Project Site: Woodbridge Country Club, Woodbridge, New Haven, CT
Survey Period: 6/08/2025 – 6/18/2025 (15 total detector nights)
Detectors: Song Meter SMBat4+ (Wildlife Acoustics, Inc.)
Microphone: SMM-U2 (Wildlife Acoustics, Inc.)
Analysis: SonoBat30 Eastern North America; Classifier- north-northeastern and southern Ontario (excludes Indiana bat, which is historically rare in Connecticut).
Prepared by: Devaughn Fraser, PhD, Biologist, Wildlife Division, Connecticut DEEP

Introduction:

An acoustic survey was conducted to assess bat community composition and relative species activity compared to statewide survey patterns. Detectors were deployed at three sites within the project area for a minimum of 14 detector nights, consistent with range-wide federal survey guidelines (https://www.fws.gov/sites/default/files/documents/USFWS_Range-wide_IBat_%26_NLEB_Survey_Guidelines_2023.05.10_0.pdf) for northern long-eared, Indiana, and tricolored bats, which covers 123-acres as conducted. Data were processed and vetted by state wildlife biologist Devaughn Fraser. Below is a summary of results, brief discussion of relevant species and recommendations based on survey results.

Figure 1 Map of Project Area and Detector Deployments

Methods:

For all surveys conducted by BNR staff, files are processed and vetted in SonoBat30, and simple metrics are calculated for each detector location and each species, including the average number of calls per night (CPN), proportion of total calls (PC), and the proportion of nights detected (PND). Species specific thresholds are then calculated as a multiple of the standard deviation for that metric across all statewide surveys. For extremely rare species, any detections are important and may prompt more conservative recommendations. For the most common species, big brown bats, both thresholds should be exceeded to prompt additional protections. This species is known to predominantly use human structures for pup-rearing, making daytime tree cutting activities unlikely to impact reproductive success. Exceptions may be made in close proximity to a known roost. Some protective measures may be required for eastern red bats during the pupping season, since females are capable of having multiple pups and are roosting primarily in trees and foliage. Silver haired bats and hoary bats may also warrant protections for similar reasons if either threshold is met.

Table 1: Connecticut's bat species (and four-letter species code), their listing status, and threshold multiplier

Common Names	Scientific Name (Species Code)	CT Listing 2025	Federal Listing	Std Dev(x)
Eastern small-footed bat	*Myotis lebeii* (MYLE)	Endangered	Not listed	1
Northern long-eared bat	*Myotis septentrionalis* (MYSE)	Endangered	Endangered	0.25
Little brown bat	*Myotis lucifugus* (MYLU)	Endangered	Not listed	1
Tri-colored bat	*Perimyotis subflavus* (PESU)	Endangered	Proposed	0.25
Eastern red bat	*Lasiurus borealis* (LABO)	Special Concern	Not listed	2
Big brown bat	*Eptesicus fuscus* (EPFU)	Not listed	Not listed	2
Silver-haired bat	*Lasionycteris noctivagans* (LANO)	Special Concern	Not listed	1.5
Hoary bat	*Lasiurus cinereus* (LACI)	Special Concern	Not listed	1.5
Indiana bat	*Myotis sodalis* (MYSO)	Endangered	Endangered	-

Results:

A total of 2,884 bat calls were recorded across all three detectors, with an average of 120, 114, and 342 calls per night (CPN) at BIGPOND, the CLUBHOUSE, and SMALLPOND, respectively. Six of eight species were detected. Eastern small footed bats and little brown bats were detected at all three locations, and on 80 percent or greater of nights surveyed at SMALLPOND. Based on the number of calls per night and the proportion of nights detected, this site is important for eastern small footed bats, and there is likely a maternity colony in the surrounding area. Evidence of foraging (i.e. feeding buzzes) was present in approximately 9,13, and 18 percent of total calls, at BIGPOND, the CLUBHOUSE, and SMALLPOND, respectively, which is near or above the statewide average.

