

Southern Arizona Bat Watchers

Citizen Scientist Bat Monitoring Network

Were your hummingbird feeders mysteriously drained during the night this past summer? Did you know the midnight raiders were bats? Most of Arizona's 28 bat species eat insects, but two species drink nectar and eat pollen and fruits from plants such as the saguaro, agave and your hummingbird feeders. The Arizona Game and Fish Department and the U.S. Fish and Wildlife Service, with cooperation from the Town of Marana will be commencing our 2012 Nighttime Hummingbird feeder bat monitoring project and we need your help!!

Over the past years citizen scientists have graciously volunteered numerous hours each summer to monitor their hummingbird feeders for bats. They have provided us with valuable information that allows us to better understand the behavior of the federally endangered lesser long-nosed bats (*Leptonycteris curasoae*) and the Arizona species of concern Mexican long-tongued bats (*Choeronycteris mexicana*). The lesser long-nosed bats migrate north from Mexico and arrive in southern Arizona as the Saguaros begin to bloom. They continue to travel throughout southern Arizona following the blooms of plants such as saguaros, agaves and your hummingbird feeders in southern Arizona.

If you enjoy watching wildlife and sitting on your porch during summer evenings please consider volunteering your time for this worthy cause. Your efforts will allow wildlife and resource managers in Arizona to better understand the ecology of these species. The goals of this project are to understand when these species arrive in southern Arizona, determine foraging habits and movement patterns, and to document when the migratory species depart Arizona. With your help, we hope to continue receiving valuable information and use it to understand their behavior as well as how to better protect these bats.

If you are interested in participating in the hummingbird feeder monitoring project this year, please visit the official website sponsored by the Town of Marana, www.marana.com/bats. The website allows participants to sign up as volunteers and to download information about this year's monitoring protocol. If you have any further questions or seek clarification please feel free to email me at: emoreno@azgfd.gov

We hope to hear from you all this season!



For additional information please contact:

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2012 BATS AND HUMMINGBIRD FEEDERS STUDY
INFORMATION AND INSTRUCTIONS
(also visit www.marana.com/bats)

Thanks for your interest in participating in our ongoing study of the use of hummingbird (HB) feeders by nectar-feeding bats in southern Arizona. Here we provide you with some basic information about HB feeders and instructions on how to report your observations.

Feeders and Sugar Water

Feeder type and placement

Bats will visit most types of feeders but not those with bee guards. Please remove guards at night and replace in the morning. Bats usually hover to feed so perches are unnecessary. If you have multiple feeders, you may notice bats prefer one to another. There's a section on the end of the season summary form to record these observations.

Sugar water and feeder cleaning

Use the same solution as for hummingbirds- 1 part cane sugar to 4 parts water. Don't add food coloring or dye as it is unhealthy for the birds, and perhaps also for the bats. Boiling the solution will help retard fermentation. Leave sugar water in a feeder no longer than 48 hours during hot weather. Clean the feeder every time you change the sugar water. Use hot water and a bottle brush. Do not use soap. If necessary, use a little vinegar in the hot water to get rid of mold, or a tiny amount of Clorox. Be sure to rinse the feeder thoroughly.

Data Collection Instructions

Data can be collected in hard copy form or entered onto the Marana website. Please let us know if you need additional forms. We are interested in two kinds of information – (1) occasional daily/nightly reports and (2) a seasonal summary report. Forms for recording this information can be found on the website (www.marana.com/bats).

1. Monitor the feeder 2-3 times a week (more if you want to, of course), beginning in May and continuing until the bats leave. If you are not able to monitor your feeder regularly we are still interested in less frequent observations. We are also interested in negative data. If no bats visit your feeders all season, we'd still like to hear about it in the summary report.
2. Avoid monitoring on windy nights, as fluid level may drop because of the wind, and bat activity is usually lower. On the night you monitor, check the level of fluid just as it gets dark and the hummingbirds go to bed. Record the date and time on the data sheet.
3. If you usually stay up late, check the feeder again before you go to bed, but not before midnight. If you are an early riser, check when you get up in the morning, but before the hummingbirds

start drinking. Record the time you checked, and whether the level didn't drop, dropped a little, a lot, or the feeder was drained. The bats usually don't leave their roost until at least a half hour after sunset and can travel 20 miles to feed so it may take some time before they come to the feeders. That's why checking only a couple hours after dark may be too early. If you have lots of hummingbirds, they may lower the level of the fluid if you check too late in the morning- you won't be able to tell if any bats visited. So, if you go to bed before midnight and get up after the hummingbirds are already drinking, use your best judgment and pick a time to check that you think will give the best data.

4. When you're sure you have bats visiting your feeder, please try to determine what time they first arrive in the evening. You don't want to light up your feeder like daylight, but the bats may still come if the feeder is in enough light for you to see whether they're there. Some people have said the bats still come to relatively lit-up areas, but others have found that the bats come only after the lights have been turned out. Sit somewhere where you're comfortable and not too far (about 6 ft) from the feeder (they don't generally mind human presence or talking) and start watching shortly after sunset until you see one appear. It will only stay at the feeder for about a second so vigilance is important. Record the date, time, and any other observations on the data form. It's only necessary to watch for time of first arrival once when they begin appearing, then once in late August or early September, and once again in late September or early October or whenever you notice numbers are dropping off. We don't have a good idea yet how long they stick around, it may be only a few weeks, or it may be a few months.
5. If you notice bats roosting at your house or in your trees or saguaros, please let us know. We're also interested in insectivorous bats in urban areas.
6. Before turning in data, please keep a copy for your own records just as a backup. You can just copy the form and paste it to Microsoft Word and it should copy the entire form with your data.

Photographing Bats

Digital photos are usually the best way to identify your bat visitors. The best clue is presence (Mexican long-tongued) or absence (lesser long-nosed bat) of a tail membrane (a broad membrane between the hind legs).

Still cameras (digital or 35mm): You will need supplemental light, either by using flash or by lighting up the feeder. We want to minimize disturbance to the bats. If you have a feeder that is lit up by lights inside or outside of the house during normal night-time activities, the bats have become habituated to it. Increasing the amount of light for a short time to take pictures is unlikely to disturb them, but monitoring their response is important. If your bats don't like lit-up areas, it might be less disturbing to take a few pictures using flash. United States Fish and Wildlife Service has given us permission to take flash pictures with the following restrictions. To minimize disturbance, avoid taking many pictures within a short period of time. Don't take pictures on consecutive nights. It is important to have species identification only when bats first show up, at the height of the season, and at the end of the season.