

BAT HOUSES FOR THE ISLANDS

An owner's manual



Elizabeth Needham
Alena Ebeling-Schuld
Nathan Hodges

Russel Barsh, Director

July 2012



KWIAHT

Bat Houses for the Islands

Why bat houses matter

Bats congregate in the spring to give birth and nurse their young. Bat “maternity roosts” or “colonies” must be large enough to accommodate from 25 to several hundred bats, depending on the species. Maternity roosts must also be relatively warm for baby bats. Maternity roosts are used for a few months, from March or April to late summer. After that, most of the bats disperse and spend the fall and winter alone or in smaller groups. Many live in trees or rock crevices. Others sleep under eaves or beneath roof shingles.

The San Juan Islands tend to have cool, wet spring weather. Sometimes it does not get warm until June or even July. The islands also have few caves, and few old deciduous trees large enough to house bat colonies in their hollow trunks or cavities. Island bats depend on attics, barns, and other human structures for large, warm roosting spaces. Indeed, they may have been using human homes as roosts since Native people began building cedar-plank houses in the islands over three thousand years ago!

Many of our older barns, granaries and farmhouses are deteriorating and falling down. Even our newer homes and barns require periodic re-siding and re-roofing. If displaced while they are nursing in spring or early summer, bats lose their babies. And bats can have difficulty finding alternative quarters, because a growing number of buildings lack attics or crawl spaces, or are thoroughly sealed to exclude wildlife. If it is not impractical to save the structure where bats already live, the solution is to give bats secure homes of their own!

Bat house design

Most of the do-it-yourself bat houses depicted in books or sold on-line are designed for use by small numbers of bats as day roosts or for hibernation. They are too small and in our climate, too cold to serve as maternity roosts. Homes for bats, like homes for people, must be adapted to the climate in which they will be used, as well as the lifestyle of the occupants.

We have designed bat maternity houses large enough for 50-100 bats, with separate compartments for smaller and larger species. Our bat houses have good insulation and very high thermal mass, to make the most of solar heating during the day (insolation) and minimize heat loss at night. Metal roofs and dark, heat-absorbing paint help bring inside temperatures close to what they might be in an attic or metal-roofed barn. This makes our bat houses heavy and relatively costly

to build and install, but they are more likely to be used, and they should last for a long, long time.

Our bat house includes space where you can install a heating mat (the kind sold by gardening-supply companies for seed germination beds) that will help get inside temperatures consistently above 80 degrees. A standard electrical outlet is required. We do not recommend using an electrical heat “boost” unless your bat house must be mounted in a shady location with limited insolation. If your house does require additional heating, it should be turned “on” from March 1st until the outside nighttime air temperature exceeds 60 degrees.

Bat house location

In our cool climate, it is important that your bat house has maximum sun exposure to stay warm in the spring. Maternity colonies like temperatures of 90 degrees or more. The best location receives at least 10 hours of direct sunlight a day by April 1st. It will necessarily be south facing, with a minimum of buildings or trees blocking the sun.

Bat houses can be mounted on the side of a barn or a building, or mounted on posts, but in any case should be mounted at least 10 feet off of the ground, and 20 feet away from overhanging tree branches to deter predators. Bats prefer the edge of a wooded or shrubby area: an open sunny field or wetland on one side of their house and trees providing a windbreak on the other.

Bats also need sources of food nearby (within half a mile): lakes, ponds, or wetlands provide abundant mosquitoes and flies for the small, mouse-eared bats; larger bats target moths and beetles that can be found in fields and woods as well. We will work with you to identify the nearby habitats that your bats use for food, so that you can let us know if anything threatens the integrity of those habitats or their production of insects. Chemical use, draining, filling, or clearing may cause problems. Already-established farms can be very good larders for bats, however.

Making the move

Moving an existing maternity colony takes time and patience. Bats need to explore and inspect the new bat house thoroughly before roosting there, and they will only congregate and nurse there once they are certain it is safe and warm. It sometimes helps to sprinkle bat guano from the existing roost inside the new bat house so that it will smell familiar.