*Table 2: Detector locations and species detection results (1 = detected, 0 = not detected). * = significant MLE value calculated by SonoBat30; § = Important site for the species based on statewide surveys*

	HABITAT FEATURE	**MYLE**	**MYSE**	**MYLU**	**PESU**	**LABO**	**EPFU**	**LANO**	**LACI**
WBGC_BIGPOND	Pond	1	0	1	0	1*	1*	1	1
WBGC_CLUBHOUSE	Building	1*	0	1*	0	1*	1*	1	1
WBGC_SMALLPOND	Pond	1*§	0	1*	0	1*	1*	1*	1

Assignment(s):

i) This site was not determined to be a critical site for any bat species.

ii) Site was important for a common species
   a. EPFU
   b. LABO

iii) Site was important for federally listed species (including proposed):
   a. MYSE- any detections are significant**
   b. PESU- any detections are significant**

iv) Site was important for WNS affected species
   a. MYLU
   b. MYLE

v) Site was important for "uncommon" tree bat species:
   a. LACI
   b. LANO

vi) Site supported high species diversity, high foraging activity, and/or high general activity

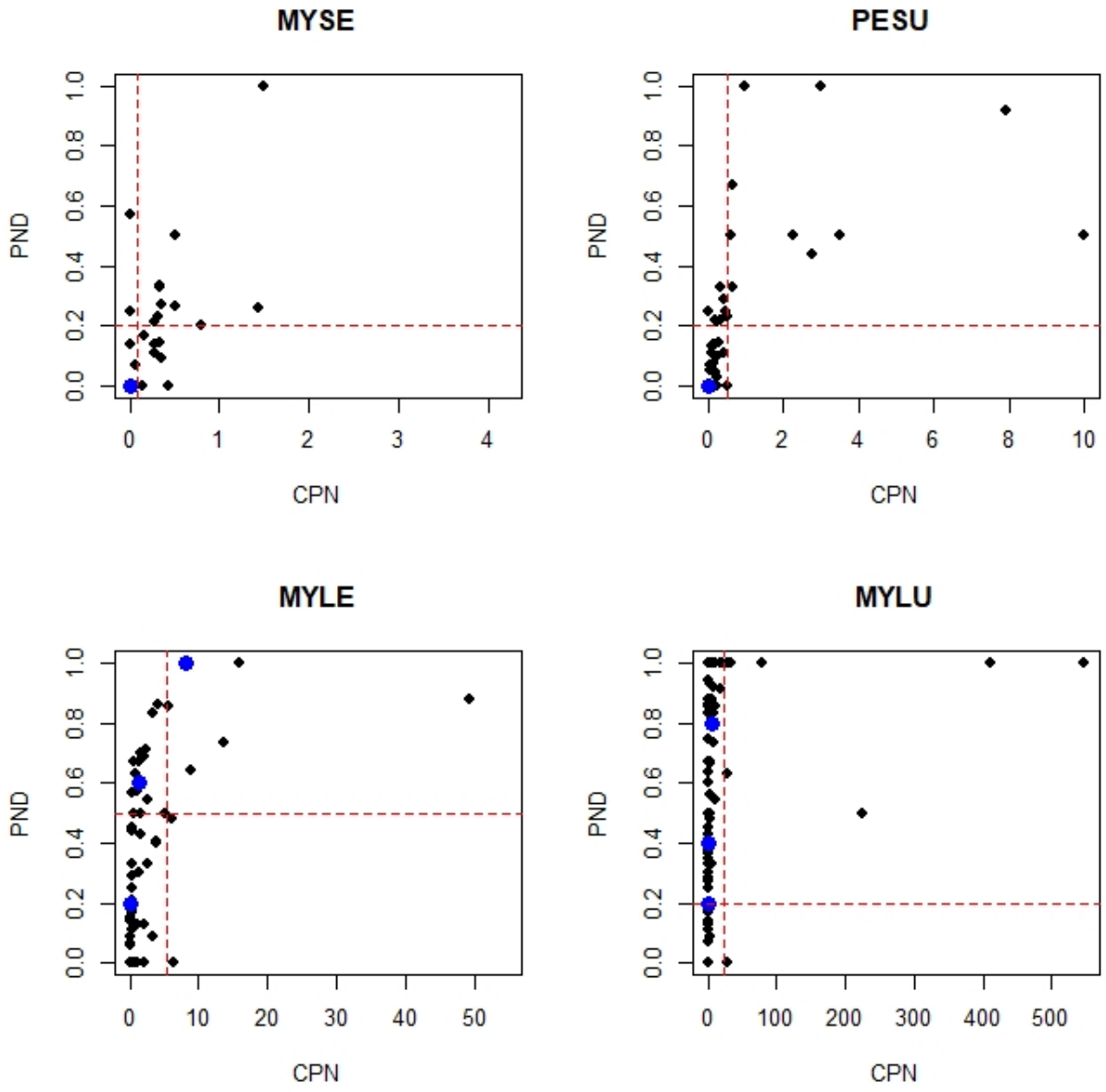

Figure 2 Proportion of Nights Detected for four WNS-affected species plotted against the average Calls Per Night; Red lines display species specific thresholds for determining site importance. Black dots show statewide survey detector locations; blue dots show current survey detector locations

