



Bushfire Risk at the Rural-Urban Interface

Australian – USA house loss and fatality comparative analysis



FIRE CENTRE
Bushfire Research Hub



FIRELAB³
Bushfires, Bioenergy, Emissions

Professor David Bowman
ARC Laureate Fellow
Director Fire Centre
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UNIVERSITY of
TASMANIA



Australian Government
Australian Research Council



Natural
**Hazards
Research**
Australia



5-7 May 2026



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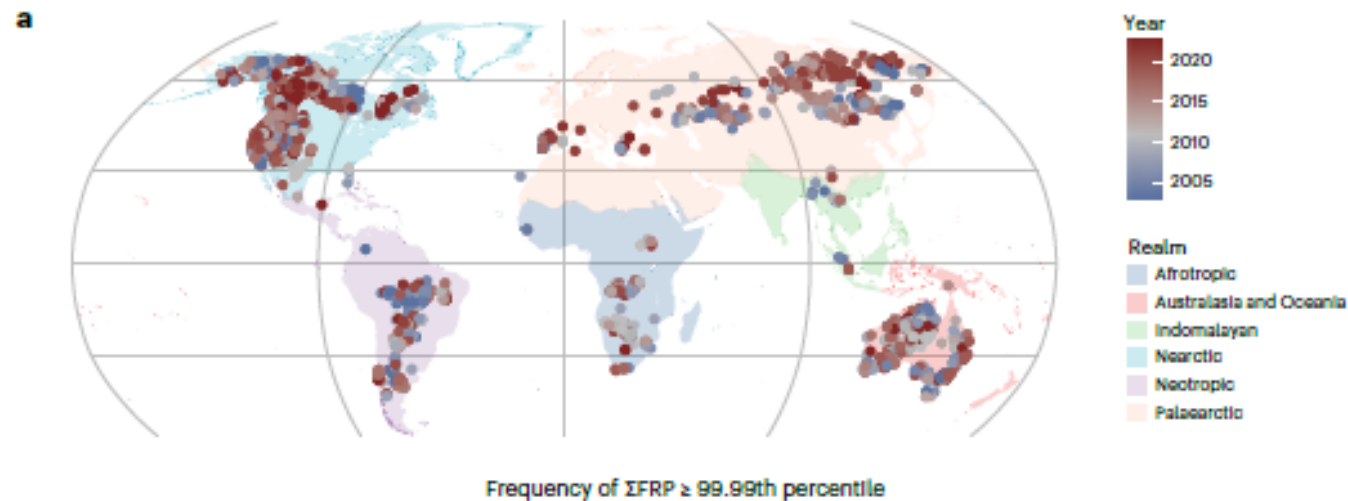
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Global fire crisis # 1

Increasingly extreme wildfires



nature ecology & evolution

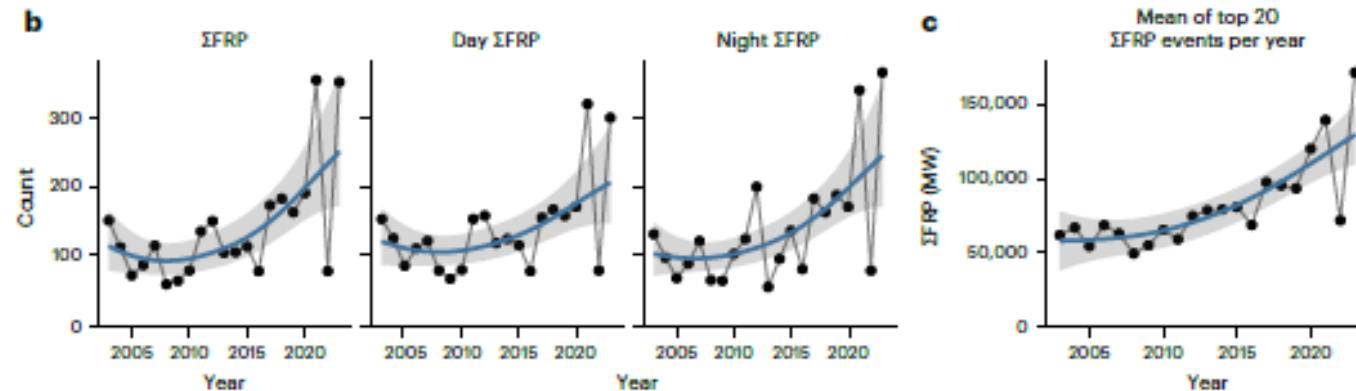
Brief Communication

<https://doi.org/10.1038/s41559-024-02452>

Increasing frequency and intensity of the most extreme wildfires on Earth

Received: 22 January 2024

Calum X. Cunningham[✉], Grant J. Williamson[✉] & David M. J. S. Bowman[✉]



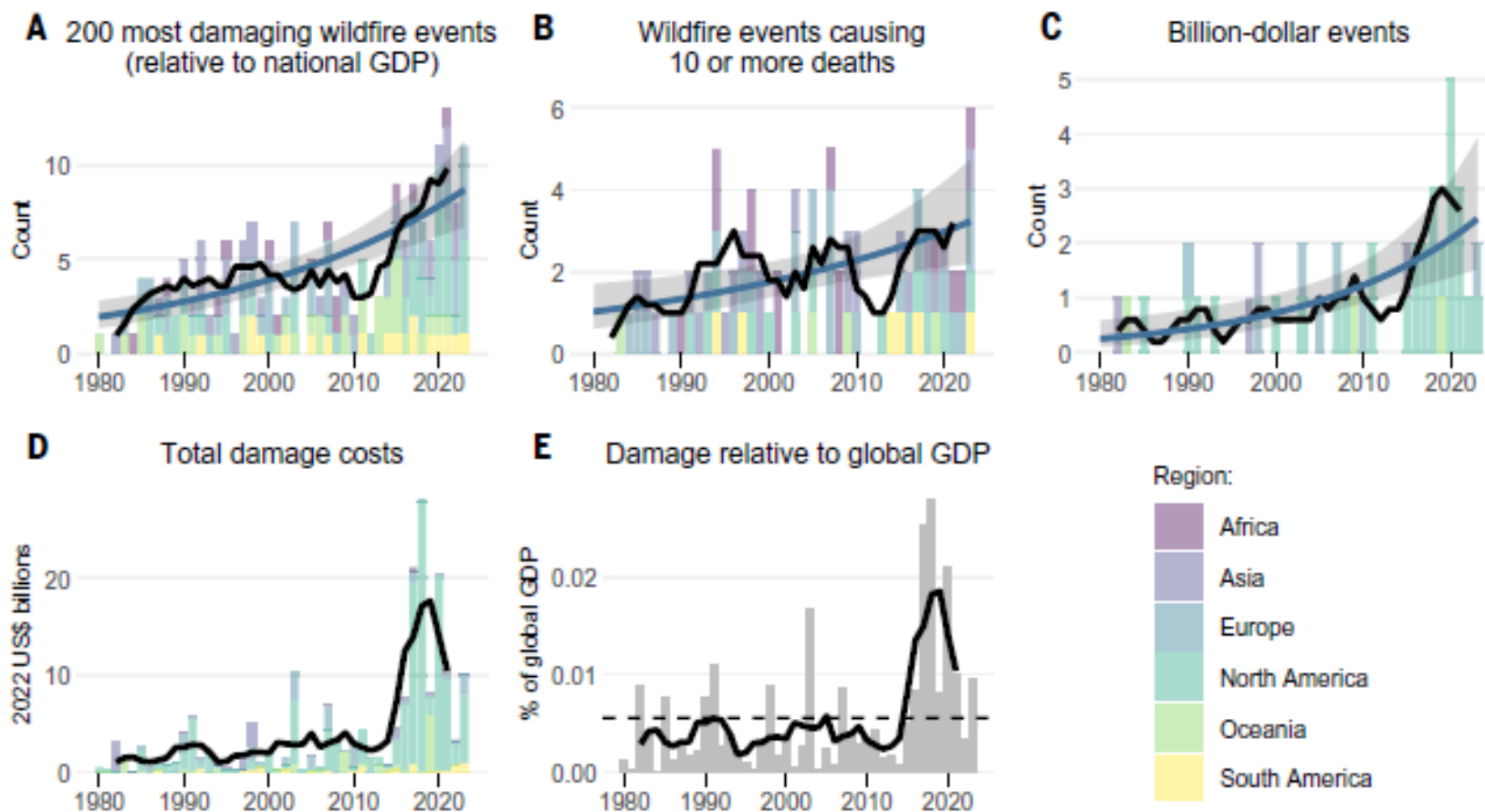
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Global fire crisis # 2

