

Abstract

Multi-Factor Analysis of House Loss in Two Major Wildfire Seasons in NSW Australia [†]

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[†] Presented at the Third International Conference on Fire Behavior and Risk, Sardinia, Italy, 3–6 May 2022.

Keywords: property destruction; bushfire; mega-fire; defence; fire weather; prescribed burning

Three recent studies from NSW (Australia) have tried to disentangle the many factors influencing house loss in wildfires at different scales. Two examined individual houses exposed in wildfires in 2013 that destroyed 200 houses and the other examined suburb scales exposed to the 2019–2020 megafires that destroyed 2500 houses. The factors investigated include the weather, forest extent, fuel treatments, topography, building age, and construction, defendable space and defence. The studies found:

- For the 2019–2020 fires, the fire weather had the largest influence on house loss. Variation in the weather was not so important in 2013.
- Defended houses had much lower loss rates than undefended houses, whether the defence was by firefighters or residents.
- Defensible space was influential, most importantly, the distance to the forest.
- In the 2013 fires, houses built to the highest construction standard (flame zone) suffered high loss rates.
- The house loss rate increases with the age of the house, which is at least partly a consequence of greater vegetation cover in older houses.
- Recent prescribed burning within suburbs substantially reduced the house loss, but prescribed burning in the surrounding landscape did not.
- Nearby houses were an important risk factor in 2013 but not in 2019–2020.
- Topography had only modest effects in all studies.

Although each study (and previous research) identified slightly different risk factors, there is an emerging consensus of the importance of resident action in reducing risk, and of a dominant role of weather, which will increase the risk as global warming increases.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The author declares no conflict of interest.



Citation: Price, O. Multi-Factor Analysis of House Loss in Two Major Wildfire Seasons in NSW Australia.

Environ. Sci. Proc. **2022**, *17*, 128.

[https://doi.org/10.3390/](https://doi.org/10.3390/environsciproc2022017128)

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Academic Editors: Pierpaolo Duce, Donatella Spano, Michele Salis, Bachisio Arca, Valentina Bacciu, Grazia Pellizzaro and Costantino Sirca

Published: 16 September 2022

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