

## Report to the Boards of Health

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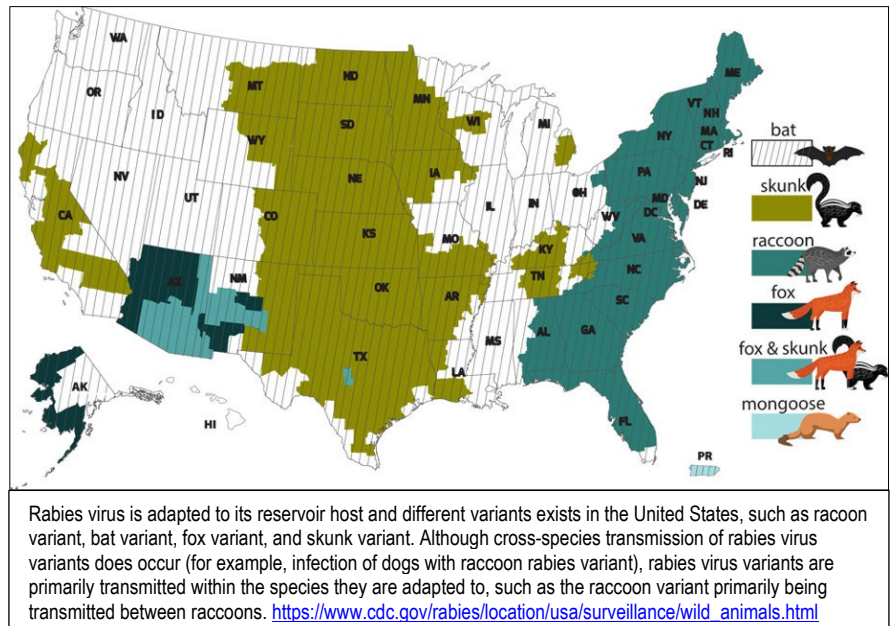
Mid-Michigan District Health Department, Wednesday, August 23, 2023  
Central Michigan District Health Department, Wednesday, August 23, 2023  
District Health Department 10, Friday, August 25, 2023



### Animal Bites and Rabies

Animal bites are very common in the United States, accounting for about 1% of all emergency department visits each year. Almost nine out of ten animal bites are from dogs, and most of the victims are children. People often know the dog that bites them. Dog bites rarely cause death, but can cause a lot of trauma, damage, and scarring. Cat bites account for most of the remaining animal bites. About 2% to 3% of bites are by rodents, most often rats. Other bites are from livestock, other types of pets, and wildlife. Some animal bites, like those from a bat, may not even be noticed. Wounded animals or abandoned young may look harmless and in need of help but are always a risk of biting. Interacting with wildlife in any way is harmful to us and is a risk to wildlife.

