

# Bats

(Dave Pehling)

## **Slide 1**

Now we will go to something completely different. We will talk about bats. These are in the order Chiroptera.

## **Slide 2**

Bats are not flying rodents, as many people think. They belong to a completely different taxonomic order. They are very important for our environment. They feed on a wide variety of insects. All of the Washington bats eat insects or arthropods of some sort. In other parts of the world, some bats are very important pollinators of plants. They feed on nectar and pollen. Some of course, the tropical ones, you have all heard of the vampire bats. Then there are fruit bats. Bats are a very diverse group. They are second only to the rodents in entire number of species world-wide. So, they are very diverse and very numerous. We don't notice that because (at least in Washington) they look the same and they are nocturnal, so we don't often see them up close. Washington state has many species of bats.

## **Slide 3**

Bats can cause problems, especially in the living structure. We want to keep them out of our house. They will leave a quantity of guano in their roosting areas. As you can see, it looks very much like mouse droppings. If you look up close, bat droppings have a very glittery appearance and they crush very easily into dust-like fragments of insect exoskeletons. You may find small piles of bat droppings by your front door, on your car hood, kind of odd places, places you would not expect to find rodent droppings.

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Bats do have a down side. Although they are very useful for the gardener, we need to keep in mind that bats are the carriers of rabies in most of the west. Back east, raccoons are the primary vector. In some places in the south, skunks are quite commonly the vector. But, in Washington state, bats are the only animals that are known to transmit this disease. Of course, not all bats have it. Research shows that less than one half of one percent of the bats in the population has rabies at any one time. It kills them very quickly just like it does us. Bottom line is, don't handle bats and you won't get rabies, as long as you can keep them out of your house.

## **Slide 5**

The little brown bat is probably are most common bat that invades structures and probably one of the most common around our yards and gardens.

## **Slide 6**

This is a fascinating little animal. It has a wing span of about nine inches. If it is much over nine inches, you probably have a big brown bat, which except for size looks similar.

## **Slide 7**

Little insectivorous bats are very colonial for the most part. There are a few bats that are known as tree bats that are solitary. But the little mouse eared bats in the genus *Miotus* are colonial in the summer roosts and during their winter hibernation.

## **Slide 8**

Bats can gain access through very small openings. Anything a pencil width or more they can flatten their bodies out to get inside an opening. They like to nest in cavities. These are some of the common places where they can gain access to living structures. These need to be closed up.

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This is a typical colony entrance. You can see the staining around the opening where the bats are going inside. Like rats and mice and other mammals, bats have oil on their fur, and in time they will stain areas where they are rubbing against it constantly.

## **Slide 10**

This is what an infestation inside a structure can look like. This can number from just a few bats up to a thousand or more. Of course, all of these bats are pooping and urinating in these areas. So, it can cause an odor problem after a while. In addition, bats can carry ectoparasites which can bite people. Although they prefer their natural hosts, the bat.

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We need to bat proof the structures. Any opening three eighths of an inch or more needs to be sealed up. We certainly can't do that with the bats inside. It is not nice for the bats and it will lead to an odor problem.

## **Slide 12**

Before bat proofing a structure, it is important that a population be evicted. The easiest or most efficient way to do that is by installing one way doors. These can be made out of plastic or fiberglass netting and screen, anything of that sort. It can be arranged as the image here. So, the bats come out of their opening they drop out through the open bottom. But, when they come back, they don't know to crawl underneath the screen and crawl up the side of the building. So, this is a very efficient way of evicting bats.

## **Slide 13**

In places where the bird netting doesn't work, you can easily make a one way bat slide out of PVC pipe and plastic, as in the image here. This allows the bats to escape the

building, but they are not able to climb back up that slippery plastic.

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Once the bats are evicted, if there are any odor problems, deodorants applied as space sprays can help reduce the problem. Of course, if there are quantities of guano in the attic, that should be removed and put in the garden.

#### **Slide 15**

Other methods of getting bats out of structures can be used. There are a couple of registered materials. Naphthalene is the active ingredient in one bat repellent that is registered for Washington state. These may be effective for confined areas. It is not the best way to deal with a bat infestation. Once this material evaporates, the bats will move right back in. It may be effective for getting bats out of a structure initially, but then the structure still needs to be bat proofed.

#### **Slide 16**

There are many electronic repellers on the market that claim to be effective for evicting bats. According to the literature I have read, I have found none effective for this use.

#### **Slide 17**

Let's keep in mind that bats are very useful for the garden. They feed strictly on insects, at least our western Washington species. They feed on a wide variety of night flying moths. They will eat mosquitoes. Little brown bats have been registered as having been able to collect up to 600 mosquitoes an hour under laboratory situations. Out in the wild they probably prefer juicier preys such as night flying moths, corn earworm moths, and other insects. So, we need to keep these guys around.

#### **Slide 18**

When talking to clients who need to evict bats, I suggest that they put up a bat house nearby. This is good for a couple of reasons. First of all, since they are evicting the bats from the house, having a ready abode for them to move into, may make them less likely to look for another opening to get back into the house.

#### **Slide 19**

This is one of the simpler bat houses you can build. These are also available to buy from some garden stores. This is the Bat Conservation International beginner bat box model, a very simple single cavity bat box.

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But, even something as simple as this can afford harborage for bats. This is actually a predator guard to keep raccoons and other animals out of a wood duck nest above. This particularly structure had a little colony of little brown bats underneath it. I could see

putting something like this in a back acre if you live out in the country. Bat boxes and structures like this should be at least 12 feet off the ground; higher is better. They need to be in full sun or as much as possible, or at least four hours of sunlight every day. They should be a dark color so they absorb a lot of sunlight because bats like it very warm. If the structure happens to be within a quarter mile of a fresh body of water, there is a very good chance bats will move in. As far as I know, there is no way to attract bats to an area where they are not already hanging about.