



Mange in Red Fox



A fox shedding its winter coat. (Photo by Backyard Biology)

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As humans, seeing an animal that appears to be sick or injured triggers our natural instinct to want to help. While our intentions are good, we need to determine if intervention is necessary. The Wisconsin Department of Natural Resources ([WDNR](#)) provides information on species-specific natural behaviors and how to assess if an animal may be sick, injured, or potentially orphaned.

What is normal?

Full or partial hair loss on a fox may be caused by a variety of conditions, including a fungal or bacterial skin infection, genetic or metabolic issues, or external parasites such as mites, lice, fleas, or ticks. If it is spring or early summer, a fox may simply be shedding its winter coat. When the weather warms up, mammals shed their heavy winter coat for a thinner summer coat. The animal might appear shaggy with some clumps of long fur still

attached, but the rest of its body should be covered in short fur. This is a natural process and does not require human intervention.

Parasitic hair loss may require human intervention. This factsheet covers one parasitic cause of hair loss: **mange in red fox** (*Vulpes vulpes*).

What is mange?

Mange is a type of skin disease caused by parasitic mites that burrow under the skin. Hair loss is a typical physical symptom. Depending on the time of year and disease severity, animals with mange may not be able to recover without care from a licensed wildlife rehabilitator along with their sponsoring veterinarian(s) who can diagnose the disease and prescribe medications to treat it. There are two major forms of mange that affect the coat of wild canids: demodectic mange and sarcoptic mange.

Demodectic mange, also known as red mange or demodex, is caused by the *Demodex canis* mite. This mite is a normal inhabitant of the skin and passes from mother to her young. In healthy animals, this mite is harmless. However, when the host's immune system is weak, demodex mites can cause skin inflammation and hair loss.

Sarcoptic mange, also known as canine scabies, is caused by the *Sarcoptes scabiei* var. *canis* mite. Sarcoptic mange is the most commonly diagnosed type of mange in red foxes and is highly contagious. A red fox with mange can infect other foxes by direct fox-to-fox contact or indirectly by sharing a den, food, or water resources. When the red fox population is high, chances of transmission can increase; thus, mange is more common in red foxes inhabiting urban areas compared to rural ones because red fox densities tend to be higher in cities.

Mange or "mangy" is commonly used to describe any animal with hair loss and apparently itchy skin. However, a diagnosis of mange cannot be made by visual inspection alone. Microscopic examination of skin scrapes and possibly skin biopsies are necessary to identify mite presence and species. While sarcoptic mange is often reported in canids, it's important to confirm that the actual condition seen is mange.

In Wisconsin, red foxes, coyotes (*Canis latrans*), and wolves (*Canis lupus*) have been documented with mange. Although uncommon, it can be transmitted between wildlife, humans, and domestic animals, such as dogs and cats. To reduce the risk of transmission to companion animals, keep your cat inside, keep your dog on a leash or in a fenced yard, and keep your pets up-to-date with preventative medications (e.g., flea and tick control). Eliminating attractants like open trash containers and pet food left outside will reduce the incentive for wildlife to come into your yard. If a red fox with perceived mange is in your yard, it is unlikely you, your pets, or children will contract mange unless you come in direct contact with the fox.

What can mange look like in foxes?

Mange concentration usually starts on the ears, elbows, hocks, and base of the tail. You may see small, scabby wounds on areas where hair loss has occurred. Untreated, mange can spread to shoulders, flanks, and

back. The hair becomes patchy, and the exposed skin can become visibly darker, appear thicker, and be wrinkled with crust and scabs. As mange progresses, it may cause hair loss on nearly the entire body. The skin can become fully darkened, thickened, and discolored to slate gray. Sometimes it's so severe that the animal has difficulty seeing and hearing due to the crust on its eyelids and ears. Because a fox with mange may be emaciated and weak, it may come in closer proximity to humans than healthy foxes in search of food and shelter.



