Bulletin #8

Bats In North Central Arizona

Bats are part of nature's food web and are very beneficial to humans. They feed on large numbers of flying insects and other arthropods; some bats may consume up to one-half their weight in insects in a night. Their guano has been used for centuries as fertilizer and even to make gunpowder. Bats feeding upon nectar pollinate certain plants such as the saguaro. Their ability to fly, their secretiveness, and their nocturnal habits have contributed to bat folklore, superstition, and fear. However, people should treat bats no different than other wildlife species.

Biology. Bats, the only mammals that truly fly, belong to the order Chiroptera. Bats are worldwide in distribution; there are over 900 species of bats in the world. About 40 species are found north of Mexico, occurring from coast to coast and into the mountains. Bats are most abundant in the Southwestern United States. There are 28 species that live in Arizona. Bats may roost in groups; some bats live alone in tree foliage or under bark. All species common in Yavapai County are insect-eaters.

Several species of Myotis have been recorded in Yavapai County. Myotis bats rear their young, born in late June, in colonies. They migrate to warmer locations in September - October and return to Arizona in April. Cave myotis (Myotis velifer) bats are found in desert areas of creosote, palo verde, brittle bush, and cacti. They inhabit mine shafts, tunnels, caves, and even under bridges. They are never more than a few miles from a water source. Arizona myotis (Myotis occultus) prefer forests of ponderosa pine and oak. They have been seen in the Verde Valley and on Mingus Mountain. M. volans is another species that prefers ponderosa pines and high elevations. The fringed myotis (Myotis thysanodes) occurs in the oak woodlands, including the Bradshaw Mountains.

The American free-tailed bat (Tadarida brasiliensis) occurs throughout Arizona in the summer. They inhabit caves, mines, sometimes old buildings or bridges of the desert scrub and foothills. This species congregates in large colonies; the colony site may move from time to time. The young are usually born in June; at one month of age they can feed themselves. Free-tailed bats do not hibernate in Arizona and are found only in the south and west part of Arizona in the winter.

The big brown bat (Eptesicus fuscus) is commonly found in wooded areas, but is also present in the desert scrub. Although this species may hibernate during part of the winter, big brown bats can withstand cold weather well.

Big-eared bats (Plecotus townsendii) are found during the day in caves or mine tunnels, but at night they often rest in abandoned buildings. In summer these bats occur widely in Arizona and can be found over desert scrub, in shelters in desert mountains, oak-woodland, pinyon-juniper, or coniferous forests. Recorded sightings include Camp Verde, Cordes, and Congress in Yavapai County. The females congregate in nursery colonies and the males remain separate. They hibernate in the winter in Arizona.

Habitat. The natural habitats of most bats are caves and trees. Many are found in mines and some in buildings. Day roosts are dark and secluded. Bats forage around water, forests, fields, ravines, and buildings. Bats spend the day in secluded retreats and become active at dusk. When bats leave the roost, they normally fly to a source of water before feeding. Most species feed around sundown and then again before daylight.

Human disturbance of habitat and food chains has generally decreased bat numbers. Bat caves have been ruined by flooding caused by the construction of dams and by explosives used in quarrying. Forestry practices have reduced the number of hollow trees available as bat roosts. These acts may contribute to the increase of bats roosting in buildings.

There are several activities of humans that have actually benefitted bats. Yavapai County has an abundance of old mines that provide good roosting places, especially since the temperatures inside these mines are much more moderate during the heat of summer and cold of winter. The cultivation of many crops, particularly alfalfa, has attracted many insects for bats to feed upon, and if insecticides have not been applied too heavily, bats can provide additional biological control for the nocturnal flying insects.

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The construction of swimming pools in urban areas and the development of waterholes for livestock in rural areas have provided an added requirement to their habitat. Bats prefer to roost near water which provides them with an opportunity to drink as well as a greater supply of flying insects.

Bat roosts around buildings. In urban areas, bats may enter homes through open windows or unscreened fireplaces. If unused chimneys are used for summer roosts, bats may fall or crawl through the open damper into the house. A bat usually will find a way out by detecting fresh air movement. The simplest solution for removing the bat is to open all windows and doors leading outside. If the bat is still present at nightfall, the lights should be turned off to help it find open doors or windows. Bats normally will not attack people, even when chased. If the bat refuses to leave, it can be caught with a net (such as an insect or butterfly net), then placed in a small box or can, with a gloved hand, and released outside.

Bat droppings outside buildings. Although bats cause little actual damage to dwellings or other structures, homeowners may find their presence objectionable due to odor caused by droppings and urine. Bats may temporarily roost behind shutters, under wood shingles, roofing, drain gutters, awnings, overhang trim, under flashing around chimneys, in garages, patios, porches, and under sheets of tarpaper. Males may hide behind shutters and blinds during the nursing season. Bats often fly around swimming pools to drink or catch insects. Street and porch lights may attract flying insects, which, in turn, attract bats. Homeowners need to know that such roosts are temporary. The beneficial activities of bats outweigh the nuisance that these activities may create.

Health hazards. Rabies is the most important public health hazard associated with bats, but its impact has been greatly exaggerated. More people die annually from dog attacks, bee stings, lightning, and household accidents than from bat-transmitted rabies. Bat rabies account for approximately one human death per year in the United States. One effective way to minimize human bat contact is to caution adults and children never to touch bats with bare hands. Bats found on the ground in daytime should not be handled. They sometimes fall from roosts and remain in a semi-stupor for a period of time. People misinterpret this to be a sick or injured bat. Bats do need to be placed in a safe site for protection from pets and predators. Children should be warned not to approach them. They may bite! Bats can be picked up with heavy, leather gloves. If a bat has bitten a person or pet, the bat should be captured without destroying the head, placed in a container, and shipped under refrigeration to the nearest health laboratory.

Damage prevention and control methods. It is important to use safe, non-destructive methods to alleviate conflicts between man and bats. Use the simplest means possible if you need to discourage bats from your home environment. The only recommended method is exclusion. Excluding bats from buildings is the soundest long-term solution. Holes should be blocked after dark in the early evening when bats have left the structure to feed. Effective materials to exclude bats are caulk, flashing, screen, and insulation. Weather-stripping, stainless steel wool, or rustproof scouring pads may be used to block long, narrow cracks.

Temporary roosts in porches, garages, patios, and overhead trim can be discouraged by tacking coarse fiberglass batting to the surfaces where bats hang. Polypropylene bird netting may be used to bat proof houses. Another way to encourage bats is to leave a yard light on at night, drawing night-flying insects -- and the bats -- away from the house. Many people are becoming aware of the value of bats for controlling insects and may encourage them by constructing a bat house. These houses also provide bats with an alternative roost when forced from roosting in a home or other building. It may take a year or two for bats to adjust to new accommodations and the smell of new wood may deter them for a period of time.

No fumigants or toxicants are registered for bat control in Arizona. No effective chemical treatments have been found for residential use.

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http://extension.arizona.edu/yavapai