1-2012

Who's the boss? Post-colonialism, ecological research and conservation management on Australian Indigenous lands

Wayne Barbour

Christine Schelesinger

COMMENT

doi: 10.1111/j.1442-8903.2011.00632.x

Who's the boss? Post-colonialism, ecological research and conservation management on Australian Indigenous lands

By Wayne Barbour and Christine Schlesinger

At the time of writing this article ***Wayne Barbour*** *was a Conservation and Land Management lecturer with Charles Darwin University, he is now Training coordinator at Bushlight with the Centre of Appropriate Technology (Bushlight, Alice Springs, PO Box 8044, NT 0871, Australia; Tel: +61 8 8959 6175; Email: wayne.barbour@bushlight.org.au).* ***Christine Schlesinger*** *is a lecturer in Ecology with the Research Institute of Environment and Livelihoods, Charles Darwin University (Alice Springs Campus, PO Box 795, NT 0871 Australia, Tel: +61 8 8959 5218; Email: christine.schlesinger@cdu.edu.au).* *This comment piece reflects the personal opinions of the authors on the need for Indigenous and non-Indigenous collaborators to share ideas and listen to each other's perspectives to enable better outcomes for Indigenous people and the management of their lands.*

Summary The involvement of Indigenous people in the national conservation effort is increasingly being acknowledged and valued in Australia. Ecological research can play an important role in reinforcing the efforts of Indigenous land managers; and interest from Indigenous and non-Indigenous ecologists and land managers to work together on ecological issues of common concern is increasing. Although there are many examples of successful collaborations there are also many instances where expectations, particularly of the Indigenous partners, are not met, and this is less frequently communicated. This paper, written from the perspective of an Arrernte researcher in partnership with his non-Indigenous colleague, outlines a range of challenges including the need for Indigenous people to have more control of what is done and why it is done on their country and to define and prioritise their own objectives for land management, which may or may not align with mainstream conservation agendas. Currently, Western conservation paradigms play the dominant role in how Natural Resource Management is practiced and how broader policy is set, and ecological research on Indigenous land is still most often led by the Western ecologists. This can leave out the ideas of Indigenous people and does little to address underlying inequitable power relationships. Indigenous Australians do not want to become spectators in the research process, giving away knowledge, or labourers to Western conservation agendas. They want to be active partners in developing better understandings of the environment and implementers of management that reflects shared agendas. Open discussion of these issues within the mainstream ecological literature is an important step towards change and will create better opportunities for both Indigenous and non-Indigenous ecological practitioners and Indigenous people dealing with land management policy.

Key words: *collaborative research, cross-cultural partnerships, Indigenous land management, Aboriginal land management.*

Introduction

In Australia, it is now widely recognised that the involvement of Indigenous people is necessary and desirable in the national conservation effort (Altman *et al.* 2007; Natural Resource Management Ministerial Council 2010). This is particularly so in the Northern Territory where nearly 50% of land is Indigenous-owned and many Indigenous people live in remote areas. For Indigenous people, the cultural imperative to manage country for conservation has always been there. The issue for many has been the lack of resources and finding a place in the world of contemporary ecological research and land management.

Early accounts of collaborative research between Western and Indigenous ecologists in desert Australia, from the academic literature, include Reid *et al.* (1992) and Baker *et al.* (1993). Baker *et al.* (1993) describe a study that combined the knowledge of Anangu from the Mutijulu community and the scientific community, and reflect on how this collaboration was engaged in, following a philosophy of joint management and 'working together'. Variations and developments on this theme are still prominent today (e.g. see the 'both ways' and 'two-way' approaches referred to in Hoffman *et al.* 2012; Ens *et al.* 2012 and Preuss & Dixon 2012). The advancement of thinking on issues related to 'Indigenous ecology' including community-based conservation, joint management of protected areas, and Indigenous Ecological Knowledge has progressed at a phenomenal rate in the last two decades as is reflected in the national and international literature (e.g. Davies *et al.* 1999; Agrawal & Redford 2006, Altman *et al.* 2007; Berkes 2003, 2008) and in substantial changes in protected area policy worldwide to incorporate Indigenous rights and interests (Posey & Dutfield 1996; Borrini-Feyerabend *et al.* 2004; IUCN 2005; United Nations 2008). But, speaking from within a local context, how far have we really come in two decades in terms of what is happening on the ground? Opportunities and support for Australian Indigenous people to be involved in land management or ecological research have substantially increased in the last decade, but there are still many unresolved issues, particularly about control, that need to be worked out.