Foxes showing hair loss and wounds due to sarcoptic mange. (Photos from Dane County Humane Society's Wildlife Center)

Why can't I help the fox myself?

In Wisconsin, it is illegal to take, possess, or rehabilitate wild animals without proper licensing or approval. Wild animals cannot be taken to keep as pets, and should not be viewed, fed, or treated as such. Temporary possession laws allow an unlicensed individual up to 24 hours to transport a sick or injured wild animal to a licensed wildlife rehabilitator for care. In addition, there are other factors to consider to protect the health and safety of wild animals and humans.

Wild animals have specific needs and concerns that are not easily met or managed in captivity without the help of a professional. Red foxes and other wild animals can carry parasites (fleas, lice, ticks) and diseases that can infect humans and/or domestic animals. Licensed wildlife rehabilitation facilities have required protocols and use personal protective gear when caring for wildlife to prevent the spread of disease and protect human and wildlife health. In addition, wild animals have specialized dietary needs that, if not met, can cause severe nutritional deficiencies that they may not be able to recover from. Lastly, inappropriate captivity and constant exposure to human existence can cause stress for wild animals and lead to further health problems, and it can encourage unnatural behaviors that would diminish their ability to survive in the wild if released.

It is illegal to treat a red fox with perceived mange in the wild by leaving medicated food outside. Attempting to treat a wild animal without an examination and diagnosis by a licensed professional not only puts that animal at risk from inappropriate treatment but also other wildlife, domestic animals, or humans who might consume the medicated food and get poisoned or even killed. Medications frequently used for mange treatment are not labeled for use in foxes and are against state and federal law without the lawful order of a licensed veterinarian within the context of a valid veterinarian-client-patient relationship. Additionally, veterinarians prescribe medication based on many factors, including the size/weight and species being treated, administration route, dose, and frequency required for a drug to be effective. Lastly, foxes with mange may require specialized medical care, as they often have concurrent conditions such as severe emaciation, anemia, pressure sores, and more.

How should mange be treated?

Foxes with a strong immune system may naturally recover from mange; however, if the infection is too severe, and depending on the time of year (e.g., winter), the fox may not recover if it does not receive rehabilitative care.

Licensed fox rehabilitators at an inspected and approved facility treat red fox with mange with an anti-parasitic medication. Effective treatment requires the use of a combination of drugs that impair the mites. Depending on the severity of mange and other potential infections, other drugs may need to be added such as a broad-spectrum antibiotic, anti-inflammatories, and pain medications. At the rehabilitation facility, the fox would also be provided with a balanced and species-appropriate diet to aid in its recovery.

While treatment may be beneficial to some red fox who have severe mange, there are a subset that may become re-infected.

How can I help?

If you see a red fox that appears to have mange, please contact a wildlife rehabilitator licensed for fox in your area for advice and to see if they have the capacity to accept and treat the animal. The [WDNR](#) maintains a Wildlife Rehabilitator Directory on their website, keyword search "wildlife rehabilitation."

Before trapping

If a wildlife rehabilitation facility is able to admit the fox, they probably cannot come out and capture or transport the animal due to limited personnel and resources. In addition, the WDNR and other agencies and organizations are unable to assist with capture and transport to a licensed wildlife rehabilitator. Therefore, we want to provide information that will enable you to safely and legally live trap and transport a red fox to a licensed facility that can provide rehabilitative care. Do not trap a fox before ensuring a licensed wildlife rehabilitator can accept it for care and you have a proper plan in place to transport the fox.

