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**Practices in Social
Ecological Research**
Interdisciplinary collaboration
in 'adaptive doing'

**Andrea Rawluk
Ruth Beilin
Helena Bender
Rebecca Ford**

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Andrea Rawluk
School of Ecosystem and Forest
Sciences
University of Melbourne
Parkville, VIC, Australia

Ruth Beilin
School of Ecosystem and Forest
Sciences
University of Melbourne
Parkville, VIC, Australia

Helena Bender
School of Ecosystem and Forest
Sciences
University of Melbourne
Parkville, VIC, Australia

Rebecca Ford
School of Ecosystem and Forest
Sciences
University of Melbourne
Parkville, VIC, Australia

ISBN 978-3-030-31188-9 ISBN 978-3-030-31189-6 (eBook)
<https://doi.org/10.1007/978-3-030-31189-6>

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We wish to dedicate this book to all of those seeking to create change in and for social ecological systems and address social ecological justice through conscience, reflection, and reciprocity. We pay tribute to the next generation of activists, such as in 350.org and Climate Strikes, who will engage with the wicked challenges that social ecological systems present. From young to old, small actions to great activism, from local to global, your work matters and we look forward to being inspired by you.

This book is released in the same year as Budj Bim, an ancient aquaculture landscape in south-west Victoria, has been listed on the UNESCO World Heritage List. We dedicate this book to those who spent many years as activists working towards this outcome. This acknowledgement is just the beginning of rewriting a colonial narrative that has dominated for too long.

ACKNOWLEDGEMENTS

We thank the Gunditjmara people, the Traditional Owners of the land upon which we were honoured to meet and write while preparing this book. We pay respect to the elders of the community and extend our recognition to their descendants. We are grateful to the local people who generously shared their time and stories with us about *Tareer*/Kelly Swamp. Any errors in the book are our own. Our achievements were enhanced by great catering and a fabulous view, for which we are very thankful. We are extremely grateful to Dr. Sara Maroske, Ana Lambert, and an anonymous reviewer for their detailed and invaluable feedback on earlier versions of the manuscript. We are grateful for the patience, open-heartedness, and contrariness of our co-authors and their ongoing willingness to enter the confronting space of collaboration.

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CHAPTER 1

Finding Ourselves in the Messy Entanglement of Complexity: An Introduction to the Challenges and Opportunities in Social Ecological Systems

CONTEXT IN WHICH WE WRITE THE BOOK

Social ecological systems (SES) and sustainability research offer exciting approaches to engage with the complex issues of our time, ranging from a single community protecting a beloved local area from development, to management of a state conservation area, to the impacts of the Anthropocene that ricochet across global and local scales. Recognition of interdependent relationships between humans and the environment has been essential to the advances made in SES research, as has the acknowledgement that SES are non-linear and dynamic. A key challenge is finding integrated approaches to SES that combine the knowledge and practices from the many disciplines that contribute to this space.

Different scholarships have made advances in helping explicate the range of ways we might think about and engage with the challenge of integrating knowledge. However, the complexity remains, and this may reflect difficulties in achieving interdisciplinarity. Some scholars, including ourselves, argue that this integration of what and how we know SES is incomplete (Cumming 2014; Herrero-Jáuregui et al. 2018). Disciplinary and philosophical differences, even if unconscious, are often irreconcilable (Phoenix et al. 2013). Tackling integration by focusing on more abstract philosophical and disciplinary differences can

present an obstacle for researchers, practitioners, and students interested in SES. Instead, we suggest that starting with practice, starting with what researchers, practitioners, and people do in their everyday lives or disciplines, and using narratives as accessible stories, can act as a doorway to reflect on what is known and prioritised, along with engaging with more abstract differences. This book supports taking action by outlining a practice-focused way to navigate the messiness of social ecological challenges, and serves as a vehicle for empowerment, vision, and action at a time when there is an increasing number of complex issues that threaten human survival and demand approaches that can facilitate sustainability.

WHY THIS BOOK

Interdisciplinary collaboration, or synthesis, is at the core of SES research and management, sustainability science, and many other areas. However, integration is a messy business, especially in SES because the synthesis process needs to occur at multiple scales: how learnings integrate with policy, how the frameworks, tools, and practices of social and ecological disciplines can be brought together, as well as how our individual practices as researchers and practitioners need to respond to changing contexts and the integration of new learnings. There is a wide array of SES frameworks that are effective within a particular discipline, but these often have limitations in their ability to link and integrate SES together (Binder et al. 2013; Cumming 2014), and there are differences of opinion about how to integrate social ecological knowledge. Herrero-Jáuregui et al. (2018) called for a well-documented framework to build bridges between the disciplines connected to social and ecological ways of knowing. Recent reviews of SES research suggest that synthesis remains a challenge, of bringing together different knowledges (Cumming 2014), bringing together different practices (Herrero-Jáuregui et al. 2018; Perz 2019), as well as exploring the relationship between epistemology (how we know), ontology (how we view reality) and axiology (our values) (Binder et al. 2013; Cumming 2014; Collard et al. 2018).