In Australia, and specifically within the mainstream ecological literature, the

majority of the writing about ecological projects involving Indigenous people, or opinions about how to get cross-cultural collaborations to work better, is from non-Indigenous academic researchers' perspectives, although often working with Indigenous co-authors. Rarely is an Indigenous voice at the fore-front, and ideas about how Indigenous Australians think about academic versions of ecology or the interaction with ecological scientists are not often voiced (but see Schnierer & Woods 1998; Nakata 2007). If ecologists trained in the Western discipline wish to form partnerships with Indigenous people, they should have access to a range of voices, to find out why Indigenous people want to participate in conservation, how they think about conservation and how they want to go about achieving it. Western ecologists also should recognise that the motives and contexts of Indigenous peoples are very likely to differ from their own, and that a failure to accept this is likely to have negative effects on collaborations (Smith 1999).

It is also uncommon for non-Indigenous ecologists, to reflect on the personal and professional challenges of working within Indigenous frameworks, undertaking truly participatory research in situations where some of their basic assumptions are likely to be challenged (but see Christie 2006; Fortmann 2008; Ens *et al.* 2012; Hoffman *et al.* 2012). We refer specifically to the challenge of relinquishing ultimate control of what is done, why it is done, when and how it is done, and what is done with the information. Many ecologists (Indigenous and Western) wish to work together, but struggle with how to deal with current frameworks and their deep seated power inequalities.

As authors of this article, we aim to share the perspectives outlined earlier. Issues of ontology and epistemology underlie our discussion and are increasingly being explored by Indigenous authors (e.g. Rigney 1997; Smith 1999; Nakata 2007; Tipa *et al.* 2009). In Australian mainstream ecology, discussion of the interaction between politics and the environment seems to be in its infancy compared with other disciplines or for ecologists in other countries (e.g. Berkes 2008) where there are journals specifically concerned with this area (Greenberg & Park 1994). We believe discussion of these ideas in Australian ecological journals will add new dimensions to our thinking and practice of ecology and lead to broader cross-disciplinary or trans-disciplinary (see Christie 2006) approaches.

An introduction and Indigenous Australian viewpoint from the first author

I (Wayne Barbour) am an Indigenous Australian and I hold the view that understanding ourselves and where we fit comes from listening to country. That's how I was taught, and I continue to see the natural world in this way. My maternal grandfather and grandmother are eastern Arrernte and Warramungu. I was born in central Australia. Like many others, I was taken away from my country and family as a young child to grow up in the Retta Dixon Homes in Darwin. I didn't ask to go. We were literally trucked out. The trucks had the sides down and bolted, there was no way out. This upset the mothers (Cummings 1990). Paradoxically, because I grew up in the Top End, a lot of my 'ecological' and cultural knowledge, including plant names and uses as well as language, is from salt-water country, but my ancestral connections and obligations are primarily in the desert. It has taken me some time to work things out for myself, with identity and belonging being the biggest factors. I knew I had to go back to country and families knowing that I can never change the past but could change today and the future. I felt that I had to take control of who I was first; because everyone else was controlling this. My involvement in natural resource management (NRM) over many years has given me an opportunity to re-connect to who I am by putting me directly in contact with the cultural landscape. I have worked alongside research scientists, coordinated and facilitated Indigenous land management programmes and have taught courses in Conservation and Land Management (CLM) in remote central Australia.

