

Mange in Wildlife: Identification and Implications for Human and Animal Health

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Mange, also known as scabies, is a debilitating disease that affects a variety of animals. This disease (classified as sarcoptic or demodectic) is common and highly contagious. In canines it is caused by the mites, *Sarcoptes scabiei* and *Demodex canis*, respectively. These mites burrow into the skin to lay their eggs which causes skin irritation and hair loss (**alopecia**). Depending on the animal's ability to resist these symptoms, the condition can become chronic, leading to changes in behavior or even death.

Effects on the animal

The symptoms of mange are relatively easy to spot in the field, but not definitive for diagnosis. Common symptoms include: intense itching, skin rash, **alopecia**, and crusting of the skin. Severely infected animals (Image 1) may lose all of their hair, and exhibit a loss of body condition. This level of infestation is typically the result of the immune system's inability to deal with such a large numbers of mites, so the general health of the animal may be poor.

Influence on behavior

In stories and folktales, a creature known as a Chupacabra preys on goats and other small livestock. In most cases, reported losses to Chupacabra



Juvenile coyote in an urban setting suffering from mange. Coyotes in this condition pose a health risk to humans and pets. Source: USDA

predation occur when animals are confined in pens or corrals. It is possible that this folklore has its basis in animal behavior caused by mange. A predatory animal that is disabled or debilitated must seek out easier prey because wild prey is typically agile and wary. The chupacabra phenomenon is consistent with predation by a sick animal, such as a coyote with mange.

Estimating the severity of the infection

If you see a wild animal that you suspect has mange or another skin disease, it is important to assess the severity of the condition before calling on

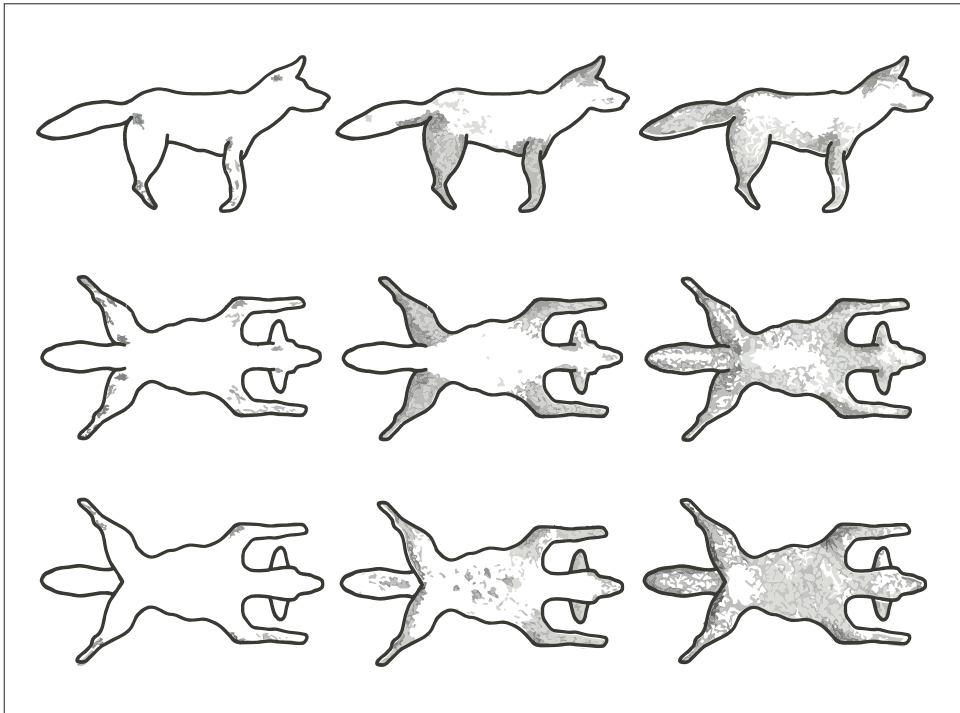


Figure 1. The progression of mange from Class 1 to Class 3 (from left to right) on the various surfaces of the animal using side, top, and bottom views.

usually becomes patchy, and exposed skin visibly darkens and thickens. The back of the head, ears, and muzzle are usually affected, but the body still has more than 50 percent hair coverage.

Class III:

At this stage, nearly all the body is hairless, except along the spine, comprising most of the *ruff*. Lesions may be notable and scaly, and the skin is fully darkened and appears very thick.

Ungulates

wildlife experts. The guidelines below discuss the progression of the disease in terms of areas on the body covered with lesions. These are separated into two general categories: Dog- or cat-like animals (canids/felids) and hoofed animals (ungulates). Primary research has addressed the progression in several species (especially coyotes in Texas), though not all will fit this pattern. The classes outlined and diagrammed below, should provide first steps in understanding mange progression.

Canid/felid:

Class I:

This stage presents small, scabby wounds on the forelimbs, hind limbs, and perhaps the top of the pelvis. Hair may or may not be lost. Lesions on the elbows, hocks, or base of the tail are the most pronounced.

Class II:

The lesions described above are established in their regions, and expand to the flanks, shoulders, and back. Hair

Class I:

Lesions appear on face, front shoulders, and lower legs. Lesions may look crusty, and the skin may be slightly thickened and dark.

