LANDSCAPES & POLICY hub

National Environmental Research Program

Fire Masterclass

Incorporating fire into global and regional vegetation models as an aid to understanding likely future fire activity

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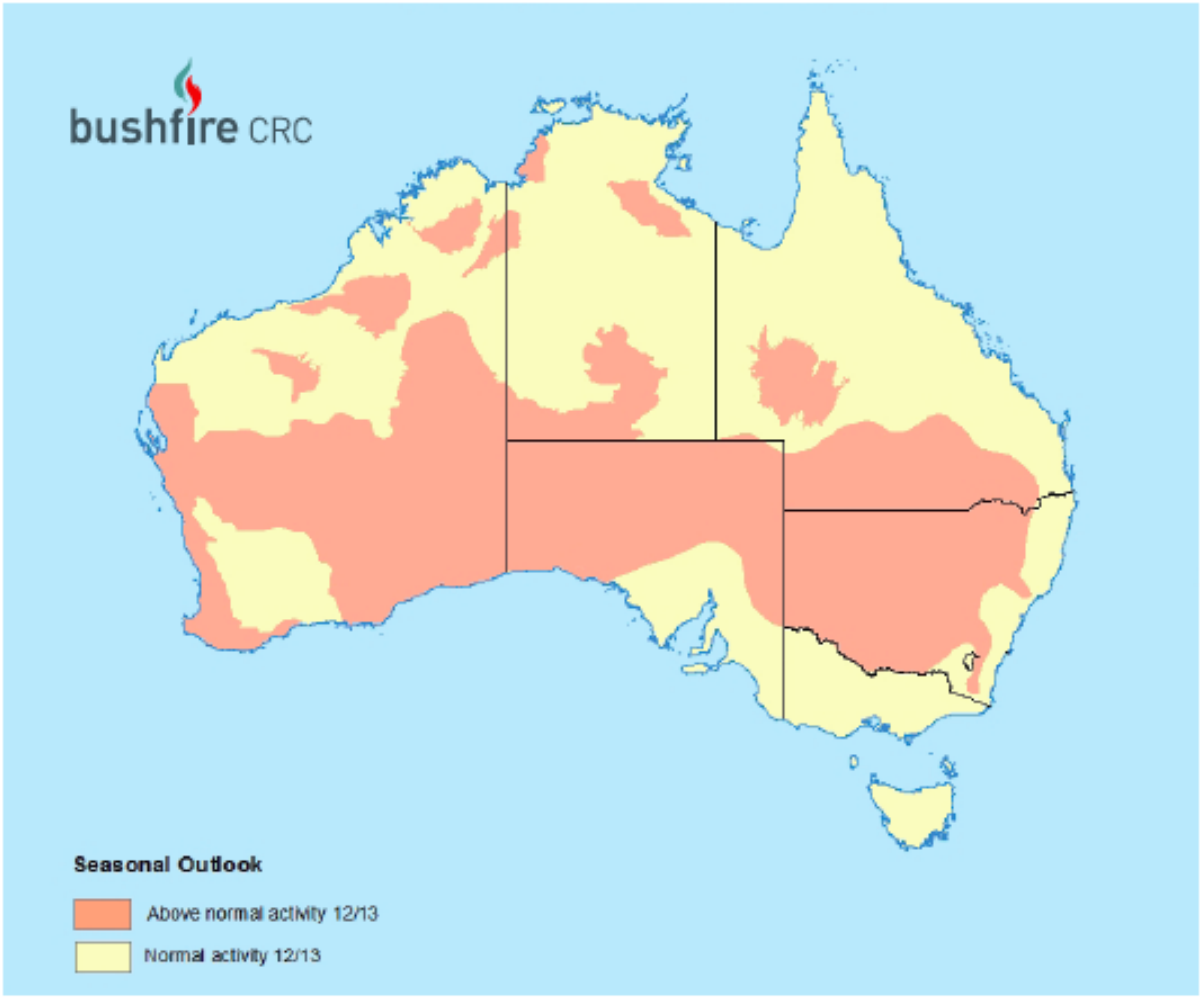
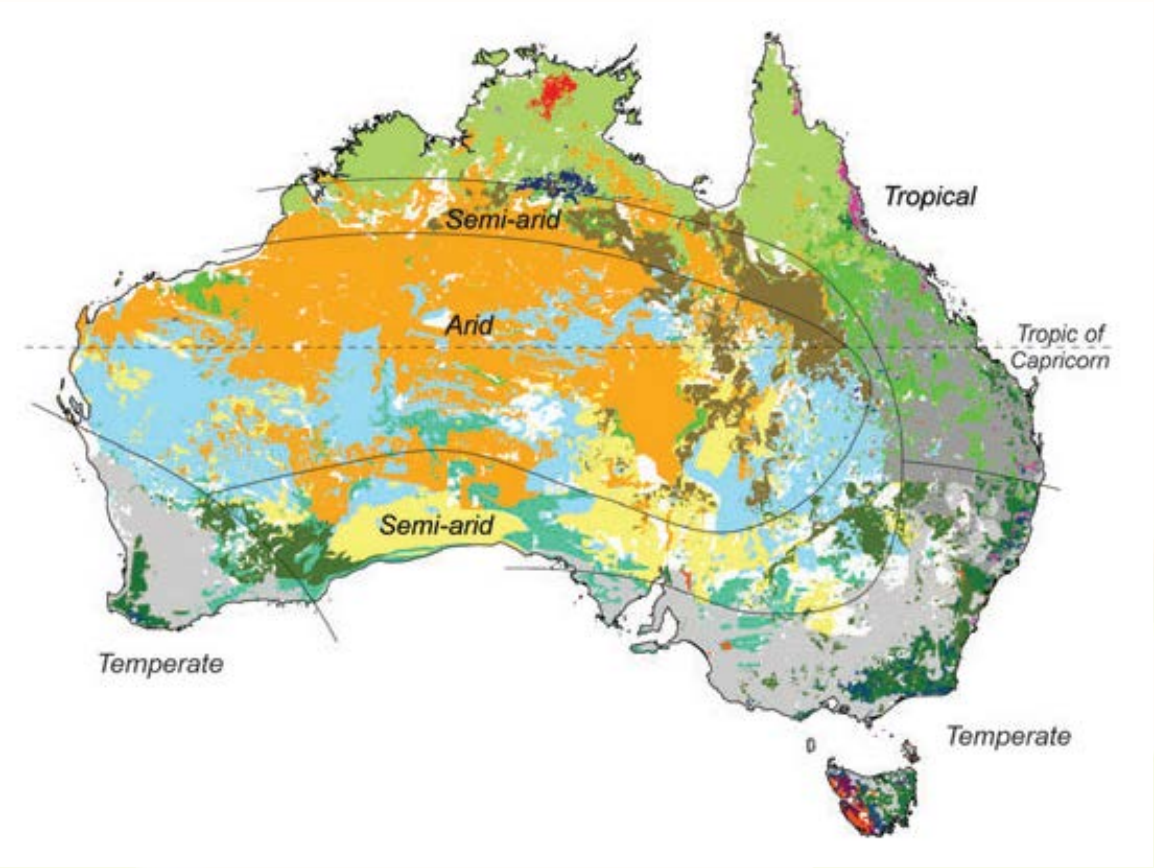
UTAS

