

Creating spaces for negotiation at the environmental management and community development interface in Australia

By

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Candidate's Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university. To the best of the author's knowledge, it contains no material previously published or written by another person, except where due reference is made in the text.

Kirsten Maclean

Date:

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Abstract

There are ongoing debates in the contemporary environment and development literature regarding the role of scientific, local and indigenous participation in sustainable development initiatives. The debates have been critical of the supremacy of western scientific knowledge in such initiatives, with some academics asserting that science can be imperialistic, and its application can sometimes lead to social inequity and exclusion. In response, local and Indigenous knowledges have been offered as providing a panacea for all environment and development problems. This thesis argues that in Australia the meta-narrative of ecologically sustainable development is in fact unsustainable because it perpetuates the intra- and inter-generational inequalities that it is supposedly meant to overcome. This is because the meta-narrative of ecologically sustainable development separates ways of knowing the world into dichotomies of self/other and universal scientific knowledge versus place-based local knowledge. The thesis argues that equitable and sustainable ecologically sustainable development is dependant upon moving beyond these dichotomies. The research questions what lies between the complex sets of knowledge of best practice environmental management at the local environmental management and community development interface in Australia.

An investigation is conducted into the knowledge synergy that is, or indeed is not, occurring between government organisations, non-government organisations, local community groups and individuals involved with two environmental management and community development projects in Australia. One project works across interest groups to protect and enhance threatened species habitat in Victoria. The other project considers what it means to manage fire across different land tenures in the Northern Territory. These case studies act as points of access into the localised knowledge networks surrounding environmental governance and management in Australia. They give life to the thesis critique and relevance to the practical outcomes.

Part 1 grounds the thesis within the discipline and practice of critical human geography. Part 2 locates the thesis within the contemporary environment and development literatures. It demonstrates an applied peoples' geography to consider the power and the potential of local spaces of environmental management and community development. Part 3 practices this applied peoples' geography. It illustrates how the political, cultural, knowledge and social landscapes of any environmental management and community development project reflect the diverse knowledges of the environment in Australia. Understanding these complex landscapes provides the means for moving beyond 'them and us' dichotomies inherent to the meta-narrative of ecologically sustainable development in Australia.

Part 4 demonstrates that knowledge of best practice environmental management move across and between multiple, networked and entangled local spaces of environmental governance. Individuals choose to engage with these local spaces of management for a variety

of social livelihood reasons. As such, projects have a responsibility to deliver both tangible management outcomes and intangible social processes for ecologically sustainable development. Part 5 illustrates that the success of any environmental management and community development project is contingent upon acknowledging the value, the power and the limitations of local community knowledge. Equally, project success depends upon recognising the many varieties of local knowledge at the environmental management and community development interface. Equitable and successful ecologically sustainable development in Australia depends upon improved knowledge sharing and knowledge synergies between these many knowledge cultures. Part 6 demonstrates that improving knowledge sharing at the local environmental management and community development interface is contingent upon four applied principles. Engaging in activities that complement these principles will result in the social action necessary to celebrate what lies between the different ways of knowing and managing the environment in Australia.

This research contributes to debates in the environment and development literature. It demonstrates what it means to move beyond the above mentioned dichotomies. It informs contemporary environmental governance and management policy and practice in Australia. It highlights the importance of diversity in overcoming issues of social and environment degradation. It sheds light on the local spaces of power and knowledge of two environmental management and community development projects. It illustrates the potential of and the necessary processes for increased knowledge sharing and synergy at the local environmental management and community development interface.

Prologue

When I began developing my research thesis I was a student at the University of Bristol in the United Kingdom. The notion of conducting field research in my native Australia and returning to the United Kingdom to write-up filled me with conflicting feelings. Would this be a contradictory practice: how could I speak of participation as central to the research methodology and then distance and abstract myself from those with whom I was participating by flying to the other side of the world to engage in the production of the research text? Additionally what of the notions of post-colonialism with which I was engaging: how could my retreat to the United Kingdom to write a discussion of the role of local and Indigenous knowledge in environmental governance and management in Australia, be justified? More importantly could I comfortably continue with the thesis title: Creating spaces for negotiation at the environmental management and community development interface in Australia, if I was not actively or at the least locally engaged in those spaces? I regarded these theoretical issues as wonderful challenges and began conceptualising my status as both insider and outsider to the research project.

