



Bats and Their Environment

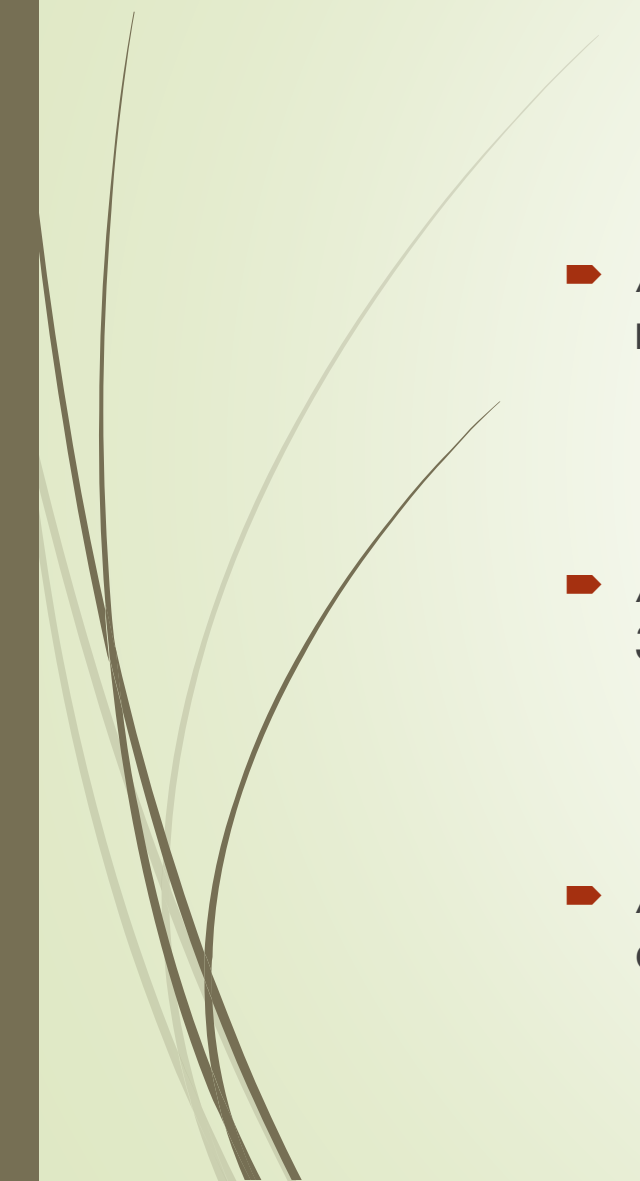
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Want to Hang Around ?





Bats are helpful!

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- ▶ As the **only major predators of night flying insects**, bats play an important role in controlling many insect pests.
 - ▶ A single bat can consume as many as **500 insects in just one hour, or nearly 3,000 insects every night.**
 - ▶ A colony of just **100 little brown bats**, may consume more than a **quarter of a million mosquitoes and other small insects each night.**

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- In Virginia we have several species of bats
 - Perhaps the most common in Hanover are the
 - Little Brown Bat
 - Big Brown Bat, and
 - The Evening Bat

Little Brown Bat



Big Brown Bat



The Evening Bat



Bat House Placement

Houses will be occupied more frequently when installed in areas where bats already exist

More likely to locate near water and food

$\frac{1}{4}$ mile of standing water

water provides habitat for prey namely insects

Grow night-scented flowers that attract night flying insects like moths

Bat House Placement

More likely to occupy houses at least 12 feet above the ground

Like 20-30 feet of clear flight space around the bat house

Minimum human disturbance

Doesn't seem to matter if on pole or against building, but need large landing zone

Bat House Placement

Bat houses need to be exposed to sunlight at least 7 hours per day

Cover exterior of the house with dark water-based, exterior-grade paint or stain which helps trap radiant energy (like 80-100 degrees)

Avoid placing houses on tree trunks:

Exposes the house to shade

Increase vulnerability to climbing predators,

Lets look at a few predators of Bats



Bat Predators







Angela Smith (c)



© John White



Owls do not feed exclusively on bats, but are among **the chief predators** of bats due to their **nocturnal habits**. **An owl's ability to fly silently allows it to easily capture flying bats.**

Diseases of Bats



As of 2014, **white nose syndrome** is responsible for the loss of nearly 6 million bats in eastern North America since its emergence, in New York, in 2006.

The disease **disrupts bat hibernation**, causing the animals to wake too frequently and to burn critical reserves.

Additionally, the feeding structures of the fungus penetrate tissue and **make holes in bats' wings**.



Diseases Spread from Bats to Humans

Rabies is perhaps the most well known disease associated with bats.

- Along with animals such as dogs, foxes, raccoons and skunks, bats are one of the primary animals that transmit rabies.
- One to three cases in United States annually
- Last case in Virginia from dog bite while visiting India (May 2017)

Histoplasmosis is another disease associated with bats.

- an infection caused by breathing in spores of a fungus often found in bird and bat droppings.
- Often when the spores become airborne, often during cleanup or demolition projects.
- Soil contaminated by bird or bat droppings also can transmit histoplasmosis



What about Bats and Wasps?

What about Bats and Wasps

Wasps are one of most common maintenance problems in bat houses

Commonly involves mud daubers and paper or red wasps

Lets look at a few interesting facts:

Wasps

Mud Dauber Wasps

Use mud to build nests

Can fill all/most of the roosting space in house


Paper and Red Wasps

Use wood pulp and saliva to construct nest

Nest typically build at top of the roosting chambers

Bats and Wasps – Coexist?