This book seeks to actively, and with humility, engage with the challenge of integration within the social ecological systems research and management space. We focus our energies here because we are concerned by complex, social ecological challenges. Through understanding and responding to SES, we wish to contribute to efforts to facilitate sustainability. In research on how to express and to integrate multiple

human and non-human aspects in SES, the starting point is often grappling with different knowledges (Phoenix et al. 2013), which are inherently irreconcilable and can make processes initially seem futile. As we indicated above, we offer a reorientation of interdisciplinary integration by turning to practice. However, there is no pre-existing map for navigating this kind of interdisciplinary practice in SES thinking that is accessible to practitioners and disciplinarians alike. We needed a map ourselves, so we developed this book.

‘Alter your perspective by a few degrees, and the view is different’ Bruce Pascoe (2014, p. 36) states in *Dark Emu*, on seeing Indigenous history and culture in Australia disentangled from colonial racism. We turn to practice in this book as a starting point for developing awareness of and then shifting our view, our conscious engagement in interdisciplinarity, and our participation in the struggle for social and environmental justice. In response, we offer the practice-oriented process of ‘adaptive doing’ in which people are asked to do differently, see differently, and open space for unexpected outcomes to emerge.

The aims of this book are:

- to outline and demonstrate ‘adaptive doing’, a practice-oriented process for integrating research in SES, that is transparent, inclusive, and engaged;
- to demonstrate three reframing tools from the social sciences—the 4 Is, assemblage, and the eternally unfolding present—that assist SES researchers and practitioners to participate in ‘adaptive doing’; and
- to overcome disciplinary silos by creating a platform that we call the ‘agora’, which creates a space where SES researchers and practitioners can participate in ‘adaptive doing’ to learn and improve SES practices and outcomes.

In response to these aims, we offer a practice-focused approach that draws on a breadth of scholarship across SES thinking, interdisciplinarity, social learning, and critical reflection. By practice, we mean any kind of ongoing, often everyday activity that involves a combination of knowledge and context as constituent parts (Cook and Wagenaar 2012). Given our focus on SES research, we are particularly interested in practices that are contributing to, elucidating, or mitigating complex issues related to sustainability.

APPROACH TAKEN IN THE BOOK

We take an interdisciplinary approach in this book. We see interdisciplinarity as a process for co-creating shared understanding of a phenomenon or system that shapes and is shaped by those involved. We, the authors, come from different disciplinary backgrounds, although we all started our disciplinary training within the natural sciences. We seek to be transparent, owning the biases that we bring to writing and engaging in social ecological research. We come from and/or work across different ontological positions, including: post-positivism, perceiving that there is an imperfectly knowable single real world; constructivism, wherein there are multiple understandings of the world, which are known through each person's experience and are built over time; and critical theory, which sees multiple understandings of the world, and acts in the world to illuminate and create change. We seek to bring a just and ethical approach in the processes and examples we offer in this book.

WHO IS THE BOOK FOR?

We write this book for other researchers and practitioners who work or are interested in a systems-thinking approach for engaging with SES issues. We see systems as a network of relationships that form an integrated whole, that are nested within other systems, and contain subsystems (e.g., Berkes et al. 2003). We recognise that not all researchers in areas of sustainability or environmental issues engage with systems thinking, but we welcome such researchers to explore this approach along with critical reflection. We write this book for people who are interested in alternative ways of thinking about sustainability and opening new questions and directions for practice.

STRUCTURE OF THE BOOK AND THE FUNCTION OF EACH CHAPTER

In this first chapter, we outline the impetus for the book and how and to whom we think it can be useful. In the second chapter, we introduce a wetland case study that at first appears unremarkable but is itself full of drama. Our case is situated in south-west Victoria, Australia and we return to it in the following chapters. In Chapter 3, we utilise our case

to highlight examples of the achievements and challenges currently faced in SES research and management. Chapter 4 introduces three key elements: ‘adaptive doing’, which is a practice-oriented process; a platform in which to participate in adaptive doing, the ‘agora’; and three reframing tools—the 4 Is, assemblage, and the eternally unfolding present, that offer different perspectives. The ‘adaptive doing’ process works to develop awareness of changed positions and improve integration, which leads to changes in understanding and practices among local communities, by researchers and with practitioners, and offers new insights that can assist us to facilitate sustainability. The ‘agora’ provides a space and time in which a practice-oriented approach can occur, it assists in building mutual respect among participants, and to overcome path dependencies in an SES. The three reframing tools that come from the social sciences, assist integration by offering different perspectives. Finally, in Chapter 5 we share the outcomes of applying adaptive doing and the three reframing tools to the case. We conclude with reflections on the insights we gained as researchers and practitioners from being in the ‘agora’ and engaging with the adaptive doing process.

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