

Dry Times Blueprint for a Red Land

Mark Stafford Smith and Julian Cribb, 2009
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RESOURCE depletion, pollution, climate change, species extinctions, etc. have opened most people's eyes to the fact that the future of humanity is irrefutably linked with the life support systems of our environment. Yet, particularly in urban Australian society, cheap clean water from ever-declining aquifers still flows freely from our taps; easily recyclable goods are collected weekly in oversized wheely-bins and dumped out of sight as landfill; our energy consumption from the burning of fossil fuels is enormous, even though Australia is blessed with practically unlimited supply of solar and wind energy. Anyone who has ever spent time travelling through outback Australia will know that our ingrained urban habits, interestingly, quickly change in the face of scarcity and uncertainty. A good example is how careful we become of not wasting a single drop of water. Suddenly it is possible to survive without electrical lighting, and other modcons. So, we are obviously capable of changing our ways, and what Mark Stafford and Julian Cribb postulate, is that by listening to the knowledge of the desert we may have a roadmap to survival in the 21st century.

The book is organized around two central themes: (1) understanding Australian deserts in order to ensure their preservation; and (2) as other areas in Australia and around the world increasingly face "drying times", learning from them. These themes are dealt with in 10 chapters (plus an acknowledgement, prologue and epilogue sections). Very early on in the book, a convincing case is made for learning from deserts and desert history. The first three chapters highlight the variability and unpredictability of deserts. Desert biota have evolved some ingenious survival strategies to cope, not only with unpredictable water supply, but also with nutrient limitation, and the interactions with other factors such as fire and, increasingly, human activity (Chapter 1). The sparseness and wide open spaces that are a feature of Australian deserts have developed as a direct consequence of lack of water and nutrient limitation. An interesting and informative account is given of the link between past climates and desert formation worldwide, and the implications of predicted future drying trends on Australian deserts in particular (Chapter 2). Unpredictable climate, scarce resources, scarce population, remoteness, local knowledge, cultural differences and social uncertainty have been identified as the key drivers that determine how deserts work (Chapter 3). In this chapter, many diagrams (five) and boxes (four) are used to help the reader understand the causal links and interactions

between these factors. Whilst too many boxes can sometimes distract from the flow of the main text, in this case they are used effectively to underscore and summarize key messages. The remaining seven chapters deal primarily with how desert knowledge can be turned to the benefit of desert dwellers today, as well as those of the future through climate change and desertification. The role of Aboriginal culture and knowledge is discussed in Chapter 4, as well as the regrettable ongoing conflict between indigenous and western societies. Drastic federal interventions such as those recently employed in the Northern Territory only highlight the lack of dialogue between the two cultures. Yet the authors stress that we thereby miss a great opportunity "... in opening our minds in a genuinely appreciative, two-way dialogue about how desert peoples traditionally coped with these environments, and translating the lessons thus learned into the modern world". A key message of Chapter 5 is that in order to conserve desert landscapes, land managers (pastoralists, tourist operators, etc., i.e., the "pillagers") and park rangers (the "conservationists") must work in unison and not against each other. Furthermore, ongoing land degradation through overstocking and other poor practices (including "silly drought policies") can be overcome by heeding the desert drivers introduced in Chapter 3. In Chapter 6, the authors suggest that lessons learned from desert business opportunities today (mining, tourism, nutrition and art are dealt with) will be vital for the survival of enterprises anywhere experiencing "drying times". An interesting parallel between survival strategies of plants and animals and those of small businesses is drawn: "... it [the business] must have strategies for surviving a prolonged 'dry spell'".

In Chapter 7, it is made clear how greatly desert settlements differ from their urban counterparts, and why it is important for outsiders to care about their welfare. Understanding the implications of these differences provides insights into what is needed for many other regions. Chapter 8 is dedicated to success stories of desert ingenuity. "In deserts, things that are greedy for scarce resources do not survive for long, and desert technologies, as well as peoples, have to obey this law". Perhaps the most famous of these innovations are the Royal Flying Doctor Service (RFDS) and the School of the Air.

Remoteness and sparseness can lead to the breakdown of mainstream models of governance and service delivery in the desert. How can the voice of desert dwellers become audible to distant politicians and bureaucrats? These issues are covered in Chapter 9, with many examples given where outback people have been successful in organizing themselves and mitigating the effects of indifferent and remote rulers. The final chapter cements the case of learning from deserts "... as the world itself moves into dry and uncertain times".

