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SCUBA DIVING TOURISM
INTRODUCTION TO SPECIAL ISSUE

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We are delighted to be part of this Special Issue for *Tourism in Marine Environments,* which provides readers with some contemporary issues being studied in scuba diving research. At the outset of the project we were unaware of the breadth in academic work being undertaken within the field. What becomes apparent is that studies of scuba diving are being carried out in many areas of the world and across disciplines, drawing on important themes within environmental sciences and social sciences, thus reflecting substantial advances made in scuba diving research.

In the seven decades since Cousteau and Gagnan's modifications to self-contained diving equipment, which transformed their underwater experiences, scuba diving has assumed a place as a globally recognized form of marine-based leisure and tourism (Dimmock, 2007; Garrod, 2008). Over this time, scuba diving has grown in popularity from being a sport pursued by hardy adventurists, to being featured in holiday activities or leisure pastime in tropical, subtropical, and temperate locations, all underpinned by an internationally recognized and standardized approach to leisure skills development and training. Millions have undertaken some level of scuba certification since scuba diving training became commercialized and internationalized as early as the 1930s, but significantly since 1967 (Dimmock, 2009; Ecott, 2001). Scuba diving is an important component of marine tourism (Higham & Lück, 2007), and a 21st century scuba diving environment is economically important to tourism destinations, draws from advances in technology, involves multifaceted management approaches, and has relevance in discussions of climate change and environmental sustainability.

Our interest as humans, in witnessing or discovering the experience of being below a watery surface, is evident in the global geography of scuba diving. Warm, tropical locations near the equator are well known and popular, including the Red Sea, Thailand, and Malaysia. Also popular are subtropical and temperate locations in Australia, US, and South Africa, where cooler ocean temperatures support different forms of marine life and habitats. As well, polar locations and ice diving extend the reach of opportunities to travel below the surface in remote locations (Garrod, 2008). Yet, the geography of scuba diving extends further than the coastal margins, as inland sites in Australia, US, Africa, and elsewhere also offer access to freshwater ponds, sinkholes, and waterways. These are often hidden from mainstream diving activities because they are classed as closed environments, which are sought after by cave divers in many parts of the world.

Scuba diving is now a multibillion dollar industry and one of the world's fastest growing recreational sports (Ong & Musa, 2011). According to

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the Professional Association of Dive Instructors (PADI), the global number of certified divers in 2008 was 17.8 million, compared with 2.5 million in 1988 (PADI, 2011). Among the factors that contribute to the appeal and popularity of recreational scuba diving has been the development of safe and affordable diving equipment (Davis & Tisdell, 1995), along with technological advances that enable marine craft to more easily access remote scuba diving sites (Parker, 2001) and the growing interest in learning about and experiencing natural environments (Dimmock, 2009; Harriott, Davis, & Banks 1997).

There has been continued concern about the detrimental impacts divers can have on the marine environment, which resulted from greater awareness of damage to natural environments (see Lück, 2003). Divers' impact on coral reefs has been widely documented in many areas of the world (e.g., Dixon, Scura, & Hof, 1993; Hawkins & Roberts, 1992; Riegl &Velimirov, 1991; Tratalos & Austin, 2001). In the Northern Red Sea, significant coral breakages and higher rates of tissue loss occurred in areas frequented by divers (Riegl & Velimirov, 1991), damage to coral colonies was evident in heavily dived sites in Egypt (Hawkins & Roberts, 1992), and reduced biological diversity in coral communities has been reported as an impact of scuba diving in the Caribbean island of Bonaire (Dixon et al., 1993).

Knowledge of diver impacts was gained by examining the carrying capacity of dive sites (Davis & Tisdell, 1995; Harriott, Davis, & Banks, 1997; Rouphael & Hanafy, 2007; Rouphael & Inglis, 1997; Schleyer & Tomalin, 2000; Zakai & Chadwick-Furman, 2002;), as well as studying divers' demographic and behavior characteristics to see whether certain categories of divers caused more negative impacts than others (Barker & Roberts, 2004; Rouphael & Inglis, 2001; Sorice, Oh, & Ditton, 2007), and eliciting the types of intervention that might alter divers' underwater behavior (Barker & Roberts, 2004; Medio, Ormond, & Pearson, 1997; Rouphael & Inglis, 2001).