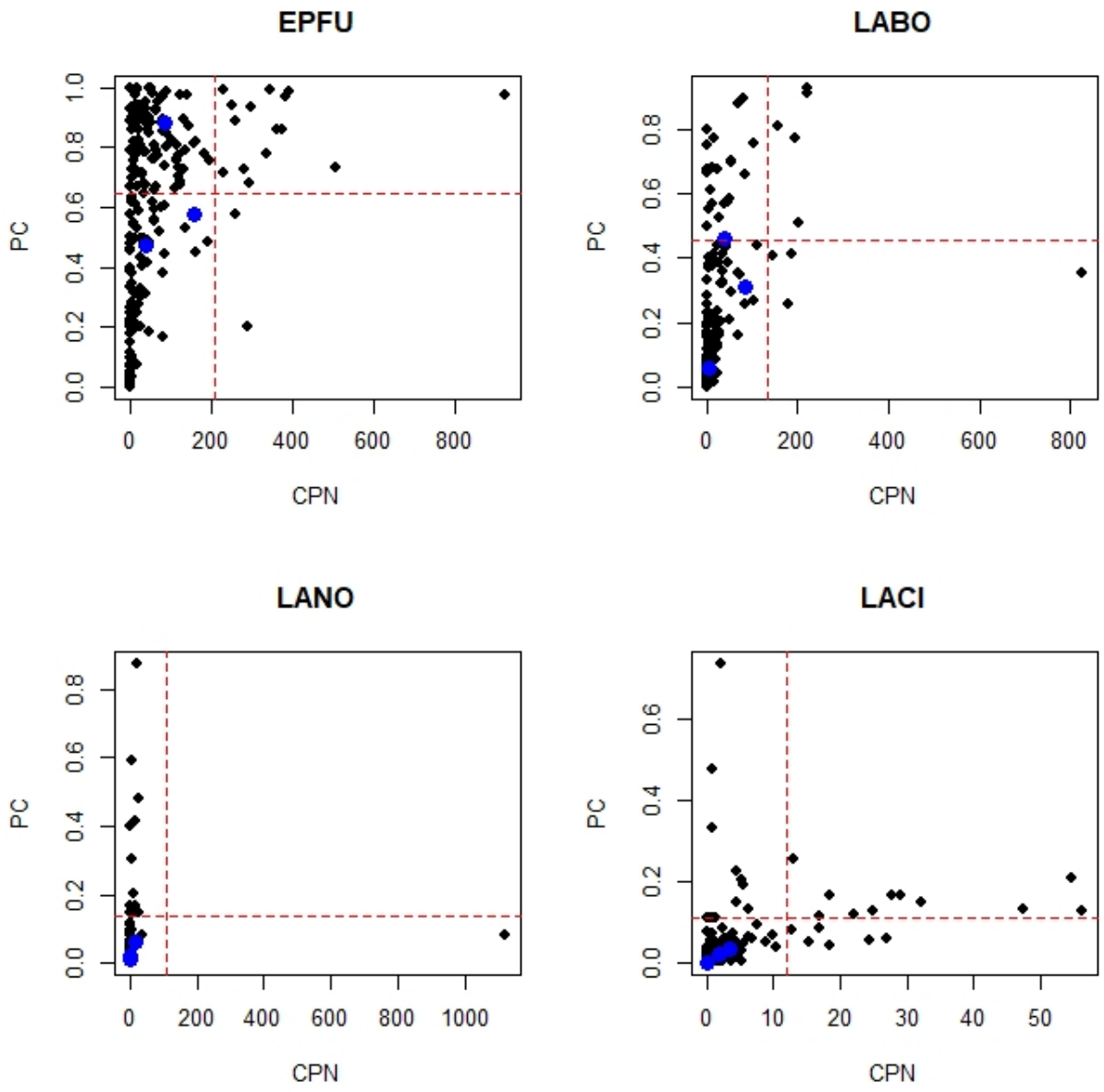

Figure 3 Proportion of Calls against Calls Per Night for migratory tree bats and big brown bats; Red lines display species specific thresholds for determining site importance. Black dots show statewide survey detector locations; blue dots show Woodville block detector locations