At the end of my first year I transferred the PhD studies from the University of Bristol to The Australian National University¹. Most of these previous challenges seemed to disappear although no doubt others would arise. I felt the research would have a more grounded ethical base. This feeling strengthened when my supervisor at The Australian National University suggested to me that the third question of my research should perhaps be the overarching question I was attempting to answer with the research thesis. The inclusion of this question that considers how to improve knowledge sharing between the many interest groups involved in environmental management and community development work in Australia had been declared possibly too optimistic albeit necessary, by my supervisors and viva panel in Bristol. This response highlights the insider-outsider dynamic of this research. To have continued the research through a university in the United Kingdom would have abstracted it. I would have been writing about the research in a theoretical way. I would have been detached from the field via geographic and financial distance, from those living the realities that I was analysing and from the Australian culture. Alternatively, the fact that I wrote some of the thesis in Alice Springs and Lajamanu, the latter an Aboriginal community in the northern Tanami region of the Northern Territory, encapsulates the many dynamics of researching the local. At the time I was grappling with the interweaving of theory with the reality of personal and situated lived experiences. The resulting thesis is a product of the theories, practices and places of which environmental governance and management in Australia are composed.

¹ I made this decision for personal reasons. It is in no way a reflection upon the University of Bristol nor my supervisors whom I found to be excellent and whose advice have continued to inform my research approach.

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List of acronyms and abbreviations

ABS	Australian Bureau of Statistics
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
BFC	Bushfires Council (Northern Territory)
CLC	Central Land Council (Northern Territory)
CLMA	Centralian Land Management Association (Northern Territory)
CRC	Cooperative Research Centre
CSIRO	Australian Commonwealth Scientific and Research Organization
DCM	Department of the Chief Minister (Northern Territory)
DDT	Dichlorodiphenyltrichloroethane
DEH	Department of Environment and Heritage (Federal)
DEST	Department of Education, Science and Training (Federal)
DIPE	Department of Infrastructure and Planning (Northern Territory)
DKCRC	Desert Knowledge Cooperative Research Centre
DNRE	Department of Natural Resources and Environment (Victoria)
DPI	Department of Planning and Infrastructure (Victoria)
DPIFM	Department of Primary Industries, Fisheries and Mines (Northern Territory)
DSE	Department of Sustainability and Environment (Victoria)
ECC	Environment Conservation Council (Victoria)
EM&CD	Environmental management and community development
EPBC	Environment Protection and Biodiversity Conservation Act, 1999 (Federal)
ESD	Ecologically sustainable development
ESDSC	Ecologically Sustainable Development Working Group (Federal)
FFG	Flora and Fauna Guarantee Act, 1988 (Victoria)
IBRA	Interim Biogeographic Regionalisation for Australia
LCNT	Landcare Council of the Northern Territory
NHMRC	National Health and Medical Research Council
NHT	Natural Heritage Trust
NHT2	Natural Heritage Trust phase 2

NLC	Northern Land Council
NRETA	Department of Natural Resources, Environment and the Arts (Northern Territory)
NRM	Natural Resource Management
TSN	Threatened Species Network (a program of the Worldwide Fund for Nature, Australia)
WSSD	World Summit on Sustainable Development, Johannesburg 2002
WWF	Worldwide Fund for Nature

