 0

Approximate woodlot size (ac or ha) 1989 ac. Distance to non-forest (ft or m) 340m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)

Tupelo and Cypress dominated swamp, mature trees, underbrush such as green briar present

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST TREE DATASHEET

Biologists (Full Name): Keegan Chavka/Drew Powell **Date:** 11/28/15

UTM: Zone _____ **Easting** _____ **Northing** _____ ***OR***

LAT 36.38245° **LONG** -76.01081°

Property Owner: NC WRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** NR1

Roost # 1 **Roost Name:** 172.781

Roost Tree Data

Species: Red Maple **Live** ✓ **Snag** __ **Other** __

(if other explain) _____

DBH (note inches or cm) 10.9 in **Total Height (ft. or m)** 55.2ft

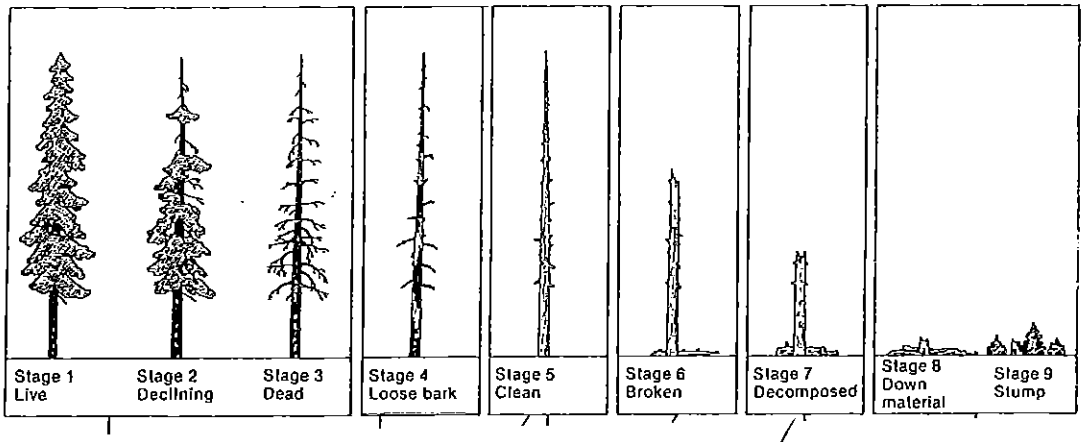
Height of roost area (if known) N/A **Dist. from capture site** 297m

Roost position aspect (deg) 147°

Exfoliating bark on bole (%) No **Describe: sloughing** __ **platy** __ **tight** ✓

Cavities present? No **If so, describe:** _____

Roost Decay State: (1) 2 3 4 5 6 7 8 9 Other



Roost tree or snag canopy position: Dominant __ **Co-Dominant** ✓ **Suppressed** __

APPENDIX D
PHASE 4 RADIO-TRACKING

Surrounding Habitat Condition

Canopy closure at roost (%) 50

Approximate woodlot size (acres) 19,893 ac **Distance to non-forest (m)** 203 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
A mature mixed pine / hardwood forest in a bald cypress swamp. Water level around 3ft at deepest depth.

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell/Jennifer Stevenitsky Kelly Ludsch **Date:** 11/29/15

~~UTM: Zone~~ ~~Easting~~ ~~Northing~~ *OR*

LAT 36.38088° **LONG** -76.01134°

Property Owner: NC WRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** 1

Roost # 2 **Roost Name:** 172.781

Roost Tree Data

Species: Live Oak **Live** ✓ **Snag** __ **Other** __

(if other, explain) _____

DBH (in or cm) 17.2 in **Total Height (ft or m)** 67.8 ft

Height of roost area (if known) _____ **Dist. from capture site** 422m

Roost position aspect (deg) 30°

Exfoliating bark on bole (%) 0 **Describe: sloughing** __ **platy** __ **tight** ✓

Cavities present? Yes **If so, describe:** A broken branch near top has multiple cavities

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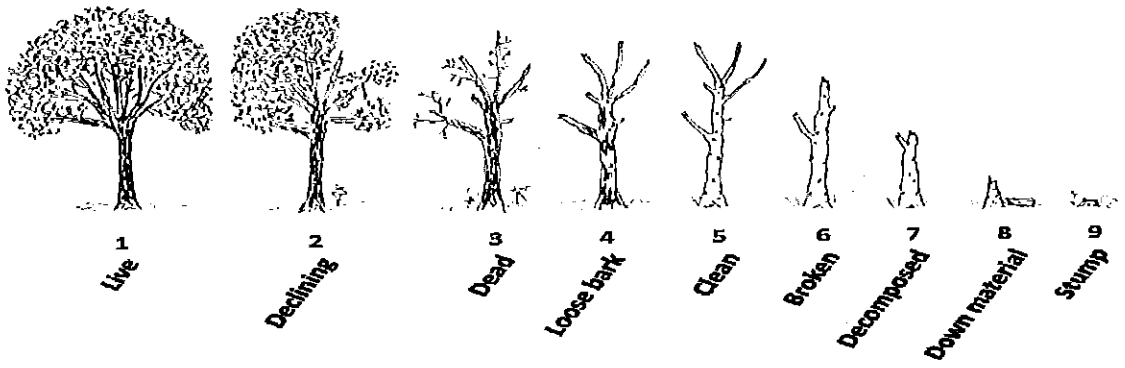
Roost Decay State: 1 (2) 3 4 5 6 7 8 9 **Other**



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant ✓ **Co-Dominant** __ **Suppressed** __

Surrounding Habitat Condition

Canopy closure at roost (%) 40

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 414 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
A mature mixed pine/hardwood forest in a bald cypress swamp. Water level around 3 ft at deepest depth.

Additional Comments Multiple dead branches present at the crown of the tree. One large branch in particular has multiple cavities on all sides.

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell Kelly Ludson **Date:** 12/10/15

UTM: ~~Zone~~ _____ **Easting** _____ **Northing** _____ ~~OR~~

LAT 36.38149 **LONG** -76.01168

Property Owner: NCWRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** NR1

Roost # Roost 3 **Roost Name:** 172.781

Roost Tree Data

Species: Bald Cypress **Live** ✓ **Snag** __ **Other** __

(if other, explain) _____

DBH (in or cm) 18.4 **Total Height (ft or m)** 85ft

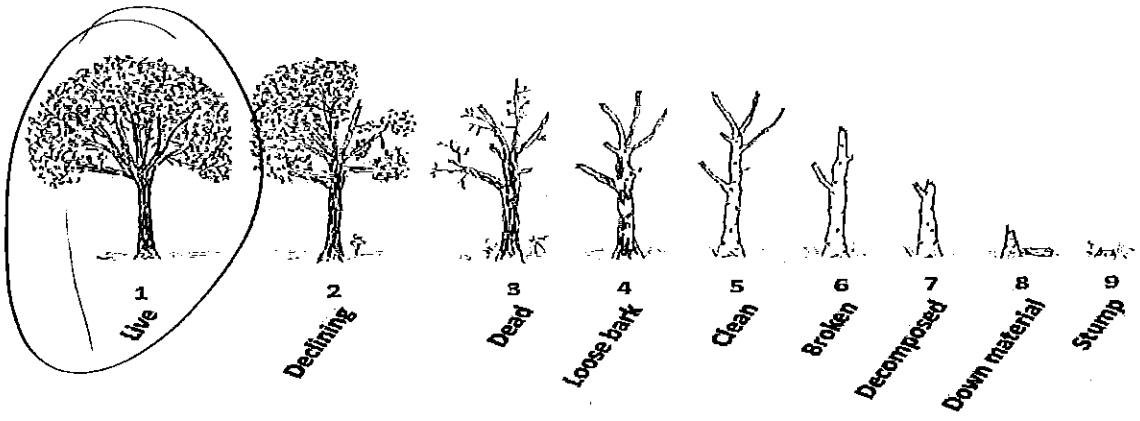
Height of roost area (if known) N/A **Dist. from capture site** 424m