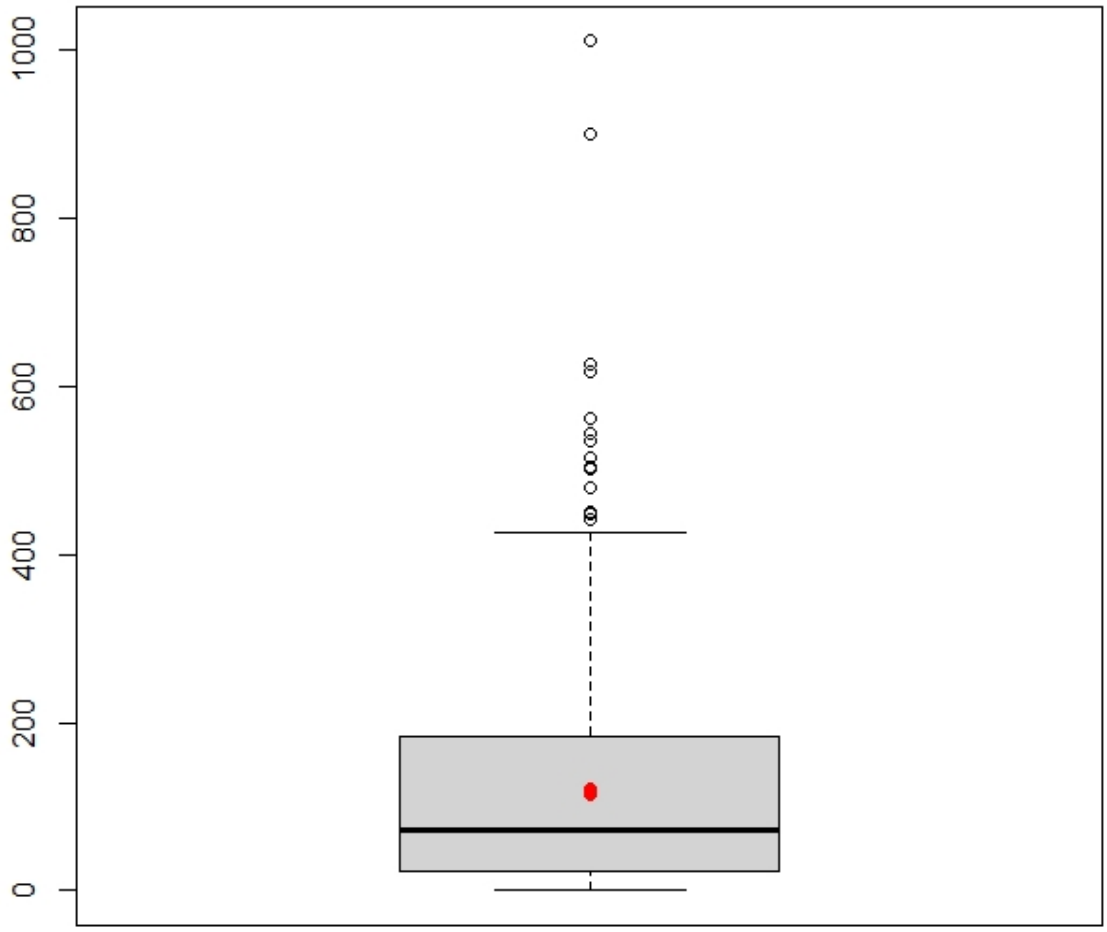

Figure 4: Boxplot of Total CPN Statewide; Red points indicate CPN for this site

Recommendations:

The Woodbridge Country Club is used by a multitude of bat species, including several state endangered species that are affected by the deadly disease White-Nose Syndrome. While this disease remains the primary threat to these species, populations that are in the early stages of recovery rely on the availability of safe and predictable habitats for foraging and reproduction. The small pond (SMALLPOND) near the northeast area of the property supported high levels of foraging, and detected eastern small footed bats on all five survey nights. There is also some evidence to indicate that bats may be using the old clubhouse

for roosting in summer months, and potentially for raising young (maternity colony). Given that this area supports such high bat diversity and activity, along with the valuable pollinator habitat, including extensive milkweed fields, the reverted golf course may be an important natural resource for a variety of important species. Maintaining the property as a natural recreational area is a great opportunity for implementing conservation actions at the local level, which may benefit an array of species regionally, and provides town residents with a direct experience of local biodiversity. Strategic installation of bat houses on the property could additionally provide a wildlife viewing experience for residents and a critical resource for state endangered species. Please contact CT DEEP Biologist Devaughn Fraser for bat house support if desired by the town.