My co-author (Christine Schlesinger) is a first-generation Australian who describes herself as having a background in 'mainstream' ecology with a keen interest in how alternative perspectives can contribute to how ecology is understood and practiced, and a strong commitment to finding fair ways to share understandings. She has lived in central Australia for nearly two decades, and her research interests are focused on conservation ecology in arid environments. She teaches ecology at tertiary and post-graduate levels. The perspectives given in this paper are shared between us, although we have come to them through very different paths, and are part of our ongoing discussions around how to work together, in particular to meet the objectives of the senior Traditional Owners of my country for looking after our small homeland area north of Alice Springs, and more generally about how to do ecological research in a different way. We also draw on our experience in teaching land management and environmental science in central Australia.

This paper discusses how some Indigenous people may at times perceive contemporary NRM ideas and practices and Western ecology. We believe that an understanding of this will better inform ecologists wishing to work with Indigenous people and groups, specifically in remote regions of Australia. Our discussion is situated in the central Australian desert region where we both have experience and where my grandfather's and grandmother's country is located. We are concerned that contemporary ecological research and Western ideas about conservation play the dominant role in how NRM is practiced and how broader policy is set – and that this can often leave out the ideas of Indigenous people, and does not empower Indigenous people in ways that current policy may have intended. We recognise that there is a vast diversity of Indigenous circumstances between and within regions of Australia and that because of this there can be no blanket approach to how ecology and land management is undertaken by and with Indigenous people. For the same reason, there is no one Indigenous view about this or one view from academic ecologists. Our views are based on our own perspectives and our observations and conversations with others over many years.

Recognising Power Inequalities in Indigenous and Western Ecological Research Collaborations and Indigenous Land Management

In the past, Indigenous Australians often became the passive subjects of research, as have other Indigenous peoples of the world, but today, thankfully, this approach is changing. Within the field of ecology, essential elements in research partnerships involving Indigenous people have been documented and include strong pre-existing relationships before the research begins and the use of participatory methods which allow Indigenous communities or individuals to have ownership of ideas and to drive the research from the bottom up (e.g. Reid *et al.* 1992; Bauman & Smyth 2007; Gorman & Garnett 2009; Ens *et al.* 2010; Hoffman *et al.* 2012). But despite the genuine desire of many ecologists to work together with Indigenous people to gain collective better understandings of country, the process of data collection, investigation and reporting, based on a positivist-reductionist paradigm, often still excludes or marginalizes Indigenous people because it is incompatible with the more holistic nature of Indigenous ecological knowledge and Indigenous ideas about research. Adherence to guidelines for the ethical conduct of research involving Indigenous Australians (AIATSIS 2011), while vitally important, does not in itself guarantee that research collaborations are going to be successful. Even with the best intentions, research does not necessarily translate to community benefit (e.g. see Gorman & Garnett 2009) and Indigenous participants in the research do not always feel in control or empowered (Sithole *et al.* 2007). The underlying power inequalities between collaborators, and the risk that the ideas or outcomes coming from Western ecology will take priority, or that non-Indigenous collaborators may gain more from the interaction than their Indigenous partners, are rarely discussed in the ecological literature.

Many Indigenous people consider that Western research can provide knowledge that is useful for managing country and can be complementary to their own knowledge (e.g. see Preuss & Dixon 2012). But for a lot of Aboriginal people, the most important reason for participating in ecological research may not be learning new ideas or developing a management plan. Instead, it is an opportunity to define and prioritise their own cultural objectives which may or may not align with mainstream conservation agendas. For example, Warlpiri people involved in managing the Northern Tanami Indigenous Protected Area (IPA) identified their priorities for managing country as they related to cultural tradition, identity, well-being and spiritual connection (Walker 2011; Preuss & Dixon 2012), whereas the interests of agency staff from the Central Land Council and the Federal Government, while recognising social and cultural outcomes from land management, saw improvements in the ecological condition of the IPA as being of key importance (Walker 2011). Where management interests and values are not well aligned, inequitable power relationships between Indigenous people and government agencies can limit the extent to which community-controlled management and local management agendas are achieved on the ground (Walker 2011). Responsibility to country is a major concern for Australian Indigenous people who have been able to maintain or re-establish cultural links with their ancestral lands. Social factors are inseparable from land management or ecological perspectives (see also Garlngarr *et al.* 2011).

