Bats can be a beneficial addition to the wildlife community on your property. With the exception of a few uncommon bats in the Florida Keys, all resident bats in Florida eat insects. Bats reduce common insect pests by consuming them in large quantities and the sound of bat calls can repel additional insects from areas where bats spend time. By attracting bats to your farm, forest, or backyard you may substantially reduce the number of nocturnal insects nearby.

**Attracting Bats to Your Property**

All insect-eating bats need roost sites in which to sleep during the day. Several of the 13 species of bats that live in Florida year-round select warm, dry, dark, narrow crevices for roosting. You may be able to attract these bats to your property by putting up wooden bat houses with appropriately-sized crevices (Figure 1). The two species you are most likely to attract to bat houses in Florida are the Brazilian free-tailed bat (*Tadarida brasiliensis*) and the evening bat (*Nycteceius humeralis*). Other less common tenants of bat houses in Florida are the southeastern bat (*Myotis austroriparius*) and the big brown bat (*Eptesicus fuscus*). Each of these species consumes insects that are known pests to crops. Lastly, a rare, endangered species could reside in bat houses in south and central Florida: the Florida bonneted bat (*Eumops floridanus*).

Research conducted by Bat Conservation International (http://www.batcon.org) has determined bat house characteristics that bats find most attractive. Bat houses with chambers at least 14 inches wide and at least two feet tall have a greater chance of attracting bats than narrower or shorter houses (Figures 2–5). A landing area beneath the entrance at least three inches long with a rough surface for bats to grab onto when they fly to the house is critical for facilitating access. If a bat house has only one chamber for bats to roost in, roughen the entire back panel of the interior of the house so that bats can easily grab onto the surface with their toes. If the house has more than one roosting chamber, roughen at least one side of each of the partitions separating the chambers.

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U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Nick T. Place, dean for UF/IFAS Extension.
There are two ways to provide rough surfaces within the house and on the landing pad: score or groove the surface using a saw or other sharp implement to make shallow cuts, or staple durable plastic mesh firmly to the wood. In Florida, grooving the surfaces is highly preferable to stapling on plastic mesh because high humidity often causes the wood to warp and the mesh to sag. Over time bats may not be able to use houses with warped wood and plastic mesh. If you cut grooves, position them horizontally at ¼- to ½-inch intervals and cut them no more than 1/16 inch deep. If you cannot cut grooves in the wood, UV-resistant plastic mesh (1/8 to 1/4 inch) is the next best option. Avoid hardware cloth and metal mesh because they could injure bats, and stay away from nylon or fiberglass window screening because these materials deteriorate quickly. Staples for holding the mesh to the wood should be exterior grade or galvanized and should not protrude from the wooden panels.

Effective Bat Houses for Florida
Bat houses made from a combination of exterior plywood and cedar work well; pressure-treated wood should be avoided because it may be toxic to bats. Plywood should be exterior-grade (ACX, BCX, or T1-11 grade), and plywood used on the exterior should be at least 1/2 inch thick for durability. Interior plywood partitions can be 3/8 inch thick rather than ½ inch to reduce the weight of the house. Screws are preferable to nails because they last longer. All screws and staples should be exterior-grade (galvanized or stainless).

Bats prefer houses that do not allow rainwater to seep in. Careful caulking of all seams (with latex caulk) can prevent leaks. Re-caulk every three to five years during a time of year when bats are not present. Some houses may be used continuously by bats for long periods each year, whereas other houses may receive intermittent use throughout the year. To determine a time of year when bats are not using the house, shine a flashlight or spotlight up into the house from below during daylight hours and check for occupants. Do not take the house down for recaulking when bats are present.

Although it is important that houses are watertight, bat houses in Florida should not be airtight, due to warm temperatures. A single, ½-inch-wide vent placed horizontally along the entire front of the house about 6 inches from the bottom can promote airflow. Vents 6 inches tall and ½ inch wide on the side of the rear chamber can also increase air circulation. Shingles or sheet metal over the roof can increase longevity of the house. A roof that provides a wide overhang will provide some shade during the middle of the day, reducing the chance that bats could overheat.

Bat houses can be put up any time of year. However, bats are most likely to move in during the early spring, so it is best to put up houses during the winter so they are available when bats are actively searching for roosts. If bats are being excluded from a building and bat houses are being provided as alternative roost sites, they should be put up several weeks before the eviction.

Many myths exist regarding techniques to attract bats to new bat houses. One common myth is that bats can be lured into a new bat house by painting it with guano from other bats. Research indicates that this does not work. Some folks believe that playing recordings of bat calls can lure bats to a new house, but this also has not proven to be true. Another common myth is that capturing a bat and relocating it to a new bat house will encourage other bats to relocate. In reality, placing a bat in a new house is unlikely to result in permanent use of the house by that bat or any others. In any case, it is illegal to capture and relocate bats without a permit in Florida. Bats are wild animals that should never be handled since they are likely to bite in self defense and bites could transmit a disease such as rabies.

