Information on Bats

- Bats are the only known truly flying mammals. (other mammals can glide, but not fly)
- They hang upside down so that they can roost in high places, and so that they can drop down to take off. Unlike birds, they cannot take off from the ground.
- They feed at night and can eat bugs, fruit, nectar, fish, or small mammals.
  - Most of the 50+ species in the USA are primarily insectivores; they eat insects.
  - Bats can eat from 40-100% of their body weight in one night of feeding.
- Does anybody know how bats know how to find their prey? They emit high frequency sounds and, with their sensitive ears, listen for the echoes that bounce from the objects in front of them. It works just like sonar.
- Their eyes are very small and their vision is poor.
- Their hearing is far superior to that of humans and many other animals. They can hear many sounds that we cannot.
- Rain messes with their echo location, so they avoid flying in rain.
- Bats make up 20% of classified mammal species world wide. There are over 1,200 identified species of bats. They also have the largest habitat range next to humans.
- Bats are very important health of an ecosystem: Can anybody guess why?
  - Pollinating flowers
  - Dispersing fruit seeds and spreading rich fertilizer through their manure or “guano”
  - Consuming insect pests
- Bats are often misunderstood creatures. True or false?
  - Most bats have rabies and are aggressive: FALSE Bats feed on human blood: FALSE
  - Bats are scared more scared of you than you are of them. TRUE
  - 15% of bats carry rabies in North America: FALSE – Estimated 1/10th of 1% to 3%
  - 100,000 people have died from bat-borne diseases in the last 50 years. FALSE – 40 people
  - Statistically, more people die from lightning strikes and dog attacks than bats. TRUE
- There is a lot stigma around bats spreading disease, but they can greatly reduce insect-borne disease such as Zika and West Nile spread by mosquitos or crop fungi spread by other insects.
- Bats are extremely valuable not only to ecosystems, but to residential areas and to agriculture –
  - they eat insect pests and their “guano” or manure is some of the richest natural fertilizer you can find. One study estimated that their insect control alone may be worth as much as $53 billion annually for agriculture in North America.

Bat Safety and How to Protect Bats

- Many bat populations are threatened or endangered due to stigma, habitat destruction, pesticide use, wind turbines, “white- nose syndrome” fungus, and more.
  - More than half of the bat species in the United States are in severe decline or listed as endangered.
  - Bat populations have sharply declined over the last decade, losing a third to a half of total combined species populations. “White-nose syndrome” has caused some bat species populations to decrease by up to 90%.
  - For these reasons, it is extremely important that we protect bat habitats and even create new habitat for them where possible. How can we do this? Build a bat box!
  - Bats like to roost in tight, dark places that will protect them from predators like owls and hawks. Caves, crevaces, inside dead trees, under bridges, in storm sewers, and yes, even your attic or garage, are common bat habitat.
  - They can fit inside very small cracks and holes (¼ by ½ inch). If you don’t want bats living under your roof or attic, sure all cracks are sealed.
  - You can encourage bat habitat by not knocking down dead trees as well as installing your own bat box at home.

Bat boxes are very easy to build and can be installed in a few hours. They should be installed on trees, sides of buildings, or on poles, anywhere from 10 – 25 feet high. Install somewhere that you don’t mind their manure collecting underneath. Here is a document with some guidelines:

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5292123.pdf

Some of the native bat species to Santa Barbara and Lake Cachuma have been listed as threatened or endangered, such as the **Little Brown Bat** (*Myotis lucifugus*) and **Big Brown bat** (*Eptesicus fuscus*)

Other species native to this area include: **Western Mastiff Bat** (*Eumops perotis*), **Mexican Free-tailed bat** (*Tadarida brasiliensis*), and **Canyon Bat** (*Parastrellus hesperus*)

The species in our boxes here at the nature center are **California Myotis** (*Myotis californicas*).

Should you ever try to touch bats or get close to their colony? **NO!**

Never go near bats especially if they are out during the day, are on the ground, as these are signs of rabies. Never touch their guano or soil around their guano with bare hands, and always wear a mask if you are around their guano indoors. Call a professional to help with bat and/or guano removal.