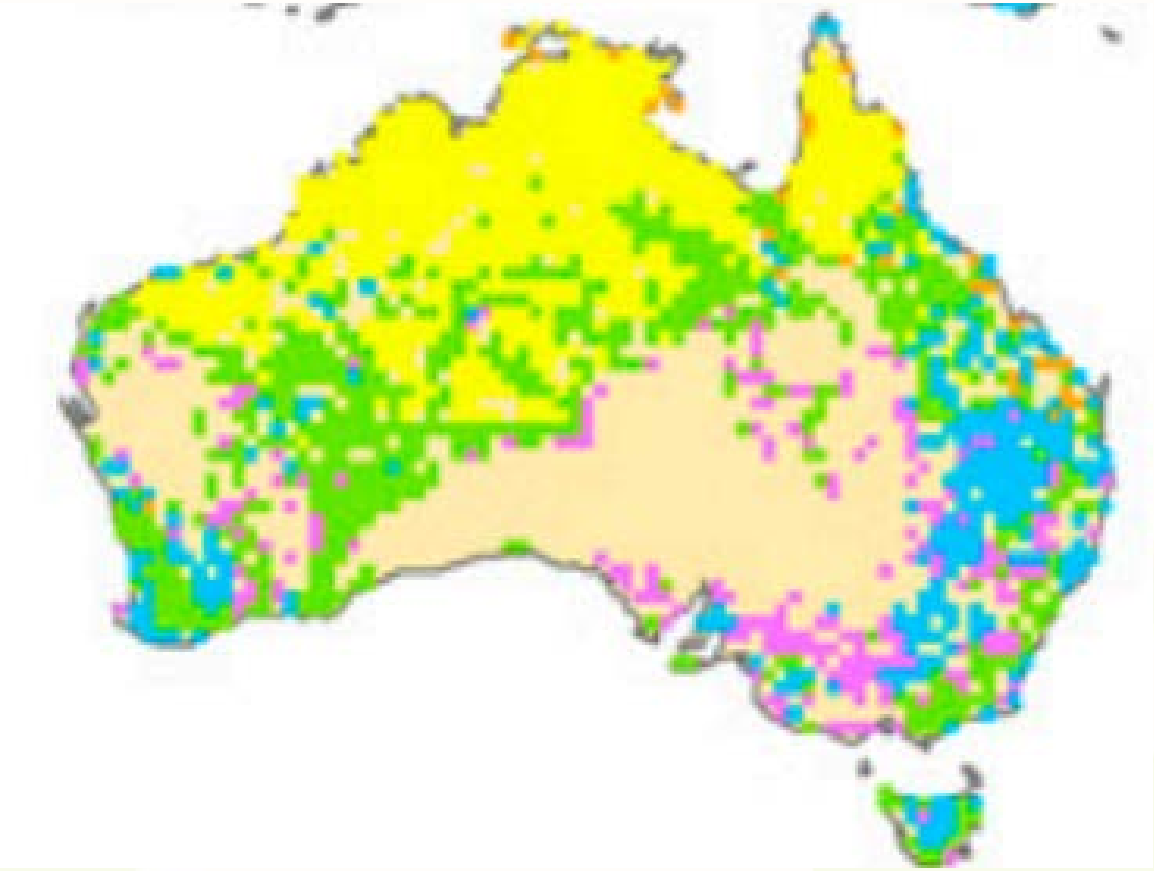
SOUTHERN AUSTRALIA SEASONAL BUSHFIRE OUTLOOK 2012-13