The challenge for both Indigenous people and ecological practitioners is to work together to create research opportunities that meet the objectives of both. The focus for Indigenous Australians is to not become spectators in knowledge generation or labourers to Western ideas of conservation management but to be leaders or equal participants in the research process, and to implement on the ground management that makes sense according to their own world view. What Indigenous people want is to be valued and to have ownership of the research and management that is occurring on their country. Understanding this and understanding how to achieve it will create better and longer-term opportunities for ecological practitioners and Indigenous people.

The privileging of Western perspectives of land management

We use weeds as a specific example of how Australian Indigenous and mainstream conservation perspectives may differ and to illustrate how ideas from mainstream ecology tend to dominate. Some Indigenous people, generally those who have been exposed to Western concepts of NRM, share the Western conservationist view that weeds are undesirable, foreign, invasive species, while others, who may not have been exposed to these ideas, do not know what a weed is. Other Indigenous people may see introduced species as weeds (whether or not they are considered to be weeds by others) from their own cultural perspective, because of damage caused to country or sites of significance by these plants. Other authors have discussed Indigenous perspectives on conservation in more detail, specifically in relation to species introduced post-colonisation (e.g. Rose 1995; Thomsen *et al.* 2006; Trigger 2008; Vaarzon-Morel & Edwards 2012). 'Weeds' are also highly contested among ecologists and land managers in general. An example from central Australia is Buffel Grass (*Pennisetum ciliare* L. Link syn. *Cenchrus ciliaris* L.) which is considered to be a weed with significant adverse effects on biodiversity by many conservation managers, but is considered a valuable improved pasture species and soil stabiliser by many pastoralists (Friedel *et al.* 2007). In the past, Buffel Grass was widely introduced into the Alice Springs district (sanctioned by scientists) as an improved pasture species and for stabilising soil (Friedel *et al.* 2007). Despite mounting evidence of detrimental effects of Buffel Grass on biodiversity in semi-arid environments (e.g. Clarke *et al.* 2005; Miller *et al.* 2010; McDonald & McPherson 2011), it is not a declared weed in the NT, primarily because of its continued value to the pastoral industry. Considering this diversity of competing opinion, can ecological scientists justify imposing their views about weeds on Indigenous land managers, without giving them the right to

decide for themselves? Other researchers have also called for a need to incorporate multiple perspectives in NRM (Robertson *et al.* 2000). Non-Indigenous ecologists, land managers and decision makers all need to be careful to not make assumptions that their ideas of conservation are always consistent with what Indigenous people want.

Within a training context, CLM programmes which include modules on controlling weeds are widely delivered in remote Indigenous communities in the NT, often to Indigenous Ranger groups who then go on to plan and implement weed management. Within these training programmes, the attention can sometimes be too much on how to control weeds and less on working out why weed control may be important. This is a particularly important point when we consider that the values behind the training are grounded in a Western conservation ethic and are generally not questioned, even though the they may no longer make sense in the context of Indigenous land management. CLM training is based on National Accredited training packages which are designed to teach skills needed by land managers working within a Western ideology. In the past, these packages have been designed within the context of rural areas in south eastern Australia and then transferred to remote Indigenous Australia, although recently there have been significant changes to try to make these packages more relevant to Indigenous land management contexts.