Roost position aspect (deg) 154°

Exfoliating bark on bole (%) _____ **Describe: sloughing** __ **platy** __ **tight** __

Cavities present? ✓ **If so, describe:** very few. Some branches at top of tree

Roost Decay State: (1) 2 3 4 5 6 7 8 9 Other



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant √ **Co-Dominant** __ **Suppressed** __

Surrounding Habitat Condition

Canopy closure at roost (%) 30%

Approximate woodlot size (ac or ha) 19893 ac **Distance to non-forest (ft or m)** 315m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)

Tupelo and cypress daminated swamp, mature trees

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell/ Keegan Chesko **Date:** 11/27/15

UTM: Zone _____ **Easting** _____ **Northing** _____ ***OR***

LAT 36.38346° **LONG** -76.01000°

Property Owner: NC WRC **Phone#** 919-707-0010

State NC **County** Currituck **Site #** NR1

Roost # 1 **Roost Name:** 172.842

Roost Tree Data

Species: Bald Cypress **Live** __ **Snag** ✓ **Other** __

(if other, explain) _____

DBH (in or cm) 17.5 in **Total Height (ft or m)** 38.5 ft

Height of roost area (if known) NA **Dist. from capture site** 180 m

Roost position aspect (deg) 130°

Exfoliating bark on bole (%) 50 **Describe: sloughing** __ **platy** __ **tight** ✓

Cavities present? Yes **If so, describe:** Multiple cavities and exposed cracks

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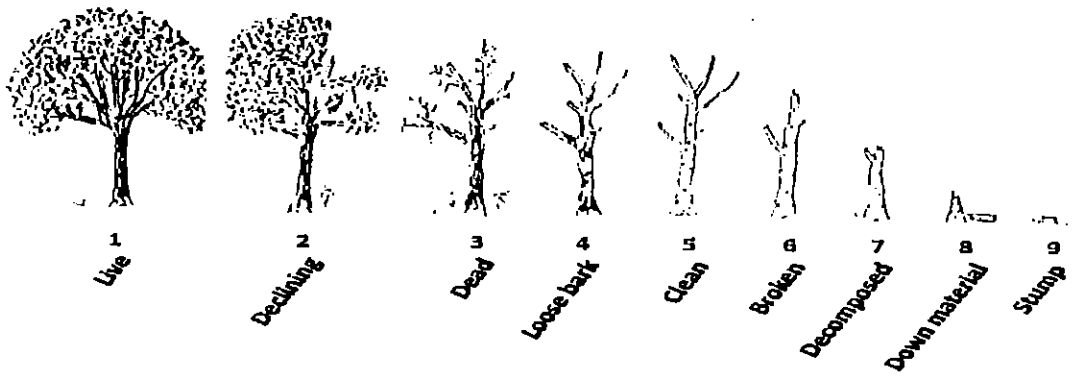
Roost Decay State: 1 2 3 (4) 5 6 7 8 9 Other



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant __ Co-Dominant X Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) 45

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 73m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
mixed pine/hardwood forest in bottomland swamp; part of the North River Gameland. Water up to 3ft at deepest depth

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Drew Powell/Keegan Clark Date: 11/28/15

UTM: Zone _____ Easting _____ Northing _____ *OR*

LAT 36.38353° LONG -76.00993°

Property Owner: NC WRC Phone# 919-707-0010

State NC County Currituck Site # NR1

Roost # 2 Roost Name: 172,842

Roost Tree Data

Species: Swamp Tupelo Live ✓ Snag __ Other __

(if other, explain) _____

DBH (in or cm) 11.3in Total Height (ft or m) 78.6 ft

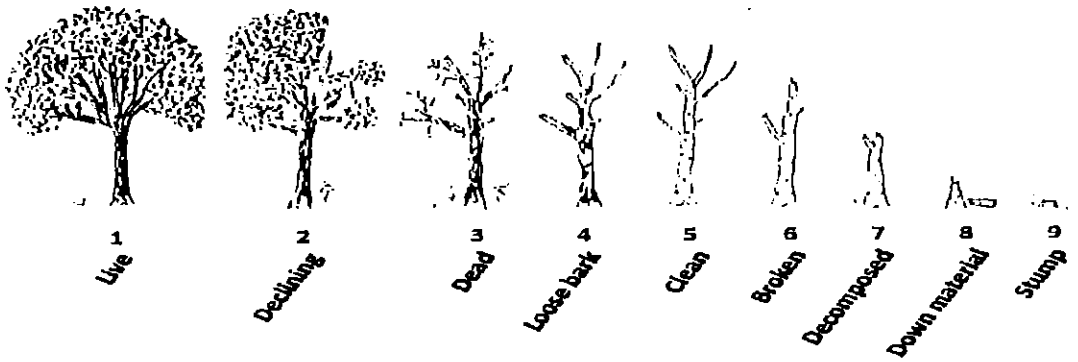
Height of roost area (if known) _____ Dist. from capture site 174 m

Roost position aspect (deg) 129°

Exfoliating bark on bole (%) 0 Describe: sloughing __ platy __ tight ✓

Cavities present? Yes If so, describe: High Knot hole facing SE

Roost Decay State: (1) 2 3 4 5 6 7 8 9 Other



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant __ Co-Dominant √ Suppressed __

Surrounding Habitat Condition

Canopy closure at roost (%) 25

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 1e1m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
A mature mixed pine / hardwood forest in a bald cypress swamp. Water level around 3ft a deepest depth.

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Jennifer Starvetsky Keegan Chavka **Date:** 11/30/15

UTM: Zone____ **Easting**____ **Northing**____ ***OR***

LAT 36.38180° **LONG** -76.01073°

Property Owner: NC WRC **Phone#** 919-707-0010

State North Carolina **County** Currituck **Site #** NR1

Roost # 3 **Roost Name:** 172.842

Roost Tree Data

Species: Sweetgum **Live** X **Snag** __ **Other** __

(if other, explain) ____

DBH (in or cm) 16.1 in **Total Height (ft or m)** 67.5 ft

Height of roost area (if known) 37ft **Dist. from capture site** 331 m

Roost position aspect (deg) 30°

Exfoliating bark on bole (%) 0 **Describe: sloughing** __ **platy** __ **tight** √