A new bat house can be erected at any time of year, but bats are most likely to discover it when they are congregated and foraging intensely for their offspring in summer (May-August). Some may roost in the new bat house over the winter. More exploration the following spring may result in some females moving in, and

by the second winter, there should be evidence of bats visiting the new house on a frequent basis.

It's best to give bats two summers to freely explore and habituate to a new house, before taking any steps (if necessary)* to exclude them from their existing roost. Bats can be excluded from an existing roost by covering entries with flaps of hardware cloth. Flaps can be left loose—a one way door—until it is certain that all bats have left the building. Then the hardware cloth can be securely stapled or nailed to prevent bats from returning. Exclusion should only be attempted in fall after most of your bats have dispersed for the winter.

If one-way “bat excluders” are impractical (for example if bat entries are in inaccessible parts of the roof), bats can be encouraged to leave by installing bright lights and a loud radio or “boom box” where bats are roosting. Entries must then be sealed from inside the building, or bats may return the following spring.

Contact us before you make any eviction decisions. We will help you plan the timing and method of eviction to be successful without harming any bats.

Bat house maintenance

Wasps, swallows, or rodents may move into your bat house before the bats—or even in winter when bats are few or absent. If possible, remove these unwelcome tenants in late fall or winter when bats are least likely to be present. Before attempting to clean out hives or nests, look up into the bat house with a flashlight to ensure that no bats are still sleeping there. Do not try to open the bat house to clean it.

Your bat house has been mounted high up, where it should be safe from most predators including raccoons, minks, and domestic cats. If you have rats in your neighborhood, you may want to place metal cones on the posts supporting your bat house, to prevent rats from climbing up and raiding the bat colony. And if you notice any evidence of predator entry or activity, contact us at once for help identifying the culprit and blocking its access to the bat house.

Repairs to your bat house should not be necessary for several years. Re-caulking and re-painting will be needed eventually to ensure a dry, warm habitat for bats and their babies. Posts or supports may eventually require re-alignment or replacement. We will visit annually to evaluate the integrity of your bat house and help make any required repairs. Contact us if you notice any changes in the mounting or exterior shell of the bat house that may need attention.

* If you simply need to make home repairs or renovations, you can proceed in fall when most bats have dispersed. If a few bats remain, allow them to leave on their own. The colony will return in the spring as long as some entries remain available.

Please contact us before making any physical changes to your bat house. Even re-painting the house a different color alters the amount of solar radiation absorbed and stored inside, changing temperature inside the house and affecting its habitability.

How do I know if bats have moved in?

There are several ways you can tell that bats have taken up residence in your bat house. Watch the bat house during the hour after sunset and you should see bats flying out. Look at the ground beneath the bat house for bat droppings; remember that they are crunchy, not fibrous like rodent pellets. Leaving a piece of plywood or tarp beneath the bat house makes it easy to collect guano.

During the day, you can even peer up inside the house with a flashlight to see any bats that may be present. It's very exciting to see your bats face to face, but avoid doing it more than once a year, or once or twice a year if you have a red light (or you can tape clear red plastic over your flashlight), since bats and other nocturnal mammals are less disturbed by red light. An infrared camera is best for viewing and documenting roosting bats, as they do not see or feel infrared. In any case, frequent viewing, even with red light, can convince female bats that the bat house is unsafe, and they will move the colony.

Bats may take two or three years to discover, try out, and eventually use your bat house. If you still see no bats in residence, it could be because the house does not get enough sun to get warm enough in spring, because there are too many predators in the area, or inadequate water and feeding sites in the area, or the bats are already contently roosting somewhere else nearby. We will continue to evaluate your situation from year to year, and work with you to make your bat house as attractive as possible to the bat species in your vicinity.

Even if no bats move in, maintain your bat house nevertheless; sooner or later, bats may need it!