Global wildfire disasters



WILDFIRES

Climate-linked escalation of societally disastrous wildfires

Calum X. Cunningham^{1*}, John T. Abatzoglou², Crystal A. Kolden²,
Grant J. Williamson¹, Markus Steuer³, David M. J. S. Bowman¹



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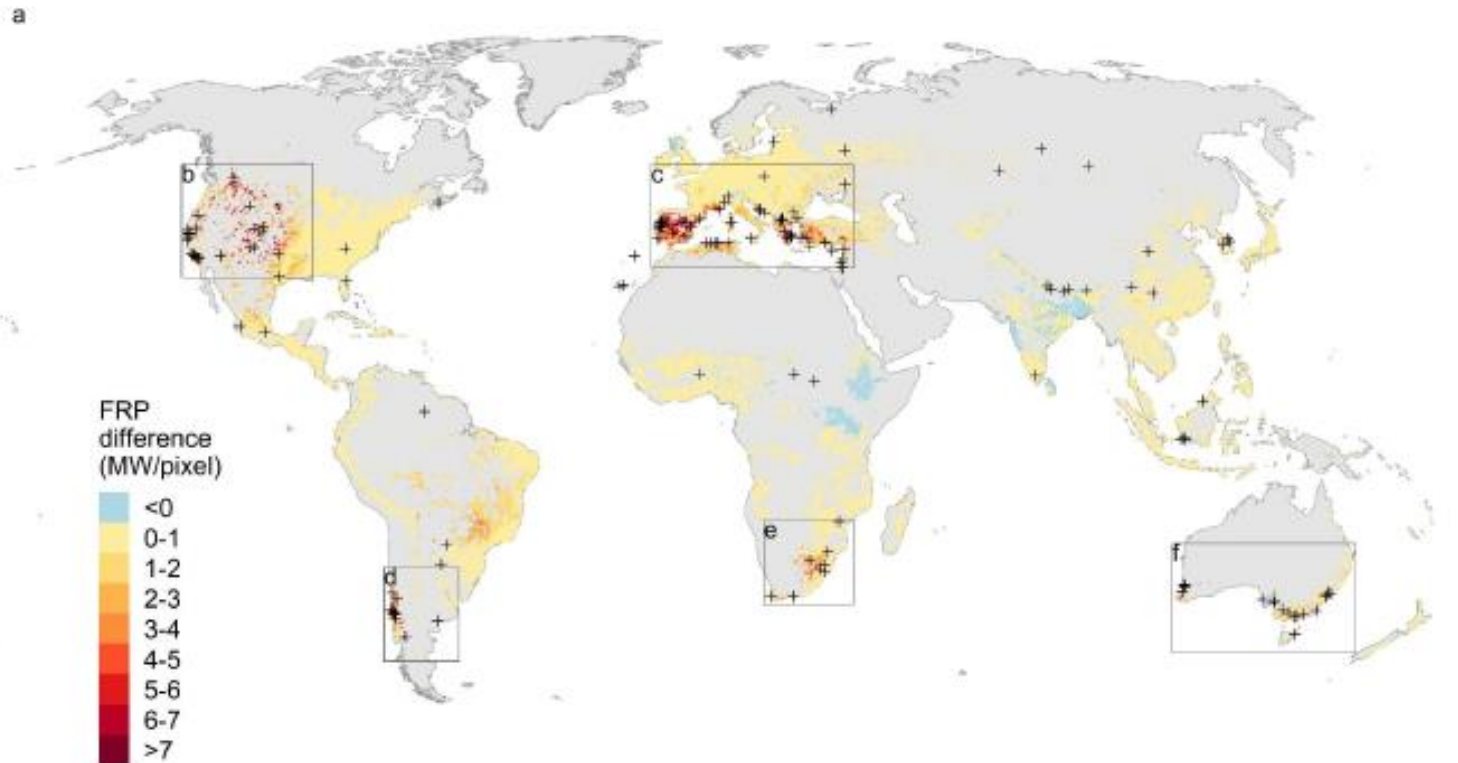


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Global fire crisis # 3

Intensifying wildfires on the WUI under 1.5°C warming

Intersection of WUI and predicted change in fire intensity



communications earth & environment

A Nature Portfolio journal

Article



<https://doi.org/10.1038/s43247-025-02475-y>

Wildfires will intensify in the wildland-urban interface under near-term warming

Check for updates

Calum X. Cunningham¹✉, John T. Abatzoglou², Todd M. Ellis¹, Grant J. Williamson¹ & David M. J. S. Bowman¹



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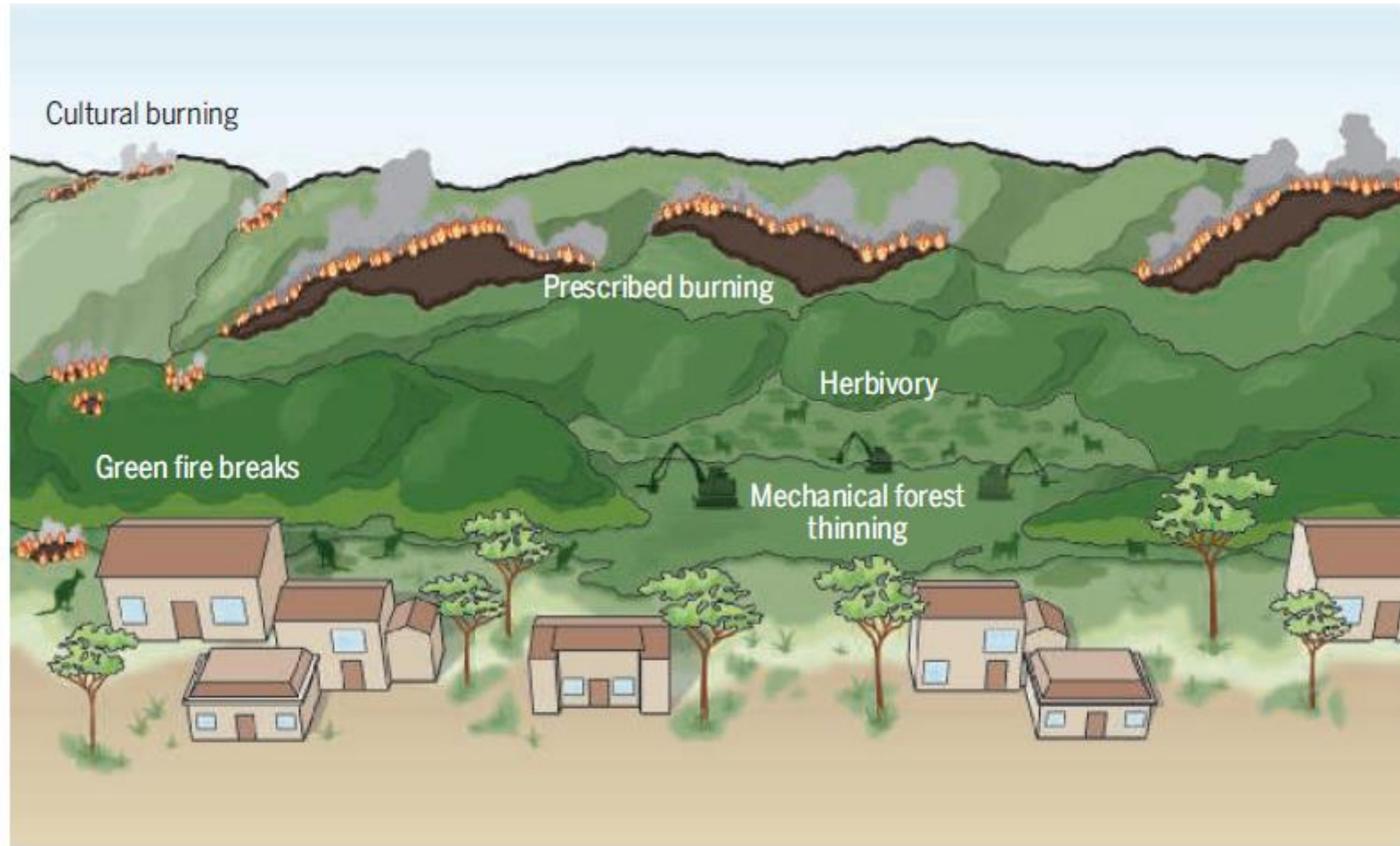
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A vision for sustainable coexistence with wildfire