Cavities present? Y **If so, describe:** cavity on knot halfway up tree

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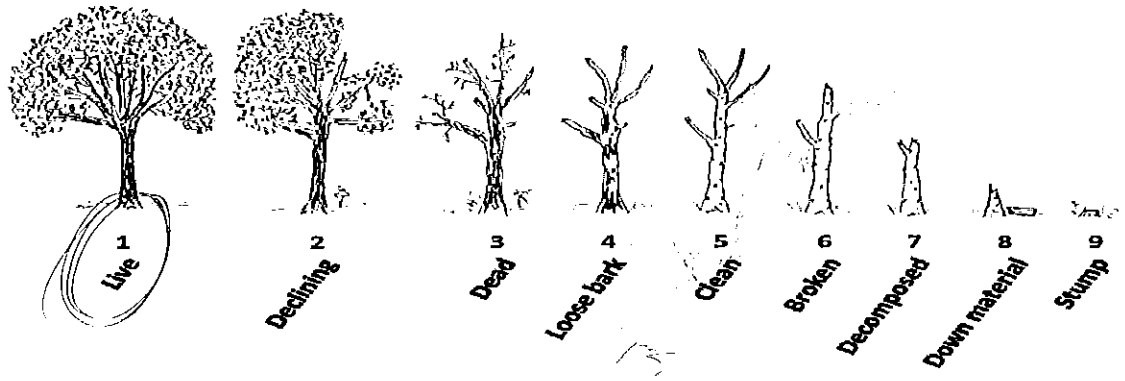
Roost Decay State: (1) 2 3 4 5 6 7 8 9 **Other**



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant X **Co-Dominant** __ **Suppressed** __

Surrounding Habitat Condition

Canopy closure at roost (%) 10

Approximate woodlot size (ac or ha) 19,893 ac **Distance to non-forest (ft or m)** 292 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
bottomland swamp in North River Gameland. Forest composed of cypress, pine, & tupelo. Roost tree is over 100 ft. dominant canopy. About 30 ft high is a knot in bark with cavity — suspected roost area.

Additional Comments

APPENDIX D
PHASE 4 RADIO-TRACKING

USFWS INDIANA BAT ROOST DATASHEET

Biologists (Full Name): Keegan Chavka Dottie Brown Date: 12-2-15

UTM: Zone_____ Easting _____ Northing_____ *OR*

LAT 36.38125 LONG -76.01081

Property Owner: NCWRC Phone# 919-707-0010

State NC County Currituck Site # 1

Roost # 4 Roost Name: 172.842

Roost Tree Data

Species: Water Tupelo Live ✓ Snag __ Other __

(if other, explain) _____

DBH (in or cm) 15.4" Total Height (ft or m) 74.1'

Height of roost area (if known) 38.5 Dist. from capture site 313m

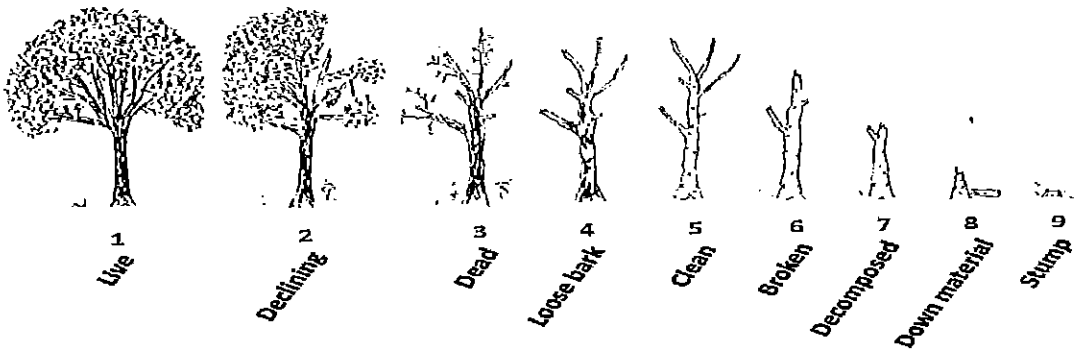
Roost position aspect (deg) 149°

Exfoliating bark on bole (%) 0% Describe: sloughing __ platy __ tight ✓

Cavities present? ✓ If so, describe: small cracks + crevices w/ dead branch ~30' up

roost w/ dead limb on S. side of tree

Roost Decay State: (1) 2 3 4 5 6 7 8 9 Other



APPENDIX D
PHASE 4 RADIO-TRACKING

Roost tree or snag canopy position: Dominant ✓ **Co-Dominant** __ **Suppressed** __

Surrounding Habitat Condition

Canopy closure at roost (%) 99% in summer, but open fall/winter

Approximate woodlot size (ac or ha) 19,893ac **Distance to non-forest (ft or m)** 280 m

Describe forest/woodlot current condition (mature, partially cut-over, burned, insect damage, etc.)
North River Swamp same area as Roost #3 for this bat. 1-2 feet deep water in hardwood forest sweetgum, water t

Additional Comments
Emergence was done on Roost 3 on 12-1-15 and Bat did not emerge & surveyor stayed till 5:35. Bat may have emerged late & in Darkness.

Appendix J

NLEB Emergence Survey Data Sheets

Appendix J

Great Dismal Swamp NWR, Session 1

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/13/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Gates **Project Name:** NC NLEB Research
Site Name/#: Sherrill Ditch **Roost Name/#** [illegible] **Bat #:** 172.541
Lat/Long or UTM of Roost: 36.51260° -76.53212°
Description of Roost/Habitat Feature Surveyed: A mature swamp tupelo in a dried cypress swamp basin
Bat Species Known to be using this Roost/Feature (if not known, leave blank): M. septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 64° F no precipitation, no wind
Survey Start Time: 16:19 **Time of Sunset:** 16:49 **Survey End Time:** 17:30

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Sherrill Ditch **Roost Name/#:** 8, 172541-1 1

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Used telemetry year during survey

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/15/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Gates **Project Name:** NC NLEB Research
Site Name/#: GDS Sheaill Ditch **Roost Name/#** 1 **Bat #:** 172.541
Lat/Long or UTM of Roost: 36.51260°, -76.52312°
Description of Roost/Habitat Feature Surveyed: Mature Swamp Tupelo in a drained section of a Bald Cypress Swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 65°F, no precipitation, 1-3 mph winds
Survey Start Time: 16:20 **Time of Sunset:** 16:52 **Survey End Time:** 17:30

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:24	1	Bat 541 left the roost, confirmed via telemetry.

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: GDS Sherrill Ditch **Roost Name/#:** 172.541-1

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/16/15 **Surveyor(s) Full Name:** Kelly Lutsch, David Cooper
State: NC **County:** Gates **Project Name:** NC NLEB Research
Site Name/#: Sherrill Ditch **Roost Name/#** 2 **Bat #:** 172.541
Lat/Long or UTM of Roost: 36.51244, -76.52301
Description of Roost/Habitat Feature Surveyed: mature forest surrounded by swamp in a mature swamp tupelo
Bat Species Known to be using this Roost/Feature (if not known, leave blank): MYSE
Other Suspected Bat Species (explain): —
Weather Conditions during Survey (temperature, precipitation, wind speed): 56°, no rain, no wind
Survey Start Time: 1622 **Time of Sunset:** 1652 **Survey End Time:** 1730

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Sherrill Ditch **Roost Name/#:** 172,541 - 2-1

Time	Number of Bats Leaving Roost*	Comments / Notes
	Ø	
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Observers sat on opposite sides of the roost. No telemetry gear was used. No bats observed leaving roost.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/13/15 **Surveyor(s) Full Name:** Keegan Chavka
State: NC **County:** Gates **Project Name:** NC NLEB Research
Site Name/#: Sherrill Ditch **Roost Name/#** [illegible] **Bat #:** 172.603
Lat/Long or UTM of Roost: 36.513301° , -76.52528°
Description of Roost/Habitat Feature Surveyed: A young Red Maple in a Bald Cypress Swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 64°F, no precipitation, no wind
Survey Start Time: 16:19 **Time of Sunset:** 16:50 **Survey End Time:** 17:25

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:10	1	Confirmed bat 603 left roost and flew around the area.

