

Interactive comment on “The spatial domain of wildfire risk and response in the Wildland Urban Interface in Sydney, Australia” by O. F. Price and R. A. Bradstock

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I found the manuscript to be interesting and well written. Not surprisingly the authors found that fires proximate to the WUI buffer were more likely to spread to within the buffer and the likelihood of a fire entering the buffer increased as fire danger index increased. Although these findings are not surprising, being able to quantitatively measure these effects from a high quality spatial data set is useful information.

My biggest concern with the paper is the treatment of risk as essentially a binary variable. The authors appear to be defining any fire that enters the WUI as a risky fire

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irrespective of the size of the event and the conditions under which it is burning. For example, Lines 20-22 on page 4549 state that "the level of risk from an ignition 400m away under an FFDI of 5 is the same as one 1 km under an FFDI of 25, and one 10km away under an FFDI of 50." I would argue that this is a gross simplification of the concept of wildfire risk. There is a growing body of literature beginning with Finney 2005 (Finney, M.A. 2005. The challenge of quantitative risk analysis for wildland fire. *Forest Ecology and Management* 211, 97-108) that highlights the necessity of considering both the likelihood of wildfire exposure as well as the consequences to highly valued resources. Those fires spreading long distances under high fire danger weather likely pose significantly more risk in terms of the number of homes that will likely be engaged by the fire as well as the ability of structure defense activities to mitigate loss. I believe the 2009 Victoria fires highlight this fact. A more thoughtful consideration of the difference in magnitude of fire risk from small fires burning under moderate conditions compared to large fires under extreme conditions would likely have a strong influence on the discussion and conclusion drawn from the presented results. I suggest the author's attempt to make revisions with this consideration in mind.

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