Whether during training or where management is being implemented, there is usually an assumption that weed management is important before the programme even starts, and this is based on contemporary mainstream views about land management (which are often, but not always, based on ecological research). This assumption is not challenged or even stated upfront. That stage is skipped and the focus, instead, is on how to implement management. Some Indigenous people struggle with the notion of managing and destroying weeds because it does not fit their world view or objectives. We need to be able to turn this approach upside down by allowing people to work it out for themselves. For example, Indigenous Australians see the landscape in terms of how country has changed or what is out of place. Sometimes, weeds have no language names, and they change how country is burnt, push out bush plants and animals and take over water holes. The priority for people is to see this first hand for themselves, to decide for themselves whether weed management should be a priority well before the chemical sprays are applied or the spraying techniques are taught.

Setting cross-cultural priorities

The value of Indigenous people's knowledge is becoming more widely recognised, especially in land management, and there is hope that combining academic ecological knowledge with Indigenous knowledge will achieve enhanced outcomes for the environment, but the question of what 'better land management' means for the different partners involved is rarely addressed. The concept of 'good' land management is already set, typically based on ideas derived from the dominant mainstream culture. Often we have seen that Indigenous knowledge is only valued at the stage of project implementation or contribution of knowledge to a research question that has already been set (e.g. research on endangered species). We need to take a step back. If we really want to share knowledge, we need to discuss what the cross-cultural priorities for land management are, value different world views and respect the equal legitimacy of different knowledges grounded in these ontologies.

Ecologists are likely to come into research collaborations with a set of basic assumptions associated with their discipline and with (understandably) different obligations and interests to their Indigenous partners. Non-Indigenous ecologists and land managers working in cross cultural situations need to be flexible and should question the validity and appropriateness of some of their own assumptions within this context, just as Indigenous partners will likely be challenged to question and perhaps modify some of their assumptions. In the experience of the second author, this can be extremely challenging, even if there is a strong desire to do so, and takes a long time; however, the rewards are great.

Once empowered in the research (or policy) process, Indigenous people will not necessarily play by the rules of Western conservation and may not come to the same conclusions or make the decisions that ecologists expect or desire (Berkes 2008). If the right of people to decide for themselves is not fully accepted, then it is not truly collaborative work and the process becomes disempowering, and can undermine Indigenous people's rights to self-determination.

Participatory research methods can play a crucial role in sharing information so that decisions can be made based on the values and goals of both Indigenous and non-Indigenous partners, where these are compatible, or so that a synthesis can be achieved. However, even if participatory methods are used, if the process is facilitated by scientists, the direction of the research and the questions asked are still likely to be very different to when the process is led by Indigenous people (Nakata 2007).

Participation in research

For Australian Indigenous people, culture is interwoven into country like a network and it has patterns and rhythms that interconnect within the expression of their identity. The Western ecological discipline, in contrast, is often reductionist and the researcher generally aims for objectivity. Ecological research is often focussed on investigating a very specific question with careful attention to methodology and interpretation. In the world view of an Indigenous person, this can be seen as static, sterile or soul-less as there is no cultural expression of the relationship between people and place or all beings. The connection to how the research could be applied may be lost. This might be remedied to a great extent if Indigenous participants in ecological research are included in all stages – having control of what is being researched, involvement in interpreting the data and control over how the knowledge gained is applied.

If Indigenous people are not included at all stages of the research process,

ecological research can be seen as a white fella's (non-Indigenous person's) thing, with ecologists focussed on the details of methodology, collecting information and drawing of conclusions about questions that may seem trivial or disassociated with reality. Indigenous people may share knowledge, willingly and generously with Western-trained academics, but may not be completely happy with the outcomes. They may at times feel exploited – used as a black voice for scientists and politicians to promote their agendas – or that they are not given adequate recognition, or that their voices are censored if their knowledge and opinions do not fit with the expectations of non-Indigenous collaborators who still have more control what gets published and how it is communicated. Such exploitation is unlikely to be deliberate, and would certainly not be the intention of ecologists working in these contexts but rather is the unwelcome result of the inherent power imbalances. Indigenous people see the country as knowledge. If they feel they are just there to produce information, this can seem too selective or reductionist and removed from reality, and there may be little incentive to be involved. It can feel like people's knowledge, which is an integral part of their lives, becomes just information, lost within data.