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Sherrill Ditch **Roost Name/#:** 172.603-1

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/15/15 **Surveyor(s) Full Name:** Keegan Chavka
State: NC **County:** Gates **Project Name:** NC NLEB Research
Site Name/#: GDS Sheavill Ditch **Roost Name/#** 1 **Bat #:** 172.603
Lat/Long or UTM of Roost: 36.51301°, -76.52528°
Description of Roost/Habitat Feature Surveyed: Suppressed Red Maple in a Bald Cypress Swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 65°F, no precipitation, 1-3 mph winds
Survey Start Time: 16:21 **Time of Sunset:** 16:52 **Survey End Time:** 17:30

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:19	1	Bat 603 left roost, confirmed via telemetry.

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: GDS Sherrill Ditch **Roost Name/#:** 172603-1

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Appendix J

North River Game Land, Session 1

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/17/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC NLEB research 42262
Site Name/#: Billboard/Airport **Roost Name/#** 172.259 1 **Bat #:** 172.259
Lat/Long or UTM of Roost: N36.38227° W-76.01043°
Description of Roost/Habitat Feature Surveyed: Live Water Tupelo in a large bald cypress swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): MyMySe
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 60°F few clouds with light breeze
Survey Start Time: 16:35 **Time of Sunset:** 16:54 **Survey End Time:** 17:36

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:36	1	Used telemetry gear to determine emergence
		bat left at 17:36
		Could not see too dark

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: NR1 Billboard/ Airport Roost Name/#: 172.259 - 1

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Bat 172.259 foraged close to the roost post emergence

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11-18-15 **Surveyor(s) Full Name:** Jennifer Starvetsky

State: NC **County:** Currituck **Project Name:** NC NLEB

Site Name/#: North River gameland **Roost Name/#** 1 **Bat #:** 172.259

Lat/Long or UTM of Roost: 36.38227 -76.01043

Description of Roost/Habitat Feature Surveyed: water tupelo, swamp/bottomland

Bat Species Known to be using this Roost/Feature (if not known, leave blank):
— MYSE

Other Suspected Bat Species (explain): NA

Weather Conditions during Survey (temperature, precipitation, wind speed):
Clear 64°

Survey Start Time: 1629 **Time of Sunset:** 1655 **Survey End Time:** 1837

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	Ø	too dark to see bats leave

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 172.259 - 1

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

to dark to see

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/18/15 **Surveyor(s) Full Name:** Kelly Lutsch

State: NC **County:** Currituck **Project Name:** NLEB Project

Site Name/#: NR1 Billboard/Airport **Roost Name/#** 2 **Bat #:** 172.259

Lat/Long or UTM of Roost: 36.38291, -76.00970

Description of Roost/Habitat Feature Surveyed: small water tupelo swamp / bottomland

Bat Species Known to be using this Roost/Feature (if not known, leave blank): MYSE

Other Suspected Bat Species (explain): NA

Weather Conditions during Survey (temperature, precipitation, wind speed):

Survey Start Time: 16:30 **Time of Sunset:** 16:55 **Survey End Time:** 17:27

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:19	1	Heard bat leave, did not see. Foraged near roost
		used telemetry to observe bat
		leaving @ 17:27

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 172.259 - D

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

too dark to see

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11-21-15 **Surveyor(s) Full Name:** Jennifer Starvets Ky

State: NC **County:** Currituck **Project Name:** NC NLEB Research

Site Name/#: NRG 1 **Roost Name/#** 3 **Bat #:** 172.259

Lat/Long or UTM of Roost: 36.38264 -76.01033

Description of Roost/Habitat Feature Surveyed: Water Tupelo, live w/ fallen leaves, in mature mixed pine/hardwood swamp, standing water, hardwood dominated

Bat Species Known to be using this Roost/Feature (if not known, leave blank): MYSE

Other Suspected Bat Species (explain): NA

Weather Conditions during Survey (temperature, precipitation, wind speed): , partly cloudy (2), no wind (0)

Survey Start Time: 1655 **Time of Sunset:** 1743 **Survey End Time:** 1740

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
1731	1	172.259
		too dark to see so telemetry
		used to document bat emerged
		@ 17:40

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: billboard/Airport Roost Name/#: 172.259-3

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/25/15 **Surveyor(s) Full Name:** Keegan Chavka
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard/Airport **Roost Name/#** 4 1 **Bat #:** 12.259
Lat/Long or UTM of Roost: N 36.38263°, W -76.01028°
Description of Roost/Habitat Feature Surveyed: Live Sweet Gum tree in a mixed Pine/Hardwood Cypress Swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): M. septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 53°F, no precipitation, light breeze
Survey Start Time: 16:21 **Time of Sunset:** 16:51 **Survey End Time:** 18:15

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 172.259-4

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Used Telemetry equipment and infrared spotlight, no bat emergence observed.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/26/15 **Surveyor(s) Full Name:** Keegan ChavKa
State: NC **County:** Currituck **Project Name:** NC NLEB Research 42262
Site Name/#: Billboard/Airport **Roost Name/#** Bat 4 **Bat #:** 172.259
Lat/Long or UTM of Roost: N 36.38266°, W -76.01050°
Description of Roost/Habitat Feature Surveyed: Mature Sweet gum in a mixed pine/Hardwood Bald Cypress Swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 63°F, No precipitation, light wind (1-3 mph)
Survey Start Time: 16:21 **Time of Sunset:** 16:51 **Survey End Time:** 17:25

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:16	1	Bat 259 emerged, confirmed via telemetry equip.

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** P-172:259-4

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

At 17:10 a suspected MYSE or MYAU emerged from a separate tree due North of 259 Roost 4. Following, at 17:14 2 bats, suspected MYSE or MYAU emerged from separate tree due North of 259 Roost 4.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/2/15 **Surveyor(s) Full Name:** Dottie Brown, Cheryl Gregory
State: NC **County:** Currituck **Project Name:** NC LEB Research
Site Name/#: Billboard/Airport **Roost Name/#** 4 **Bat #:** 172.259
Lat/Long or UTM of Roost: 36.38263, -76.01028
Description of Roost/Habitat Feature Surveyed: Sweetgum in mixed pine/hardwood swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis Septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 64°F, overcast (3), light breeze (1)
Survey Start Time: 16:30 **Time of Sunset:** 16:50 **Survey End Time:** 17:41

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:15	1	Bat 259, confirmed via telemetry equip.

