

Study suggests climate change may kill off the armadillo in some areas

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Armadillo mother and young. Credit: Wikipedia/CC BY-SA 2.0

(Phys.org)—A team of researchers with the University of the Witwatersrand in South Africa has found evidence that suggests the armadillo may face a large decrease in population as the planet heats up due to global warming. In their paper published in the journal *Biology Letters*, the group describes how they fastened monitors to a group of armadillos who by happenstance were forced to endure a severe drought—and how the animals fared.

Armadillos are interesting mammals, to say the least; they have floppy ears, a tubular snout and a body reminiscent of an armadillo. They survive by hiding from sub-Saharan African heat inside burrows they dig and eating ants and termites at night. As the researchers note, armadillos are considered to be a keystone species because others [animals](#) use the burrows they build as nests, sleeping quarters or simply as a place to escape from predators and the intense desert heat. But their very existence might be in jeopardy, the researchers with this new effort have found, as the planet heats up and conditions in parts of Africa become more inhospitable.

As part of an ongoing study of the creatures, the researchers affixed sensors to the bodies of several specimens and then released them back into the wild. The sensors tracked both body temperature and activity. As it turned out, the period of study happened to occur during a particularly hot and dry spell in the area, offering an opportunity to see how the armadillos might fare as sub-Saharan Africa grows hotter and drier.

As it turned out, the armadillos did not fare well at all—five out of six of the monitored creatures died from apparent unnatural causes. Study of data from the sensors showed that the animals had swapped their usual routines, venturing out during the day to eat, rather than at night. They also showed that the body temperature of the animals had declined—an indication of malnourishment. This was backed up by measurements of extremely low body weight. The researchers suggest the reason the armadillos had trouble finding food was because ants and termites need a certain amount of water in the soil to survive. The armadillos that died had starved to death, the researchers concluded, as had several other armadillos they observed in areas around the test site. This, the team suggests, indicates that [armadillo](#) populations are likely going to plummet as their habitats grow hotter and drier.

More information: Benjamin Rey et al. Drought-induced starvation of armadillos in the Kalahari: an indirect effect of climate change, *Biology Letters* (2017). [DOI: 10.1098/rsbl.2017.0301](https://doi.org/10.1098/rsbl.2017.0301)

Abstract

Armadillos (*Oryzomys afer*) are elusive burrowing mammals, predominantly nocturnal and distributed widely throughout Africa except for arid deserts. Their survival may be threatened by climate change via direct and indirect effects of increasing heat and aridity. To measure their current physiological plasticity, we implanted biologgers into six adult armadillos resident in the semi-arid Kalahari. Following a particularly dry and hot summer, five of

the study aardvarks and 11 other aardvarks at the study site died. Body temperature records revealed homeothermy (35.4–37.2°C) initially, but heterothermy increased progressively through the summer, with declining troughs in the nycthemeral rhythm of body temperature reaching as low as 25°C before death, likely due to starvation. Activity patterns shifted from the normal nocturnal to a diurnal mode. Our results do not bode well for the future of aardvarks facing climate change. Extirpation of aardvarks, which play a key role as ecosystem engineers, may disrupt stability of African ecosystems.

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