Article Type: Book Review

Mountain Ash: Fire, Logging and the Future of Victoria's Giant Forests

D. Lindenmayer, D. Blair, L. McBurney and S. Banks

CSIRO Publishing, Clayton South, Victoria, 2015, xxii + 173 pp. Price \$59.95 (paperback)

ISBN 9781486304974 (also available as Ebook).

For ecologists, the value of long-term research is self-evident. Longitudinal studies allow insights that simply cannot come with single point observations, no matter how rigorously designed the methods are or how appropriate the chronosequence is. The outcomes of such studies also provide excellent communication tools to describe and exhibit the changes in forest patterns and processes over time. This is especially the case for the forest ecosystems of southern Australia, where periodic large-scale landscape disturbances can render formerly familiar landscapes unrecognisable for decades to come. An example of this is the forests of the Central Highlands of Victoria as they recover from the Black Saturday bushfires of February 2009 – which forms the basis for *Mountain Ash: Fire, Logging and the Future of Victoria's Giant Forests*, the latest book from the Conservation and Landscape Ecology group at Australian National University (ANU).

The book continues the work of *Forest Phoenix* (Lindenmayer et al, 2010), which documented the Central Highland's forests as they turned from green to black, then slowly green again, following the 2009 fires. In *Mountain Ash* the thrust is less of documenting recovery, but exploring flora and fauna response to disturbance, and the potential future for this forest now that the regrowth from the 2009 fires has had its sixth birthday. On centre stage is the major disturbances that affect this landscape – fire and logging.

The chapters compartmentalise the Mountain Ash ecosystem into its key components: the forest and plants (chapter 3); large old trees (chapter 4); carbon stocks (chapter 5); and the response of possums, terrestrial mammals, birds and invertebrates to fire (chapter 6 – 9). Each chapter explores through the latest research the impacts of fire and/or logging on each of these components. I most enjoyed the sections focusing on the forest and plants. The discussion on the different categories of forest age according to scientific and government

This is the author manuscript accepted for publication and has undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the [Version of Record](#). Please cite this article as [doi: 10.1111/aec.12480](https://doi.org/10.1111/aec.12480)

This article is protected by copyright. All rights reserved

policy (p. 38) is a clear illustration of how, depending on which agency or researcher you speak to, the same 80 year old ash tree can be considered at once “mature”, “mature (younger)”, or “advanced regrowth”. Furthermore, the observations of seedling dynamics following fire of different severity is fascinating – variation in seedling density and growth across severity classes become apparent only a number of years following the fire, which reaffirms the necessity of longitudinal studies to tease out medium-to-long term trends following disturbance.

The book is not without its shortcomings. It appears to be primarily a tool for science communication, and accordingly the authors have streamlined the number of in-text references; this improves readability but along with the limited references and abundance of self-citations, critical reading of the book is made difficult. One consequence of this is that statements are occasionally made that a more extensive appraisal of the literature would clarify, or at the very least qualify. For example, a discussion on resprouting mountain ash (p. 50) closes by stating that this has been “observed to occur in very old, large diameter trees”. This is an interesting anecdote, but may be erroneously attributing specific features to old trees when they may be more likely a general trait. *Eucalyptus regnans*, after all, has been shown to have a weak epicormic resprouting structure (Waters *et al.* 2010) and there are published examples of post-fire resprouting mountain ash in other age classes (e.g. Ashton and Martin 1996). The tension at the heart of good science communication is balancing complexity and brevity – unfortunately it appears at times this book trades one for the other.

The closing chapters (p. 119 – 152) on the management of a post-fire landscape and the future of the Central Highlands are unfortunately short and unfulfilling. Throughout the text, reference is made to the necessity of both reservation *and* restoration to reinstate the key limiting factor in the forests – the presence of hollow bearing trees, which are essential habitat for a range of arboreal mammals. The team’s research (p. 58) indicates that with complete forest reservation, and a Herculean effort to exclude all fire, there will be more hollow bearing trees present ($\sim 0.8 \text{ ha}^{-1}$) relative to a future of intense fire and logging ($\sim 0.4 \text{ ha}^{-1}$). This appears to provide a compelling argument for forest reservation – however, these values pale when compared to the current ($\sim 4 \text{ ha}^{-1}$) and pre-Black Saturday ($\sim 7 \text{ ha}^{-1}$) estimates of hollow bearing trees. Recognising that reservation therefore can only achieve so much, one would expect the concluding chapters to emphasise how forest management and ecological research can unite to inform restoration practices and halt the looming deficiency of hollow bearing trees. Unfortunately, the discussion is largely framed on reservation

options (essentially proposing restoration by reservation), and analysis of innovative restoration techniques (e.g., damaging/removing upper limbs or girdling trees to induce hollow development) are either mentioned in passing in early chapters (e.g., p. 61) or missing altogether.

These shortcomings do not detract from remarkable depth of expertise that underpins the book. I would recommend it alone for the photographic record it provides of a stunning ecosystem recovering from what is a – hopefully - once-in-a-lifetime disturbance event. For those who wish to gain a more comprehensive treatment of the science that informs it, I would recommend *Forest Pattern and Ecological Process* (Lindenmayer, 2009).

References

Ashton D. H., Martin D. G. (1996) Changes in a spar-stage ecotonal forest of *Eucalyptus regnans*, *Eucalyptus obliqua* and *Eucalyptus cypellocarpa* following wildfire on the Hume Range in November 1982. *Aust. For.* **59**, 32–41.

Lindenmayer D. (2009) *Forest Pattern & Ecological Process: A Synthesis of 25 Years of Research*. CSIRO Publishing, Collingwood.

Lindenmayer D.B., Blair D., McBurney L., Banks S. (2010) *Forest Phoenix: How a great forest recovers after wildfire*. CSIRO Publishing, Collingwood.

Waters D.A., Burrows G.E., Harper J.D. (2010) *Eucalyptus regnans* (Myrtaceae): A fire-sensitive eucalypt with a resprouter epicormic structure. *Amer. Jour. Bot.* **97**, 545–556.

doi:10.3732/ajb.0900158.

THOMAS A FAIRMAN

The University of Melbourne

Richmond, Victoria, Australia

thomas.fairman@gmail.com

Minerva Access is the Institutional Repository of The University of Melbourne

Author/s:

Fairman, TA

Title:

Mountain Ash: Fire, Logging and the Future of Victoria's Giant Forests D. Lindenmayer, D. Blair, L. McBurney and S. Banks. CSIRO Publishing, Clayton South, Victoria, 2015. xxii + 173 pp. Price \$59.95 (paperback). ISBN 9781486304974 (also available as Eboo

Date:

2017-12

Citation:

Fairman, T. A. (2017). Mountain Ash: Fire, Logging and the Future of Victoria's Giant Forests D. Lindenmayer, D. Blair, L. McBurney and S. Banks. CSIRO Publishing, Clayton South, Victoria, 2015. xxii + 173 pp. Price \$59.95 (paperback). ISBN 9781486304974 (also available as Eboo. Austral Ecology, 42 (8), pp.e18-e19. <https://doi.org/10.1111/aec.12480>.

Persistent Link:

<http://hdl.handle.net/11343/293935>