

Climate change and community bushfire resilience

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Chapter summary

Bushfire vulnerability and resilience occur in dynamic and complex ways – spatially, temporally, ecologically and socially, and in synergies between these. Along with increasing fire weather risk, climate change is also likely to affect social–ecological bushfire vulnerabilities and challenge bushfire resilience in complex ways. In this chapter we summarise projected impacts on fire weather risk, and discuss the implications for community bushfire resilience. We conclude with key questions and considerations for fire management agencies.

For communities, climate change will not only likely increase the risk of bushfire and its associated impacts and losses, but it may also affect underlying vulnerabilities and resilience. For example, combined with globalised economic pressures and drought losses, a bushfire may represent a threshold beyond which an individual or community cannot cope or recover. Less rain in certain regions may contribute to rural decline, further reducing social networks and volunteer numbers. Extended fire seasons will mean people must remain prepared and vigilant for longer. Essential services that contribute to a community's resilience may face a growing bushfire risk. Already-stressed ecosystem function and services may decline further, with concomitant impacts on social resilience. More subtle impacts may include the nuances and sophistication of preparedness advice.

Agencies will need to explore what is realistic in terms of bushfire impacts, preparedness and suppression capabilities in a changing climate, and how this will inform their planning, policies and dialogue with communities. 'Adapting to climate change' not only suggests that fire management policies may need re-evaluation, it also implicates those who interact with fire management. Recovery efforts will need to ensure that they contribute to improved resilience both to bushfires and to a changing climate more generally, rather than re-establishing vulnerabilities. Work is needed to better understand the synergies and interrelationships between climate, ecology and society; existing vulnerabilities and ways they can be addressed; whether or not our policies are effective; and whether our policies are robust enough to remain effective in our changing climate.

Fire vulnerability: the role of climate and weather

When, where, whether and how a bushfire burns is influenced by daily weather, which is a reflection of climate. The weather systems that aggregate to form regional climate determine the seasonality of rainfall in relation to the annual cycle of temperature at any location, thereby influencing fire seasonality; inter-annual fluctuations in weather and climate influence fuel loads and condition; micro- to meso-scale atmospheric processes and weather conditions establish the potential for severe bushfires, and control the behaviour of individual fires once they begin (Lindesay 2003).