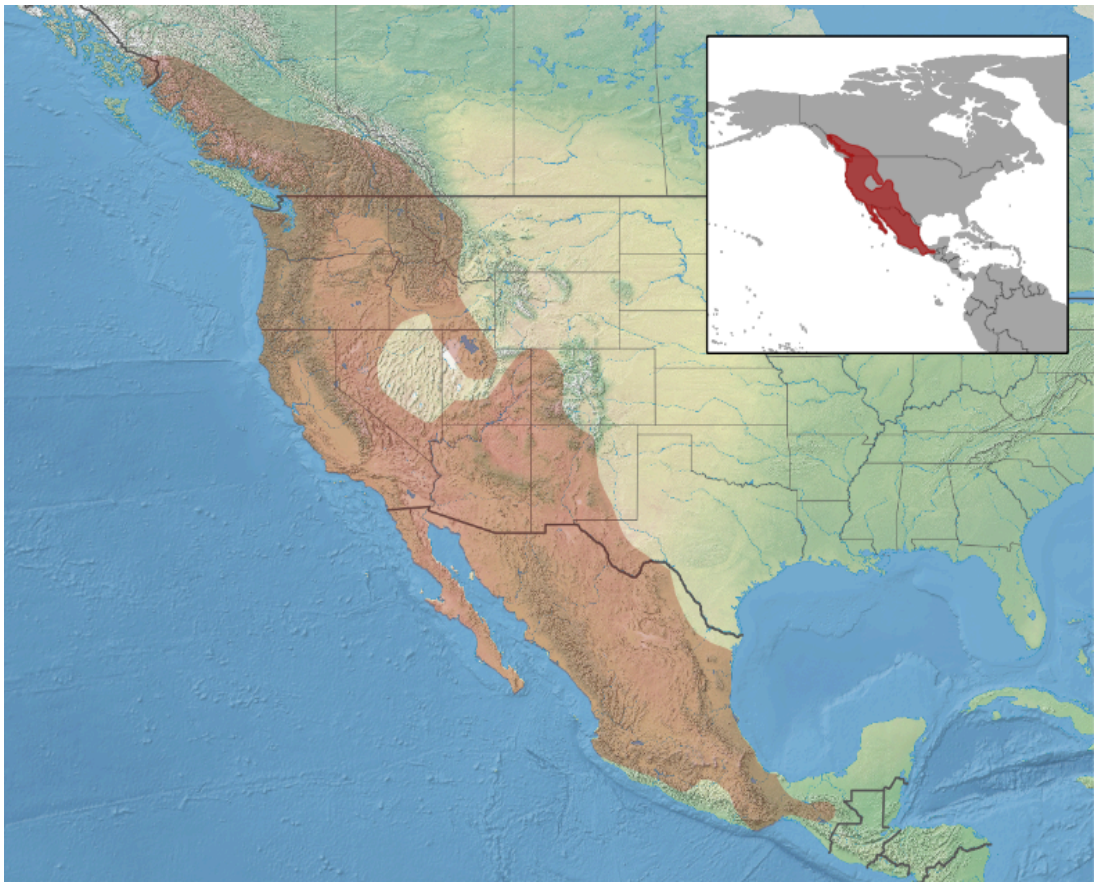
California Myotis Facts

- The species found in the boxes at the nature center is the California Myotis (Myotis californicas).
- California Myotis mate in the fall and give birth during late spring (May - early June).
- In 2015, 272 bats were observed flying out of one of the bat boxes at Neal Taylor Nature Center. As far as we know, our current colony mostly consists of females and their pups.
- Their diet consists of moths, flies, and other flying insects.
- Females give birth to one pup per year, usually in May or June. Pups feed on their mother's milk for several weeks.
- The young develop rapidly and can start flying at around 1 month old.
- During the birthing season, they form small maternity colonies of about 20 individuals.
- They usually roost in the loose bark of trees or rock crevices.
- In winter, they may hibernate in mines, rock caves, or remain active.
- California Myotis are considered microbats, measuring 1.5 to 2 inches long with a wingspan of 6 to 9 inches and weighing one-tenth of an ounce.
- They must consume a third to half of their weight each day in insects like mosquitoes and moths.
- California Myotis have been known to live up to 15 years in the wild.