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport Roost Name/#: 172.259-4

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

At 17:10 a single bat was observed fly a signficant distance above Bat 259 Roost 4, East to West flight.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 7/6/15 **Surveyor(s) Full Name:** Kelly Lutsch, Drew Powell, Keegan Chavka
State: NC **County:** Currituck **Project Name:** NLEB Research
Site Name/#: Billboard/Airport **Roost Name/#** P4 **Bat #:** 172.259
Lat/Long or UTM of Roost: 36.38263°, -76.01028°
Description of Roost/Habitat Feature Surveyed: Cypress and tupelo swamp

Bat Species Known to be using this Roost/Feature (if not known, leave blank):
MYSE
Other Suspected Bat Species (explain): —
Weather Conditions during Survey (temperature, precipitation, wind speed):
53°, no rain, minimal wind
Survey Start Time: 15:50 **Time of Sunset:** 16:49 **Survey End Time:** 17 25

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 172.259-4

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:		

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Acoustic unit set at roost to capture any calls as bats emerge. AB003 was used.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/9/15 **Surveyor(s) Full Name:** Kelly Lusch, Drew Powell, Keegan Chavka
State: NC **County:** Currituck **Project Name:** NLEB Research
Site Name/#: Billboard/ATP **Roost Name/#** 4 **Bat #:** 192.259
Lat/Long or UTM of Roost: 36.38263, -76.01028
Description of Roost/Habitat Feature Surveyed: Cypress and tupelo swamp

Bat Species Known to be using this Roost/Feature (if not known, leave blank):
MYSE
Other Suspected Bat Species (explain): —
Weather Conditions during Survey (temperature, precipitation, wind speed):
58°, no rain, 4mph wind
Survey Start Time: 1618 **Time of Sunset:** 1649 **Survey End Time:** 1730

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 172.259-4

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:		

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Acoustic unit set at roost to capture any calls as bats emerge. AB003 was used

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/27/15 **Surveyor(s) Full Name:** Keegan Chavka
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: NR Billboard/Airport **Roost Name/#** 5 **Bat #:** 172.259
Lat/Long or UTM of Roost: N36.38237°, W-76.01047°
Description of Roost/Habitat Feature Surveyed: Codominant Swamp Tupelo in a mixed pine/mature hardwood, Bald Cyprus Swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 65°F, no precipitation, light wind (1-3mph)
Survey Start Time: 16:20 **Time of Sunset:** 16:50 **Survey End Time:** 17:25

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:25	1	No visual emergence, confirmed via telemetry

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: NR Billboard/Airport **Roost Name/#:** 172.259-5

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/28/15 **Surveyor(s) Full Name:** Keegan Chavka

State: NC **County:** Currituck **Project Name:** NC NLEB Research

Site Name/#: NR Billboard/Airport **Roost Name/#** 6 **Bat #:** 172.259

Lat/Long or UTM of Roost: N 36.38222°, W -76.00931°

Description of Roost/Habitat Feature Surveyed: Young Red Maple in a mixed pine/Mature Hardwood, Bald Cypress Swamp

Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis

Other Suspected Bat Species (explain): N/A

Weather Conditions during Survey (temperature, precipitation, wind speed): 64°F, no precipitation and partly cloudy, no wind

Survey Start Time: 16:20 **Time of Sunset:** 16:50 **Survey End Time:** 17:28

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: NR Billboard/Airport **Roost Name/#:** 172.259-6

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	no emergence, confirmed via radio telemetry

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/21/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC Tri NLEB research
Site Name/#: Billboard/Airport **Roost Name/#** [illegible] **Bat #:** 172.662
Lat/Long or UTM of Roost: 36.38081° -76.01275
Description of Roost/Habitat Feature Surveyed: Live bald cypress tree in the middle of a swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank):
Myotis septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed):
59° F, no precipitation or breeze
Survey Start Time: 16:22 **Time of Sunset:** 16:52 **Survey End Time:** 17:40

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	too dark to see, used telemetry to document time of emergence bat #662 did not leave.

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport Roost Name/#: 172.662-1

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/25/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC NLEB research
Site Name/#: Billboard / Airport **Roost Name/#** [illegible] **Bat #:** 172622
Lat/Long or UTM of Roost:
Description of Roost/Habitat Feature Surveyed: Live bald cypress tree in the middle of a mixed pine / hardwood swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): M. septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 53° F, no precipitation, light breeze
Survey Start Time: 16:21 **Time of Sunset:** 16:51 **Survey End Time:** 18:15

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard / Airport **Roost Name/#:** B. 192.622-14

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Used telemetry equipment and night-vision binoculars, no bat emergence

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/26/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC NLEB Research 42262
Site Name/#: Billboard/Airport **Roost Name/#** 1 **Bat #:** 172.662
Lat/Long or UTM of Roost:
Description of Roost/Habitat Feature Surveyed: A mature live bald cypress tree in the middle of a mixed pine/hardwood swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 63°F, no precipitation, light wind (1-3mph)
Survey Start Time: 16:21 **Time of Sunset:** 16:51 **Survey End Time:** 17:25

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 172.622-1

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/27/15 **Surveyor(s) Full Name:** Keegan Chavka
State: NC **County:** Currituck **Project Name:** NC NLEB Research 42262
Site Name/#: Billboard/Airport **Roost Name/#** [illegible] **Bat #:** 172.722
Lat/Long or UTM of Roost: 36.38401°N -76.01202°W
Description of Roost/Habitat Feature Surveyed: Mature Bald Cyprus in a Mixed pine/hardwood Bald Cyprus swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis Septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 65°F, No precipitation, light wind (1-3 mph)
Survey Start Time: 16:20 **Time of Sunset:** 16:50 **Survey End Time:** 17:25

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:19	1	Emerged and flew away immediately, SE. Bat 722 confirmed using telemetry equipment

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 172.722-1

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/28/15 **Surveyor(s) Full Name:** Keegan Chavka
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard/Airport **Roost Name/#** 2 **Bat #:** 172-722
Lat/Long or UTM of Roost: N 36.38419° W-76.01254°
Description of Roost/Habitat Feature Surveyed: Mature Bald Cypress that splits into two parts, one being dead and fractured. In a mixed pine/Hardwood Bald Cypress Swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 64°F, no precipitation and partly cloudy, no wind.
Survey Start Time: 16:19 **Time of Sunset:** 16:49 **Survey End Time:** 17:28

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:14	1	emerged from lowest branch on south side
17:18	1	
17:25	1	bat 722, confirmed with telemetry equip.

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 172.722-2

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	3	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/29/15 **Surveyor(s) Full Name:** Kelly Lutsch

State: NC **County:** Currituck **Project Name:** NLEB Research

Site Name/#: Billboard/Airport **Roost Name/#** 2 **Bat #:** 172722

Lat/Long or UTM of Roost: 36.38419, -76.01254

Description of Roost/Habitat Feature Surveyed: Tupelo/Cypress swamp bordered by mature forest and open field

Bat Species Known to be using this Roost/Feature (if not known, leave blank):
MYSE

Other Suspected Bat Species (explain):

Weather Conditions during Survey (temperature, precipitation, wind speed):
56° degrees F, no rain, wind about 8mph

Survey Start Time: 1625 **Time of Sunset:** 1650 **Survey End Time:** 17:33

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:01	1	non-transmitted bat seen flying from ½ way up roost tree

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: 172.722 **Roost Name/#:** 172.722+2

Time	Number of Bats Leaving Roost*	Comments / Notes
		1
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	only bat observed leaving roost was non-transmitter bat.

