

Virtual Creature Festival: Habitat Conservation for Bats

In this series of bat articles, you will have the opportunity to explore the 9 native bats of New Jersey and why they are essential to the ecosystem, why they are beneficial to humans, and why we must work harder to protect them.

As we learned in the NJ native bat article, each of our 9 native bats are listed as “threatened” or of “special concern”. It is obvious that bats need our help and one way to do that is to focus heavily on conserving, restoring, and providing safe habitat for bats. Below are 6 ways to help restore bat habitat: avoid pesticide use, plant native trees, keep standing, dead, or decaying trees, protect water quality, install bat boxes, prevent the spread of white-nose syndrome, and combat climate change.

1. Avoid pesticide use

Pesticides are harmful chemicals that come in many forms like insecticides, herbicides, fungicides, and rodenticides. These chemicals are meant to focus on specific organisms, but they do not discriminate. Once you spray pesticides, they may influence every organism that encounters it, including a build-up of the chemical in the food chain. Many people spray insecticides as an attempt to get rid of insect pests, like mosquitoes, but this depletes the food source of bats or if the insects do not succumb to the poison, then the bats may ingest the poisoned bugs.

It is also possible that pesticides weaken bats’ immune systems making them more susceptible to diseases and more research is being conducted to make conclusions with specificity.



Sign for pesticide use.
[Source.](#)

2. Plant native trees and keep dead and dying trees standing in your yard

Bats are nocturnal; they sleep in the daytime and are active at night. During the day, bats will roost in and on trees, caves, and buildings. One way to create habitat is to plant trees, especially those native to the area. These may include sycamore, hickory, oak, and ash. Bats seem to especially prefer trees with vines growing up them and those with loose bark, cracks, splits, and holes created by other animals. Bats use these features to hold onto.

If a dead or decaying tree is safe to remain standing in your yard, you can also leave those up to create habitat.

[Click here](#) to view information on creating bat habitat in your yard.



Bats roosting on the side of a tree. [Source](#)

3. Protect water quality

Like every other living organism, bats rely on water to live. Some insects that they eat, for example mosquitoes, spend the early part of their lives in the water until they become adults and can fly. Adult mosquitoes will then come back to the water to lay their eggs. Any impurities that the insects have ingested from the water will get

transferred to bats when the insect is consumed. Some bats can eat up to 1,000 mosquitoes a night, so if those mosquitoes have been affected by a chemical or impurity found in the water, the bat will ingest that as well. Bats are also affected by the water that they ingest directly from drinking, so it is important for bats and all life that we keep our waterways clean and protected.

4. Install bat boxes

Bat boxes are another great way of adding bat habitat to your yard. You can install them on the side of your house, like the one shown. These bat boxes may seem small, but bats prefer to sleep in small spaces. Depending on the size of the box and how many bats are in your area you can provide shelter for 50, 100, or even several hundred bats!



5. Prevent the spread of white-nose syndrome

White-nose syndrome (WNS) is a highly contagious fungal disease. It attacks bats' bare skin and can degrade their wings. It also causes them to become more active during hibernation, depleting their stored fat, which is the essential energy source they require to survive the winter. WNS can unknowingly be transferred by humans. If we come in contact with the fungus, *Pseudogymnoascus destructans* (Pd), it can stick to our clothing, shoes, and hiking gear. From there we can spread it, especially when going through caves and mines where bats hibernate. The fungus thrives in dark, damp, cold places, putting bats that hibernate in caves and mines at a higher risk for contracting the disease. Always be sure to clean your clothes, shoes, and gear before and after going into bat habitat and follow local and national guidelines set forth by scientists.

Check out our [distance learning portal](#) for more information on WNS.

6. Combat climate change

The increasingly alarming changing climate affects *all life on the planet*, including bats. A change in climate will alter the dispersal of bat species in an area, when they hibernate and for how long, reproduction and development of their pups, and available food sources. In places that have nectar eating bats, this will also change pollination habits and seed dispersal.

It is important to take steps every day that combat climate change. Some bigger motions include investing in renewable energy, purchasing or leasing an electric vehicle, and adding green infrastructure to your home. Some smaller everyday options include cutting out plastic (especially single-use), using less water, using an alternate form of transportation (such as riding a bike or taking public transportation), and conserving energy in your home by remembering to turn off the lights and power strips when they are not in use.

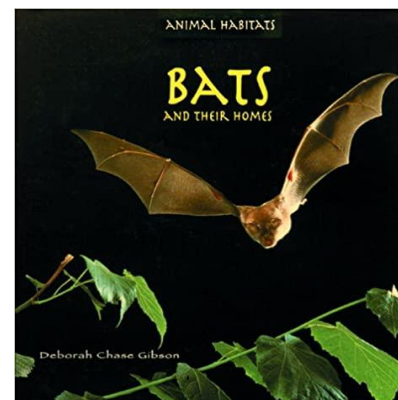
Check out Sustainability September on our [distance learning portal](#) for more ways to combat climate change.

[Bats and Their Homes](#) by Deborah Chase Gibson provides an overview of many different bats and some of the typical places they may roost. Find more information on the book [here](#).

Habitat Management for Bats:

A Guide for Land Managers, Landowners, and their Advisors

[This guide](#) for habitat management in Great Britain was developed by the Joint Nature Conservation Committee which includes three country nature conservation agencies – the Countryside Council for Wales (CCW), English Nature (EN) and Scottish Natural Heritage (SNH). Their responsibilities include contributing to sustaining and enriching biological diversity, enhancing geological features, and sustaining natural systems.



The special functions are principally:

- To advise ministers on the development of policies for, or affecting, nature conservation in Great Britain and internationally
- To provide advice and knowledge to anyone on nature conservation issues affecting Great Britain and internationally
- To establish common standards throughout Great Britain for the monitoring of nature conservation and for research into nature conservation and the analysis of the results
- To commission or support research which the Committee deems relevant to the special functions. In the UK, bat numbers have declined rapidly in recent years. Habitat management for Bats enables land managers, owners and their advisors to play their part in stemming this trend by providing clear advice on how to manage areas to benefit foraging bats. To access the guide to learn more about these resources from Great Britain:

Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY UK ISBN 1 86107 528 6

Extensions

Using this research project in your classroom may allow students to compare and contrast methodologies, data and nature conservation statements between the US and Great Britain beginning with each species.

For more information about how to include these materials in your teaching and learning about bats, habitat, climate change and many other topics, contact Kate Reilly, Manager of Education, Duke Farms.