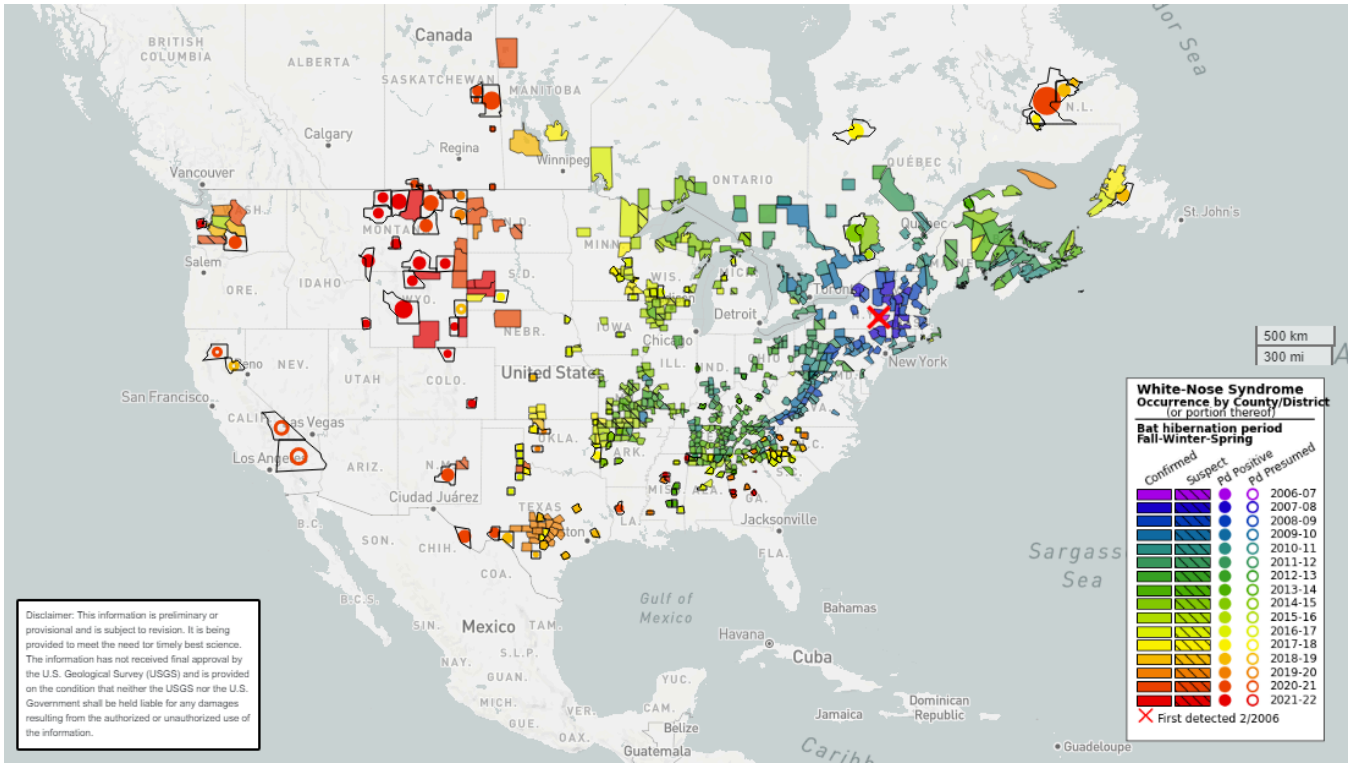
White Nose Syndrome and Bats Local to Santa Barbara

- White nose syndrome is a fungus disease that is wreaking havoc on hibernating bats in colder climates, many of which are in the **Myotis** genus.
- **Little Brown Bat** (*Myotis lucifugus*) are one native endangered bat affected by White Nose syndrome. Although the fungus thrives in colder winters than we have here in Santa Barbara, it is still found its way to California in some places as of 2023.
- **White-nose syndrome** has **killed over 90%** of **Northern Long-eared, Little Brown** and **Tri-colored bat** populations in the USA in **fewer than 10 years**.
- The expected relative population reduction of **California Myotis** due to the disease is between 1.3 – 4.2%.

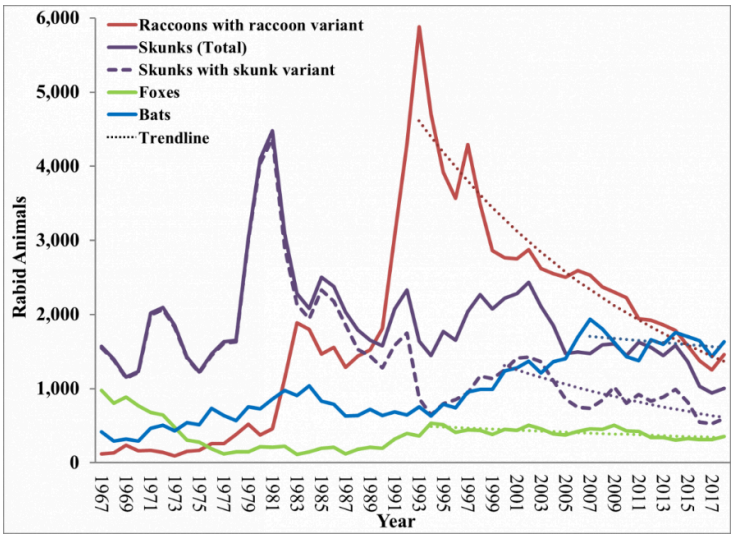
California Myotis Native Habitat (shown in red)



White-Nose Syndrome Distribution as of 2022



North America Rabies Rates, by animal as of 2017



Additional Resources

Podcasts:

https://www.allcreaturespod.com/episodes/episode-16a-busting-bat-myths/

https://www.allcreaturespod.com/episodes/episode-188-lubee-bat-conservancys-director-brian-pope/

Videos:

https://www.youtube.com/watch?v=pOA8y8VArpA&ab_channel=SmithsonianChannel

https://www.youtube.com/watch?v=phUXDChNFPo&ab_channel=KCRA3

Articles

https://www.usgs.gov/faqs/what-do-bats-eat

https://www.cdc.gov/rabies/exposure/animals/bats.html

https://www.cdc.gov/rabies/location/usa/surveillance/wild_animals.html

https://www.mercurynews.com/2019/10/12/how-common-are-bats-with-rabies-and-should-you-worry/

https://animaldiversity.org/accounts/Myotis_californicus/

https://www.sciencedaily.com/releases/2011/01/110131133323.htm

https://www.batcon.org/article/bats-the-fight-for-flight/

Activities for kids:

https://www.batcon.org/about-bats/games-and-activities/bat-squad-2/

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https://tinyurl.com/battyinfo