Bats can be killed by wasp stings



When occupying same bat houses, they may segregate into separate roosting chambers

Some evidence exist that when using same chamber, bats may leave **“travel lanes”** open for wasps to come and go

Solution to the Problem of Wasp

Maintenance:

- At least **once per year clean out all wasp nest** from bat house
- Wait until bats have **left for season** or **in the evening to** clean
- Use yardstick or similar long thin object to scrape
- Make sure there are **no pups** (baby bats) present before beginning
- **Use goggles** to prevent falling debris from getting into your eyes
- Be extra **careful using ladders after dark and maintain three points of contact**

References:

Penn State Extension: A Homeowner's Guide to Northeastern Bats and Bat Problems

University of Nebraska – Lincoln Extension, Institute of Agriculture and Natural Resources; Publication G1575

Virginia Department of Game & Inland Fisheries Conserve, Connect, Protect:

<https://www.dgif.virginia.gov/wildlife/nuisance/bats/>

Bat Conservation International, Inc.



Now Let's Build That Bat House

Bat House Materials

(4) 6 – foot privacy non-pressure treated fence boards (cedar preferred but costly)

1/2" deck screws

3 – 1/2" deck screws

1/4" dowel rod (usually comes in 6' sections)- Optional

Interior metal grating material or plastic mesh (routing is possible)

1 tube acrylic black caulking

1 pint exterior latex black paint

Total Cost approximately \$25.00

Cut to Form Bat House



1- 18" for roof of house

2 - 22" sides of house

3 - 26" back of house

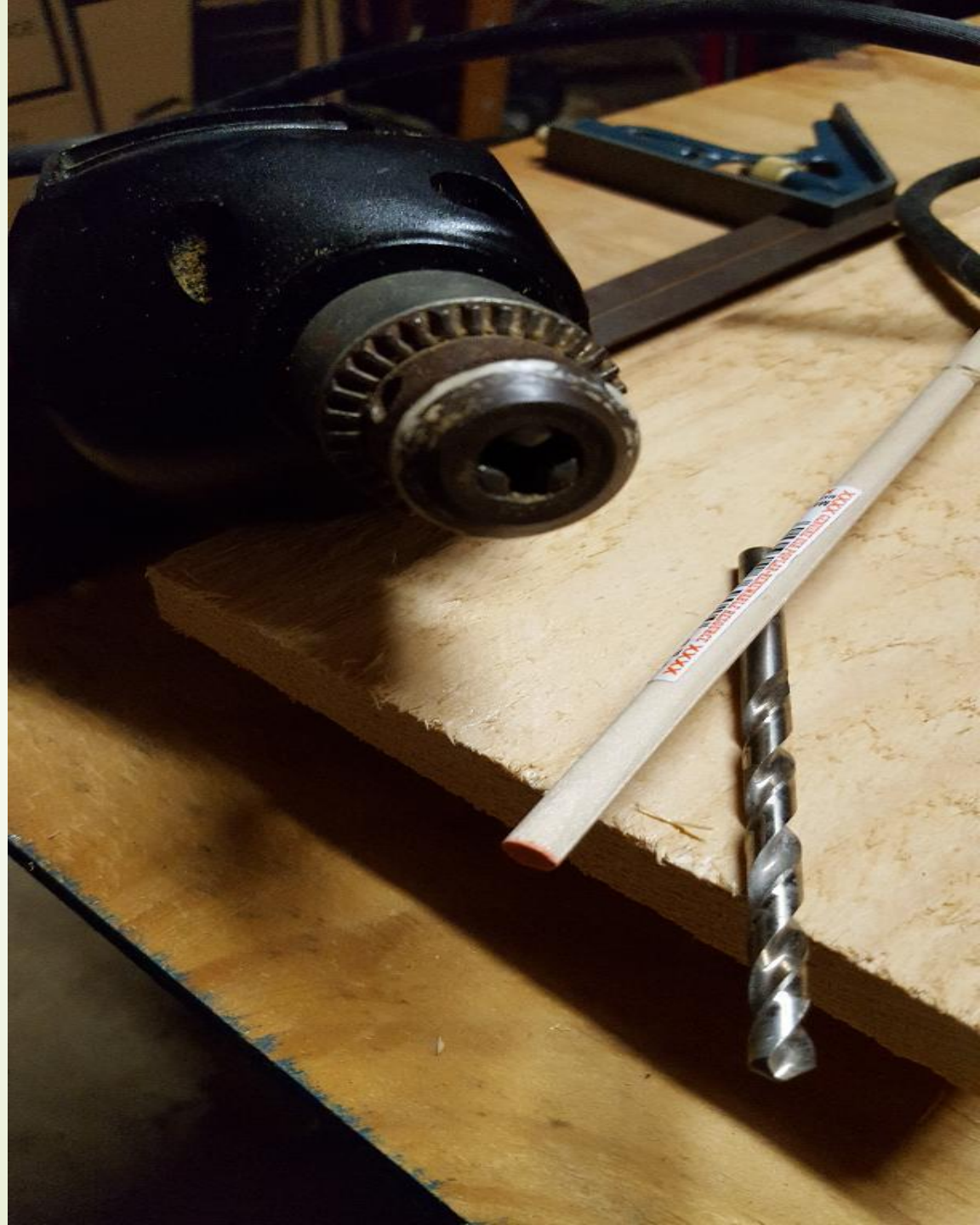
3 - 22" front of house

1 - 29" Connector Board

































Helpful Hints to Attract Bats to Your New Bat House

Ideal temperature within a bat house is 80-100 degrees

Avoid pressure treated wood

Caulking should not be within the house – apply from the outside of the house

Bats prefer dark spaces – so keep the light out

Don't forget to provide exterior ventilation to your bat house