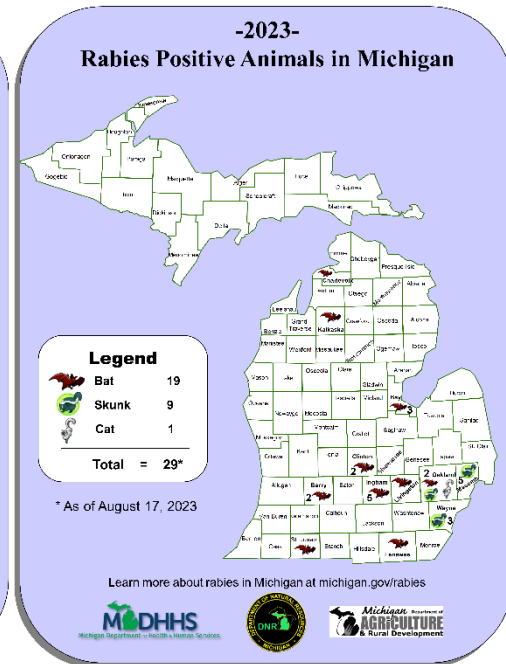
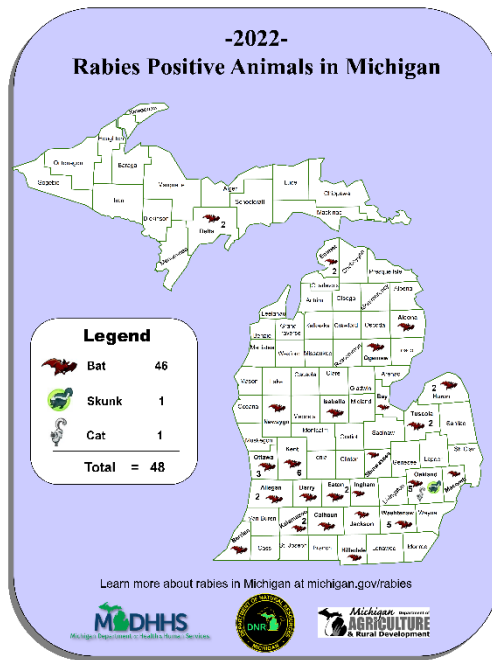
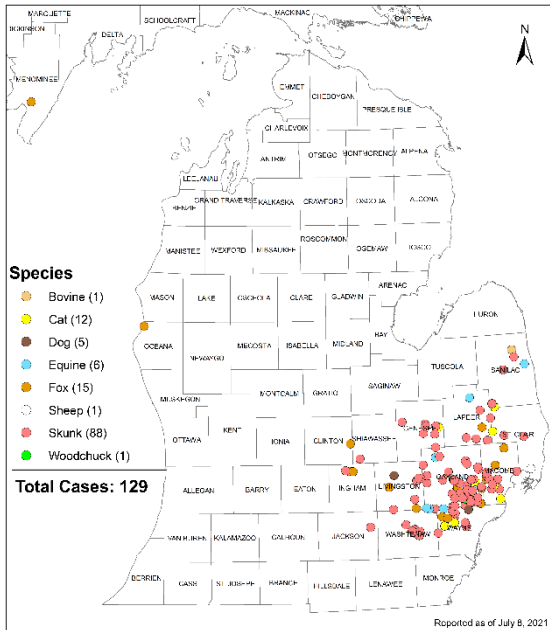
Rabies is likely the most feared consequence of an animal bite. Rabies is caused by a virus that can probably infect all mammals, but only a small number of animals are reservoir hosts, meaning they are normal carriers of the virus. There are different strains or variants of rabies found in the different reservoir hosts. In the United States, we have distinct strains or variants of rabies in bats, raccoons, skunks, foxes, and mongooses. Dog rabies used to be common until the US, however aggressive dog vaccination programs have helped, and the U.S. was declared free of dog rabies in 2007. Around 60 to 70 dogs and more than 250 cats are reported rabid each year in the U.S., but this is due to contact with wildlife. There is a higher chance of rabies in cats in the U.S. as rabies vaccination is not usually mandated in cats as it is in dogs and cats are often outside and exposed to wildlife. Small numbers of cattle, horses, donkeys, and other livestock are reported with rabies, and they are infected with rabies from wild animals. In many other parts of the world, rabies in dogs is still common due to a lack of resources for vaccination. In parts of the world where resources are poor, stray dog bites cause close to 60,000 human rabies deaths a year.



Bats carry rabies in all parts of the United States, other than Hawaii, and are the main cause of rabies deaths in people in the U.S. While most bats don't have rabies, you don't know which ones have it unless they are tested by a special lab. Any direct contact with a bat could be a risk for rabies. This could happen while you are sleeping. If you ever wake to find a bat in your bedroom or see a bat in the bedroom of someone unable to tell you if it woke them up, like a small child, you must assume there was contact with the bat. If there has or could have been any direct contact with a bat, try to safely catch the bat then contact your health department to have it tested for rabies. This helps decide if preventative treatment for rabies is needed. More information about rabies in bats is

available here <https://www.cdc.gov/rabies/animals/bats/index.html> and a video of how to catch a bat here <https://www.youtube.com/watch?v=YhnV5WJQBA>

Terrestrial Animal Rabies Cases in Michigan: 2003 - Present



For more information please visit:  
[www.michigan.gov/rabies](http://www.michigan.gov/rabies)  
or  
[www.cdc.gov/rabies](http://www.cdc.gov/rabies)

Rabies is spread in the saliva or brain matter of an infected animal. It most commonly spreads from the bite of an infected animal. After being bitten, the virus gets into a muscle and starts to multiply. It then travels along a nerve until getting to the brain, where it multiplies further. Depending on how far the bite is from the brain, this process can take weeks to months. Within a few days of getting to the brain, enough damage is done to cause symptoms. Soon after the virus reaches the brain and before symptoms start, the infected mammal will start shedding the rabies virus in their saliva. In humans, if antibodies and vaccination can be given after a bite and can stop the virus before it reaches the brain, rabies disease and death can be prevented.

**What are the signs of Rabies in animals?**

Signs may vary based on the type of animal infected and the stage of the disease.

