

**Full Reference:**

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**Determining the impacts of climate change on iconic West Australian trees, woodlands and forest ecosystems.** Brouwers, N.C. (*State Centre of Excellence for Climate Change, Woodland and Forest Health (CoE), Murdoch University, Australia; n.brouwers@murdoch.edu.au*), Lyons, T. (*CoE, Murdoch University, Australia; t.lyons@murdoch.edu.au*), Hardy, G. (*CoE, Murdoch University, Australia; g.hardy@murdoch.edu.au*), Dell, B. (*CoE, Murdoch University, Australia; b.dell@murdoch.edu.au*), Veneklaas, E. (*CoE, University of Western Australia, Australia; evenekla@cyllene.uwa.edu.au*), Renton, M. (*CoE, University of Western Australia, Australia; michael.renton@uwa.edu.au*), Barber, P. (*CoE, Murdoch University, Australia; p.barber@murdoch.edu.au*), Stone, C. (*CoE, NSW Department of Primary Industries, Australia; christine.stone@dpi.nsw.gov.au*), Behn, G. (*CoE, Department of Environment & Conservation, Australia; graeme.behn@dec.wa.gov.au*), Evans, B. (*CoE, Murdoch University, Australia; brad.evans@murdoch.edu.au*)

The State Centre of Excellence for Climate Change, Woodland and Forest Health (Murdoch University) is dedicated to provide up-to-date and scientifically sound science and information to underpin the protection, health and sustainable management of Western Australia's unique woodlands and forests. Eucalypt (*Eucalypt spp.*) trees, woodlands and forest ecosystems have been declining rapidly across a range of climatic zones and terrestrial and riparian ecosystems. Global climate change and altered land use are suspected to be two of the key drivers in the declines of eucalypt species; however, the exact causes of these declines are largely unknown. This research program aims to determine correlations between historical declines of eucalypt ecosystems and climate variables, using a combination of temporal records of remote sensed data, mesoscale meteorological models, and field-acquired data. This project will focus on: (i) accurately mapping the spread and extent of tree declines, (ii) find correlations with abiotic factors, and (iii) detect indicators of canopy health. This project will specifically test the hypothesis that lower annual precipitation in combination with higher temperatures (i.e. drought stress) is the main driver of the observed declines. Preliminary results of this research will be presented and future steps and challenges will be discussed.