Bowman and Sharples *Science* 2023



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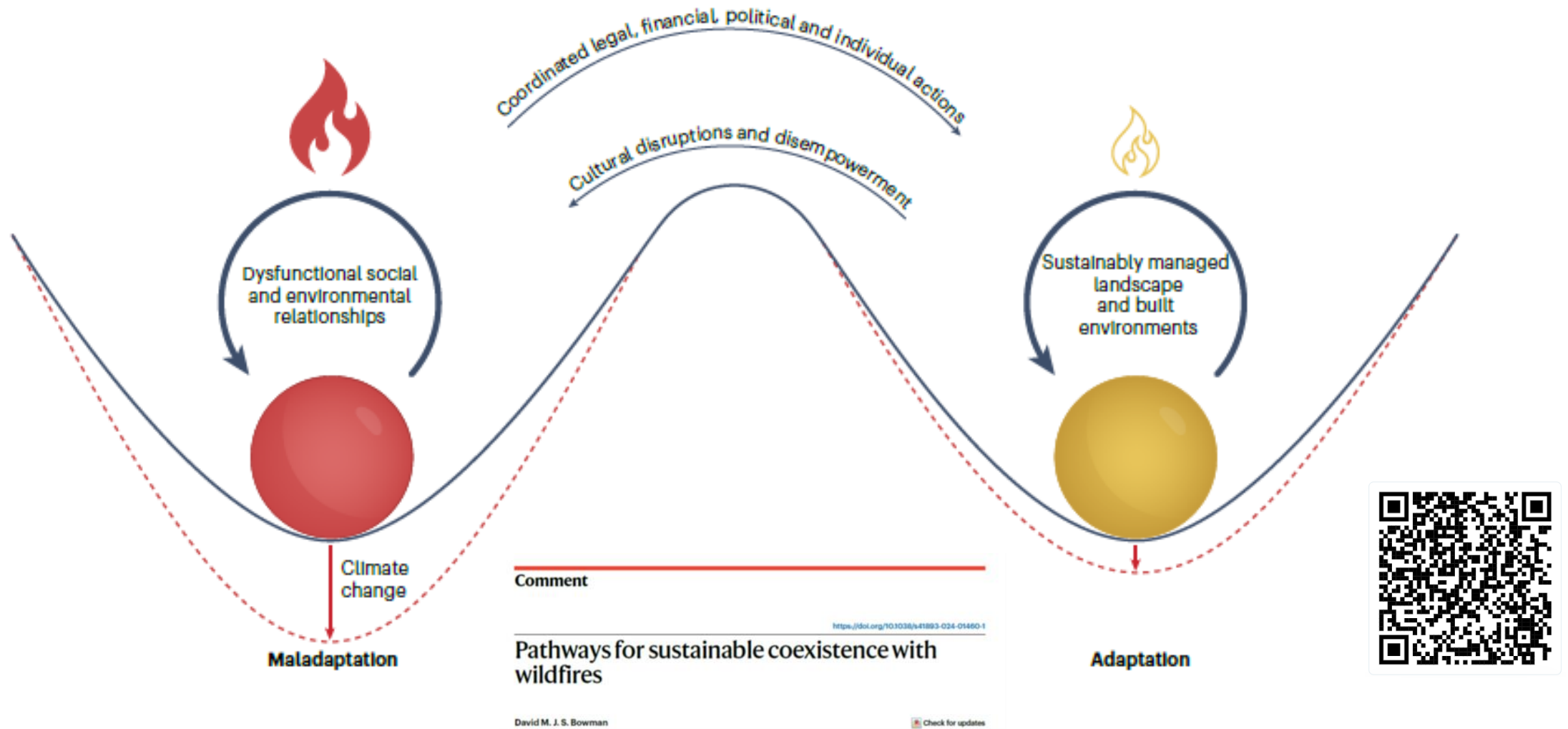
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Wildfire Adaptation/Maladaptation Vicious/virtuous cycles



Australia and USA Wildfire doctrines



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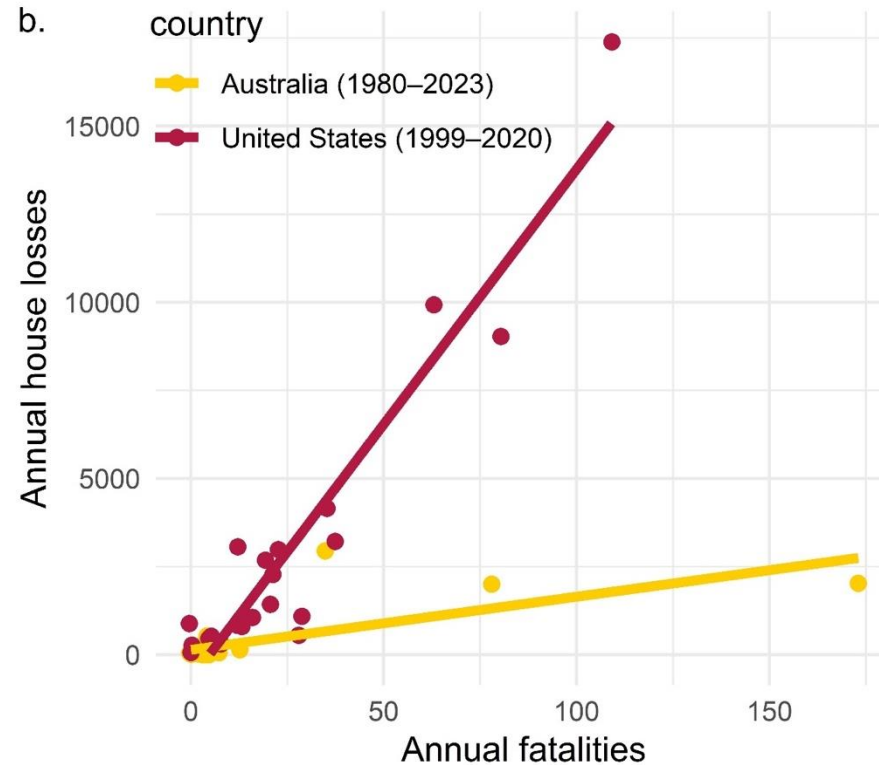