- Aggression or confusion:** animal may attack or bite anything that comes near.
- Abnormal behaviour:** e.g. bats thrash around on the ground; wild animals appear tame or unafraid to approach humans.
- Voice change:** e.g. change in the pitch and tone of a dog's bark or howl.
- Excessive drooling** and the animal may stop eating and drinking (cannot swallow).
- Paralysis** or difficulty walking.

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**What are the signs of Rabies in humans?**

It usually takes 1 to 3 months for signs to develop after exposure.

**Typical symptoms include:**

- Fever, pain or unexplained tingling, pricking or burning sensation at the bite or scratch site.
- Muscle paralysis or hyperactivity depending on the form of the disease.
- Difficulty swallowing or hydrophobia (fear of water).

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Tetanus, or "lockjaw" is another concerning consequence from an animal bite. It is caused from a toxin made by a bacteria called *Clostridium tetani*. This bacteria lives in the dirt, dust, and animal droppings. Any break in the skin that wasn't clean could lead to tetanus. The symptoms of tetanus start around a week after being exposed but could range from 3 to 21 days. The first sign is usually spasms and cramps of the jaw muscles, and then include sudden muscle spasms (often in the stomach), painful muscle stiffness all over the body, trouble swallowing,

seizures, headache, fever, sweating, and changes in blood pressure and heart rate. More serious symptoms can include muscle spasms so hard they cause broken bones and blood clots, spasms of the vocal cords, and difficulty breathing which can lead to pneumonia. Tetanus can lead to death in about 1 to 2 in 10 cases.

Tetanus can be prevented by keeping up to date on vaccinations. For those not up to date on vaccination or too young to be vaccinated, there is an immunoglobulin (antibody) that can be given. However, most injuries at risk for tetanus are minor and don't get seen by a healthcare provider, so this type of treatment after injury wouldn't be given.

Infections from bacteria are the most common complication of animal bites. About 20% of dog bites and 50% of cat bites become infected. When infected bites are tested, there are an average of five different types of bacteria present. Signs of infection usually show up around 24 hours after a dog bite and 12 hours after a cat bite. The infections can be in the skin or can be deeper in the muscle, tendons, and bone. Most times bites cannot be closed (sutured or sewn shut) as this will increase the risk of infection. People with a poor immune system, like those with diabetes or on medication weakening the immune system, are at higher risk for infections. Bites on the hand or foot, those causing crush injury or puncture wound, and cat bites are at higher risk for infection.

#### Resources:

- Tips about handling wild animal issues <https://www.dfwwildlife.org/> (Note: based out of Texas, still a source of good information)
- Dog bite prevention [https://www.cfsph.iastate.edu/Zoonoses\\_Textbook/Assets/dog\\_bite\\_prevention.pdf](https://www.cfsph.iastate.edu/Zoonoses_Textbook/Assets/dog_bite_prevention.pdf)
- Risks to people from wildlife AND wildlife from people <https://www.nps.gov/subjects/watchingwildlife/smart.htm>
- Harms of feeding wildlife <https://www.fws.gov/story/hidden-harm-feeding-your-local-wildlife>
  - Can Baiting and Feeding Deer Really Spread Disease Faster? <https://deerassociation.com/can-baiting-and-feeding-really-spread-deer-diseases-faster/>
- To feed or not feed wild birds <https://www.fws.gov/story/feed-or-not-feed-wild-birds>
- Animal Behavior and Restraint for companion animals and livestock (during health emergencies) <https://www.cfsph.iastate.edu/emergency-response/just-in-time-training/>

#### Recommendations:

1. Avoid wild animals. Use care when handling dead animals. Keep trash secured so animals aren't attracted around the home.
2. If you find an injured animal or baby animal, do not touch, move, or feed it. Contact a licensed rehabilitator right away. Michigan's licensed animal rehabilitators are listed with the DNR <https://www2.dnr.state.mi.us/dlr/>. (Note: the first bullet above has good tips as well)
3. Bats are very beneficial to us and our environment but about 1 in 100 have rabies. Avoid direct contact with them. If you do have direct contact with a bat, or awake to one in your bedroom, try to safely catch it and call your health department. See <https://www.cdc.gov/rabies/animals/bats/index.html> for more information.
4. If bitten or scratched by a dog, cat, or other animal in a foreign country, get medical attention right away, or as soon as you get home as there may be a higher risk for rabies. You can search your destination country to see if rabies, or any other health issue, is a concern here: <https://wwwnc.cdc.gov/travel/>.

#### Sources

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