



Research article

From resilience thinking to Resilience Planning: Lessons from practice

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ARTICLE INFO

Article history:

Received 27 April 2017

Received in revised form

26 March 2018

Accepted 3 April 2018

Available online 24 April 2018

Keywords:

Adaptive governance

Adaptive management

Australia

Natural resource management

Practitioner perceptions

Transformation

ABSTRACT

Resilience thinking has frequently been proposed as an alternative to conventional natural resource management, but there are few studies of its applications in real-world settings. To address this gap, we synthesized experiences from practitioners that have applied a resilience thinking approach to strategic planning, called Resilience Planning, in regional natural resource management organizations in Australia. This case represents one of the most extensive and long-term applications of resilience thinking in the world today. We conducted semi-structured interviews with Resilience Planning practitioners from nine organizations and reviewed strategic planning documents to investigate: 1) the key contributions of the approach to their existing strategic planning, and 2) what enabled and hindered the practitioners in applying and embedding the new approach in their organizations. Our results reveal that Resilience Planning contributed to developing a social-ecological systems perspective, more adaptive and collaborative approaches to planning, and that it clarified management goals of desirable resource conditions. Applying Resilience Planning required translating resilience thinking to practice in each unique circumstance, while simultaneously creating support among staff, and engaging external actors. Embedding Resilience Planning within organizations implied starting and maintaining longer-term change processes that required sustained multi-level organizational support. We conclude by identifying four lessons for successfully applying and embedding resilience practice in an organization: 1) to connect internal “entrepreneurs” to “interpreters” and “networkers” who work across organizations, 2) to assess the opportunity context for resilience practice, 3) to ensure that resilience practice is a learning process that engages internal and external actors, and 4) to develop reflective strategies for managing complexity and uncertainty.

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1. Introduction

Resilience thinking views social and ecological systems as intertwined, and argues that these interactions continually produce surprises (Berkes et al., 2003; Folke et al., 2010). It has been proposed as an alternative framework to conventional natural resource management, which treats environmental and social aspects as separate entities existing in an unchanging world (Folke et al., 2002; Walker and Salt, 2006). The framework suggests a variety of ways to strengthen resilience, that is the ability to deal with change and continue to develop (Folke et al., 2010), for example through fostering learning, participation, and understanding of

complex social-ecological interactions across scales (Biggs et al., 2015; Gunderson and Holling, 2002). It also proposes that transformations at smaller scales often are necessary to build resilience at larger scales (Folke et al., 2010). In recent years, interest in resilience in science and policy has increased dramatically and there is a growing demand for practical guidance on resilience, for example within environmental management, urban planning, and climate adaptation (Baggio et al., 2015; Davoudi, 2012; Robins and Kanowski, 2011; UNDP, 2014).

Despite this demand, studies of resilience practice are still rare. Few studies have analyzed the applications of resilience thinking in real-world settings and assessed what it has actually managed to achieve (Baird et al., 2016; Mitchell et al., 2014; Wagenaar and Wilkinson, 2015). Existing studies within this nascent field of research have focused on local and regional scales and typically investigated one or two local governments or watershed

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organizations (Baird et al., 2016; Mitchell et al., 2014; Sellberg et al., 2015; Walker and Salt, 2012; Walker et al., 2009; Wilkinson, 2012). So far, there has been very little synthesis across these case studies. Emerging results show that resilience practice has helped to develop a more holistic and dynamic understanding of the regions in which it has been applied (Ayre and Nettle, 2017; Haider et al., 2012; Sellberg et al., 2015; Walker and Salt, 2012; Wilkinson, 2012). In some cases, it also supported adaptive management and adaptive governance, for example by establishing an adaptive management program (Walker and Salt, 2012), coordinating different actors and mobilizing collective action (Ayre and Nettle, 2017), and devolving responsibilities to local communities (Mitchell, 2013a) (Table 1). Some scholars highlight that resilience practice lacks research and guidance on how to navigate deliberate transformations (Haider et al., 2012; Mitchell et al., 2014; Sellberg et al., 2017), while others find resilience thinking potentially more useful than sustainability in challenging the status quo (Wilkinson, 2012). This conflict highlights a wider debate on whether resilience thinking and practice can promote the transformative change required to shift to a sustainable civilization (Cretney, 2014; Davidson et al., 2016).

