
Attachment 4

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Report of Bat Survey Results for 3800 Portola Drive, Santa Cruz, CA

Introduction

The planned demolition of the large barn structure at 3800 Portola Drive necessitated a survey of the structure by a qualified bat biologist. On February 27, 2015 Paul Heady of Central Coast Bat Research Group conducted a visual survey of the building to determine if bat species are using any portion of the structure as a roost. An acoustic recording device was deployed in the building over the night of the 27th of February 2015 to determine if any bats were echolocating in the vicinity of the building.

Special-status bat species

There are fifteen bat species known to occur in the Santa Cruz County area. Seven of these species have some level of special-status (see Table 1). The focus of bat surveys was the Barn structure and out buildings at 3800 Portola Drive, Santa Cruz CA.

Roosts

Bats use structures, such as bridges and buildings, for roosting habitats, including day roosts, night roosts, and maternity roosts. Day roosts are areas where bats are able to spend the non-active period of the day resting or in torpor, depending on the weather conditions. Day roosts provide shelter from the elements and safety from predators. Night roosts are used by bats to rest between foraging bouts, to allow for digestion of prey, to escape from predators, as shelter from weather, and possibly for social purposes. Night roosts are typically sites that retain heat from the day to aid the bats in maintaining the higher metabolism necessary for digestion. Maternity roosts are sites that provide protection from the elements and predators and provide the correct thermal environment for reproduction. Maternity roost sites tend to be warmer in temperature because breeding females need to maintain a high metabolism to aid in lactation and juvenile bats need to keep warm to maintain a metabolic rate that allows for rapid growth. Winter roosts are usually areas that have a stable low temperature suitable for hibernating or prolonged periods of torpor.

METHODS

Building surveys

All of the buildings in the project were visually investigated to determine if bats are using the structure for day roosting, night roosting, or maternity roosts. The both the interior and exterior of the structure were surveyed during the day with bright lights and mirrors to for a day and maternity roost assessment. No bats or sign of bat use were observed. The building was acoustically monitored from sunset to sunrise and no echolocation calls of bats were recorded during the 12 hour period

Acoustic surveys for habitat assessment

Acoustic monitoring was done with Wildlife Acoustics SM2 bat detector and storage device to collect acoustic files of the echolocation calls of the bats. The Wildlife Acoustics SM2 system detects and records bat ultrasonic echolocation calls in the field and converts the detected signals into frequency/time graphs to be viewed on a laptop computer. The graphs are used to identify bat species. Species are identified by their vocal signature graphs by comparing calls recorded during previous mist-netting activities, calls recorded from bats that are visually identified at the time of recording, and by comparing calls with existing bat vocal signature library databases

Table 1. Bat Species Expected to Occur In the Santa Cruz County Region

Family VESPERTILIONIDAE (Plain-nosed or mouse-eared bats)	
<i>Myotis lucifugus</i>	Little brown myotis
<i>Myotis yumanensis</i>	Yuma myotis
<i>Myotis evotis</i>	Long-eared myotis
<i>Myotis thysanodes</i>	Fringed myotis
<i>Myotis volans</i>	Long-legged myotis
<i>Myotis californicus</i>	California myotis
<i>Myotis ciliolabrum</i>	W. small-footed myotis
<i>Lasionycteris noctivagans</i>	Silver-haired bat
<i>Parastrellus hesperus</i>	Canyon bat
<i>Eptesicus fuscus</i>	Big brown bat
<i>Lasiurus blossevillei</i>	Western red bat
<i>Lasiurus cinereus</i>	Hoary bat
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat
<i>Antrozous pallidus</i>	Pallid bat
Family MOLOSSIDAE (Free-tailed bats)	
<i>Tadarida brasiliensis</i>	Mexican free-tailed bat

Table 2. Species known to use structure roosts

Species	Structure Roost Type
<i>M. yumanensis</i>	DR, NR
<i>M. evotis</i>	DR, NR
<i>M. thysanodes</i>	DR, NR
<i>M. volans</i>	DR, NR
<i>M. californicus</i>	DR, NR
<i>E. fuscus</i>	DR, NR
<i>C. townsendii</i>	DR, NR
<i>A. pallidus</i>	DR, NR
<i>L. noctivagans</i>	NR
<i>T. brasiliensis</i>	DR, NR
Species not associated with structures	
<i>L. cinereus</i>	Trees
<i>L. blossevilli</i>	Trees

NR = night roost; DR = day roost; WR = winter roost

Necessary Protective Measures

Because no sign of bat use was observed and no echolocation calls were recorded at the building no protective measures for bats are necessary during the demolition of the structure.

Paul Heady



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