Sarcoptic Mange

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CAUSE

Sarcoptic mange is an infectious skin disease caused by the mite *Sarcoptes scabiei*, which burrows deep into the skin. Different mites can cause other types of mange, for example demodectic mange (*Demodex* spp. mites) and notoedric mange (*Notoedres* spp. mites).

DISEASE SIGNIFICANCE

Sarcoptic mange is the most common disease diagnosed in red foxes in the southeastern United States and likely causes significant mortality in this species. The disease does not appear to have significant impacts on gray foxes. Sarcoptic mange is also common in coyotes and has increasingly impacted black bears in the mid-Atlantic and northeastern regions of the US.

HOST SPECIES

Sarcoptic mange can affect all wild and domestic mammals, especially canids. In the United States, it particularly impacts red foxes, wolves, coyotes, and American black bears.

GEOGRAPHICAL DISTRIBUTION

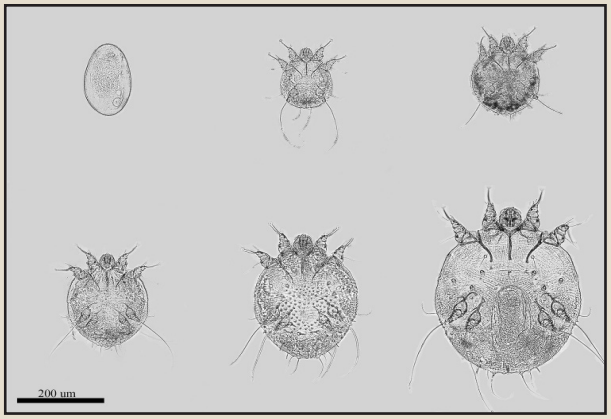
Sarcoptic mange occurs in wildlife in Europe, Australia, Africa, and Asia, as well as North America. In North America, reports of mange in red foxes are primarily limited to the eastern US and studies show that foxes in urban settings are more likely to develop disease and die, compared to rural populations. Coyotes with sarcoptic mange have been reported across the continental US. Sarcoptic mange has been reported in wolves in the midwestern United States and the northern Rocky Mountains, and in black bears in numerous states in the eastern and central US.

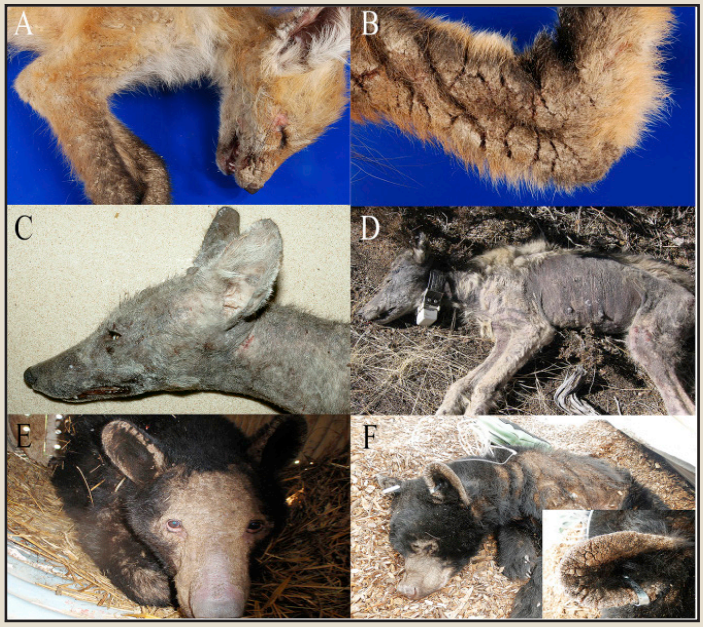
TRANSMISSION

Female mites lay eggs in the surface layer of the skin, then the eggs hatch and produce larvae that molt to the adult stage. Animals become infested through contact with other animals or with contaminated environmental areas, such as dens or burrows, where free-living mites can survive under certain circumstances.

FIELD SIGNS

Animals with sarcoptic mange typically show varying degrees of hair loss, flaky material in the fur, and thickening, wrinkling, and crusting of the skin on the head, trunk, and limbs. Animals spend much of their time scratching, chewing, or licking the affected skin and are often weak and emaciated. While these signs can be suggestive of mange, a diagnosis of sarcoptic mange requires a sample of skin or a skin scrape from affected areas of the animal to confirm the presence and identity of the mites.





Above: Life stages of *Sarcoptes scabiei*
Right: North American mammals with clinical sarcoptic mange: (A-B) Red fox, (C) Coyote, (D) Gray wolf (Photo credit: Yellowstone Wolf Project/National Park Service), (E-F) Black bear, inset: close-up of hyperkeratotic and crusted skin.
Source: Niedringhaus et al, 2019.

RISK TO HUMANS & DOMESTIC ANIMALS

Sarcoptes scabiei mites can infest humans and domestic animals. Disease in livestock and domestic pets can be similar to that observed in wildlife. In humans, they cause scabies, a transient dermatitis with severe itching, in people who have handled wildlife or pets with mange. Most commercially available cat and dog flea/tick preventatives also treat and prevent mange.

PREVENTION & MANAGEMENT

In some mild to moderate cases, animals may recover on their own without treatment. Animals with sarcoptic mange can be treated with oral or topical anti-parastic drugs. However, several doses may be necessary to kill all the mites and animals may require treatment for secondary conditions such as emaciation or concurrent bacterial infections. Therefore, it is important that treatment be individualized for each affected animal and that the treatment and recovery process be carefully supervised by a licensed veterinarian and/or wildlife rehabilitator. Wildlife with severe sarcoptic mange may be euthanized by wildlife managers due to animal welfare concerns or risk posed to other animals in the area.

REFERENCES

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