

2018 Maryland Stationary Point Acoustic Bat Monitoring

Report: Calvert County Parks

Ben Neece

During summer 2018, we conducted stationary point acoustic surveys of bats throughout Maryland. We selected survey areas (cells) and designed our survey methods based on the North American Bat Monitoring Program (NABat) guidelines. This allows our findings to be useful at the site level, and also to be contributed to national bat research and conservation efforts.

After completing the surveys, we processed the recorded files with SonoBat 4.2.2 bat classification software, and then manually vetted the results to improve confidence in species detections. Some bat species have very similar echolocation calls and environmental conditions can reduce the quality of recordings, so not all species can consistently be identified with complete certainty. We were very conservative during the vetting process, but physical confirmation of some species may be desired. Our results indicate the likely presence of the listed species or species group during summer.

Table 1. Number of nights each species or species group was detected at each survey point. Species are big brown bat or silver-haired bat (*Eptesicus fuscus* or *Lasionycteris noctivigans*; EPFULANO), eastern red bat or evening bat (*Lasiurus borealis* or *Nycticeius humeralis*; LABONYHU), hoary bat (*L. cinereus*; LACI), eastern small-footed bat (*Myotis leibii*; MYLE), little brown bat or Indiana bat (*M. lucifugus* or *M. sodalis*; MYLUSO), northern long-eared bat (*M. septentrionalis*; MYSE), and tri-colored bat (*Perimyotis subflavus*; PESU). Myotis indicates any identified or unidentified *Myotis* species. A * indicates white nose syndrome (WNS) affected species, but does not indicate individuals with WNS were found.

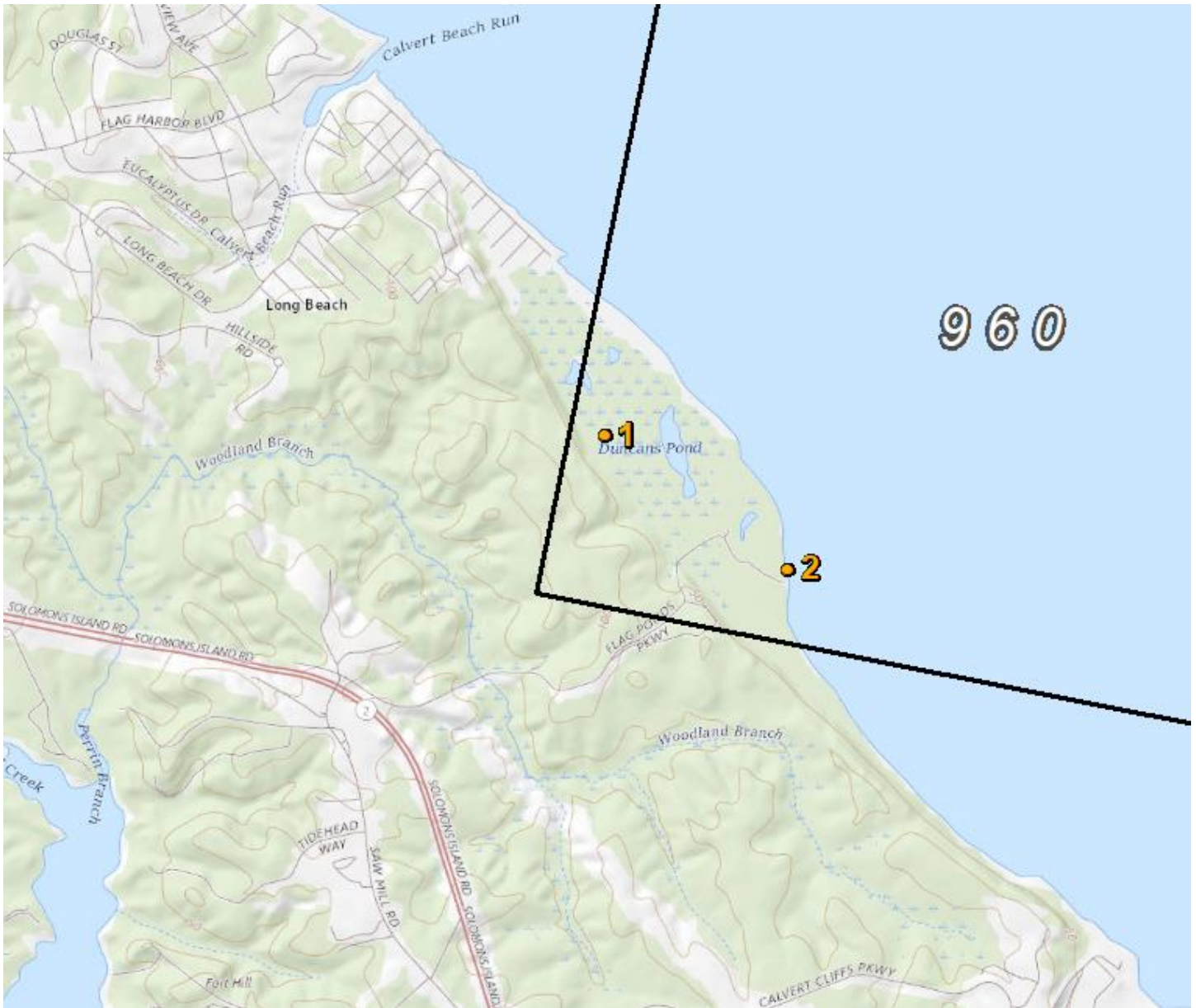
Cell	Site	EPFULANO	LABONYHU	LACI	MYLE*	MYLUSO*	MYSE*	Myotis*	PESU*
960	1	3	4	2	0	0	0	0	4
960	2	4	4	2	0	0	0	0	4
16064	4	4	4	1	0	0	0	0	3