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Radio-tagged bat did not leave roost during emergence. Beep on receiver was constant during emergence.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12-1-15 **Surveyor(s) Full Name:** Keegan Chavka
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: NRG1 **Roost Name/#** 2 **Bat #:** 172.722
Lat/Long or UTM of Roost: 36.38419, -76.01254
Description of Roost/Habitat Feature Surveyed: Split sweetgum w/ one side dead & splintered, bottomland swamp - mixed pine/hardwood
Bat Species Known to be using this Roost/Feature (if not known, leave blank):
NLEB
Other Suspected Bat Species (explain):
Weather Conditions during Survey (temperature, precipitation, wind speed):
calm(0), overcast (3), no precipitation.
Survey Start Time: 1620 **Time of Sunset:** 1630 **Survey End Time:** 1735

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	NO bats emerged - confirmed w/ reciever bat 722 still in tree

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: NRG-1 **Roost Name/#:** 172.722-2

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/3/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard / Airport **Roost Name/#** [illegible] 2 **Bat #:** 172.722
Lat/Long or UTM of Roost: 36.38419° -76.01254°
Description of Roost/Habitat Feature Surveyed: A large mature half snag/ half live bald cypress tree in a black swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): M. septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 64° F, overcast w/ no precipitation, light breeze
Survey Start Time: 16:19 **Time of Sunset:** 16:50 **Survey End Time:** 17:30

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard / Airport Roost Name/#: T-172722-2

Time	Number of Bats Leaving Roost*	Comments / Notes :
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Used telemetry gear during survey.

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/3/15 **Surveyor(s) Full Name:** Keegan ChavKa
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard/Airport **Roost Name/#** 3 **Bat #:** 172.722
Lat/Long or UTM of Roost: N 36.38401° W-76.01217°
Description of Roost/Habitat Feature Surveyed: Codominant, Mature Red Maple in a mixed pine / Hardwood / Bald Cyprus swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis Septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): no precipitation, light wind (1-3mph)
Survey Start Time: 16:15 **Time of Sunset:** 16:19 **Survey End Time:** 17:21

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 172.722-3

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/6/15 **Surveyor(s) Full Name:** Keegan Chavka
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: NR Billboard/Airport **Roost Name/#** 3 **Bat #:** 172.722
Lat/Long or UTM of Roost: N 36.38401°, W -76.01217°
Description of Roost/Habitat Feature Surveyed: Mature Red Maple in a mixed pine/Mature Hardwood, Bald Cypress Swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 54°F, no precipitation, no wind
Survey Start Time: 16:19 **Time of Sunset:** 16:49 **Survey End Time:** 17:20

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: NR Billboard/Airport **Roost Name/#:** B. 172.722+3

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/9/15 **Surveyor(s) Full Name:** Keegan Chavka

State: NC **County:** Currituck **Project Name:** NC NLEB Research

Site Name/#: NR Billboard, Airport **Roost Name/#** 4 **Bat #:** 172.722

Lat/Long or UTM of Roost: N 36.38402°, W -76.01233°

Description of Roost/Habitat Feature Surveyed: Mature Red Maple in a Mixed Pine/Hardwood, Bald Cypress Swamp.

Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis

Other Suspected Bat Species (explain): N/A

Weather Conditions during Survey (temperature, precipitation, wind speed): 58°F, no precipitation

Survey Start Time: 16:19 **Time of Sunset:** 16:49 **Survey End Time:** 17:25

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: NR Billboard/Airport **Roost Name/#:** 172,722-41

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	No emergence but via telemetry the bat was heard being active in roost.

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/10/15 **Surveyor(s) Full Name:** Kelly Lutsen

State: NC **County:** Currituck **Project Name:** NC NLEB Research

Site Name/#: Billboard/Airport **Roost Name/#** 5 **Bat #:** 172.722

Lat/Long or UTM of Roost: 36.381166 , -76.01225

Description of Roost/Habitat Feature Surveyed: Tupelo and Cypress mature Swamp

Bat Species Known to be using this Roost/Feature (if not known, leave blank): MYSE

Other Suspected Bat Species (explain): —

Weather Conditions during Survey (temperature, precipitation, wind speed): 60°, no rain, minimal wind

Survey Start Time: 1556 **Time of Sunset:** 1649 **Survey End Time:** 1720

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	Ø	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** P... 172.722-5

Time	Number of Bats Leaving Roost*	Comments / Notes
	0	
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Telemetry was used to confirm the bat's location. No bat was observed leaving roost

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12-11-15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard / Airport **Roost Name/#** 5 **Bat #:** 172.722
Lat/Long or UTM of Roost: 36.38166° -76.01225°
Description of Roost/Habitat Feature Surveyed: A live oak snag in a bald cypress swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): M. septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 63° F. no precipitation, the slightest of breeze
Survey Start Time: 16:19 **Time of Sunset:** 16:49 **Survey End Time:** 17:30

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard / Airport **Roost Name/#:** B- 172.722-13

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	∅	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Used telemetry gear during survey

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/12/15 **Surveyor(s) Full Name:** Keagan Chavka

State: NC **County:** Currituck **Project Name:** NC NLEB Research

Site Name/#: NR Billboard/Airport **Roost Name/#** 5 **Bat #:** 172.722

Lat/Long or UTM of Roost: 36.38166° -76.01225

Description of Roost/Habitat Feature Surveyed: Live Oak snag in a mixed pine Mature Hardwood, Bald Cypress Swamp.

Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis

Other Suspected Bat Species (explain): N/A

Weather Conditions during Survey (temperature, precipitation, wind speed): 66°F, no precipitation, 4mph wind

Survey Start Time: 16:19 **Time of Sunset:** 16:50 **Survey End Time:** 17:25

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: NR Billboard/Airport **Roost Name/#:** 172.722-5

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/13/15 **Surveyor(s) Full Name:** Dottie Brown, Kelly Lutsch
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard/Airport **Roost Name/#** 4 **Bat #:** 172.722
Lat/Long or UTM of Roost: 36.38402, -76.01233
Description of Roost/Habitat Feature Surveyed: Tupelo and cypress dominated mature swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): MYSE
Other Suspected Bat Species (explain): -
Weather Conditions during Survey (temperature, precipitation, wind speed): 60°, no rain, 5 mph wind
Survey Start Time: 1650 **Time of Sunset:** 1650 **Survey End Time:** 1740

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	Ø	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport Roost Name/#: F.172.722-4

Time	Number of Bats Leaving Roost*	Comments / Notes
	0	
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Telemetry was used. No bats observed emerging

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/28/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC NLEB research
Site Name/#: Billboard/Airport **Roost Name/#** B. 1 P. 1 **Bat #:** 172.781
Lat/Long or UTM of Roost: 36.38245° -76.01081°
Description of Roost/Habitat Feature Surveyed: A mature red maple in a mixed pine/hardwood forest in a bald cypress swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): M. septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 64° F, no precipitation and partly cloudy. Light breeze
Survey Start Time: 16:19 **Time of Sunset:** 16:49 **Survey End Time:** 17:28

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:19	1	Used telemetry gear during survey

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/ Airport **Roost Name/#:** 172.781-1 1

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Bat emerged & foraged near roost for around 10 minutes before flying NE.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/29/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard / Airport **Roost Name/#** [illegible] **Bat #:** 172.781
Lat/Long or UTM of Roost: 36.38088° -76.01134°
Description of Roost/Habitat Feature Surveyed: A mature live oak tree in a mixed pine/hardwood bald cypress swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): M. septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 57° F, no precipitation, overcast with a light breeze
Survey Start Time: 16:20 **Time of Sunset:** 16:50 **Survey End Time:** 17:35

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:31	1	172.781 left roost and flew NE