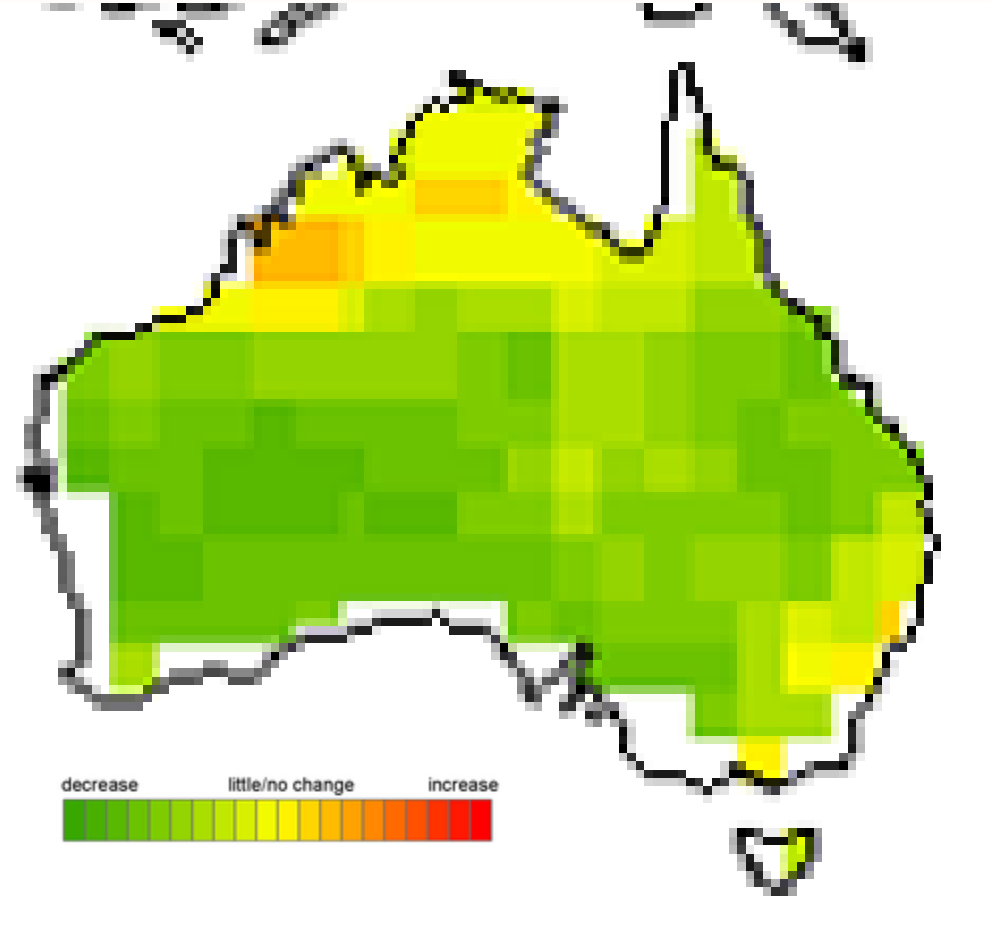
The distribution of major fire regime niches throughout Australia. See Table 1 for a more detailed description of typical and extreme fire intensities and intervals for each niche. The niches are ordered according to decreasing annual net primary productivity.