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House loss – life loss ratio



Bowman and Cunningham J. Pyrogeography (2025)



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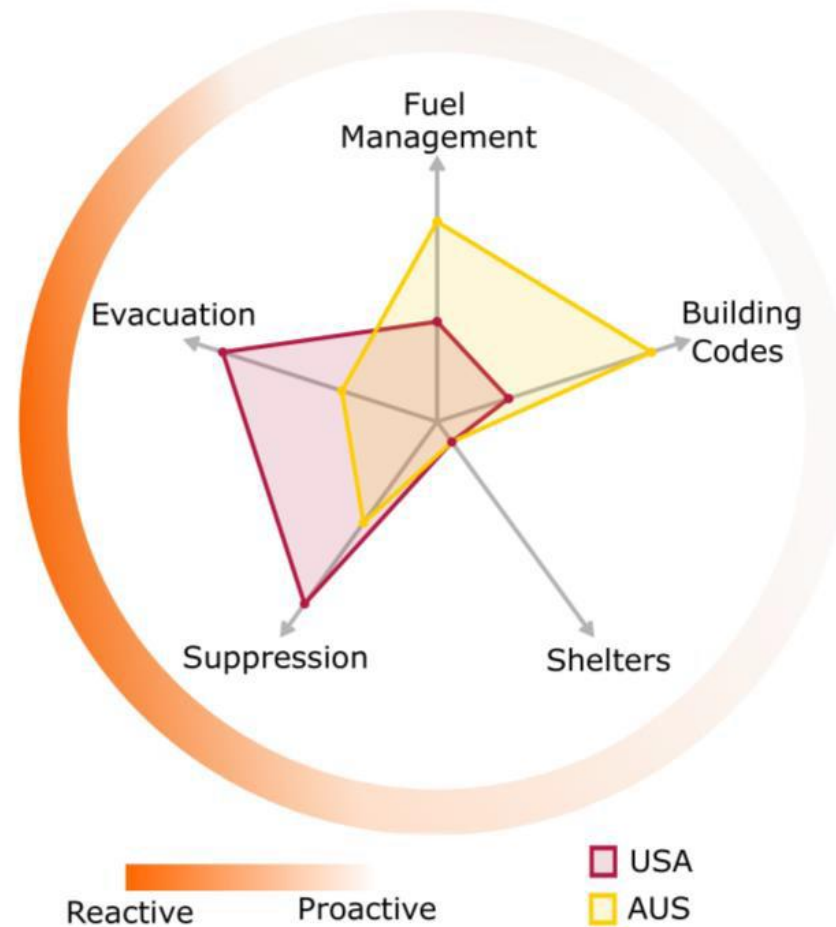
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USA – Australia have different management responses



Bowman and Cunningham (2025)

Australian doctrine of 'shared responsibility'

A work in progress

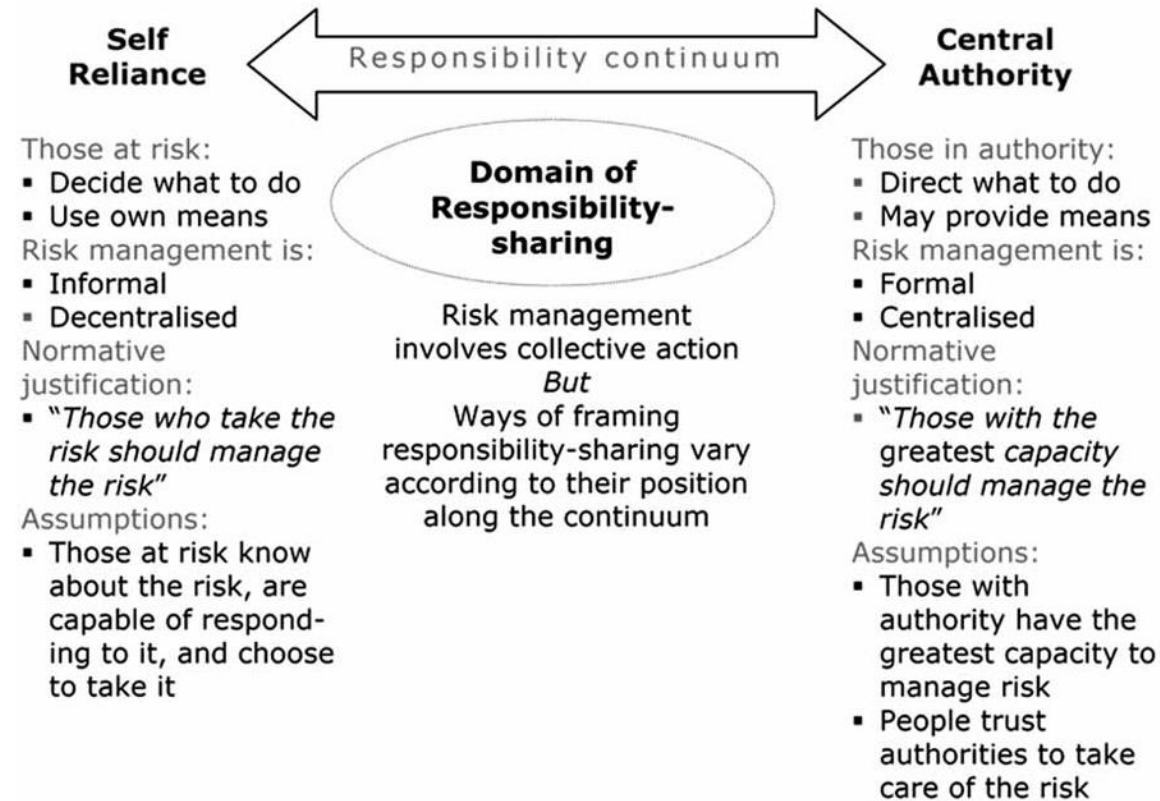


FIGURE 1 The responsibility continuum for risk management.



