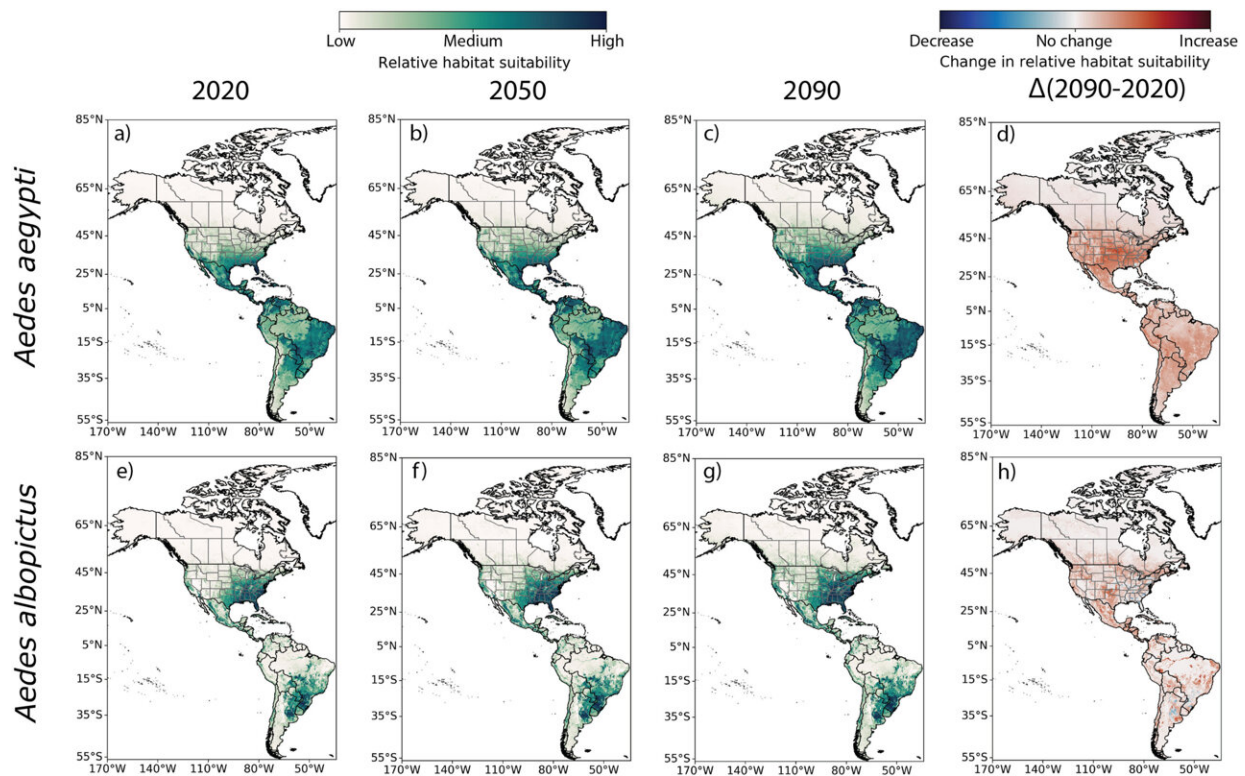


# Global warming may boost mosquito habitats, study finds

May 8 2024, by Nick Njegomir



Mean geographical distribution maps averaged across the ten bootstrapped models for *Aedes aegypti* (a-d) and *Aedes albopictus* (e-h) in North and South America, including (a,e) the estimated contemporary distribution averaged for 2020, (b,f) the SSP5 RCP8.5 projection for 2050, (c,g) the SSP5 RCP8.5 projection for 2090, and (d,h) the change in habitat suitability between 2090 (c,g) and 2020 (a,e) for SSP5 RCP8.5. Credit: *The Journal of Climate Change*

*and Health* (2024). DOI: 10.1016/j.joclim.2024.100317

A research team at Los Alamos National Laboratory is using computer models to simulate how climate change could expand the geographical range in which mosquitoes live, which may cause an increase in mosquito-borne illness. The [study](#) was recently published in the *Journal of Climate Change and Health*.

"We found that all nine species in our model responded resiliently to climate change, which tells us that mosquito-borne disease will be a continued threat as the climate warms," said Morgan Gorris, a scientist in Los Alamos' Information Systems and Modeling group and lead author of the study. "Understanding how mosquito populations grow and move in response to climate change is crucial to inform public health planning."

Future [climate change](#) may expand, contract, or shift the geographical ranges of mosquito species. For example, [warmer temperatures](#) may cause ranges to expand or shift toward the poles, while areas around the equator may become too hot for mosquitoes to live. These shifts could expose new communities to [mosquito-borne disease](#).

Global land-surface temperatures have already risen by roughly 2 degrees Fahrenheit from pre-industrial levels (1850-1900). By the end of the 21st century, global temperatures are expected to rise by nearly 5 degrees Fahrenheit.

Of the nine mosquito species Gorris and the team modeled, six are projected to expand in geographical range, two are projected to shift in

geographical range, and one is projected to remain nearly the same. For some species, the areas currently suitable for survival are projected to become even more suitable in the future, worsening the mosquito problem.

Mosquitoes are the deadliest animal on the planet because of their ability to spread myriad diseases, including chikungunya, dengue, West Nile virus, [yellow fever](#), and Zika virus—all of which are spread by the mosquitoes in this study.

"Knowing where mosquitoes will live in the future is important for understanding who is at risk for these diseases and taking the appropriate actions to protect health security," Gorris said.

**More information:** Morgan E. Gorris et al, Projections of Aedes and Culex mosquitoes across North and South America in response to climate change, *The Journal of Climate Change and Health* (2024). [DOI: 10.1016/j.joclim.2024.100317](#)

Provided by Los Alamos National Laboratory

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