Murphy, B.P., Bradstock, R.A., Boer, M.M., Carter, J., Cary, G.J., Cochrane, M.A., Fensham, R.J., Russell-Smith, J., Williamson, G.J. and Bowman, D.M.J.S. (2013) **Fire regimes of Australia: a pyrogeographic model system.**, *Journal of Biogeography*



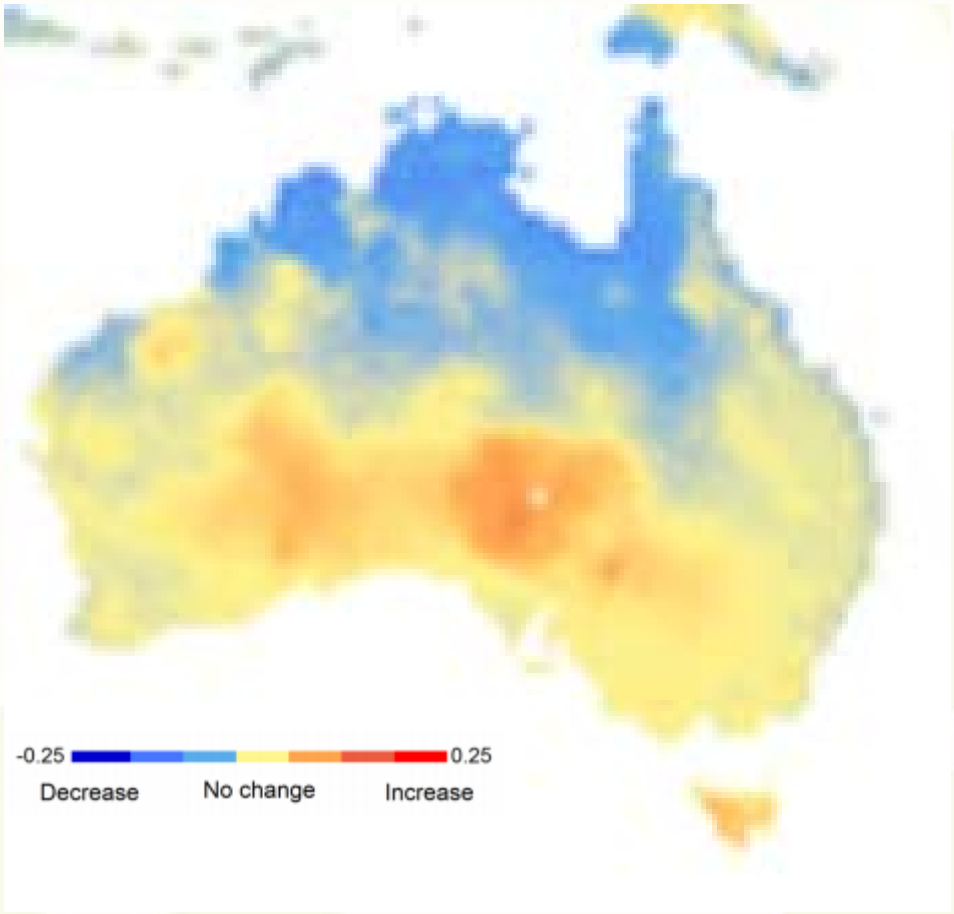
Pyromes represent regions of the globe that have similar fire frequencies, intensities, sizes, burned areas, and fire season lengths.