There are many circumstances where ecological or conservation work will by necessity be driven by NRM policy and government funding – and a lot of this work will have measurable positive outcomes for the people involved as well as for the environment. Indigenous people in the NT now have available to them various NRM agencies and structures that facilitate this process. For example, the Indigenous Ranger movement has set the framework for many Indigenous people to have the political and cultural means to have involvement in the management of the landscape. We are not suggesting that Indigenous people always need to lead the research process, but in situations where the research questions or land-management strategies do not come directly from Indigenous people, they still need to know that the approach will be to genuinely ask 'what do you think?'. If that happens, it is likely that the participation that is being sought will be there, because then Aboriginal people will feel that there is a genuine opportunity to have their culture valued and their ownership retained.

Balancing the Power

The resurgence in Indigenous involvement in ecological management and research at a national level is supporting Indigenous landowners' perspectives. In recent times, the ecological community has helped to reinforce the efforts of Indigenous land managers with supporting research evidence. For example, the west Arnhem Plateau is the site for an innovative and important project in which skilled Indigenous fire managers are working with the broader community to reduce greenhouse gas emissions, protect culture and biodiversity on their country, and bring social and economic benefits to their communities (Yibarbuk *et al.* 2001; Russell-Smith *et al.* 2009). This has been taken to a political level that suggests Indigenous people's involvement in managing the ecological assets is important. This is a very positive outcome. Something to watch; however, is that science is not seen as something that is required to legitimise Indigenous land management practice, and that ecological science does not continue to be the privileged knowledge system that can judge whether the Indigenous knowledge and land management practice is right or wrong. What happens, for example, in situations where Western and Indigenous perspectives do not align?

We strongly believe that the research agenda needs to be set more often by Indigenous individuals or groups, with their objectives the starting point – with ecological scientists participating in meeting these objectives. Then ecologists can help Indigenous people to come up with answers instead of Indigenous people helping ecologists to answer questions. Indigenous people should have the opportunity to validate their own understandings by being the authors of the research, although this is likely to raise questions about what is an acceptable method that is recognised by academic peers. They need to make sure that they do not sacrifice their ability to do things for themselves on country.

Ultimately, we would like to see more Indigenous people becoming the researchers, the scientists and the managers, applying their ideas across all levels to design and implement initiatives that help to define the significance of country, and to develop strategies for the management of Indigenous ancestral lands.

Acknowledgements

This article has been inspired by my Arrernte and Warramungu families, the Stolen Generations and others who struggle to have their voices heard. We would like to acknowledge all the people who have shared their stories, their opinions and their passion for the environment and for social justice with us throughout our lives.

References

Agrawal A. and Redford K. H. (2006) *Poverty Development and Biodiversity Conservation: Shooting in the Dark*? Working Paper No 26. Wildlife Conservation Society, Bronx.

AIATSIS (2011) *Guidelines for Ethical Research in Australian Indigenous Studies*, 2nd Edn. Canberra Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS). [Cited 15 June 2011.] Available from URL: http://www.aiatsis.gov.au/research/docs/GERAISjune2011.pdf.

Altman J. C., Buchanan G. and Larson L. (2007) *The Environmental Significance of the Indigenous Estate: Natural Resource Management as Economic Development in Remote Australia*. Centre for Aboriginal Economic Policy Research Discussion Paper 286. Australian National University, Canberra. [Cited 15 June 2011.] Available from URL: http://caepr.anu.edu.au/sites/default/files/Publications/DP/2007_DP286.pdf.

Baker L., Woenne-Green S. and the Mutitjulu Community (1993) Anangu knowledge of vertebrates and the environment. In: *Kowari 4: Uluru fauna. The distribution and abundance of Uluru (Ayres Rock – Mount Olga) National Park, NT.* (eds J. R. W. Reid, J. A. Kerle and S. R. Morton) pp. 79–132. Australian National Parks and Wildlife Service, Canberra.

