

Bats Solve Insect Problems in the Garden

by Jo Ann Abell

FEW ANIMALS HAVE BEEN so burdened with myth and superstition as bats. For centuries, these flying mammals have been associated with evil and death, and regarded by some as carriers of disease. But in the last decade or so, thanks to the efforts of conservation groups and federal and state wildlife agencies, bats are being seen in a different light for the valuable role they play in the ecosystem.

Gardeners in particular should appreciate bats for helping to reduce insect pest populations, including those pesky mosquitoes that take some of the fun out of being outdoors in summer. According to Barbara French, conservation officer at Bat Conservation International (BCI), “As primary predators of night-flying insects, bats are essential to the balance of nature.”

North America is home to 46 bat species. Most are insect-eaters, with the exception of three species found in Arizona, California, and Texas that feed on nectar and pollen. Texas holds the title of “battiest” state in the union—32 species of bats call the Lone Star State home at various times of the year.

Bats are nocturnal, hunting in the dim hours between sunset and sunrise. Using a form of sonar known as echolocation, they literally hear their way through the world, crying out through the darkness in a language of high-pitched (ultrasonic) noises and listening for the echoes to return. Sound waves bounce off insects and solid objects and send back a “picture,” helping the bat to navigate in the dark.

BROWN AND RED BATS

The most common of the native North American bats, the **big brown bat**, is found in every part of the country except the southern parts of Florida and Texas. Russet to dark brown in color, this bat averages between four and five inches in



The red bat can be found in wooded areas throughout the eastern half of North America.

length with a wingspan of about 13 inches. Their favorite roosts include attics, barns, bell towers, behind window shutters, and in manmade bat houses. These efficient feeders prey on June bugs, stinkbugs, mosquitoes, leafhoppers, and cucumber beetles.

Little brown bats look a lot like big browns, but smaller, only between three and four inches long, and are also common throughout most of the United

States. They can be identified on the wing by their swift, erratic flight. They voraciously consume thousands of insects in one outing, eating as many as 1,200 mosquito-sized insects in an hour! Mated females form maternity colonies inside abandoned buildings, hollow trees, rock crevices, or similar warm areas. Males and unmated females roost under shingles, the eaves of buildings, loose bark of trees, and in rock outcroppings.

One of North America’s most beautiful bats, the **eastern red bat**, ranges in color from bright orange to yellow-brown. Long, pointed wings and swift flight at low levels mark this bat as it forages for crickets, flies, beetles, and cicadas. They are known to congregate around corncribs, where they feast on grain moths, much to the delight of farmers. Red bats are found in wooded areas east of the Rocky Mountains from Canada to as far south as central

Florida, roosting in trees where they resemble dead leaves or pinecones.

FREE-TAILED AND LONG-NOSED BATS

The **Mexican free-tailed bat** is found at lower elevations throughout California, across southern Nevada, and southern Utah, Arizona, New Mexico, Texas, and parts of Oklahoma. Colonies are also found throughout the southeastern United States from Mississippi down through Florida and over to South Carolina. Their colonies are the largest con-

HOW YOU CAN HELP BATS

Like many other animals in our increasingly urban environment, bats are often the victims of diminishing natural habitats. Gardeners can help provide these useful creatures with places to feed and live by making a few adaptations to the landscape.

- Bats can be encouraged to live in manmade bat houses if the houses are properly constructed and sited where they will get adequate sunlight and be protected from predators. Bat houses can be purchased, or you can make your own—see “Resources,” right.
- Bats prefer habitats with different types of cover, such as a mix of agricultural fields and wooded areas. Plant a variety of perennials, herbs, and night-blooming flowers to lure the insects that will, in turn, attract bats.
- Bats are drawn to aquatic areas, where insect populations tend to be greater. Add a pond or other water feature to your landscape to ensure lucrative foraging for bats.
- Avoid using chemical pesticides that can harm non-target organisms such as bats and other wildlife.

gregations of mammals in the world. Besides caves, free-tail bats like to roost in culverts, old buildings, tunnels, and under bridges.

When hungry free-tails come out at sundown, humans reap the benefit. In central Texas, for example, 100 million Mexican free-tailed bats cruise over lawns, gardens, farm fields, and orchards, gobbling up some two million pounds of insects every night. This bat is truly the farmer's best friend—one of its favorite foods is the number one-ranked agricultural pest in America, the corn earworm moth. Other crop-damaging pests on the bat's menu include armyworm moths,

codling and corn borer moths, locusts, and leafhoppers.

Long-nosed bats are a keystone species in the ecosystems of the Sonoran Desert in the southwestern United States. These pollinators have long tongues that can reach deep into flowers for nectar. Bees, moths, lizards, and many birds depend on plants pollinated by long-nosed bats, either for food or shelter. Without the bats, there would be serious disruptions to the ecosystem.

SPECIAL NEEDS

Because they have highly specialized habitat requirements, bats have not been

Resources

America's Neighborhood Bats: Understanding and Learning to Live in Harmony with Them by Merlin Tuttle. University of Texas Press, Austin, 1997.

The Bat: Wings In The Night Sky by M. Brock Fenton. Firefly Books, New York, New York, 1998.

Bats of the World by Gary L. Graham. Golden Guide, St. Martin Press, New York, New York, 2001.

Building Homes for Bats, a 33-minute video that includes a complete set of plans is available for \$12.95 on the Web site of Bat Conservation International (see below).

Bat Conservation International, (800) 538-2287. www.batcon.org. This non-profit organization is dedicated to protecting and restoring bats and their habitats worldwide.

adept at adjusting to environmental change. Most produce only one offspring per year and often live in large colonies that can easily be wiped out in a single catastrophe. These traits leave bats extremely vulnerable to extinction. With many species suffering population declines due to loss of roosting habitat, loss of wetlands (which serve as insect-breeding grounds), and pesticide poisoning, gardeners can do their part to help stem the tide by making the home landscape more bat-friendly (see the sidebar on this page for how to get started).

Welcoming bats to the garden will pay dividends. These winged wonders have long played an important role in nature's systems of checks and balances. In a healthy ecosystem, for every insect pest we might find, there is a natural predator. One of these is the silent hunter of the night, the under-appreciated bat.

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Voracious insect-eaters, bats can consume thousands of mosquitoes, cucumber beetles, and other garden pests in a single night. This big brown bat swoops in on a hapless moth.