Glossary and Terms

Best practice environmental management	Best practice environmental management implies a particular set of truths or processes upon which the environmental should be management. Such a notion is paternalistic and in direct contradiction to the epistemology and aim of this thesis. I reclaim this term to consider the variety of different approaches to environmental management that are practiced by different groups at the local environmental management and community development project interface. Throughout the thesis I argue that genuine ‘best practice environmental management’ would result from synergies between these situated knowledges. This would create an iterative approach to localised environmental management.
Caring for country	A term used to describe the philosophy of Indigenous land management practices. The Northern Land Council explains that “Aboriginal people have a special relationship to land that is different to the majority of non-Aboriginals. It is not a commodity to be bought and sold” (NLC, 2003:1).
Friends Groups	Groups of volunteers who work in conjunction with government agencies such as Parks Victoria, in managing parks and reserves around Australia.
Gatekeeper	This term is used frequently in the qualitative social science literatures. It describes individuals who provide or prohibit the means to access certain groups of individuals. As such the term is also loaded with negative patriarchal connotations, particularly in relation to Indigenous peoples. I proactively reclaim this term to suggest the important role of particular individuals in facilitating the potential for equitable knowledge exchange between different cultural groups who otherwise would not have access to each other.

Jurkurrpa	Jukurrpa means Dreaming, Story or Law in some central Australian languages. It is “the basis for Warlpiri Law and custom; the period during which the Warlpiri social, moral and physical universe was created, which has an ongoing reality through the continuity of the practice that constitute Warlpiri culture” (Vaarzon-Morel, 1995:111).
Polyvocality	This term literally means ‘many voices’. In this context it affirms the need to move beyond positivist social research practice that is grounded within the scientific tradition to recognise and embrace diversity.
Post-colonial	The post-colonial literature is extensive and grounded upon diverse experiences that differ from nation to nation (for example see Ashcroft et al., 1995). As such this term has different connotations for different nations and for different groups of peoples within those nations. Willems-Braun (1997) states that there cannot be a global theory of colonial culture only localised theories and historically specific accounts that provide insight into varied articulations of colonialist and counter colonial representations and practices. Australia could be described as a young nation grappling with what it means to move beyond the post-colonial. Australia could also be described as a nation whose colonial heritage persists in contemporary times, particularly in relation to Indigenous land rights, social status and so on. When I use this term I refer to a body of literature that both critiques colonialism and considers what it means to move beyond colonialism.
Traditional owner	This refers to Indigenous people who have traditional ownership over an area of country and thus have the cultural right and authority to speak for that country.
Warlpiri	Warlpiri is a central Australian language that is spoken by approximately 3000 people as their first language. The traditional lands of these speakers cover a relatively extensive area to the north-west of Alice Springs (CLC, 2006:1). See Figure 6.1 (chapter 6, section 6.3) for an approximate indication

of the geographic location of the Warlpiri language group.

Yolngu

Yolngu people live in northeast Arnhem Land, Northern Territory. Their language is Yolngu Matha. See Figure 6.1 (chapter 6, section 6.3) for an approximate indication of the geographic location of the Yolngu Matha language group.

Part 1: Introduction and Methodology

Introduction

Chapter 1



Field naturalist information day, north central Victoria

Photo: Kirsten Maclean 2004

Chapter 1: Introduction

1.1 *Research challenge and aim*

This thesis considers ways to alleviate the contemporary challenges of environmental and social degradation in Australia. It engages with the complex sets of knowledge of best practice environmental management² that are active in any environmental management and community development project. It critiques Australia's commitment to the global dimensions of sustainable development and it explores how the meta-narrative of ecologically sustainable development influences local environmental governance and management in Australia.

The research explores the tensions that exist at the nexus between environmental governance and environmental management. This includes what I call the environment and development interface where environmental governance is formalised in policy and articulated in strategies such as the *National Strategy for Ecologically Sustainable Development, 1992*; and practice as exemplified by the Australian Federal Government's Natural Heritage Trust program. It also includes what I call the environmental management and community development interface where community groups carry out environmental management at the local scale. On-ground environmental management projects are facilitated and funded through projects that also advocate community development. The tensions between these two interfaces appear when we consider the rhetoric of environment and development policy and the reality of local lived experience as exemplified at the environmental management and community development interface.