Shared responsibility elements

- Defensible space
- Fuel treatments
- Evacuation (leave early)
- Fire shelters



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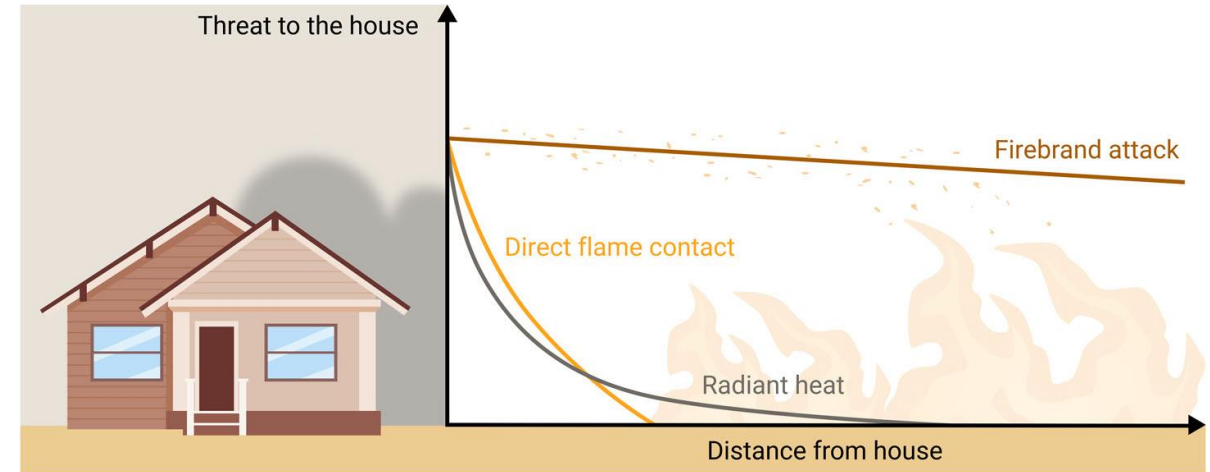
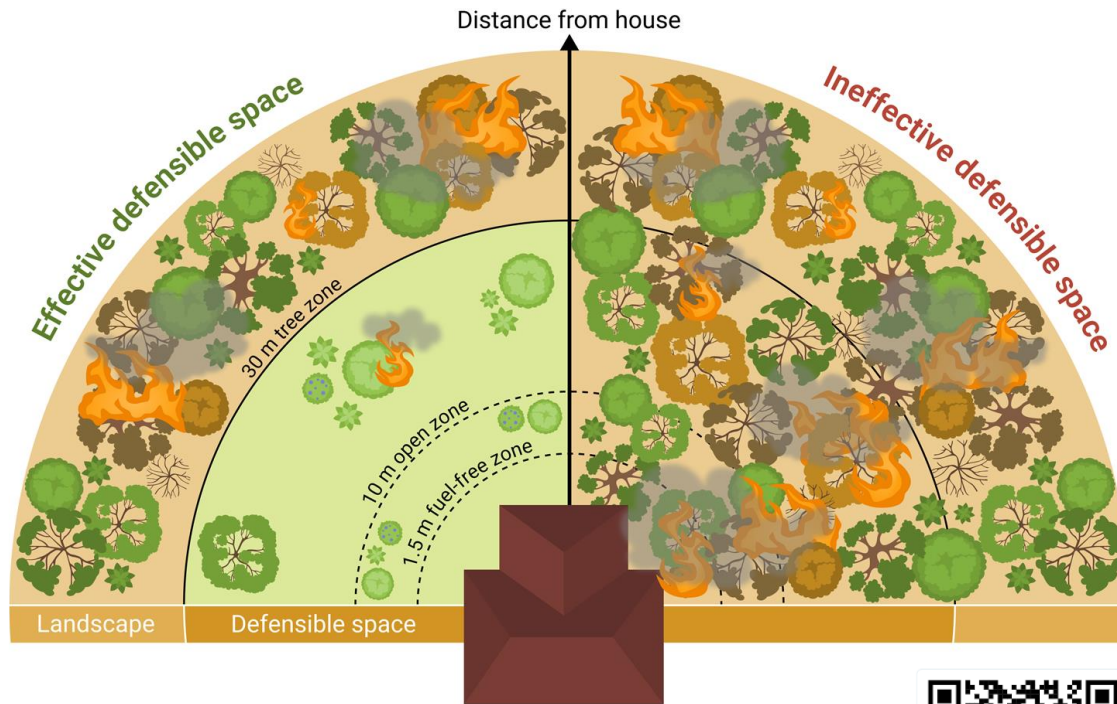
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Defensible space and garden design



npj | natural hazards

Review article



<https://doi.org/10.1038/s44304-024-00012-z>

Garden design can reduce wildfire risk and drive more sustainable co-existence with wildfire

Check for updates

Stefania Ondei, Owen F. Price & David M.J.S. Bowman

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Thinning and prescribed burning 'green firebreaks' for wildfire adaptation

J.M. Furlaud et al.

Journal of Environmental Management 344 (2023) 118301



Furlaud et al. (2023) *Journal of Environmental Management* 344, p.118301.



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Green firebreaks



Herbivores and marsupial lawns



Evacuation intentions #1

> 50% of people don't plan to leave early
Men and women have different risk appetites to bushfire threat

International Journal of Disaster Risk Reduction 111 (2024) 104712



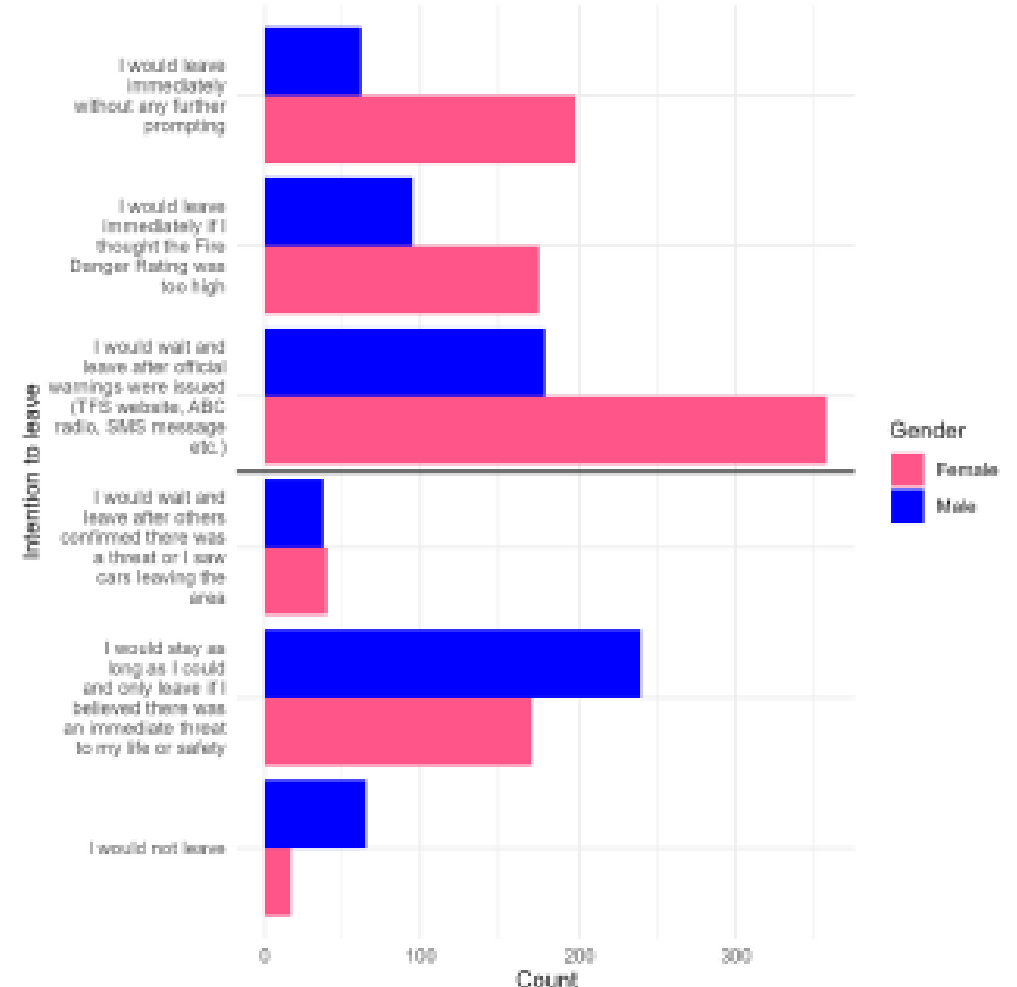
Social and health factors influence self-reported evacuation intentions in the wildfire-prone island of Tasmania, Australia

Sharon L. Campbell^{a,*}, Grant J. Williamson^b, Fay H. Johnston^{a,c}, David M.J.S. Bowman^b

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^b Fire Centre, School of Natural Sciences, College of Science and Engineering, University of Tasmania, College Rd, Sandy Bay, Tasmania, Australia

