

Guest Editorial: Building a Science of Desert Living

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Living in deserts is about much more than just managing the desert natural resources, and hence about much more than rangeland ecology. The past ten years has seen the growth of a ‘Desert Knowledge’ community, initially from Alice Springs but rapidly networking across inland Australia (Wand and Stafford Smith 2004). Organisations including Desert Knowledge Australia, the Desert Knowledge Cooperative Research Centre (DKCRC) and the Desert Peoples Centre are seeking a path forwards to a more prosperous, united and sustainable future for desert regions. On the research side, this has involved asking how elements of rangeland ecology, remote area science and Aboriginal traditional knowledge interact.

The Australian deserts (defined loosely here as arid and semi-arid regions with sparse and remote settlement) support a wide range of livelihoods which rely on the status of the natural and social resources found in the desert. These livelihood activities inter-relate in several ways – for example, pastoralists are small business people who must live remotely as well as manage grazing. There are good reasons why natural resources (and hence rangeland ecology) are a vital element in the mix, but this special issue is an effort to illustrate a more holistic approach to desert living, based on a portfolio of research emerging mainly from the Desert Knowledge Cooperative Research Centre [www.desertknowledgecrc.com.au/publications/downloads/DKCRC-07-Annual-Report.pdf]. Individual papers encompass more-or-less small parts of the puzzle, but the sum is far greater than the whole, as a few synthetic papers seek to show. Our goal is that more people should come to see how their own work fits into this wider context, thereby creating new synergies and linkages among disciplines to the betterment of outback residents everywhere, and laying the ground work for a new integrated and interdisciplinary ‘Science of Desert Living’.

Despite this, it is still necessary to subdivide and categorise. Desert Knowledge developments have been founded around three major pillars that must respond to desert drivers – desert livelihoods, desert settlements and regions, and desert social capital. The linkages between these elements are logical – without livelihoods no-one will live in the desert; even with livelihoods, no-one will stay without appropriate settlements and their services, and these need to be linked into functional regions; and nothing will happen at all without people and institutions to take up the opportunities. Accordingly the Special Issue is arranged around these themes, after a discussion of the broader drivers of desert regions in Australia that each theme must attend to.

Desert drivers: the first four papers address the special features of desert Australia, and their consequences for the underlying drivers of biophysical and social function. Stafford Smith (2008) argues for a high-level syndrome of these factors, such that climatic unpredictability and scarce resources drive a sparse and patchy population, which is of necessity a long way from markets and centres of governance; this has consequences for further variability in labour, markets and policy, as well as for the importance of local knowledge and local culture and institutions. Stafford Smith and McAllister (2008) take the first two of these drivers and revisit their implication for the biota and its management, noting lessons that may, through biomimicry, be relevant for many other aspects of desert life. Brown *et al.* (2008) then describe the demographic characteristics of the desert, highlighting the sparse and mobile population and trends particularly with respect to the Aboriginal/non-Aboriginal balance, while Maru and Chewings (2008) illustrate how the definition of desert socio-regions requires special attention to the interwoven influences of environment, economics and social factors.

Desert livelihoods: the next group of papers extends the concept of livelihoods from a focus on work (a ‘9-to-5’ job in western economic terms) to include such factors as health and wellbeing, and pluri-activity where performing a range of jobs may become the norm. Davies *et al.* (2008) introduce the desert livelihoods section with an overview of the use of the Sustainable Livelihoods approach in a variety of case studies, showing how its broad approach to different capital assets can assist in a holistic appraisal of the factors that affect livelihood outcomes. In the first of a series of more specific case studies, Tremblay (2008) and Carson and Taylor (2008) focus on two aspects of tourism – first its interaction with and implications for regional conservation reserve policy and management, and second the features of the burgeoning four wheel drive market. Rea and Messner (2008) next take up the theme of opportunities in natural resource management, showing how a much more encompassing view of the ‘public’ management of water resources which are largely exploited for private purposes can provide livelihoods for local Aboriginal people. The following two papers focus on fire as another natural force that requires management; Turner *et al.* (2008) synthesise new knowledge about the fire regimes across the inland, thereby providing a context within which management needs can be considered. Edwards *et al.* (2008) then take this theme forward in a case study of the Tanami region where a series of projects have built greater understanding of the underlying

ecological function and hence the potential roles of livelihoods in helping to manage this.

Sustainable desert settlements: this section shifts the emphasis upwards in human scale from individual livelihoods to communities and settlements. Stafford Smith *et al.* (2008) open the section with a synthetic review of how desert ‘communities of livelihood’, and the settlements in which these communities live, differ in qualitative but fundamental ways from larger mixed coastal settlements where most administrative learning takes place; they challenge simplistic analyses of settlement ‘viability’ as a result of this analysis. Sanders and Holcombe (2008) follow with an analysis of how individual settlement relevance can be combined with regional efficiency in local government, at a time when state governments are seeking to upscale all local governments with the consequent threat of undermining the effective delivery of services to their dispersed settlements. Grey-Gardner (2008) then reports a project to re-empower local residents to manage their own water supplies at an appropriately balanced level of risk and independence, taking up the challenge of reversing the trend towards supply- (rather than demand-) driven service provision. Abolhasan and Wright (2008) discuss changes in communications technology that open up new opportunities to empower desert settlements, whether through supporting remote Aboriginal livelihoods or facilitating more efficient monitoring by pastoral and conservation land managers.

Desert social capital: the final section is introduced by McAllister *et al.* (2008) in another conceptual paper that explores the nature of networks in sparse and variable populations; they highlight a series of hypotheses, credibly supported but not formally tested by evidence, around the degree to which the strength and numbers of network links may differ from more densely populated environments, with implications for social capital, business networks and governance. Young and Guenther (2008) focus in on human capital, in the form of Aboriginal training in relation to work opportunities in remote areas, showing how educational activities must, and can, be tailored to recognise the special circumstances faced by this sector. Taylor *et al.* (2008) round off the volume by reporting on a successful pilot program which has created new social capital through virtual business clusters that are able to overcome local disadvantage to compete nationally and internationally.

These papers represent a valuable but partial scan through the scope of work emerging from the Desert Knowledge community, and we thank the authors for their contributions. Interested readers are encouraged to check also many additional reports on the Desert Knowledge CRC and Desert Knowledge Australia websites (both accessible via www.desertknowledge.com.au/), and may be interested to sample a forthcoming special issue of *GeoJournal* (2008; Volume: 70) which has a greater focus on the social science side of the emerging body of research.

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