**Selecting a Location for Your Bat House**

Bat houses located on the sides of buildings or on poles are more likely to attract bats than bat houses mounted on trees. This is because houses on trees tend to be shaded by foliage and tend to provide perch sites for predators, both of which are bad for the bats. Poles and buildings are better alternatives because they offer more exposure to sunlight and fewer perch sites for potential predators such as owls, hawks, and falcons. Bat houses should be located at least 20 feet from potential perch sites for predators and at least 12 feet off the ground. If mounted on a metal or wooden pole, a conical piece of flashing wrapped around the pole can prevent potential predators (such as snakes) from climbing the pole.

Again, bats will not use houses where the internal temperature is too hot or too cool. The length of time the house is exposed to direct sunlight during the course of an average day influences its temperature. You can control the temperature through the orientation of the bat house on the side of a building (north, south, east, west), and the
presence of an awning that provides shade over the house. Other factors that influence bat house temperatures include the color of the paint or stain on the exterior of the house, the material used to construct the house, and the amount of ventilation. Most bats prefer interior temperatures from 80 to 100°F.

Bats select roost sites that are near the other resources they require, such as food and fresh water. Bat houses in areas with a mix of habitat types, such as woods and agricultural fields, typically have the greatest likelihood of attracting bats due to the diversity of feeding opportunities. Many bats drink free-standing water shortly after emerging from their roost at dusk and several species consume insects commonly found near water. For this reason, bat houses located within ¼ mile of a river, stream, pond, or lake are more likely to be used than houses located farther from water.

It is best to select a location for your bat house that will be permanent because you won’t want to move a house once bats have settled in. Because guano (bat droppings) will accumulate beneath the house once bats take up residence, it is wise to select a location where the sight or odor of droppings will not be bothersome. To reduce the odor produced by large quantities of guano, this material can be scooped up periodically and used as a fertilizer for plants. Guano should be collected with a shovel or scoop rather than with bare hands to avoid direct contact with microorganisms living in the feces.

**How To Mount Your Bat House**

If you plan to mount your bat house on the side of a building, structures made of wood, brick, or stone are a much better choice than buildings with metal siding. For single-chamber houses, building mounts are preferable to tree or pole mounts because the building will provide some buffer from rapid changes in air temperatures. Multi-chamber houses can be mounted on buildings or poles. Options for mounting bat houses on buildings include using several 1” x 2” wooden rails placed either horizontally or vertically on the rear of the bat house, slightly longer than the dimensions of the house. Alternatively, houses could be mounted using 2-inch by 4-inch wooden boards and French cleats.

If you decide to mount your house on a pole, you could use either a 4-inch x 6-inch pressure-treated post or a metal pole. The post should be at least 16 feet long so that the house is an adequate height off the ground after the post has been dug 3 feet into the ground. Smaller houses can be mounted on a single wooden post by attaching a wooden cross made of 2-inch by 4-inch boards, or to a metal pole using U-bolts. Larger houses or back-to-back houses can be mounted to double posts (one post at each end of the houses). Two bat houses mounted back-to-back on a single or double pole arrangement offer a variety of temperature conditions for roosting bats, especially when they are covered with a single galvanized metal roof to provide additional roosting space between the two houses.

**Common Reasons Bat Houses Do Not Attract Bats**

Bat houses serve as a place for bats to stay warm, dry, and undisturbed while sleeping during the day. If a bat house does not provide the temperatures bats find comfortable, they will never inhabit the house. If a house has been up for three or more years and no bats have moved in, you may be able to make the house more attractive by changing either the color of the exterior or the location of the house. Light and noise can be disruptive to bats, so houses should not be mounted near bright lights or near areas with a lot of human activity.

Houses with multiple chambers are generally more successful at attracting bats than single-chamber houses. Houses with more chambers provide living space with a variety of temperatures, allowing the bats to select the conditions most comfortable for them. Similarly, short, narrow houses provide less variation in temperatures than tall, wide houses, and are therefore less attractive to bats than are larger houses. Very small houses are unlikely to ever attract inhabitants.

Finally, bat houses require periodic maintenance. Check periodically for wasp and mud dauber nests. If mud daubers do make mud nests inside your bat house when bats are not present, these nests can be scraped out with a long, thin pole or hosed out with a high pressure garden hose. Insecticides are not needed, and they are strongly cautioned against because they would likely prevent future use of the house by bats. Remember to re-caulk to prevent drafts and leaks. If you use mesh, it may need replacement after several years of use.

**Concerns about Attracting Bats to Yards**

The only animals other than bats that could be attracted to your property by a bat house are insects such as wasps and mud daubers that consider dark crevices good locations for nests. Avoid chambers more than 3/4 inch wide because...
they are more likely to attract wasps and less likely to attract bats.

The presence of bats in your yard is unlikely to influence the use of your yard by birds, because birds and bats are active at different times of day and they rely on different insects for food.

Children should be warned never to touch bats (and all other wild animals). Healthy bats are rarely found on the ground, so if you find a bat on the ground, you should assume it to be ill and not pick it up. Call a local animal rehabilitation center or your County Animal Control if you find an injured bat. Do not bring a bat or any other wild animal into your home to care for it yourself.

**Additional Information**