Bauman T. and Smyth D. (2007) *Indigenous Partnerships in Protected Area Management: Three Case Studies*. Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS) and the Australian Collaboration, Canberra. [Cited 15 June 2011.] Available from URL: http://www.aiatsis.gov.au/research/docs/partnerships.pdf.

Berkes F. (2003) Rethinking Community-based Conservation. *Conservation Biology* **18**, 621–623.

Berkes F. (2008) *Sacred Ecology*, 2nd edn. Routledge, Oxon.

Borrini-Feyerabend G., Kothari A. and Oviedo G. (2004) *Indigenous and Local Communities and Protected Areas: Towards Equity and Enhanced Conservation*. IUCN, Gland, Switzerland and Cambridge.

Christie M. (2006) Transdisciplinary research and Aboriginal knowledge. *The Australian Journal of Indigenous Education* **35**, 78–89.

Clarke P. J., Latz P. K. and Albrecht D. E. (2005) Long-term changes in semi-arid vegetation: invasion of an exotic perennial grass has larger effects than rainfall variability. *Journal of Vegetation Science* **16**, 237–248.

Cummings B. (1990) *Take this Child: From Kahlin Compound to the Retta Dixon Children's Home*. Aboriginal Studies Press, Canberra.

Davies J., Higginbottom K., Noack D., Ross H. and Young E. (1999) *Sustaining Eden: Indigenous Community Wildlife Management in Australia*. International Institute for Environment and Development, London.

Ens E., Daniels C., Thompson W. *et al.* (2010) Combining Aboriginal knowledge and Western science to investigate possible explanations for the decline in fruit production of a bush tucker shrub, Djutpi, near Ngukurr, Northern Territory. *Ecological Management & Restoration* **11**, 146–148.

Ens E., Towler G., Daniels C., Yugul Mangi Rangers and Manwurrk Rangers (2012) Looking back to move forward: Collaborative ecological monitoring in remote Arnhem Land. *Ecological Management & Restoration* **13**, 26–35.

Fortmann L. (2008) *Participatory Research in Conservation and Rural Livelihoods: Doing Science Together*. Blackwell Publishing Ltd and the Zoological Society of London, Oxford.

Friedel M., Puckey H., O'Malley C., Waycott M., Smyth A. and Miller G. (2007) *Buffel Grass: Both Friend and Foe. An Evaluation of the Advantages and Disadvantages of Buffel Grass Use, and Recommendations for Future Research*. Desert Knowledge CRC, Alice Springs. P. 17.

Garlngarr V., Gurwalwal B., Bentley-Toon S., Ens E. and Towler G. (2011) Victor Garlngarr and Barbara Gurwalwal: caring for country in the Warddeken Indigenous Protected Area. *Australasian Plant Conservation* **19**, 3–4.

Gorman J. and Garnett S. (2009) Research, collaboration and community development – evolution of a partnership. *Learning Communities: International Journal of Learning in Social Contexts*, December 2009, 86–103.

Greenberg J. B. and Park T. K. (1994) Political ecology. *Journal of Political Ecology* **1**, 1–12.

Hoffman B. D., Roeger S., Wise P. *et al.* (2012) Achieving highly successful multiple agency collaborations in a cross-cultural environment: experiences and lessons from Dhimurru Aboriginal Corporation and partners. *Ecological Management & Restoration* **13**, 42–50.

IUCN (2005) *Benefits Beyond Boundaries: Proceedings of the Vth IUCN World Parks Congress*. IUCN, Gland, Switzerland and Cambridge.

McDonald C. J. and McPherson G. R. (2011) Fire behaviour characteristics of buffelgrass-fueled fires and native plant community composition in invaded patches. *Journal of Arid Environments* **75**, 1147–1154.

Miller G., Friedel M., Adam P. and Chewings V. (2010) Ecological impacts of buffel grass (*Cenchrus ciliaris* L.) invasion in central Australia – does field evidence support a fire-invasion feedback? *The Rangeland Journal*, **32**, 353–365.