Archibald S, Lehmann CER, Gómez-Dans JL, and Bradstock RA (2013) Defining pyromes and global syndromes of fire regimes. PNAS 2013



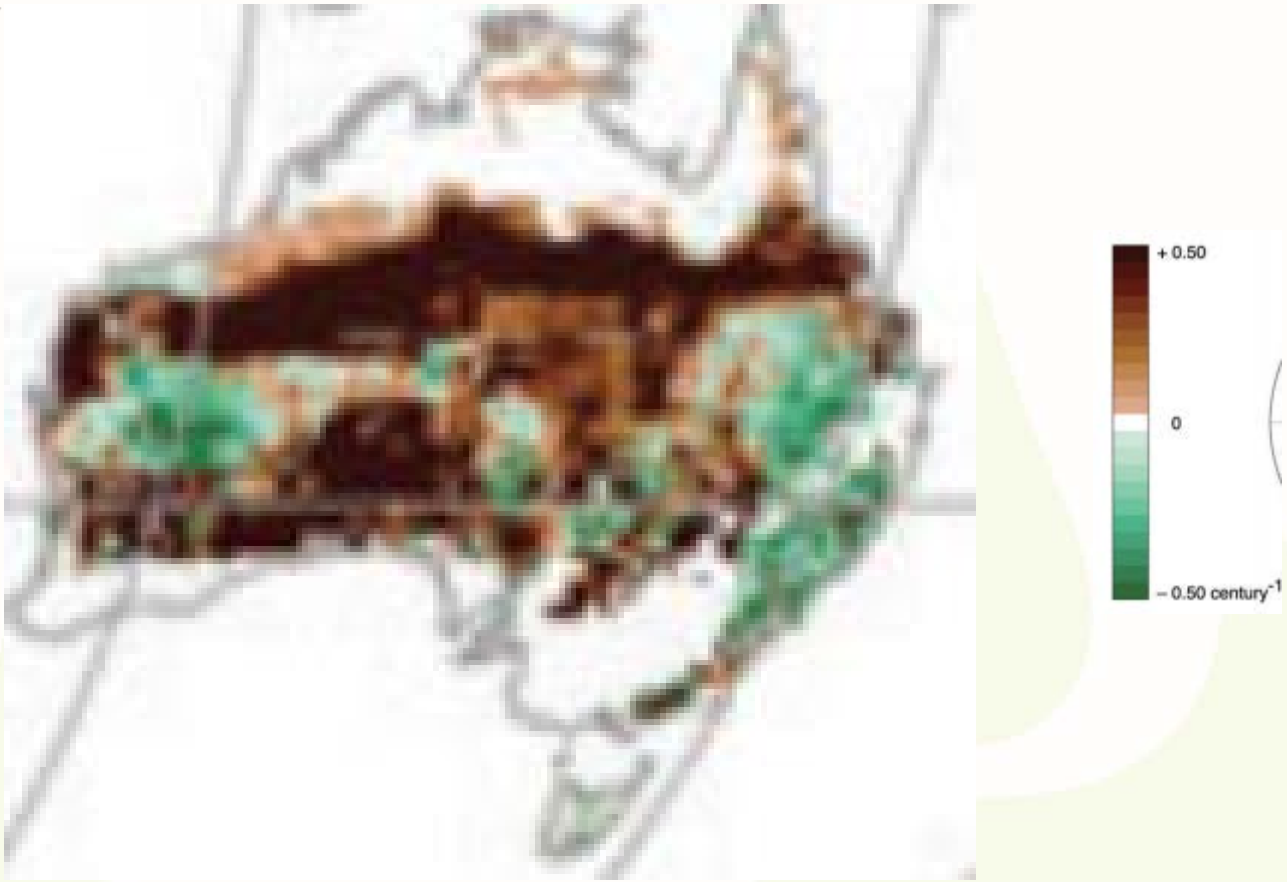
Changes in the global distribution of fire-prone pixels under the A2 (mid-high) emissions scenario, 2070-2099 using NPP model.

