

Brown recluse spider habitat to expand with climate change

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One of the most feared spiders in North America is the subject a new University of Kansas study that aims to predict its distribution and how that distribution will be affected by climate changes.

When provoked, the spider, commonly known as the brown recluse (*Loxosceles reclusa*), injects powerful [venom](#) that can kill the tissues at the site of the bite. This can lead to a painful deep sore and occasional scarring.

But the wounds are not always easy to diagnose. Medical practitioners can confuse the bite with other serious conditions, including [Lyme disease](#) and various cancers. The distribution of the spider is poorly understood as well, and medical professionals routinely diagnose brown recluse bites outside of the areas where it is known to exist.

By better characterizing its distribution, and by examining potential new areas of distribution with future climate change scenarios, the medical community and the public can be more informed about this species, said study author Erin Saupe, a graduate student in geology and a Biodiversity Institute student.

To address the issue of brown recluse distribution, Saupe and other researchers used a predictive mapping technique called ecological niche modeling. They applied future climate change scenarios to the spider's known distribution in the Midwest and southern United States. The researchers concluded that the range may expand northward, potentially

invading previously unaffected regions. Newly influenced areas may include parts of Nebraska, Minnesota, Wisconsin, Michigan, South Dakota, Ohio and Pennsylvania.

“These results illustrate a potential negative consequence of [climate change](#) on humans and will aid medical professionals in proper bite identification and treatment, potentially reducing bite misdiagnoses,” Saupe said.

The paper was published in the March 25 edition of the journal *PLoS ONE*.

Provided by University of Kansas

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