The aim of this research is twofold. First, it engages with these challenges to deliver a critique of environmental governance and management in Australia. Second, it considers what it means to move beyond the knowledge dichotomies that are highlighted in chapter 3 as central to the meta-narrative of ecologically sustainable development (hereon referred to as ESD). To deliver these aims I practise a research praxis that integrates theoretical and empirical investigations. Chapter 1 introduces my argument and structure; chapter 2 describes the thesis methodology and chapter 3 engages with debates in the environment and development literature to consider theoretical and practical mechanisms to move beyond dichotomies between western scientific knowledge and local and Indigenous knowledge that perpetuate binaries of 'them and us' (for example Knorr-Cetina, 1983; Haraway, 1991; Murdoch and Clark, 1994; Hajer, 1995; Blaike et al., 1997 and Brown, 2001a). Chapter 4 then argues that equitable and sustainable ESD is contingent with moving beyond these dis-empowering dichotomies.

² This term is defined in section 1.3.

This will only occur with a conceptualisation of:

- power as entangled (for example Foucault, 1980a and Sharp et al., 2000);
- knowledge as situated in place and networked (for example Haraway, 1989, 1991; Watson-Verran and Turnbull, 1995; Casey, 1996; Murdoch, 1997a, 1997b and Escobar, 2001);
- governance scale as relational and networked (for example Swyngedouw, 1997; McGuirk, 1997 and Howitt, 1998; 2000a); and
- the natural environment as a multi-faceted social construct (for example Proctor, 1996; 1998; Willems-Braun, 1997; Castree and Braun, 2001 and Castree, 2001a).

Chapter 10 engages with and extend Brown's (2001a) typology of 'knowledge cultures in western decision making systems' (see Figure 1.1) to first unpack the sets of environmental knowledge cultures active at the local environmental management and community development project interface; and second, to re-conceptualise the kinds of knowledge cultures necessary for equitable and sustainable environmental governance and management in Australia.³ Finally, chapters 11 and 12 advocate theoretical and practical strategies for increased knowledge sharing between the many interest groups working for ecologically sustainable development in Australia. These strategies embrace the practice of cultural hybridity as essential in moving beyond knowledge dichotomies to a third cultural space of representation (Bhabha, 1990). Cultural hybridity is conceived as fundamental to equitable ESD into the future in Australia.

The empirical focus of this work is upon considering ways to improve knowledge sharing between government organisations, non-government organisations, local communities and individuals involved in environmental governance and management in Australia. The research engages with two environmental management and community development projects to understand these theoretical complexities as well as the practical realities at the local environmental management and community development interface. The case studies are located in specific geographical places and act as points of access into the localised knowledge networks surrounding environmental governance and management in Australia.

³ In chapter 10 I extend this typology to represent an understanding of all knowledge cultures as locally situated.

