

Desert Dwellers

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June 2011

BATS

Those amazing bug-eating Machines



Talk about an image problem! Who has a worse rep than bats?? Myths and long-held beliefs are stubborn and very difficult to change. Start with the facts that they are black and operate at night, have sharp teeth and rather nasty-looking faces.

Movies and other popular images of bats are most-often negative and frightening, often focusing on the tiny minority of vampire bats who feed on blood.

I would love to change that image, and I'll start right here by telling you how valuable and important these little guys are, how undeserving they are of their bad image, and how you, too, can learn to love bats!

Bats make up 20-25% of all mammal species and among the approximately 1200 bat species worldwide the diversity is incredible. From the tiny bumblebee bat (the world's smallest mammal) to giant flying foxes with 6-foot wingspans, bats have inhabited almost every part of the world dating back 60 million years. They are the only mammals with true flight. And, no, they are NOT rodents! What makes them different from other mammals? Two important characteristics—wings and echolocation. The 'wings' are actually forearms with elongated hands and fingers which support the membrane that forms the flying surface. Echolocation involves emitting high frequency sounds and detecting their echoes, which allows the bat to 'see' everything except color. Sonar systems developed by man in the 1940s were based on echolocation, but their level of sophistication and efficiency still cannot compare to that of bats. All New World species of bats use echolocation. In addition to echolocation, most bats also have excellent vision, belying the myth that they are blind.

Most bat species are insectivorous and are major consumers of nighttime insects, including serious agricultural pests and mosquitoes that aggravate people and carry disease. A single Little Brown Bat can eat up to 1000 mosquitoes in an hour, and a pregnant or lactating female will eat the equivalent of her body weight each night. Each million bats consume an astonishing 10 tons of insects every night! The more natural pest control available, the less we have to depend on chemical pesticides. In the New World there are about 38 bat species are nectivorous, feeding on the nectar of night-blooming flowers and performing important pollination duties. Many of our iconic desert plant species rely to a great extent on the pollination provided by bats for their reproduction. If you love tequila, you can thank bats. They are the prime pollinators of the blue agave as well as many species of columnar cacti. Other products that depend on bats for pollination include bananas, dates and balsa wood. Since nectar bats will also consume the fruit of saguaros and other desert and tropical plants, they are key to seed dispersal and are actually more effective at this job than birds. Only 3 species, all in Latin America, are vampire bats, feeding on the blood of birds and mammals. Even these make an important contribution to mankind—in the field of medical research on anti-coagulants. Bat droppings, called guano, are a rich natural fertilizer that are still mined in many countries.

Cold weather is intolerable to bats, which forces them to either hibernate or migrate. Most of our Arizona

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bats migrate south in the winter. They will mate during their winter stay, and the females will give birth to one or possibly two babies in the summer roost. Caves, bridges, mines and buildings all provide summer daytime roosting habitat for bats in Arizona. Very long-lived for such small animals, some temperate-zone hibernators can live 15 to 20 years or more.

Owls are the main predators of bats, as they are active at the same time, but other predators include falcons, hawks, lizards, snakes, raccoons, skunks, ringtails, and, of course, man. Bats are protected by both state and federal laws. White nose syndrome disease is now having a devastating effect on hibernating bats in the eastern U.S. WNS is a fungus that lives in cold, damp caves or mines and has spread to bats in 19 states and killed more than a million bats since being discovered in 2006.

Some of the greatest misinformation about bats concerns rabies. Although bats, like any mammal, can carry the disease, less than one half of one percent of bats contract rabies. The possibility of contracting rabies from a bat is greatly exaggerated. More people are killed each year by lightning, dogs and bees. Still, you should use common sense and not handle a bat, whether it is dead or alive. If you find a bat on the ground, or if your pet comes into contact with a bat, contact Pima Animal Control Center, 243-5900, your veterinarian, or Arizona Game and Fish Department, 628-5376.

In Arizona, we are fortunate to have 28 species of bats, perhaps 10 of which you can see right here in Tucson. Thousands of Mexican free-tailed bats use bridges in Tucson as their summer roost. Other species you might see include Western pipistrelle, cave myotis, big brown, pallid, Yuma myotis, California myotis and, rarely, silver-haired. Two species of nectar bats are also here in the summer—lesser long-nosed and Mexican long-tongued. For a wonderful spectacle, go down to the Campbell/River bridge in the summer before dusk and watch the thousands of bats, mainly Mexican free tails, emerge to go foraging for the night. The Arizona Sonora Desert Museum will have docents at the bridge on Thursday evenings throughout the summer, talking about bats, answering questions and demonstrating

echolocation with bat monitors.

