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DEVELOPING A FRAMEWORK FOR ASSESSING RESILIENCE OF TOURISM SUB-SYSTEMS TO CLIMATIC FACTORS

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Abstract: Some researchers have argued that resilience is a useful concept for understanding impacts on social-ecological systems, such as tourist destinations. This paper presents the development of a resilience framework for tourist destinations with a particular focus on climatic disturbances or stress, and their impacts on tourism activity sub-systems. Building on the model of a 'stability landscape', this research uses primary data from the Queenstown-Wanaka destination in New Zealand to evaluate the concept of resilience and to formulate surrogates that describe the factors that shape resilience. Challenges for future research, including the proactive building of resilience, are outlined. This research represents a good example of an interdisciplinary approach that transcends existing epistemologies in tourism.
Keywords: resilience, tourist destinations, climate impacts, adaptive capacity, social-ecological systems.

INTRODUCTION

This research builds on, and supports, Farrell and Twining-Ward's (2004) and Strickland-Munro, Allison, and Moore's (2010) call for greater consideration of research on complex adaptive systems, including resilience, to enhance tourism research. To date, the knowledge domain of sustainable tourism has made very little use of research advances in the related fields of social-ecological system (SES) and ecosystem sciences, with a few exceptions (e.g. Biggs, 2011; Ruiz-Ballesteros, 2010). This is relatively surprising given that tourism is a prime example of a SES, involving both societal (including economic) and natural resources, and their interactions. While tourism and the environment has been studied extensively (Becken, 2010), the concept of resilience

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as a means to understanding the impact of disturbances or stress on a system has rarely been used. Of particular interest to this paper is the stress that weather and climate lay on a tourist destination (Becken & Hay, 2012). Climate undergoes natural cycles of variability, and their daily manifestation is referred to as weather. Weather impacts on tourism can be positive or negative, or in some cases disastrous (Becken & Wilson, 2013; Jeuring & Becken, 2013). Longer-term systemic changes in the climate are expected due to climate change, resulting amongst others in warmer temperatures, changed precipitation schemes, and more intense weather events (Intergovernmental Panel on Climate Change, 2007). The emphasis on present and future climatic disturbances allows for a focused analysis; however, it is important to note that tourist destinations experience a wide range of other stress factors simultaneously.

Depending on the context, resilience can be operationalised through a conceptually precise interpretation, or be used in a conceptually more vague but creative problem-solving situation (e.g. in a post-normal science context) (Strunz, 2012). To date, however, resilience largely remains a theoretical concept (Turner, 2010) that has only been operationalised in limited contexts (e.g. Malone & Brenkert, 2008; Walker, Holling, Carpenter, & Kinzig, 2004; Walker et al., 2010). To overcome some of the difficulties of transferring key theoretical concepts into the applied contexts of SESs, the use of surrogates has been proposed (Berkes & Seixas, 2005). Examples include surrogates related to institutional change, economic structure, property rights, risk perceptions, and level of interest (Klein, Nicholls, & Thomalla, 2003; Marshall, 2010). Folke, Colding, and Berkes (2003) clusters of surrogates to assess four key dimensions of building resilience have been applied to lagoons (Berkes & Seixas, 2005) and community-based tourism in Ecuador (Ruiz-Ballesteros, 2010). Systemic analysis of the resilience of economic sectors, however, is still largely absent from the debate, although Biggs (2011) and Biggs, Hall, and Stoeckl (2012) made an important contribution in advancing the concept of enterprise resilience for the case of reef tourism.

Acknowledging the conceptual vagueness of resilience (Strunz, 2012), as well as Strickland-Munro et al.'s (2010) theoretical discussion about the usefulness of resilience as a concept to study impacts in tourism, this paper develops a conceptual framework that moves the debate towards a more defined understanding of resilience for the context of tourism and climatic factors. By providing a pathway to operationalising the concept, it can be evaluated beyond the pure academic discussion, which then in turn would give more assurance that the underlying theoretical model is appropriate. This paper will begin by synthesising the resilience literature to identify a suitable model on which this current analysis can build. Based on empirical data from a case study tourist destination, a tourism-specific framework with resilience surrogates will then be developed. These surrogates could serve as a basis for defining a set of indicators that allow future monitoring of resilience (Buckley, 2012). The framework presented in this paper represents the first time that the conceptual model of a stability landscape