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** T172.781-2

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Used telemetry gear to assist with emergence.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12-1-15 **Surveyor(s) Full Name:** Jennifer Starvetsky
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: NRG 1 **Roost Name/#** 2 **Bat #:** 172.781
Lat/Long or UTM of Roost: 36.38088, -76.01134
Description of Roost/Habitat Feature Surveyed:
live oak w/ broken limb at top, bottomland swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank):
MYSE
Other Suspected Bat Species (explain):
Weather Conditions during Survey (temperature, precipitation, wind speed):
Calm (0), overcast skies (3), no precipitation,
Survey Start Time: 1620 **Time of Sunset:** 1650 **Survey End Time:** 1728

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	No Bats Emerged
		-confirmed w/ reciever bat still
		in tree at 1740

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: NRG 1 **Roost Name/#:** 172,781 - 2

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/2/15 **Surveyor(s) Full Name:** Keegan Chavka

State: NC **County:** Currituck **Project Name:** NC LEB Research

Site Name/#: Billboard/Airport **Roost Name/#** Det. 2 **Bat #:** 172.781

Lat/Long or UTM of Roost: 36.38688, -76.01134

Description of Roost/Habitat Feature Surveyed: live oak in mixed pine/ hardwood swamp

Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis

Other Suspected Bat Species (explain): N/A

Weather Conditions during Survey (temperature, precipitation, wind speed): 64°, overcast (3), light breeze (1)

Survey Start Time: 16:18 **Time of Sunset:** 16:50 **Survey End Time:** 17:22

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport Roost Name/#: L 172.781 - 2

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/3/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard / Airport **Roost Name/#** [illegible] 2 [illegible] **Bat #:** 172.781
Lat/Long or UTM of Roost: N 36.38088°, W-76.01134°
Description of Roost/Habitat Feature Surveyed: A mature live oak tree in a bald cypress swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): M. septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 50° F, no precipitation, no breeze
Survey Start Time: 16:20 **Time of Sunset:** 16:50 **Survey End Time:** 17:20

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/ Airport **Roost Name/#:** 7-172-781-2

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Used telemetry gear during survey

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/6/15 **Surveyor(s) Full Name:** Drew Powell

State: NC **County:** Currituck **Project Name:** NC NLEB Research

Site Name/#: Billboard/Airport **Roost Name/#** [illegible] **Bat #:** 172.781

Lat/Long or UTM of Roost: 36.38068° -76.01134°

Description of Roost/Habitat Feature Surveyed: A large mature Live Oak tree in a bald cypress swamp

Bat Species Known to be using this Roost/Feature (if not known, leave blank):
M. septentrionalis

Other Suspected Bat Species (explain): N/A

Weather Conditions during Survey (temperature, precipitation, wind speed):
54° F, no precipitation, no breeze

Survey Start Time: 16:19 **Time of Sunset:** 16:49 **Survey End Time:** 15:19

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/ Airport **Roost Name/#:** B-172-781-22

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Used telemetry gear during survey.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/9/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard Airport **Roost Name/#** 781 2 **Bat #:** 172.781
Lat/Long or UTM of Roost: 36.38088° -76.01134°
Description of Roost/Habitat Feature Surveyed: A large mature live oak tree in a bald cypress swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): M. Septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 59° F no precipitation, no breeze
Survey Start Time: 16:19 **Time of Sunset:** 16:49 **Survey End Time:** 17:25

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:24	1	Bat 781 circled tree then flew SW

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 78172.781-2

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Used telemetry gear to assist with emergence

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/10/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard/Airport **Roost Name/#** B. T3 R 3 **Bat #:** 172.781
Lat/Long or UTM of Roost: 36.38149° -76.01168°
Description of Roost/Habitat Feature Surveyed: A large bald cypress tree in a large cypress swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): M. septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 58° F, no precipitation, no breeze
Survey Start Time: 16:19 **Time of Sunset:** 16:49 **Survey End Time:** 17:25

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard / Airport **Roost Name/#:** Bat 172.781-3

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Used telemetry gear during survey.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/11/15 **Surveyor(s) Full Name:** Kelly Lutsch
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard/AR 64 **Roost Name/#** Roost 3 **Bat #:** 192,781
Lat/Long or UTM of Roost: 36.38149 , -76.01168
Description of Roost/Habitat Feature Surveyed: tupelo and cypress dominated Mature Swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): MYSE
Other Suspected Bat Species (explain): —
Weather Conditions during Survey (temperature, precipitation, wind speed): 63°, no rain, 6mph
Survey Start Time: 1625 **Time of Sunset:** 1649 **Survey End Time:** 1727

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	Ø	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** P-0172781-3

Time	Number of Bats Leaving Roost*	Comments / Notes
	0	
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Telemetry used to confirm bat was in tree. Bat was not observed or heard leaving roost

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/12/15 **Surveyor(s) Full Name:** Kelly Lutsch
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard/Airport **Roost Name/#** Roost 3 **Bat #:** 172-181
Lat/Long or UTM of Roost: 36.38149, -76.01168
Description of Roost/Habitat Feature Surveyed: Typlca and Cypress dominated mature swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): MYSE
Other Suspected Bat Species (explain): —
Weather Conditions during Survey (temperature, precipitation, wind speed): 60, no rain, 4mph wind
Survey Start Time: 1625 **Time of Sunset:** 1650 **Survey End Time:** 1723

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	Ø	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** [illegible]172.781-73

Time	Number of Bats Leaving Roost*	Comments / Notes
	Ø	
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Radio-tagged bat did not emerge. Telemetry was used to detect movement.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/15/15 **Surveyor(s) Full Name:** Kelly Lutsch, David Cooper
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard/Airport **Roost Name/#** Roost 3 **Bat #:** 172.781
Lat/Long or UTM of Roost: 36.38149, -76.01168
Description of Roost/Habitat Feature Surveyed: Cypress and Tupelo dominated mature swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): MYSE
Other Suspected Bat Species (explain): —
Weather Conditions during Survey (temperature, precipitation, wind speed): 59°, no rain, no wind
Survey Start Time: 1625 **Time of Sunset:** 1651 **Survey End Time:** 1727

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	Ø	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** E-0172,781 -31

Time	Number of Bats Leaving Roost*	Comments / Notes
	Ø	
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

One observer had binoculars, the other had telemetry gear. NO bats were observed leaving the roost. One bat was observed flying near roost, emerged from unknown tree (out of our line of vision).

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/16/15 **Surveyor(s) Full Name:** Keegan Chavka
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: NR Billboard/Airport **Roost Name/#:** Roost 3 **Bat #:** 172.781
Lat/Long or UTM of Roost: 36.38149°, -76.01168.
Description of Roost/Habitat Feature Surveyed: A mature Bald Cypress in a mixed pine/mature hardwood, bald cypress swamp.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 65°F, no precipitation, 1-3 mph
Survey Start Time: 16:18 **Time of Sunset:** 16:51 **Survey End Time:** 17:30

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: NR Billboard/Airport **Roost Name/#:** L 172.781-3

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11/27/15 **Surveyor(s) Full Name:** Drew Powell
State: NC **County:** Currituck **Project Name:** NC NLEB Research 42262
Site Name/#: Billboard/Airport **Roost Name/#:** [illegible] Roost 1 **Bat #:** 172.842
Lat/Long or UTM of Roost: 36.38346°N -76.01000°W
Description of Roost/Habitat Feature Surveyed: Dead Bald Cyprus snag in a mixed pine/Hardwood Bald Syprus Swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): Myotis Septentrionalis
Other Suspected Bat Species (explain): N/A
Weather Conditions during Survey (temperature, precipitation, wind speed): 65°F, no precipitation, light (1-3mph)
Survey Start Time: 16:20 **Time of Sunset:** 16:50 **Survey End Time:** 17:25