Damaging behavior in marine environments has also been studied by examining the influence of sociopsychological factors on scuba divers underwater behavior, including experience, personality, attitude, and personal norms (Davis & Tisdell, 1996; Musa, Seng, Thirumoorthi, & Abessi., 2011; Ong & Musa, 2011; Thapa, Graefe, & Meyer, 2006). Aspects of scuba divers underwater experiences using interpretative qualitative methods were explored by Dimmock (2009) to investigate the role of in-water comfort, constraints to comfort (Dimmock & Wilson, 2009), and in-water constraints negotiation (Dimmock & Wilson, 2011) during recreational scuba diving.

Education is crucial to the scuba diving industry as a means of ensuring safety and the protection of marine environments. Its role is to inform, influence, and change divers' cognition, which is demonstrated in responsible diving behavior. Researchers including Townsend (2003), Bennett, Dearden, and Rollins (2003), Cottrell and Meisel (2004), Dearden, Bennett, and Rollins (2007), and Belknap (2008) have all contributed to knowledge on the role of interpretation and environmental education in dive tourism settings.

With regard to the on-going sustainability of the scuba diving industry, areas which have gained research momentum include service quality and scuba divers satisfaction. From a business management and marketing perspective, O'Neill, Williams, MacCarthy, and Groves (2000), Williams and Polunin, (2000), Musa (2002), Musa, Kadir, and Lee (2006), Worachananant, Carter, and Hockings (2006), Sorice et al. (2007) and Uyarra, Watkinson, and Cote (2009) examined experiences with marine environment settings and hospitality service attributes, while Dimmock (2004) looked at the business challenges for dive tourism operators in New South Wales, Australia.

From an environmental resource management perspective, Marine Protected Areas (MPAs) have emerged as a favored management tool to help address issues of coral and habitat degradation and marine species protection (Lück, 2007). The governance and effectiveness of different management approaches have been widely examined in recent decades by authors including Ruddle (1998), Christie and White (1997, 2007), Pollnac, Crawford, and Gorospe, (2001), Aswani and Hamilton (2004), and Pomeroy, Mascia, and Pollnac (2005).

Adding to the extensive work already available, this Special Issue offers some insight into contemporary research themes in scuba diving research. The articles within this volume can be considered

according to two broad themes reflecting the research development in the field as the articles draw on multiple aspects of the activity and the industry surrounding it.

Taking a scuba diver's perspective, we have included four articles. Edney considered the sociodemographic characteristics, motivations, and attitudes of divers to Chuuk Lagoon, Federated States of Micronesia. Kler and Tribe present evidence for a new facet of our understanding revealing why scuba divers pursue their interest so fervently and are willing to travel to do so, using the concept of eudemonia. Moskwa studied aspects of place attachment, whereby divers are bound to underwater landscapes through a sense of place, which can generate environmental practices and a sense of stewardship. The resource attributes which contribute to nonresident diver satisfaction in the Florida Keys, US, was the focus for Paterson, Young, Loomis, and Obenour.

With regard to diving education and conservation, three interesting articles are provided. Johansen and Koster used qualitative and quantitative content analysis to examine the environmental content of entry-level certification manuals produced by leading scuba certification bodies: British Sub Aqua Club (BSAC), Professional Association of Diving Instructors (PADI), and SCUBA Schools International (SSI). Meanwhile, Hammerton, Dimmock, Hahn, Dalton, and Smith explored the collaboration between the diving industry and marine conservation in two Australian subtropical destinations. Last, but indeed not least, MunkKlint, Jiang, Law, DeLacy, Filep, Calgaro, Domineyhowes, and Harrison reported on the shocks and stressors faced by the dive tourism sector in Luganville (Vanuatu) and how they might be exacerbated by climate change.

We hope you agree that the fruits of the researchers' labor into scuba diving are ripening as the body of work in this area assumes greater reach across disciplines and uses a variety of research methods. What is revealed is a rich understanding of our fascination and its implications from being under the sea.

Biographical Notes

Ghazali Musa, a medical doctor (M.B.B.S.) and a Ph.D. in tourism, is currently as Associate Professor in the Faculty of Business and Accountancy, University of Malaya, Kuala Lumpur, Malaysia. He has a wide range of interest in tourism research. Among research areas are scuba diving, health tourism, disabled tourism, tourism for elderly community, sociocultural impacts, ecotourism, high altitude tourism, home-stay and backpacker tourism.

Kay Dimmock (Ph.D.) is a lecturer within the School of Tourism and Hospitality Management, Southern Cross University, Lismore. She has published in areas including management competencies in tourism education, managing tourism operations, international tourism trends, and risk management in outdoor adventure. Her Ph.D. explores comfort in scuba diving experiences. Kay's research interests extend to social engagement with water-based tourism and leisure.

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