Mexican free-tailed bats (*Tadarida braziliensis*), the most numerous species in Tucson, are called the jets of the bat world. They are made for speed, with long, narrow wings. A medium-sized bat with reddish to dark brown or gray fur, they have broad, black, forward-facing ears and wrinkled lips. Their tails extend more than one third beyond the tail membranes. Known as swarm feeders, they often travel to the agricultural fields of Avra Valley for foraging, returning to their roost under bridges in the early morning. They roost in large maternity colonies, having given birth to one pup in late spring or early summer, and use caves or man-made structures for roosting. In the fall they migrate back to Mexico. Mexican free-tailed bats consume huge numbers of insects that damage crops such as corn and cotton. In Austin, Texas, where over a million Mexican free-tailed bats roost under the Congress Avenue Bridge, their nightly emergence has become a huge tourist draw, earning millions of dollars for the local economy every year.

Previously I mentioned two species of nectar-feeding bats that migrate to Arizona in the spring and summer. The Lesser Long-Nosed and the Mexican Long-Tongued follow the bloom of columnar cacti [but not saguaros] north in the spring and roost in caves or mines during their stay in Arizona. These bats have also learned that sweet nectar can be obtained from hummingbird feeders and, primarily in the late summer before they return to Mexico, can be seen taking nectar from the feeders. If you have a hummingbird feeder, start checking to see if the level of the nectar is dropping overnight. If so, start watching around 9pm for an amazing show. These bats can hover like hummingbirds, but they do so only briefly at feeders. When they approach the feeder, they extend their long tongue into the tiny opening, extract the nectar and fly away, all in a second or so. To see a large number of bats (perhaps dozens) with a 14" wingspan circling and approaching the feeder in darkness is awe-inspiring. I have had nectar bats at my feeders for several years in August and September. They fly long distances from their roost caves in the Rincons and Catalinas to reach feeders in our neighborhood. The

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Town of Marana sponsors a bat/hummingbird feeder study every year, involving residents like us. To participate in the study, go to <http://www.marana.com/index.aspx?nid=520>, or just Google *BAT STUDY MARANA*.

In two previous years, researchers from U.S. Fish and Wildlife Service, Arizona Game and Fish Department and the University of Arizona have come to my home to trap and study the nectar bats. In 2007, bats were trapped, weighed, ID'd, sexed and then fitted with a tiny radio transmitter. Once released, the researchers tracked the bats, hoping to learn more about their roosting and foraging habits. The entire text of the findings can be read at: <http://www.marana.com/DocumentView.aspx?DID=2901>. Last year, the same researchers from USFWS and AGFD trapped bats to determine species, age, sex, weight, health, etc. and then released them. In both cases, all the bats were lesser long-nosed, (*Leptonycteris yerbabuena*). The LLNB is classified as Endangered in the US portion of its range. Also last year, a U of A student conducted research at my feeders to learn more about the cues that nectar bats use to find the feeders.

In conclusion, bats are important indicators of a healthy ecosystem, and make valuable contributions to mankind and to the flora of the Sonoran Desert region. Many resources are available to increase your knowledge and understanding of these phenomenal animals. Some have been mentioned in this article, and others can be found at Bat Conservation International (www.batcon.org), the Arizona Game and Fish Department and the Arizona Sonora Desert Museum (www.desertmuseum.org). At the batcon website, you can find plans for building a bat house to encourage bats to roost nearby, and to use as an excellent educational tool for your children.

I urge you to get better acquainted with our flying mammalian friends!

Carole DeAngeli

References:

<http://www.batcon.org>

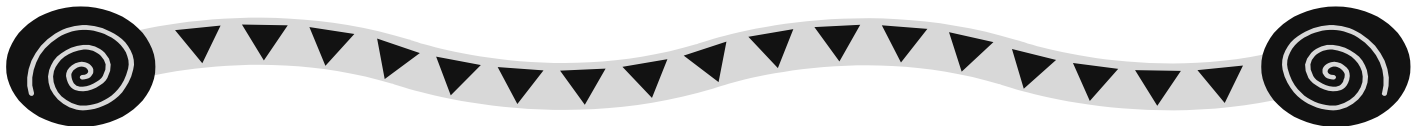
<http://www.desertmuseum.org>

Karen Krebs, B.Sc., Arizona Sonora Desert Museum

Dr. Rodrigo Medellin, Dir. Science and Conservation, ASDM

Dr. Ted Fleming, Emeritus Professor of Biology, University of

Miami; Adjunct Professor, Department of Ecology and Evolutionary Biology, University of Arizona



A Note about Dues

An OFNA membership form is always included on the back page of the Desert Dwellers newsletter. I include this for the convenience of those who perhaps did not receive an invoice or have misplaced it. Remember that our fiscal year runs from **September 1 to August 31**. The 2011 fiscal year is coming to an end in just a couple of months. If you have forgotten whether your dues are paid, please contact the membership chairman:

Jay DeAngeli
 ejdeangeli@comcast.net
 520-690-1107

OFNA Financial Report - Fiscal Year 2011

Balance Forward (9/1/10)	\$13,260
Income	1,980
Expenses	4,381
Current Balance (5/2/11)	\$10,859

Detailed financial reports are available at the Annual Meeting. Members may receive a copy at any time by requesting it from the Treasurer, ejdeangeli@comcast.net, 690-1107.