Class II:

Lesions expand to include ears, nostrils, and various parts of the body. Essentially everything from the shoulder forward, including neck and ears is affected. Lesions become worse, hair loss occurs, and skin noticeably thickens and darkens.

Class III:

At this stage, lesions expand to areas from mid back through the rump, and down all legs. A small area of the underside and upper back of the animal

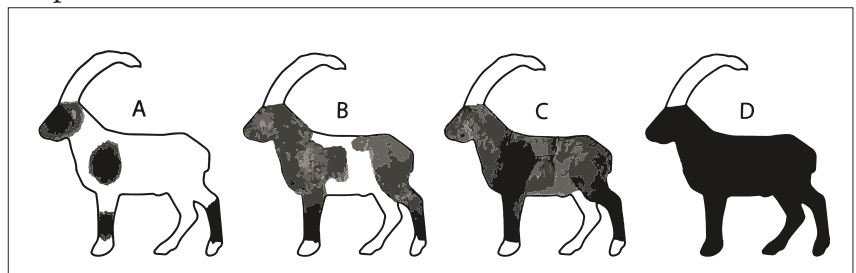


Figure 2. Classes of mange progression in ungulates, left to right.

is unaffected. Conditions worsen on front half of affected animal, and skin noticeably darkens and thickens. Hair loss is conspicuous.

Class IV:

At this stage the condition is considered chronic. All areas of the body are affected, with hair loss on most or all of the body. Skin is dark and scaly, and crusty, open wounds are likely conspicuous.



Deer with severe mange. Source: Washington Department of Fish and Wildlife

What to do if you see an animal like this:

For people who see an animal like this, the most natural reactions are disgust or to humanely dispatch the animal. These are natural reactions, but we need to consider our actions carefully and go a step further.

First, look closely to determine if the animal is possibly someone's pet with mange. Next, call your local Texas Parks and Wildlife Game Warden or Wildlife Biologist. They may direct you to take the animal, or ask access to where it was spotted.

Most importantly, if you see a wild animal with mange-like symptoms, keep an eye on your domestic animals that may be susceptible. There are no known preventative measures for mange, so it

would be wise to consider bathing working dogs and companion animals etc., with and **acaricide** if mange is common where you live. At the first sign of mange, consult with a licensed veterinarian.

It is possible for humans to contract mange, which often leads to scaly skin and red-purple rashes on the arms, chest, and neck. This condition, however, usually clears up once any symptomatic animal is removed.

If you are experiencing livestock losses due to infected animals as described above, contact a wildlife biologist or wildlife damage specialist, such as those working for Texas Wildlife Services. Identification of infested animals based on sign and feeding on carcasses is essential before taking any wildlife damage management action. If you have the carcass of an infected animal, contact a licensed veterinarian for advice on how to proceed.

El Chupacabra

A figure in Latin American lore that has been said to prey on livestock and pets for decades, the chupacabra is a creature that has experienced a resurgence in recent years. News reports and land-owner sightings of these creatures occur on a fairly regular basis. In reality, these reports typically refer to wildlife infected with mange.

The chupacabra is most commonly described as a creature with grey, scaly skin, a raised ridge on its back, and viscous teeth. These descriptions can match several wild animals with severe cases of mange. Most often these are coyotes (*Canis latrans*), or rarely, raccoons (*Procyon lotor*) with severe cases of this disease. The characteristic raised ridge is often the remnant guard hairs of the **ruff**, and grey is the natural color of coyote skin. Thorough examinations of dentition and other anatomical traits confirm these are the animal species being sighted.

It is critical to understand that infected animals such as these, should be regarded cautiously—they are a danger to human health and safety.



Gray squirrel with moderate mange. Source: Arkive

Can I eat game animals with mange?

Common sense rules apply to the harvest, handling, and consumption of any wildlife showing signs of disease.

Mange is extremely rare in most game animals. Although documented at high levels in several African antelopes, it is usually most prevalent in wildlife that is rarely consumed (canines, big cats, etc.). Hunters often suspect mange in deer when their coat shows hair loss or appears odd. Deer mange (demodectic) is not a threat to humans; however, small game hunters that consume squirrels may encounter sarcoptic mange, a type that can transfer with contact. Consuming meat from animals with severe infestations can cause secondary bacterial infections.

Generally, hunters should avoid harvesting and consuming animals that are visibly infected with any disease. While harvest may occur out of concern for animal welfare or a desire to have the animal tested by a state laboratory, handling the animal should be minimal, and consumption

avoided.

Glossary

Acaricides: Substances that are poisonous to mites or ticks.

Alopecia: The chronic loss of hair in mammals as a result of an allergic reaction or disease that affects the skin and hair coat.

Mange: A condition produced by a number of parasitic mites that burrow into skin and feed on the subcutaneous fluids of mammals—also commonly known as scabies.

Ruff: A projecting or conspicuously colored ring of feathers or hair around the neck of a bird or mammal.

Resources

Texas Animal Health Commission

Tahc.state.tx.us

Texas Parks and Wildlife Department

tpwd.texas.gov

Texas Veterinary Medical Association

tvma.azurewebsites.net

Texas A&M AgriLife Extension Service

agrilifeextension.tamu.edu

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