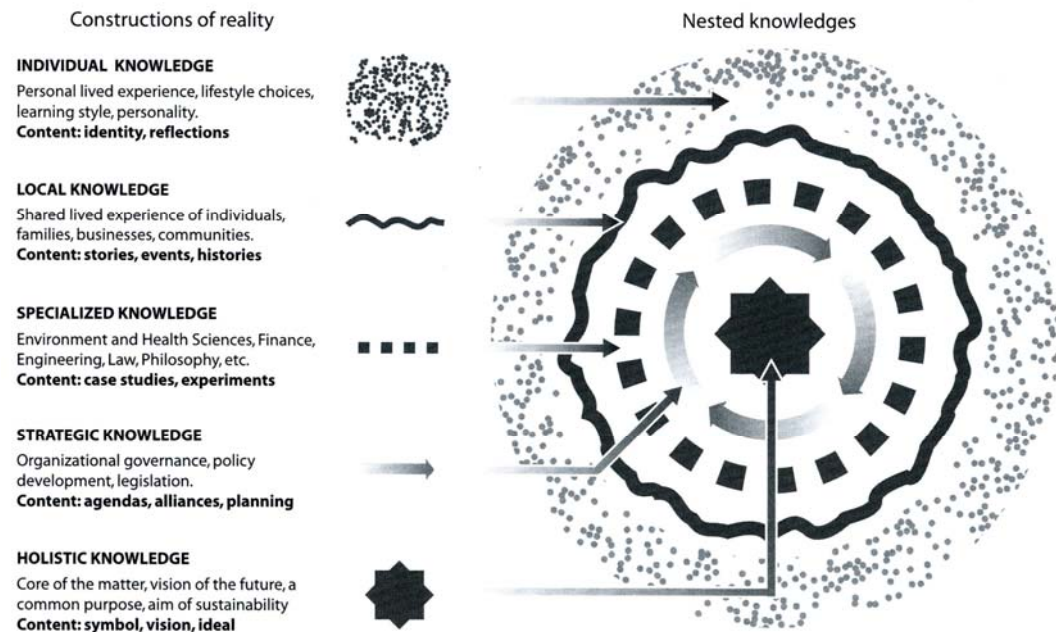


Figure 1.1 Knowledge cultures in western decision making systems

In this figure, the shapes of the knowledge diagrams represent the different structures of these diverse knowledge systems. For example local knowledge is diverse and loosely connected; specialist knowledge is tightly specified within the different frameworks; strategic knowledge is organised and directional; and holistic knowledge is considered the core focus of decision making systems (see Aslin and Brown, 2004). Source: Brown (2001a)

1.2 Research questions

Three research questions drive the thesis. These questions are based upon the premise that equitable and sustainable ESD is dependant upon moving beyond dichotomies that position western scientific knowledge of best practice environmental management as universal, and thus more powerful than local and Indigenous knowledges of best practice environmental management. The thesis confronts and considers ways to move beyond these dichotomies. The research questions are listed in order of their increasing importance and in relation to their increasing connection to place.

1. How do knowledges of best practice environmental management move across and between international, national and local scales of governance and community advocacy?
2. What is the role of community stakeholder groups and their knowledge in the networks surrounding environmental governance and management in Australia?
3. How can greater knowledge sharing between the many interest groups involved in environmental management and community development projects in Australia be devised?

The significance of these questions is threefold. Firstly, international and national environmental governance structures speak about the essential role of local community participation in working towards worldwide ESD. In Australia, the *National Strategy for the Conservation of Australia's Biological Diversity, 1992* states that “the involvement of all Australians is vital to the conservation of biological diversity” (DEST, 1996:36). Equally, the *National Strategy for Ecologically Sustainable Development, 1992* comments that “progress towards ecologically sustainable development is supported by community understanding and action” (ESDSC, 1992:10). The third over-arching objective of the Australian Federal Government’s Natural Heritage Trust speaks specifically of community capacity building. The Natural Heritage Trust administers programs that aim to provide “land-holders, community groups and other natural resource managers with understanding and skills to contribute to biodiversity conservation and sustainable natural resource management” (NHT, 2004:1). Central to the narrative of local community participation is the notion of environmental governance scale as hierarchical, whereby knowledge moves from larger global scales to smaller local scales.

The first question of this research works from within the narrative of participation to consider how knowledges of best practice environmental management move across and between so-called hierarchical scales of governance. Chapters 7 and 8 critically examine the ways in which individuals working at the so-called local environmental management and community development interface know about best practice environmental management. By engaging with the experiences of individuals from the two project case studies, I posit that these knowledges of best practice environmental management move across and between networked spaces of governance and management. This critique highlights the tension between environmental governance and community participation. That is: the nexus between the environment and development policy interface and the environmental management and community development practice interface.

The second point of significance of the research questions relates to the narrative of community participation in the meta-narrative of ESD. Central to this narrative is the notion of community as an identifiable and quantifiable entity. Discourses of empowerment and capacity building speak about these communities as having an important stake in the processes of ESD at the local environmental management and community development interface. As such, community stakeholders are consulted about what they perceive as best practice environmental management rather than partnered. The consultation process for the regional delivery of the second phase of the Natural Heritage Trust exemplifies the way in which this discourse is practised.