You can legally set a live trap on property you own or occupy with landowner permission to capture a red fox without a trapping license and outside of fox trapping season if you follow all local and municipal regulations. Always check local ordinances to ensure there are no additional regulations set by local law enforcement for trapping in your area. When trapping under nuisance wildlife regulations outside of an open trapping season, it is illegal to set a trap on property you don't own or occupy, including public property, without the property owner or manager's written permission and a valid Wisconsin trapping license. Alternatively, you could hire or ask someone else to trap the fox on your property on your behalf, but this person must have written permission and a current Wisconsin trapping license. The [Wisconsin Trappers Association](#) provides a list of licensed trappers who may be willing to live trap a red fox in need of rehabilitation. In many cases, they charge a fee for trapping assistance. If the fox is live-trapped, it cannot be released on DNR-managed public property, and you will need permission from the landowner or

manager to relocate it to private property or property owned by another entity (e.g., county land). Wisconsin trapping regulations for nuisance fox can be found on the [WDNR](#) website, keyword search "nuisance."

Once you have ensured a licensed fox rehabilitator can accept it for care and you follow all applicable regulations and ordinances, you can trap red foxes using a box (or cage) trap to ensure humane capture. A box trap is a rectangular box made from galvanized wire mesh. It should have a single door with a trigger mechanism that closes the door when the fox steps on a treadle as it approaches bait placed in the back of the trap. The trap size should allow an adult fox to fit comfortably. The recommended size is at least 42 inches long, 15 inches wide, and 15 inches high.

Box traps can be purchased at outdoor sporting goods stores, agricultural supply stores, home improvement stores or online. Rental options may be available at the stores or online.



The anatomy of a box trap. (Photo by Stephen M. Vantassel)

Trapping

Where, when, and how

The trap should be set in a part of your yard where you typically see the fox and where you can easily check the trap without having to go near it. It should be set near natural cover like trees or shrubs, or where the fox can move without interacting with your pets or children playing in the yard. If possible, keep the trap as out of view as possible to minimize human activity that could cause additional stress to an animal in the trap or negative reactions from individuals who may not know why the trap is placed. Regardless of where you set the trap, it should be on relatively level ground and stable so it doesn't lean or rock when an animal enters. Additionally, animals don't like placing their paws on the wire mesh floor of the trap, so line the trap floor with natural vegetation like leaves or grass. However, ensure the bedding material doesn't get under the treadle. If the treadle can't be pressed down far enough as the animal steps on it, the trap door may not shut.

Baiting the trap will increase the opportunity to capture an animal, especially if it is food motivated because it is not feeling well and may be malnourished. Do not use pet foods as bait (e.g., wet cat food) because they attract domestic animals and non-target wildlife. Odor-based baits (e.g., skunk scent) may be effective, but food-based baits will likely be more effective. Baits like sardines, chicken livers, or other meat baits that carry a scent will entice the fox to investigate the trap. You may want to leave bait near the trap entrance on the first day. Once the bait has been eaten consistently, place it in the back of the trap so the fox must step on the treadle to reach it and subsequently close the door of the trap. There is no need to add a bowl of water in the trap.

From late February through the end of summer, foxes are likely to be raising their young. If you trap a fox during these months, you may separate one of the parents from the young. Consultation during these months with the WDNR or a licensed wildlife rehabilitator should be undertaken prior to any trapping activity. Although urban foxes tend to be nocturnal, they may be active during the day as they search for food and shelter. Therefore, the trap should remain open at all times.

If you are trapping during cold weather months, you may want to set the trap where it's sheltered from the wind, and add straw, hay, or an old blanket in the trap to provide some thermal cover. Remember that these items can all harbor mites and mite eggs and should not be left or reused following a successful trapping event. Similarly, during hot weather months, you may need to provide shade if you're not able to check the trap frequently during the sunny times of the day. Simply place an old blanket or towel over the top of the trap or place the trap under the canopy of a tree. Alternatively, you can cover the trap with leaves, light branches, or sticks to make it appear more natural and hidden.

Per WDNR trapping regulations, you must check the trap at least once every 24 hours. However, checking the trap more regularly within that period will reduce the amount of time an animal needs to remain in the trap.