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:26	1	Bat 842 emerged, confirmed via telemetry equipment

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 172.842-1

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 11-29-15 **Surveyor(s) Full Name:** Jennifer Starvetsky

State: NC **County:** Currituck **Project Name:** NC NLEB Research

Site Name/#: NRG1 Billboard/Airport **Roost Name/#** 2 **Bat #:** 172.84/2

Lat/Long or UTM of Roost: 36.38353, -76.00993

Description of Roost/Habitat Feature Surveyed: Dead bald cypress snag in a mixed pine/hardwood swamp

Bat Species Known to be using this Roost/Feature (if not known, leave blank):
MYSE

Other Suspected Bat Species (explain): _____

Weather Conditions during Survey (temperature, precipitation, wind speed):
58°F, overcast, mostly calm, occasional 3-4 mi gust of wind

Survey Start Time: 1610 **Time of Sunset:** 1650 **Survey End Time:** 1730

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
—	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport **Roost Name/#:** 8172.842 - 2

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	No bats seen leaving tree Anabat used, on from 1615-1740

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Heard a couple beeps from Anabat at 1720 and after dark.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12-1-15 **Surveyor(s) Full Name:** Kelly Lutsch
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: NRG 1 **Roost Name/#** 3 **Bat #:** 172.842
Lat/Long or UTM of Roost: 36.38180, -76.01073
Description of Roost/Habitat Feature Surveyed: Sweetgum w/ cavity in knot half way up tree, bottomland swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank): MYSE
Other Suspected Bat Species (explain):
Weather Conditions during Survey (temperature, precipitation, wind speed): calm(0), no precipitation, overcast (3)
Survey Start Time: 1620 **Time of Sunset:** 1650 **Survey End Time:** 1733

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	—	No bats left tree
		-confirmed w/ reciever bat 842
		still in tree

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: NRG-1 **Roost Name/#:** 172.842-3

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	0	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

telemetry equipment used

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/2/15 **Surveyor(s) Full Name:** Chris - Manley

State: NC **County:** Currituck **Project Name:** NC LEB Research

Site Name/#: Billboard/Airport **Roost Name/#** Roost 4 **Bat #:** 172.842

Lat/Long or UTM of Roost: N 36.38175° W-76.01081°

Description of Roost/Habitat Feature Surveyed: Live Water Tupelo in a mature Hardwood / Sweet Gum / Bald Cypress Swamp

Bat Species Known to be using this Roost/Feature (if not known, leave blank):
Myotis Septentrionalis

Other Suspected Bat Species (explain): N/A

Weather Conditions during Survey (temperature, precipitation, wind speed):
64°F, overcast (3), light breeze (1)

Survey Start Time: 16:18 **Time of Sunset:** 16:50 **Survey End Time:** 17:22

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
17:08	1	Not B42, confirmed via telemetry equip. that bat# 842 did not leave roost

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: Billboard/Airport Roost Name/#: 172,842-4

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	1	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

Bat emerged ~38 ft up from the SE and flew NW.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12-3-15 **Surveyor(s) Full Name:** Kelly Lutsch
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: Billboard/Airport **Roost Name/#** 4 **Bat #:** 172.842
Lat/Long or UTM of Roost: 36.38175, -76.01081
Description of Roost/Habitat Feature Surveyed: water tupelo in mixed pine/hardwood forest in swamp
Bat Species Known to be using this Roost/Feature (if not known, leave blank):
MYSE
Other Suspected Bat Species (explain):
Weather Conditions during Survey (temperature, precipitation, wind speed):
50°F, light wind (1), cloudy (2), no fog
Survey Start Time: 16:03 **Time of Sunset:** 16:49 **Survey End Time:** 17:20

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	∅	no bats observed emerging

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: 172.842 **Roost Name/#:** 1 172.842-4

Time	Number of Bats Leaving Roost*	Comments / Notes
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

no bats observed emerging from tree

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/16/15 **Surveyor(s) Full Name:** Kelly Lutsch
State: NC **County:** Currituck **Project Name:** NC NLEB Research
Site Name/#: NRG 1 **Roost Name/#** Roost #4 **Bat #:** 172.842
Lat/Long or UTM of Roost: 36.38175°, -76.01081°
Description of Roost/Habitat Feature Surveyed: Tupelo & Cypress swamp bordered by forest on one side and an open field to another.
Bat Species Known to be using this Roost/Feature (if not known, leave blank): MYSE
Other Suspected Bat Species (explain): —
Weather Conditions during Survey (temperature, precipitation, wind speed): 52° no rain 3mph wind
Survey Start Time: 16:00 **Time of Sunset:** 16:49 **Survey End Time:** 17:23

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: NRG1 **Roost Name/#:** 172.842-4

Time	Number of Bats Leaving Roost*	Comments / Notes
	Ø	
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:		

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

No bats observed emerging. No telemetry equipment was used.

APPENDIX E
PHASE 4 (CONT) EMERGENCE SURVEYS

USFWS BAT EMERGENCE SURVEY DATASHEET

Date: 12/9/18 **Surveyor(s) Full Name:** Kelly Lutsch

State: NC **County:** Currituck **Project Name:** NLEB Research

Site Name/#: Billboard Area **Roost Name/#** Roost 4 **Bat #:** 172.842

Lat/Long or UTM of Roost: 36.38175, -76.01081

Description of Roost/Habitat Feature Surveyed: Cypress and tupelo swamp

Bat Species Known to be using this Roost/Feature (if not known, leave blank):
MYSE

Other Suspected Bat Species (explain): —

Weather Conditions during Survey (temperature, precipitation, wind speed):
58° No rain, 4mph wind

Survey Start Time: 1622 **Time of Sunset:** 1649 **Survey End Time:** 1722

NOTE: Emergence surveys should begin ½ hour before sunset and continue for a minimum of 1 hour or until it is otherwise too dark to see emerging bats. The surveyor(s) should position him or herself so that emerging bats will be silhouetted against the sky as they exit the roost. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Please ensure that surveyor(s) are close enough to the roost to observe all exiting/returning bats, but not close enough to influence emergence (i.e., do not stand directly beneath the roost and do not make unnecessary noise and/or conversation, and minimize use of lights other than a small flashlight to record data, if necessary). Do not shine a light on the roost tree crevice/cave/mine entrance itself as this may prevent or delay bats from emerging. If available, use of an infra-red, night vision, or thermal-imaging video camera or spotting scope and an ultrasonic bat detector are strongly recommended but not required.

Time	Number of Bats Leaving Roost*	Comments / Notes
N/A	0	no emergence

APPENDIX E
PHASE 4 EMERGENCE SURVEYS

Site Name/#: ~~Billboard/Airport~~ **Roost Name/#:** 172,842-4

Time	Number of Bats Leaving Roost*	Comments / Notes
	Ø	
Total Number of Bats Observed Emerging from the Roost/Feature During the Survey:	Ø	

* If any bats return to the roost during the survey, then they should be subtracted from the tally.

Describe Emergence: Did bats emerge simultaneously, fly off in the same direction, loiter, circle, disperse, etc. If a radio-tagged bat was roosting in the tree, at what time did it emerge?

No telemetry used due to high visibility against trees.