The second question of this research works from within discourses of community stakeholder consultation to explore the role of these so-called community stakeholder groups and their knowledge in the networks surrounding environmental governance and management in

Australia. Chapter 9 critically examines ‘who is community?’ at the two case study project interfaces. Chapter 10 explores what constitutes ‘local community knowledge.’ I unpack the discourse of community stakeholder consultation by considering the power ascribed to this knowledge by individuals working at the local environmental management and community development project interface. I build upon conclusions from the previous research question to show that all knowledge is locally situated and tied to place. In chapter 10 I engage with Brown’s (2001a) typology of knowledge cultures in western decision making systems to expose the many varieties of local knowledge that are essential for equitable and sustainable ESD at each project interface.

The third point of significance of the research questions relates to the role of knowledge in equitable ESD. Despite international and national commitment to the United Nations Millennium Development Goals, in particular goal 7: to ensure environmental stability (MDG, 2004), environmental and social degradation are increasing globally (see Worldwatch Institute, 2005). Throughout the thesis I argue that conceiving of all knowledge as locally situated paves the way for improved environmental governance and management. Central to this argument is the proposition that increased knowledge sharing between the many groups working at the environmental management and community development interface is essential to combat the many challenges of environmental and social degradation. Not only does knowledge sharing increase the potential for locally derived solutions but it is also critical in moving beyond the dichotomies of exploitation discussed above. When I speak about locally based solutions I do not argue for a conception of local knowledge as a panacea for all environment and development problems.⁴ Rather I argue that equitable and sustainable local solutions can evolve from knowledge synergies between the many knowledge cultures active at the environmental management and community development interface (following Brown, 2001a).

The third question of this research moves beyond the critiques of the previous two questions, to consider mechanisms for improving knowledge sharing, synergies and exchange at the local environmental management and community development interface. By listening to the local voices of this research and engaging with strategies from the community development and social learning literatures, I suggest practical mechanisms for knowledge sharing. These practical mechanisms reflect the epistemology of the thesis as well as the ‘ingredients for success’ as identified by the local voices of the research. I propose these mechanisms as ways

⁴ There are times when place-based knowledge can exacerbate environmental and social degradation. For example some central Australian Aboriginal attitudes about threatened and extinct animal species are limited by their localness. One such attitude is reported in Rose (1995:89) “in olden times there were lots of those animals, but they have gone, maybe to Brisbane, maybe to Sydney.” In addition, place-based knowledge can have serious political ramifications. For example members of the bush users group, who advocate for ongoing mining and prospecting in the Victoria Goldfields, argue that local knowledge should be valued over scientific knowledge.

to move beyond dichotomies of exploitation to the reality and potential of Bhabha's (1990) third cultural space.

1.3 Research epistemology, design and case studies

This research is grounded in an ontology that celebrates the existence of a biophysical world that is composed of dynamic biological, chemical and physical processes. These biophysical processes support a great diversity of life. These biophysical processes and life forms are inter-dependant. They develop, evolve and destruct in ongoing cycles and exist independent of social epistemologies. The research study is grounded in an epistemology that acknowledges the many social understandings, interpretations and qualifications of this biophysical world. This epistemology holds that human beings belong to particular cultures that ascribe different meanings to the biophysical world. Some of these cultures understand the world according to binaries. The epistemology of the thesis engages with various theoretical and philosophical conceptualisations of social process to argue that genuine ESD can only occur through the celebration of diversity. Celebrating diversity means moving beyond binaries that carve the biophysical and social world into unhelpful dichotomies of 'them and us' (Murdoch, 1997a).