Living safely with bats

Bats rarely bite humans, and only when they are frightened or threatened. Avoid handling live bats in any way. This includes trying to catch a bat, picking up an injured bat, or reaching into a bat house or roosting space. If you discover a live bat inside your home, open the nearest doors and windows, then turn off the lights so that the bat can escape on its own. It may not attempt to leave until nightfall. If that fails, you can call the Wolf Hollow Wildlife Rehabilitation Center (360 378-5000) for help. If they cannot help you, call us.

There have been no documented cases of rabies in bats from the San Juan Islands. Even on the mainland, fewer than one in 500 bats ever contract rabies, and the chance of catching rabies from a bat bite is therefore extremely low. Nevertheless, if think you have been bitten by a bat we recommend that you see a physician as soon as possible. If the bat involved is injured or trapped inside, contact Wolf Hollow (360 378-5000) or us so that it can be collected for testing.

Bat guano is crunchy and composed of chewed up insect exoskeletons. It poses no more of a health risk than bird droppings. Inhalation of dust associated with animal feces of any kind should be avoided, however. Wear a dust mask if you are cleaning up beneath a bat roost.

Dead or injured bats

If you find an injured bat, call Wolf Hollow Wildlife Rehabilitation Center (360 378-5000) to retrieve and treat the bat safely. Like birds, bats sometimes fly into things, and if they fall to the ground, may be unable to take flight again. An ill bat may behave confused or disoriented, stumble, or be unable to open its wings fully. Don't try to help in this situation: this is when most bat bites occur.

If you absolutely must move a live bat yourself, we recommend that you don thick leather gloves and try gently nudging it into a shoebox. If it is out of reach, you can use a long-handled net (like a bait net or butterfly net), preferably in daylight when the bat is least active. Once outside, release the bat in a high place, such as a shed roof, or the trunk of a tree, never on the ground. Bats need to free-fall several feet before they produce enough lift to fly. On the ground, a bat is helpless, frightened, and may bite or be killed by cats or wild predators.

If you find a dead bat, we want to see it! Studying dead bats tells us more about the species, its predators, prey, and diseases. Among other things, we are screening local bats for the possible appearance of White Nose Syndrome, which has been killing thousands of bats in eastern North America.

When handling a dead bat, avoid touching it with bare hands and wash your hands afterwards. Place the bat in a Ziploc or other plastic bag and freeze it. Once it is frozen, give us a call to organize a pick-up at your home or workplace, or leave the bat in the specimen cooler outside the KWIAHT office in Lopez Plaza.

Monitoring your bat house

You can help us better understand the ecology and health of island bats by observing your bats and making notes of what you see. We ask that you record your bats' arrival and departure times each year, and whether they all leave in the fall, or some stay over the winter. If you notice any changes in the numbers of bats from year to year, or any signs of distress or illness, please keep a record of that, too!

Check your bat house every few months for structural problems such as cracks, wood deterioration, peeling paint, or loosened mounting. If you detect, or suspect any problems with the bat house or the bats living inside it, contact us at KWIAHT immediately. Since bats may be resident in winter as well as spring and summer, please do not try to repair or move your bat house yourself without first checking with us.

We will contact you and inspect your bat house and its inhabitants at least once a year. In the mean time, if you have any questions, concerns, or detect any problems with the bat house, contact us at once!

If we have installed a temperature sensor in your bat house, we will need to retrieve it and download the data every 12-16 months. This will only take a few minutes, and will help us ensure that your house is sufficiently warm. It will also help us tell whether a colony of bats is using your bat house, as opposed to a few solitary bats: bat maternity colonies produce a lot of extra heat.

Thank you for giving island bats a better chance!

Keep these first-responder contacts handy:

Injured or trapped bats: 360 378-5000 (Wolf Hollow)

Dead bats, bat house maintenance: kwiaht@gmail.com

KWIAHT

Center for the Historical Ecology of the Salish Sea
PO Box 415, Lopez Island, WA 98261

Drop-box location: Suite #9, Lopez Plaza, 211 Lopez Road in “the village”

kwiaht@gmail.com
360.468.2808

<http://www.kwiaht.org/>
<http://www.facebook.com/Kwiaht>