This study contributes to research on resilience practice by investigating a large-scale and relatively long-term application of resilience thinking in regional organizations in Australia. Its practitioners have called this approach to strategic natural resource management planning Resilience Planning (Table 1). Compared to existing studies of resilience practice, which often explore short-term, isolated interventions (e.g., Baird et al., 2016; Sellberg et al., 2015; Wilkinson et al., 2010), this case involves a longer-term application of resilience thinking that has been more integrated in the organizations (Mitchell, 2013a; Mitchell et al., 2014; Walker and Salt, 2012).

In this study, we examine how Resilience Planning practitioners – staff, consultants and researchers – translated and applied resilience thinking in this particular setting. In resilience practice, applications of resilience thinking are translated and adapted to a particular place in different ways depending on local people and context. Our focus on practitioner perceptions is based on previous studies (Bennett, 2016), both of resilience practice (e.g., Wilkinson et al., 2010), and of research on the conceptually and practically related field of adaptive management (West et al., 2016; Westley, 2002). By engaging practitioners across nine organizations in four different states, this study complements previous research that focused on individual organizations within this case (Mitchell,

2013a; Walker et al., 2009). We used semi-structured interviews with the practitioners and a review of the strategic planning documents of the organizations in order to investigate two overarching research questions: 1) What are the main characteristics of Resilience Planning and the key contributions to the strategic planning of the organizations? The overarching themes of contributions that we identified can be used to frame and guide in-depth evaluations of the impacts of resilience practice, including a broader variety of perceptions, in the future; 2) What enabled and hindered the practitioners in adopting and embedding the new approach in the strategic planning of their organizations? This information is useful for other resilience practitioners, particularly in natural resource management, but we believe also for other contexts such as urban resilience (e.g., Liu, 2014; Tyler and Moench, 2012; Wardekker et al., 2010), and resilience in development (e.g., Haider et al., 2012). The identified lessons and contributions can be compared to other studies, thereby facilitating further reflection, synthesis and comparison among resilience practitioners and across resilience practice cases.

2. Background

Before outlining how Resilience Planning developed in Australia, we describe the Australian regional natural resource management organizations in which Resilience Planning currently is applied.

2.1. The Australian regional natural resource management organizations

Australia's land, estuarine, and coastal areas are divided among 56 regional natural resource management organizations (NRM Region Australia, 2017). In the early 2000s, the organizations were established in their current form to redistribute environmental management from the national and state governments to regional communities (Lockwood et al., 2009) – an arrangement referred to as “the regional model” (Robins and Kanowski, 2011). The organizations are governed by community-based Boards (ibid.). They are concerned with the sustainable management of land, vegetation, and water, and deal with multiple interconnected issues, such as climate change and extreme events, biodiversity loss, invasive species, and sustainable agriculture. They all develop strategic plans, which are assessed and approved by state and federal governments (Lockwood et al., 2009). These plans set the

Table 1
Glossary of key terms. Resilience terms are, and will be, used and interpreted in different ways. These are the definitions we use in the context of this study.

Term	Definition	Key references
Resilience thinking	A theoretical framework, including the lens of social-ecological systems that are complex, adaptive, dynamic, and interacting across scales; specific concepts describing characteristics of such systems, such as resilience, adaptability, and transformability; and a normative orientation towards sustainable people-biosphere relations and human wellbeing.	Folke et al., 2010; Walker and Salt, 2006
Resilience practice	Applications of resilience thinking in real-world settings, that is not only in planning, or in the form of Resilience Assessments.	Walker and Salt, 2012; also used by e.g. Baird et al., 2016
Resilience Assessment	A specific method for applying resilience thinking that has been influential within resilience practice. It was developed by the research network, the Resilience Alliance, and its purpose is to increase understanding of the resilience of a specific social-ecological system.	Resilience Alliance, 2010; Walker and Salt, 2012
Resilience Planning	A resilience thinking approach to strategic planning of natural resource management, applied by practitioners (staff, consultants, and action researchers) in the strategic planning of regional natural resource management organizations in Australia (see framework in Fig. 3). Application of Resilience Planning is a specific case of resilience practice.	The Resilience Planning Community of Practice (http://www.rpcop.org.au)
Adaptive management	An approach to natural resources management that emphasizes using learning to navigate uncertain situations that require action.	Walters, 1986
Adaptive governance	A learning-based, flexible collaboration and decision-making process, that includes state and non-state actors, often at multiple levels, to adaptively negotiate and coordinate management of social-ecological systems and ecosystem services across landscapes and seascapes.	Folke et al., 2005; Schultz et al., 2015

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