^c Public Health Services, Department of Health, Tasmania, PO Box 125, Hobart, Tasmania, 7001, Australia



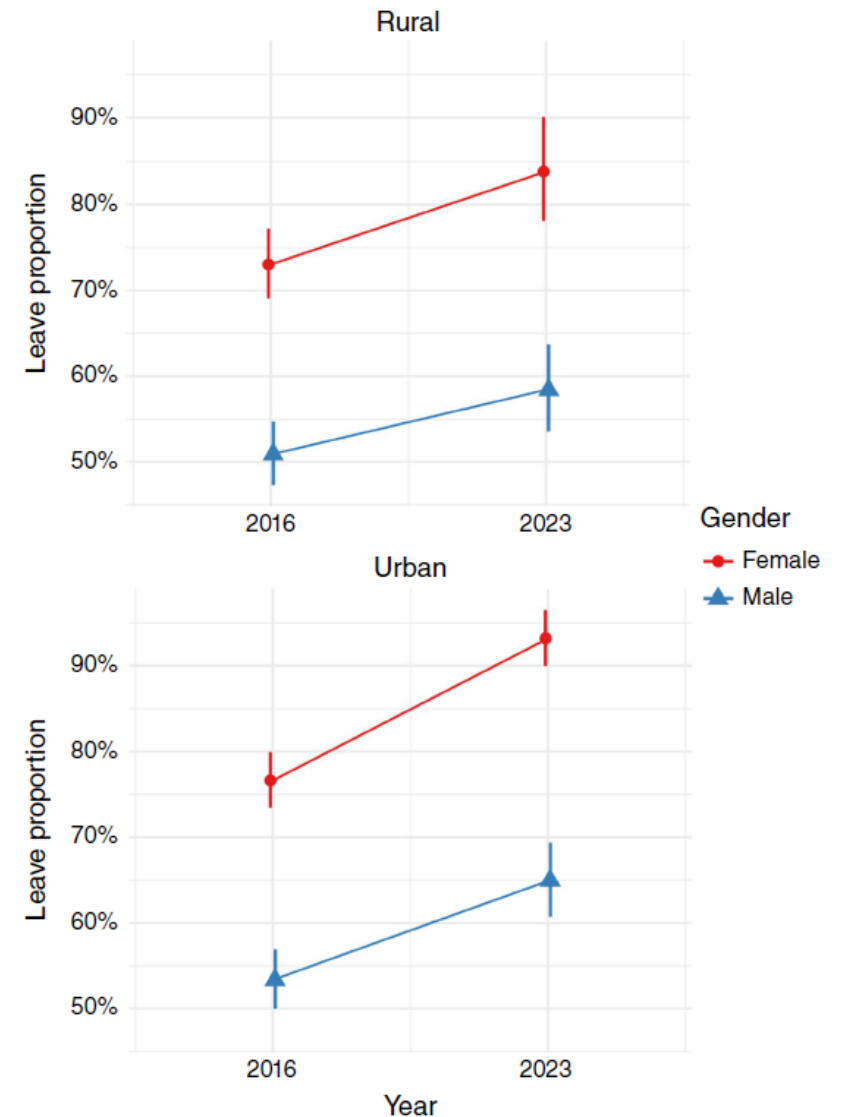
Evacuation intentions #2

- Rural and Urban men and women have different risk appetites to bushfire threat
- All are becoming more risk averse



Archetypes and change in wildfire risk perceptions, behaviours and intentions among adults in Tasmania, Australia.

Sharon Campbell , Grant Williamson , Fay Johnston, David Bowman 



Fire shelters

Tasmanian artist Wendy Edwards fined over fire bunker built without approval

By Meg Whitfield

Courts

Fri 5 Jul 2024



The court heard Edwards initially believed approval was not required for the bunker, due to its size.

(Supplied: Wendy Edwards)



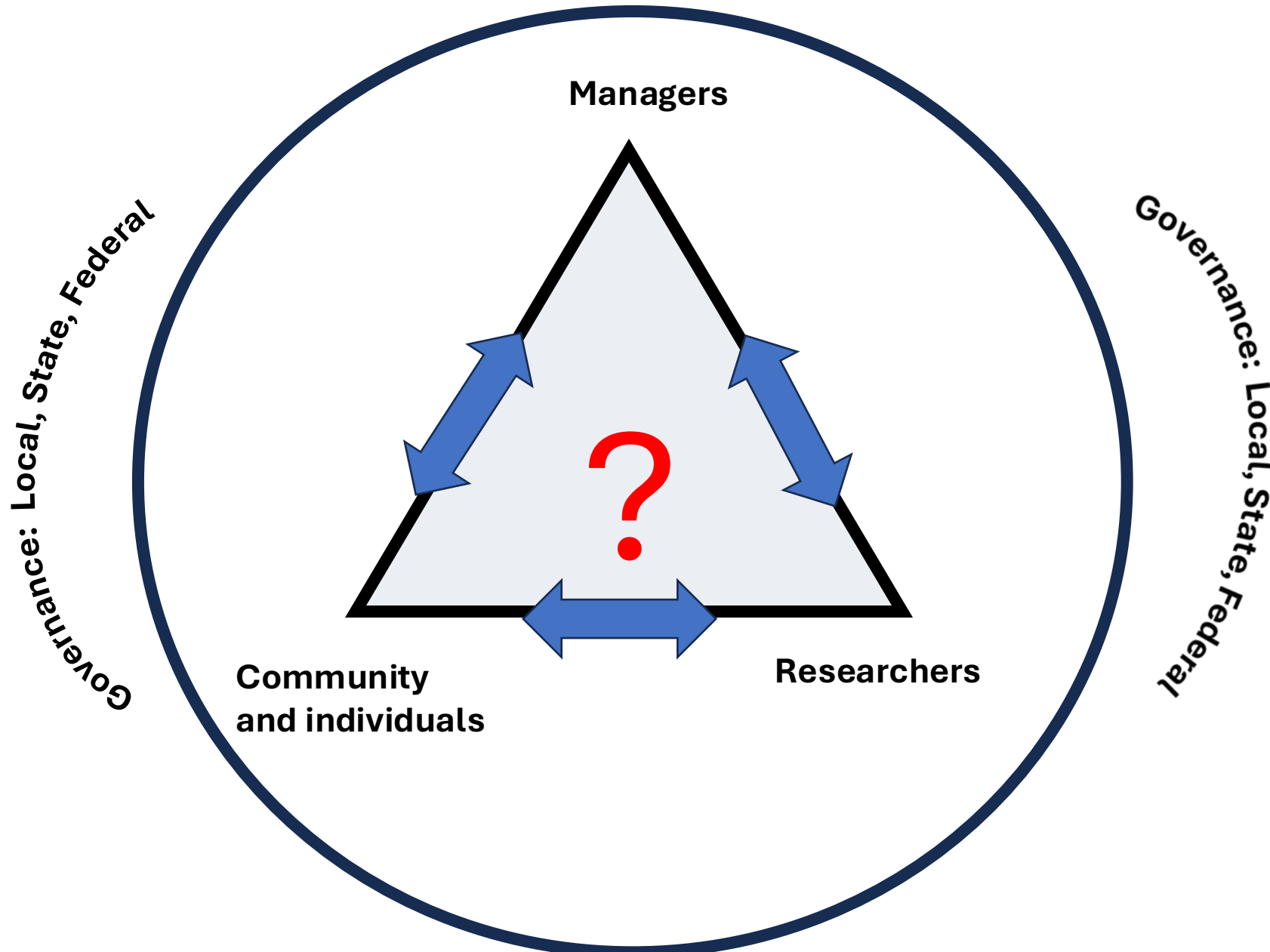
Perspective

Arrested Policy Development of Private Fire Shelters (Fire Bunkers) Is A Barrier to Adaptation to the Australian Bushfire Crisis

