



North American Bat Monitoring Program

Stationary Acoustic Monitoring Report

Participant: Quail Hollow County Park

June 14th-18th, 2020

Background

The [North American Bat Monitoring Program \(NABat\)](#) is a large-scale, long-term monitoring program designed to assess the status and trends of North American bat populations. NABat brings together an extensive network of partners to collect data across the continent about bat populations. The [PacWest NABat Hub](#) coordinates NABat surveys throughout California and Nevada.

California is home to 25 bat species, all of which eat insects and some of which prey upon agricultural pests. Bats are difficult to observe and identify because they are most active at night and roost in small spaces. However, using ultrasonic microphones (called “bat detectors”), we can record the echolocation calls of bats. The recordings can then be used to identify the species of the bats present in the area. Collecting recordings across the continent, we are able to document bat species diversity patterns to inform research and land management locally, regionally, and nationally.

Methods

Relationships with private landowners are critical to the success of effective bat population monitoring in our region as many of our highest priority survey locations fall on private land. The NABat sample framework identifies 10 x 10 km target survey areas (“cells”) across the continent. Exact survey locations within those 10 x 10 km cells are then selected in an effort to record echolocation calls of all bat species present in the area. As such, bat detectors are placed near landscape features that may attract bats (e.g., water, snags, barns, open space, forest edges).

Bat echolocation calls are recorded for four consecutive nights. Calls are identified to the species level using auto-identification software and suspected species are then confirmed through expert review by Bat Conservation International staff. Data are then contributed to the NABat database and used to create species range maps (maps of the areas where we expect to find a given type of bat) and to track the health of bat populations over time.

Results

Ten bat species were detected on the nights between June 14th-18th, 2020.

Common Name	Species
Townsend’s big-eared bat	<i>Corynorhinus townsendii</i>
Big brown bat	<i>Eptesicus fuscus</i>
Western red bat	<i>Lasiurus blossevillii</i>
Hoary bat	<i>Lasiurus cinereus</i>
Silver-haired bat	<i>Lasionycteris noctivagans</i>
California myotis	<i>Myotis californicus</i>
Long-eared myotis	<i>Myotis evotis</i>
Fringed myotis	<i>Myotis thysanodes</i>
Yuma myotis	<i>Myotis yumanensis</i>
Mexican free-tailed bat	<i>Tadarida brasiliensis</i>

Bat Species Present



California myotis
(Myotis californicus)

Photo by Michael Durham / Minden Pictures, Bat Conservation International



Yuma myotis
(Myotis yumanensis)

Photo by Michael Durham / Minden Pictures, Bat Conservation International



Western red bat
(Lasiurus blossevillii)

Photo by Jose Gabriel Martinez Fonseca



Townsend's big-eared bat
(Corynorhinus townsendii)

Photo by Michael Durham / Minden Pictures



Big brown bat
(Eptesicus fuscus)

Photo by Michael Durham / Minden Pictures



Mexican free-tailed bat
(Tadarida brasiliensis)

Photo by Michael Durham / Minden Pictures, Bat Conservation International



Silver-haired bat
(Lasionycteris noctivagans)

Photo by Michael Durham / Minden Pictures, Bat Conservation International



Long-eared myotis
(Myotis evotis)

Photo by Michael Durham / Minden Pictures, Bat Conservation International



Hoary bat
(Lasiurus cinereus)

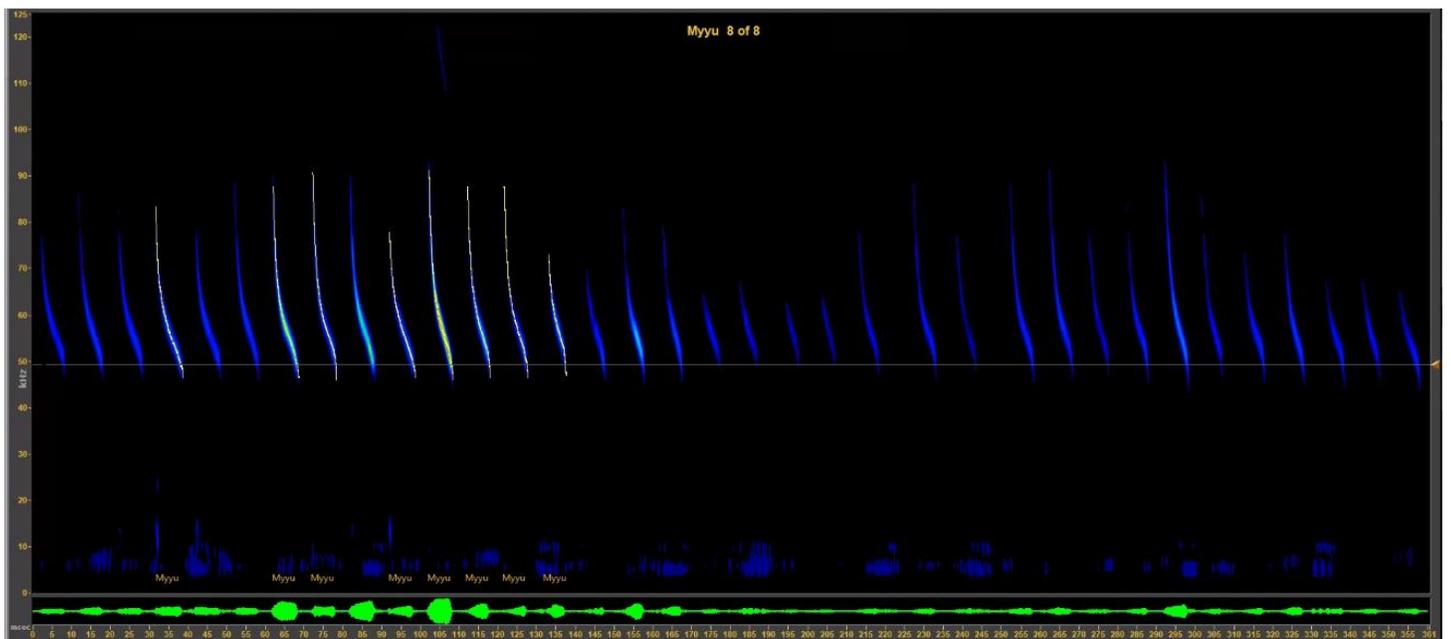
Photo by Michael Durham / Minden Pictures, Bat Conservation International



Fringed myotis
(Myotis thysanodes)
Photo by J. Scott Altenbach

GRTS Cell ID	Location Name	Latitude	Longitude	Survey Start Time	Survey End Time
3562	3	37.08297	-122.06195	6/14/2020, 8:00 PM	6/18/2020, 6:18 AM

Site location and survey dates of acoustic monitoring.



Bat echolocation calls are displayed as sonograms, shown as frequency of the sound (kilohertz) across time (milliseconds). This example sonogram shows the echolocation calls of a Yuma myotis (*Myotis yumanensis*).