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The chapters in the book flow smoothly into each other and the writing style is clear and vibrant. The abundant boxes and diagrams are easy to understand and are used to good effect. Being somewhat of a desert enthusiast myself, I might have liked to see a few more colour plates, although the ones shown (five in all) do demonstrate some important desert strategies employed in contrasting situations. I believe the book is aimed at a wide readership, by no means only resource managers and policy makers.

All in all, this book is a delight to read. More importantly, the insights provided do much to clarify how deserts operate, particularly in a socio-environmental context, how their governance can be improved, and how the lessons learnt from them can benefit the entire nation (and world) in increasingly drying and resource-depleted times.

Forest Pattern and Ecological Process: A Synthesis of 24 Years of Research

David Lindenmayer (2009)
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FOR a biologist attaining his doctorate in 1990, David Lindenmayer has been nothing less than prolific. His web page at the Australian National University (ANU) credits him with more than 520 scientific publications and 20 books. This book, *Forest Pattern and Ecological Process*, brings together his 25 years of research experience in the montane ash forests of Victoria's Central Highlands. That research began in 1983 with studies of the ecology of Leadbeater's Possum *Gymnobelideus leadbeateri*, an iconic and endangered arboreal marsupial and led to his doctorate from ANU entitled *The Ecology and Habitat Requirements of Leadbeater's Possum*. I remember reading that dissertation and thinking how good it was and the promise it held for the young biologist who wrote it. I was not wrong.

In the preface, Lindenmayer states that this book is "written for a broad audience", including researchers, managers, policy-makers, and those with an interest in nature. Foremost, it is a synthesis of David's work in the Central Highlands, but it is also "about how a forest works". The introduction contains a caveat that the book refers frequently to Lindenmayer's own publications and there is an apology to those who might find frequent self-citation annoying. David is prone to self-citation, but he has done the work, it is good work, and he should feel confident in promoting and sharing it with others. Apologies are not necessary. Studies by other workers in the Central Highlands and forests of Australia are cited as required and the extensive collaboration that went into Lindenmayer's own research is made transparent. Enough about David Lindenmayer.

This is a book about how a forest works, about the ways ecologists study forests, and about outcomes of research and how these can be used to improve forest management and conservation. Victoria's montane forests are not only biodiverse with many threatened

species, but they are a valued resource for timber, water, honey, and tourism, among other uses. Integrating the needs of the forest's flora and fauna for survival with human aspirations for resources, jobs, and profits has been an area of conflict and compromise for decades. Meeting these goals requires research, but it also requires understanding. Sometimes research and understanding go hand-in-hand, sometimes they do not; it depends on who is doing the research. As you read through *Forest Pattern and Ecological Process*, it becomes clear that this is an example of research and understanding progressing together.

There are seven parts to the book. An introductory section provides the requisite background of geography, geology, and biota, and gives simple descriptions of the field techniques used to study forest plants and animals. Parts II and III describe the composition and structure of the forests in the Central Highlands. Two forest types or kinds predominate, one dominated by eucalypts *Eucalyptus* spp. (ash-type) and the other by Myrtle Beech *Nothofagus gunnii* (loosely "rainforest" or "cool temperate rainforest"). Rainforest plants are also an important component of the understorey of the much taller (90–120 m in height) eucalypt forests. In describing the montane ash forests, Lindenmayer has a useful account of old-growth and why it is difficult to define. Disagreements over what is or is not old-growth forest have wasted inordinate amounts of time and resources in debates over forestry activities and forest conservation, so it is good to see a calm and reasoned discussion of old-growth and their importance or otherwise to the forest vertebrate fauna. Perhaps this is the appropriate place to note that, although Lindenmayer writes about forest animals, it is really about forest vertebrates and, more specifically, about birds and mammals. These are his research animals and little is said about invertebrates. Invertebrates are only mentioned once (p. 28) and arthropods, the most diverse faunal assemblage in forests, are not listed in the index. There is also little about frogs and reptiles. This is not a criticism, just a reflection on how much more work needs to be done before we can really say we understand how Australian forests work.