David M. J. S. Bowman ^{1,*} and Phillipa C. McCormack ²



The 'how much responsibility to share' triangle



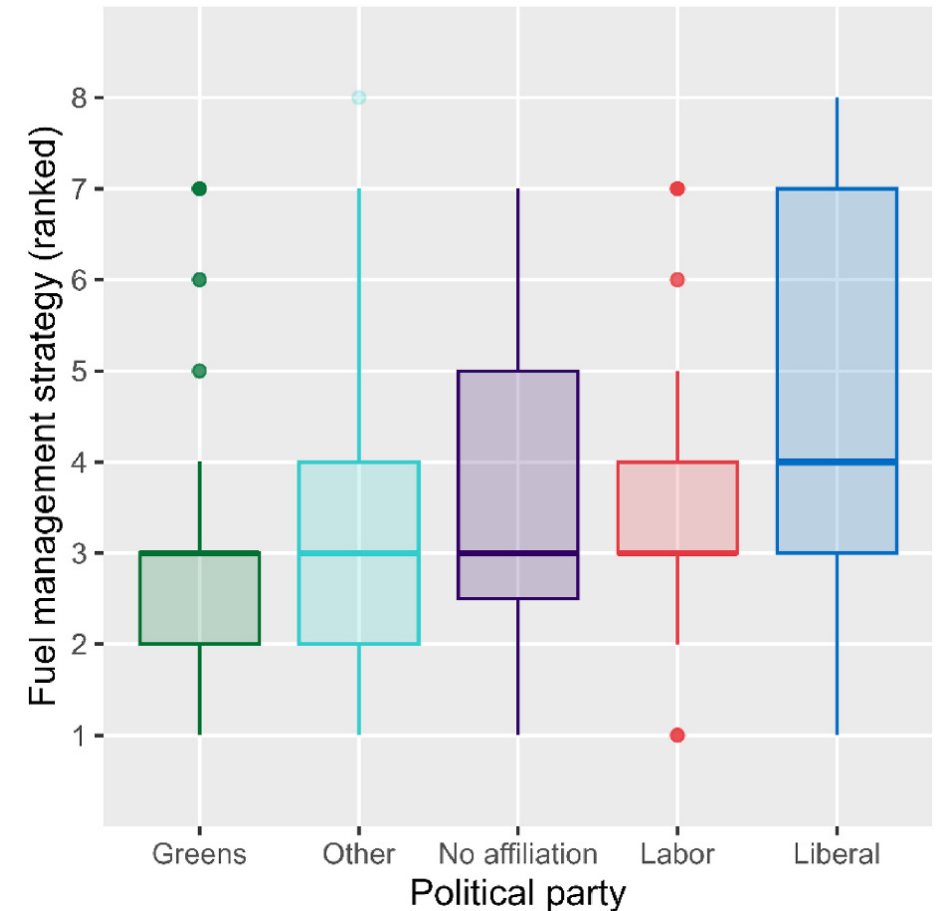
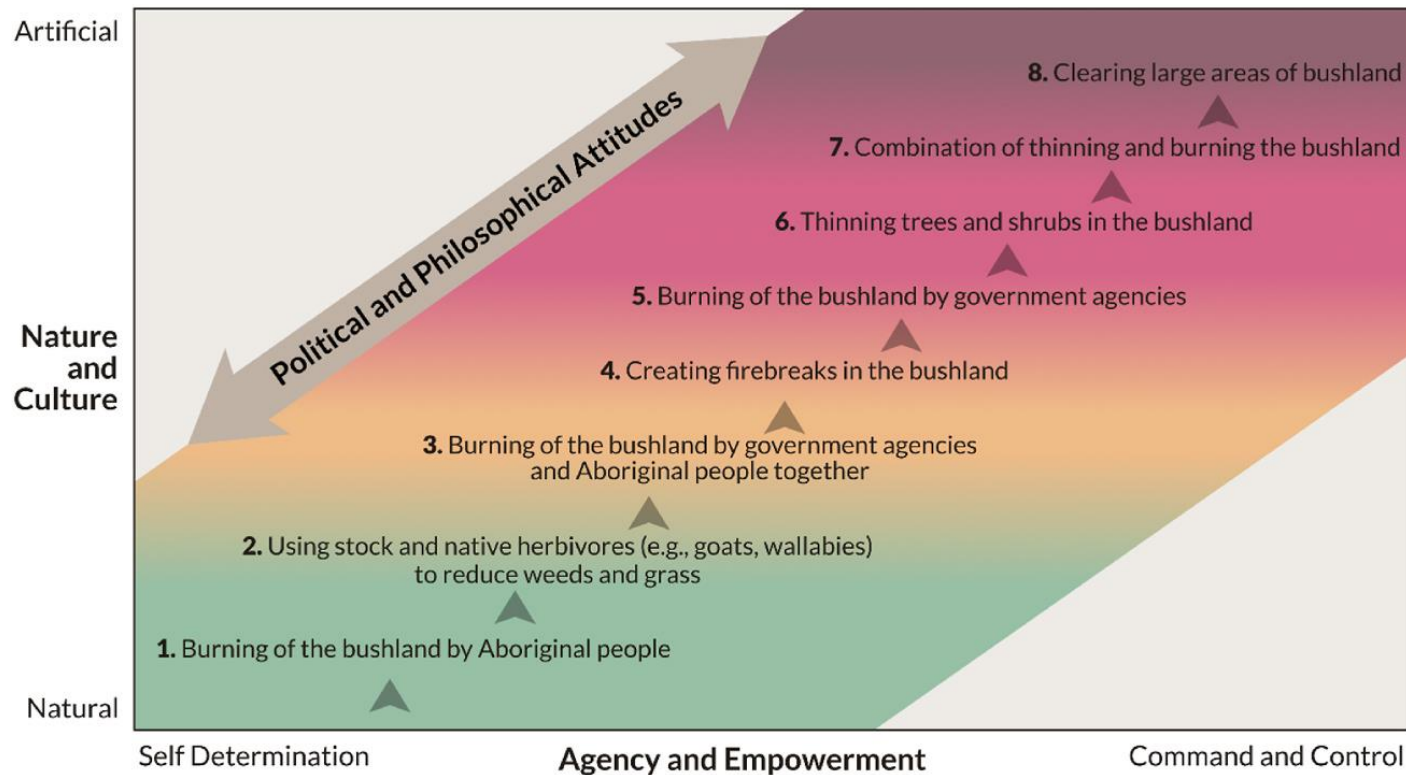
Social licence for fuel treatments

For some

‘A chainsaw is to the plant kingdom what a rifle is to the animal kingdom’



