

# Almost 17 million vertebrates killed in the 2020 wildfires in Brazil: study

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Researcher performing the sampling just after the wildfire. Credit: CENAP-ICMBio

The 2020 wildfires in the Pantanal wetland, Brazil, caused the immediate death of potentially 16.9 million vertebrates, including

lizards, birds and primates, reports a study published in *Scientific Reports*.

The wildfires in the Pantanal wetland burned between January and November 2020 causing huge damage to the world's largest tropical wetland. Walfrido Moraes Tomas, Ronaldo Morato and colleagues estimated [wildfire](#) animal deaths by counting carcasses in burned areas. They sampled carcasses at intervals along tracts of wetland (114.43 kilometers in total) in the immediate aftermath of a fire.

The authors found 302 carcasses and, despite their poor condition, were able to identify the species in most cases. They then scaled up their numbers for both [small vertebrates](#) (with a [body weight](#) less than 2kg) and medium-to-large vertebrates (with a body weight greater than 2kg) to estimate how many animals were killed in total.

The authors estimate that between 13,206,700 and 18,811,300 small vertebrates were killed across the 39,030 km<sup>2</sup> burnt area of the Pantanal wetlands between January and November 2020. Small vertebrates included small lizards, birds and rodents. The authors also estimate that between 691,090 and 1,196,570 medium-to-large vertebrates were immediately killed, including ungulates and primates. They provide an overall total estimate of 16,952,000 vertebrates killed in the fires.



Overview of the Pantanal wetland after the wildfire. Notice the smoke covering the entering region. Credit: CENAP-ICMBio

The authors report that their sampling likely missed several species known to have also been killed by the fires including jaguars, pumas and tapirs. They also caution that their estimation does not reflect the full impact of the wildfires that would have caused subsequent animal deaths from habitat loss.



Researcher collecting a dead animal. Credit: CENAP-ICMBio

Walfrido Moraes Tomas and colleagues conclude that their study highlights the catastrophic impact the 2020 wildfires had on wildlife in the Pantanal wetlands and the importance of preventing future disasters.

**More information:** Walfrido Tomas, Distance sampling surveys reveal 17 million vertebrates directly killed by the 2020's wildfires in the Pantanal, Brazil, *Scientific Reports* (2021). [DOI: 10.1038/s41598-021-02844-5](https://doi.org/10.1038/s41598-021-02844-5).  
[www.nature.com/articles/s41598-021-02844-5](https://www.nature.com/articles/s41598-021-02844-5)

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