Once you trap a red fox

Once the fox is trapped, cover the box trap with a large towel, bedsheet, or tarp to reduce stress for the animal. Contact the same wildlife rehabilitator you called prior to trapping and make arrangements to drop off the trapped fox as soon as possible. Keeping a red fox captive for over 24 hours without appropriate authorization is illegal in Wisconsin.

Wear thick leather or kevlar gloves for safety. Although some traps have a metal plate by the handle to prevent animals from scratching and biting you, it's always wise to keep your hands well out of the fox's reach. Keep children and pets away from the box trap and the fox. To minimize the possibility of disease transmission and for cleanliness, cover the seat and floor of your vehicle with a tarp or plastic trash bag before placing the trap and fox in your vehicle. If you are unable to transport the animal yourself, ask the licensed wildlife rehabilitator prior to attempting to trap if they know of any transportation resources. Wildlife should not be trapped without a transportation plan in place prior to setting the trap.

After transporting the fox to the rehabilitation facility, wash the trap and anything that came in contact with the trap and fox. Thoroughly wash and disinfect the tarp and trap with a bleach solution (1 part bleach: 9 parts water, left on the trap for 20 minutes) before using again. Any towels, blankets, or other cloth material that came in contact with the fox should be disposed of rather than washed.

Releasing non-target animals

Note: This section uses skunks as an example because they can be a common non-target species caught in box traps.

If you catch a non-target animal, you must release it at the trap site. You cannot release live-trapped wildlife on DNR-managed public property, and you will need permission from the landowner or manager to relocate it to private property or property owned by another entity (e.g., county land).

To release the non-target animal in a manner safe for both you and the animal, pin the animal to the back of the trap by placing steel rods (e.g. rebar), a pitchfork, or sticks through the mesh behind the door. Make sure you can operate the trap door beyond the animal's reach.

Open the door. You can put a stick under the door or secure the door to the top of the cage using a metal carabiner to keep it open. Make sure it opens toward a clear escape route, and no people or pets are in the way. Retreat behind the trap and carefully remove the rods or sticks to give the animal free space to leave.

The animal may not leave the trap at first. If that is the case, let the trap door remain open and move away from the trap. The animal will leave in a relatively short period of time. Make sure people and pets avoid the site until the animal leaves.

If a skunk is accidentally caught, you should avoid any sudden movements, make sure it sees you, approach slowly, and use a tarp or towel to cover the trap. Covering the trap will help the animal relax and create protection between you and the skunk if it does spray. Skunks may thump their front feet as a warning sign prior to spraying. If you hear pounding sounds when you approach, slow down or stop until the skunk calms down. As with other non-target animals, use sticks or similar items to pin the skunk near the back of the trap, open the door, remove the barrier, pick up the tarp or towel and hold it in front of you, and slowly back away from the trap.



Pin the animal to the back of the trap using sticks or something similar. (Photo by David Drake)



Open the door before removing the sticks that block the animal. (Photo by David Drake)



If it's a skunk, cover the trap to calm it and prevent spraying. (Photo by David Drake)

Summary

Mange is a parasitic disease that can be associated with hair loss and a series of related skin conditions in red foxes. While some foxes can recover from it, severe cases could benefit from appropriate rehabilitative care. If you suspect a fox has mange, do not attempt to take care of it yourself; instead, contact a wildlife rehabilitator licensed to treat fox for guidance.

If trapping is undertaken, follow all applicable regulations and humane trapping practices. Trapping regulations can be found on the [WDNR](#) website, keyword search "trapping regulations." Ensure the trap is checked regularly, release non-target animals, and arrange for admittance/transportation to the licensed wildlife rehabilitator before the fox is trapped. Always pay attention to safety and hygiene during and after the trapping process. While you can contact the rehabilitator for updates, wildlife rehabilitators are often extremely busy with intakes, care, and phone calls. Please be patient while waiting for a response and consider contacting a local wildlife rehabilitator to learn about opportunities to help their organization.

Your careful actions can make a real difference in protecting the health and well-being of the foxes in your area and build healthy coexistence with our wildlife neighbors.

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