Table 2. Coordinates for each survey site, start and end dates, and number of nights each site was surveyed.

Park	Cell	Site	Lat.	Long.	Start	Stop	Nights
Flag Ponds	960	1	38.45277	-76.4622	2018-05-26	2018-05-30	4
Flag Ponds	960	2	38.4486	-76.45499	2018-05-26	2018-05-30	4
Hallowing Point	16064	4	38.51072	-76.63541	2018-05-26	2018-05-30	4

Maps depict NABat cells (black bordered squares) and survey sites (orange points). Cell numbers are shown within each cell, and site numbers are to the right of each point. All NABat cells came from a random selection from a grid and are 10 km x 10 km, but may not be visible on the maps displayed below due to the scale and positioning of points.

Flag Ponds Nature Park



Hallowing Point Park



2019 Maryland Bat Surveys

Report: Calvert County – Flag Ponds Nature Park

Ben Neece

During late spring and summer 2019, we conducted stationary point acoustic surveys of bats throughout Maryland. We selected survey areas (cells) and designed our survey methods based on the North American Bat Monitoring Program (NABat) guidelines (<https://www.nabatmonitoring.org/>). This allows our findings to be useful for conservation and management decisions at the site level, and also to be contributed to national bat research and conservation efforts. We surveyed many of the same sites in 2019 as we surveyed in 2018, but some new locations were added and some old locations dropped.

After completing the surveys, we processed the recorded files with SonoBat 4.4.1 bat classification software, and then manually vetted the results to improve confidence in species detections. Some bat species have very similar echolocation calls and environmental conditions can reduce the quality of recordings, so not all species can consistently be identified with complete certainty. We were very stringent during the vetting process, but physical confirmation of some species may be desired. Our acoustic results indicate the likely presence of species or species groups during summer. However, some species have quiet calls, fly very high, or echolocate very infrequently, so some species may be present but not detected.

Table 1. Number of nights each species or species group was acoustically detected at each survey point. Species are big brown bat or silver-haired bat (*Eptesicus fuscus* or *Lasionycteris noctivigans*; EPFULANO), eastern red bat or evening bat (*Lasiurus borealis* or *Nycticeius humeralis*; LABONYHU), hoary bat (*L. cinereus*; LACI), eastern small-footed bat (*Myotis leibii*; MYLE), little brown bat or Indiana bat (*M. lucifugus* or *M. sodalis*; MYLUSO), northern long-eared bat (*M. septentrionalis*; MYSE), tri-colored bat (*Perimyotis subflavus*; PESU), and Mexican free-tailed bat (*Tadarida brasiliensis*; TABR). Myotis indicates any identified or unidentified *Myotis* species. A * indicates species affected by white nose syndrome (WNS), but does not indicate that we found individuals with signs of WNS.

Cell	Site	EPFULANO	LABONYHU	LACI	MYLE*	MYLUSO*	MYSE*	Myotis*	PESU*	TABR
960	1	3	3	0	0	0	0	1	3	0
960	2	4	4	3	0	0	0	0	4	0

Table 2. Coordinates for each survey site, start and end dates, and number of nights each site was surveyed.

Cell	Site	Lat	Long	Start	Stop	Nights
960	1	38.45264	-76.46211	2019-06-03	2019-06-07	4
960	2	38.4468	-76.45493	2019-06-03	2019-06-07	4

Map depicts NABat cell (black bordered square) and survey sites (red points). Labels are formatted as [Cell Number]P[Site Number].