Nakata M. (2007) *Disciplining the Savages Savaging the Disciplines*. Aboriginal Studies Press, Canberra.

Natural Resource Management Ministerial Council (2010) *Australia's Biodiversity Conservation Strategy 2010–2030*. Australian Government, Department of Sustainability, Environment, Water, Population and Communities, Canberra. [Cited 15 June 2011.] Available from URL http://www.environment.gov.au/biodiversity/strategy.

Posey D. A. and Dutfield G. (1996) *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities*. International Development Research Centre, Ottawa.

Preuss K. and Dixon M. (2012) 'Looking after country two-ways': Insights into Indigenous community-based conservation from the Southern Tanami. *Ecological Management & Restoration* **13**, 2–15.

Reid J., Baker L., Morton S. R. and Mutitjulu Community (1992) Traditional knowledge + ecological survey = better land management. *Search* **23**, 249–251.

Rigney L. I. (1997) Internationalism of an Aboriginal or Torres Strait Islander anti-colonial cultural critique of research methodologies: a guide to Indigenist research methodology and its principles. Research and development in Higher Education: Advancing International Perspectives, Higher Education Research and Development Society of Australia, Annual International Conference Proceedings, **20**, 629–636.

Robertson M., Nichols P., Horwitz P., Bradby K. and MacKintosh D. (2000) Environmental narratives and the need for multiple perspectives to restore degraded landscapes in Australia. *Ecosystem Health* **6**, 119–133.

Rose B. (1995) *Land Management Issues: Attitudes and Perceptions amongst Aboriginal People of Central Australia. Report for the Cross Cultural Land Management Project*. Central Land Council, Alice Springs.

Russell-Smith J., Whitehead P. J. and Cooke P. (2009) *Culture, Ecology and Economy of Fire Management in Northern Australian Savannas: Rekindling the Wurrk Tradition*. CSIRO Publishing, Collingwood.

Schnierer S. and Woods G. (1998) An Indigenous perspective on ethical research practices in protected areas. *Australian Journal of Environmental Management Fenner Conference Supplementary Edition* **1998**, 39–45.

Sithole B., Hunter-Xenie H., Williams L. *et al.* (2007). *Aboriginal Land and Sea Management in the Top End: A Community Driven Evaluation*. CSIRO, Darwin.

Smith L. T. (1999) *Decolonising Methodologies: Research and Indigenous Peoples*. University of Otago Press, Dunedin.

Thomsen D. A., Muir K. and Davies J. (2006) Aboriginal perspectives on kangaroo management in South Australia. *The Rangeland Journal* **28**, 127–137.

Tipa G., Panelli R. and the Moeraki Stream Team (2009) Beyond 'someone else's agenda': an example of Indigenous/academic research collaboration. *New Zealand Geographer* **65**, 95–106.

Trigger D. S. (2008) Indigeneity, ferality, and what 'belongs' in the Australian bush: aboriginal responses to 'introduced' animals and plants in a settler-descendant society. *Journal of the Royal Anthropological Institute (N.S.)* **14**, 628–646.

United Nations (2008) *United Nations Declaration on the Rights of Indigenous Peoples*. United Nations, Geneva.

Vaarzon-Morel P. and Edwards G. (2012) Incorporating Aboriginal people's perceptions of introduced animals in resource management: insights from the feral camel project. *Ecological Management & Restoration* **13**, 65–71.

Walker J. (2011) Processes for effective management: learning from agencies and Warlpirri people involved in managing the Northern Tanami Indigenous Protected Area, Australia, PhD thesis, Charles Darwin University, Darwin.

Yibarbuk D., Whitehead P. J., Russel-Smith J. *et al.* (2001) Fire ecology and Aboriginal Land Management in central Arnhem Land, northern Australia: a tradition of ecosystem management. *Journal of Biogeography* **28**, 325–343.