Weekly Neighborhood Update

If you want to receive weekly neighborhood updates via e-mail, drop a note to:

caroledeangeli@earthlink.net

All residents are welcome to be on the list.

CRIME

Crime has been down last few months, which is good news for all of us. Neighborhood Patrols continue on an informal basis, watching for suspicious activity during daytime hours. We did have one daytime burglary in January on Canyon View Drive, 2 incidents of larceny from a motor vehicle (both on the same night) and a stolen car abandoned in the neighborhood. Please contact your Block Captain if you see or hear of a crime or suspicious activity. Please also notify me at caroledeangeli@earthlink.net so I can alert the neighbors.

Neighborhood Watch Area Leaders:

Jacki Elder, elder@theriver.com, 292-6070
Bente Jensen, bentejaz@gmail.com, 744-7742

OFNA is ONLINE

Be sure to visit our website, ofna.org, and explore all the information available there. The PHOTOS pages are continuing to expand.

And, look for Oracle Foothills Neighborhood Association on FACEBOOK.





Picnic Time

DATE: Saturday, October 22

TIME: Noon to Dark

PLACE: Yvon Dr. Wash

BRING: Potluck Dish

OFNA will provide everything else, including delicious grilled chicken, brats and ribs. Come and enjoy the day with your neighbors!

The Neighborhood Picnic is making it's 14th annual appearance this fall. Your help is needed to make it a success. If you can help in any way or would like more information, please contact

**Picnic Chairman Mark Andersen
mark@markmarie.com, 887-2296**



Board Candidates Needed

OFNA is looking for a few good candidates for the Board of Directors for fiscal year 2012. Election of a new board will take place at the Annual Meeting, to be held on September 10th. Your Neighborhood Association works hard to maintain and improve the quality of life in Oracle Foothills neighborhood and to represent your interests. Please consider serving for a year on the Board, adding your voice and expertise to the Board for the benefit of your neighbors. If you are interested, please contact **Susan Berger, 690-2570, sberger@rnco.com** for more information or to volunteer.

To Rebuild Our Streets

Improvement Districts

In the last issue of the Desert Dwellers, I wrote an article about the deplorable condition of our neighborhood streets and the pleas sent out by OFNA to our Pima County Supervisor and the Transportation Department. Essentially, the answer is that, while Pima County will continue to provide a level of maintenance for our existing streets, they do not have the funds or the responsibility to completely rebuild the streets as they so desperately need.

In order to properly repair the streets of our subdivision, property owners could form an Improvement District, which is a special taxing district, for the purpose of raising the necessary funds to rebuild the streets. Improvement Districts are commonly used throughout the country as a way for property owners to finance projects in their area, such as street lighting, drainage, sidewalks, parks and street repair. The costs of the improvement are charged to the property owners in the district based upon the benefit derived from the improvements.

Property owners in the proposed Improvement District make a request to the Pima County Board of Supervisors, detailing the purpose of the district, the area to be included and an estimate of support for the project. The Board of Supervisors evaluate the plan and determine the feasibility of the district.

If the project appears to be supportable by the properties within the boundary, the petition phase begins. All affected property owners are asked to sign petitions to approve the project and agree to the funding. A majority of property owners must sign the petitions in order for the project to proceed.

The Board of Supervisors will then give the final approval to form the district. The design and construction phase will then proceed. All design work and construction activity is authorized and/or performed by Pima County or its contractors.

Once the construction phase is complete, the County assesses **all** the property owners in the district for the costs of the improvement. Generally, bonds are issued by the District to finance the cost of the improvements. The property owners are as-

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sessed the principal and interest costs of the bonds over a period of years. The assessment is payable semi-annually over a period of several years. Pima County would assume maintenance of the new roadways.

Rebuilding old roadways such as ours can be very expensive due to possible roadway realignment, drainage, etc.

The Pima County document outlining the procedure can be found at OFNA's website:

<http://ofna.org/Improvement%20Districts.pdf>

OFNA is requesting that Pima County representatives speak on this subject at our neighborhood association's Annual Meeting. This will give neighbors a chance to ask questions and get more information.

Please note that OFNA is not advocating for or against an Improvement District. We simply want to make neighbors aware of this option.

SAVE THE DATE!



Oracle Foothills Neighborhood Associations's Annual Meeting

**will be held on
Saturday, September 10th**

at Dove of Peace Lutheran Church, 660 W. Roller Coaster Rd., in All Saints Hall. Coffee and Conversation start at 8am, the meeting will begin promptly at 9. We will have guest speakers, bring you up to date on neighborhood events, elect new Board members, and have a raffle. We hope to see you there! For more information, contact OFNA President

**Carolyn Redmore
319-1319
cdredmore@aol.com**

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**Standing Committees and
Task Assignments**

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