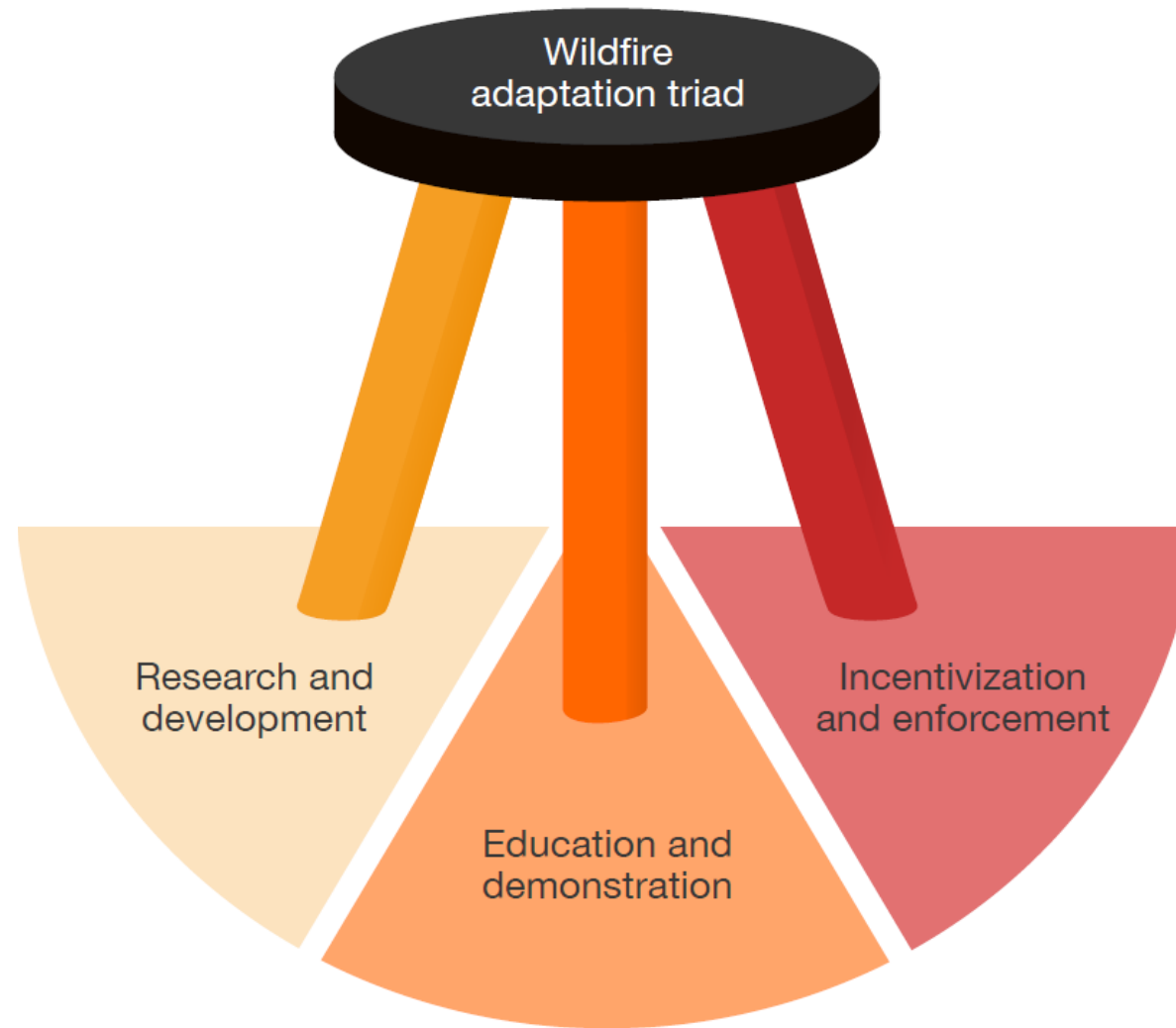
Politics and fuel management preferences



Seivwright *et al.* (2025) *International Journal of Disaster Risk Reduction* 123, p.105521.



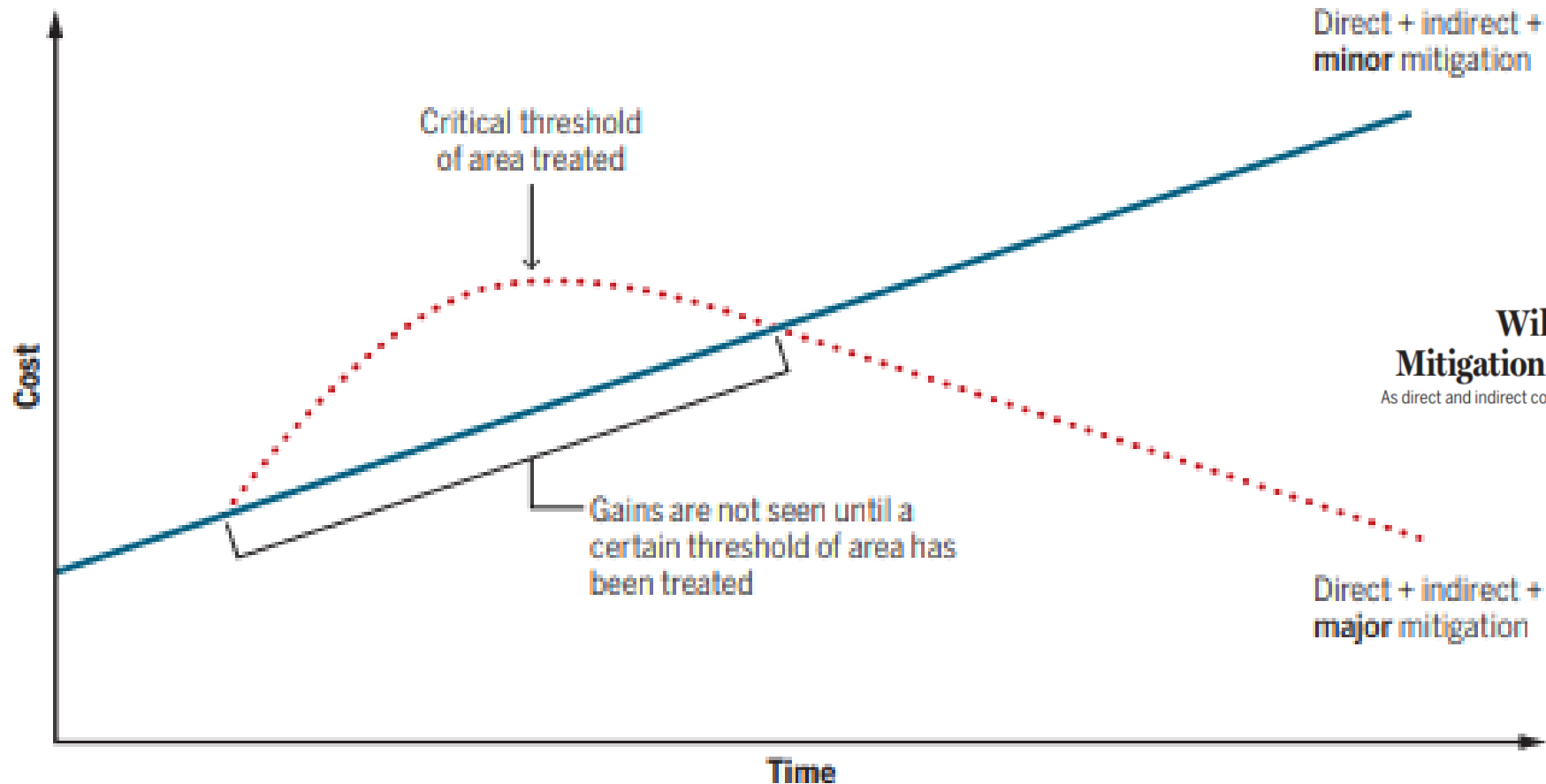
The 'wildfire adaptation triad'



Bowman (2024) *Nature Sustainability* 7(12), pp.1547-1549.



Fire adaptation cost benefit lag



POLICY FORUM

WILDFIRE

Wildfire management at a crossroads: Mitigation and prevention or response and recovery?

As direct and indirect costs of fires continue to grow, so too might motivation to invest more heavily in mitigation

Robert Gray¹, Robin Gregory^{2,3}, Calvin Sandborn⁴