Krawchuk MA, Moritz MA, Parisien M-A, Van Dorn J, Hayhoe K (2009) Global Pyrogeography: the Current and Future Distribution of Wildfire. PLoS ONE 4(4):



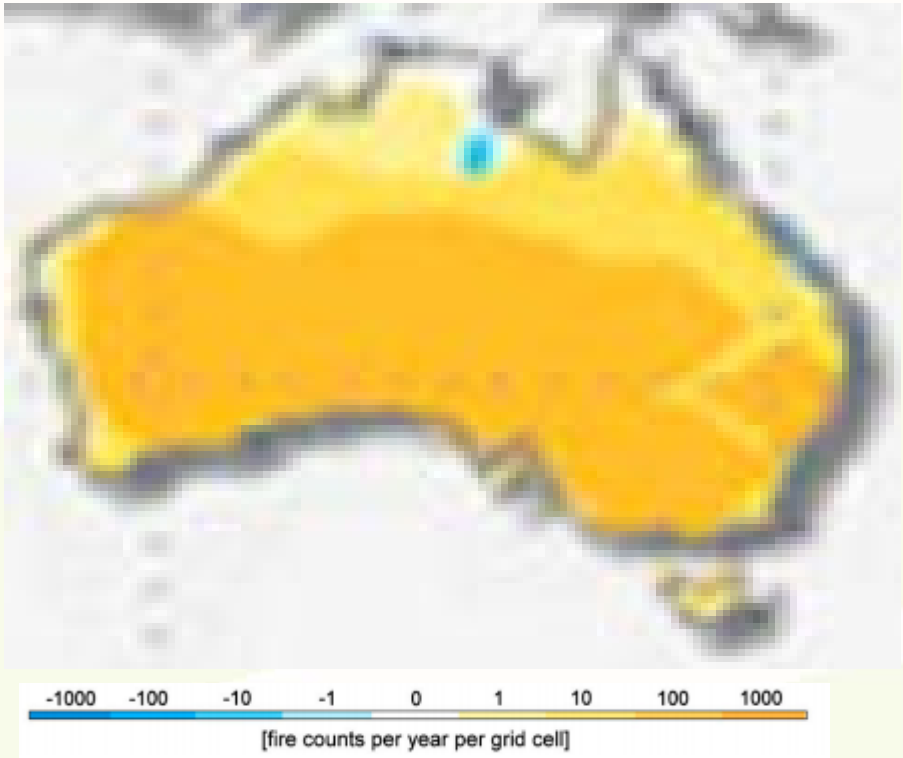
Ensemble mean change in predicted fire probability among 16 GCMs for 2070–2099.

Moritz MA, Parisien M-A, Batllori E, Krawchuk MA, Van Dorn J, Ganz DJ, Hayhoe K (2012) Climate change and disruptions to global fire activity. *Ecosphere* **3** 49.



Projected fire trends. Rates of change are shown for the three general circulation model ensemble for IPCC (2007a) emissions scenario A1B for wildfire frequency between the periods 1951–2000 and 2051–2100.

Gonzalez, P., Neilson, R. P., Lenihan, J. M. and Drapek, R. J. (2010), Global patterns in the vulnerability of ecosystems to vegetation shifts due to climate change. Global Ecology and Biogeography, 19: 755–768.



Regional patterns of projected fire activity changes. Yellow shades indicate increases, and blue shades indicate decreases in linearized regional fire activity trends over the 21st century (years 2004–2100) in A2 scenario.

Pechony O, & Shindell DT (2010) Driving forces of global wildfires over the past millennium and the forthcoming century. PNAS 107, 19167–19170.

Australia's Fire Future - ???