

Temperature fluctuations over a 20-year period affect ostrich fertility traits

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A team of researchers from, Lund University, the University of Stellenbosch and the Western Cape Department of Agriculture for South Africa has learned more about how animals cope with rising

temperatures by studying ostriches living in South Africa. In their paper published in the journal *Nature Communications*, the group describes studying multiple attributes of reproduction in ostriches over a 20-year-period, and what they learned about them and their ability to adapt to climate change.

As the world continues to grow warmer due to human activities, scientists around the world try to understand what the future [natural world](#) may look like. One way to do that is by studying species to see how they have coped thus far. In this new effort, the researchers looked at the biggest bird in the world—the ostrich.

The researchers picked ostriches for their study because prior research has shown that they are able to adapt to a remarkable range of ecosystems—some hot and some cold. To learn more about how they might be adapting to [climate change](#), the team pored over data collected over a 20-year period for ostriches living on the Oudtshoorn Research Farm in South Africa. The farm currently houses 1,300 adult ostriches. To maintain the population, the birds have been kept in pairs. The researchers have also tried to keep the birds living in conditions as natural as possible, so they have had to endure both hot and [cold temperatures](#).

The researchers found that despite their ability to adapt to a wide range of temperatures in the long term, the birds were not very good at adapting in the short term. They found that the number of eggs a female laid was reduced during both hot and cold spells—though the size of the eggs changed. Hot weather tended to result in larger eggs, suggesting that the mothers were willing to invest more of themselves to reproduce as conditions grew hotter. The researchers also found that males tended to produce less sperm during hot or cold periods. And finally, they found that the quality of gametes produced was not impacted by variations in temperature. According to the researchers, the data indicates that an

ability to handle [temperature](#) fluctuations, not just increasing temperatures, is likely to be a major factor in the ability of a given species to survive as the planet warms.

More information: Mads F. Schou et al. Extreme temperatures compromise male and female fertility in a large desert bird, *Nature Communications* (2021). [DOI: 10.1038/s41467-021-20937-7](https://doi.org/10.1038/s41467-021-20937-7)

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