I propose that these binaries and dichotomies evolve from social conceptualisations of power as static; knowledge as hierarchical; governance scale as hierarchical; and the denial that what constitutes the natural world is based on social constructs. Following Harvey (1984) I engage with an epistemology that celebrates an 'applied peoples' geography'. This applied peoples' geography is based upon the fluid and entangled realities of knowledge, power, governance scale and nature. This epistemology opens up spaces of knowing and acting in the world that celebrate diversity and as such provide a basis for social action. In the following discussion I briefly define these epistemological tools (in chapters 2 and 3 I explore these epistemological tools in detail).

I engage with post-colonial (for example, Said, 1979; Guha and Spivak, 1988 and Bhabha, 1994); political ecology (for example, Bryant, 1997, 2001 and Peet and Watts, 1996); and cultural and political geography (for example Sharp et al., 2000) literatures to conceive of power as entangled. I delve into the history and philosophy of science (for example, Latour, 1987; Golinski, 1998 and Kendall and Wickham, 1999) and cultural geography literatures (for example, Haraway, 1991 and Murdoch, 1997a, 1997b) to develop a critique of knowledge as situated, tied to place, networked and associated across time and space. I use the work of cultural and political geographers (for example McGuirk, 1997; Swyngedouw, 1997 and Howitt, 1998, 2000a) to conceive of governance scale as relational, networked and associated across time and space. Finally, I critique western scientific constructions of the so-called natural world to develop an understanding of nature as a social construction.

The research epistemology demands a methodology that takes a participatory learning and action approach. As is discussed in chapter 2, this approach works to unsettle positivist social research practice to embrace polyvocality. The research practice involves participant observation of two specific environmental management and community development projects, as well as conducting semi-structured interviews with key individuals, and doing transect walks. These projects embody the intersection of knowledge networks, what Massey (1993) calls the power of geometry. The methodological approach is based upon open, flexible, interactive research relationships between all stakeholders who choose to be involved. This helps to understand the perceptions, opinions and relationship dynamics of and between different interest groups. It also sets the foundations to devise appropriate strategies for greater interfacing between these groups.

This research study engages with a relatively abstract epistemology to deliver both theoretical and practical mechanisms to expand the notion that equitable and sustained ESD is about knowledge. Accordingly, clarity of the core terms of this epistemology is essential in communicating the proposed mechanisms and strategies to various audiences. While these terms are explored in great detail in chapter 4 my own interpretation of these terms follows.

When I refer to ‘local knowledge’, I speak first of the knowledge that is juxtaposed with scientific knowledge and understood in relation to its connection to the place where it evolved. As the thesis progresses the complexity of this term is revealed as I explore how knowledges of best practice environmental management move between different governance arenas and different geographical places. All knowledges are revealed to be in some sense local. The success of, for example, specific threatened species management techniques depends upon how appropriate these techniques are to the demands of different geographical places. The success of such techniques also depends upon the interest and skills of local actors and the extent to which local actors can adapt such techniques to local circumstances. In chapter 10 the notion of ‘place-based knowledge’ is proposed and used to refer to local knowledge that is confined to knowledge of a specific geographical place.

When I refer to ‘knowledges of best practice environmental management’ I speak of the complex sets of knowledge active at any environmental management and community development interface. These knowledges that are explained visually in Figure 1.1 (section 1.1), encompass the many different ways to govern and manage specific places. When I refer to ‘knowledge networks’ I speak of the networks of individuals located in various geographical places and governance arenas across the landscape. I argue that what might be conceived of as a bounded and ordered environmental management and community development project actually represents a point of intersection of these networks that make up complexly entangled and very local worlds.

When I refer to ‘environmental governance scale’ I speak of the various arenas, international, national, regional and local where individuals, political institutions and

governments articulate best practice environmental management. I argue that each of these arenas is located in specific geographical places. Accordingly, environmental governance scale is enacted similarly at any one geographical place through multiple, networked and complexly entangled local spaces of environmental governance and management. As such environmental knowledge moves differently through local spaces of environmental management and community development than through the meta-narratives of policy and political agendas.

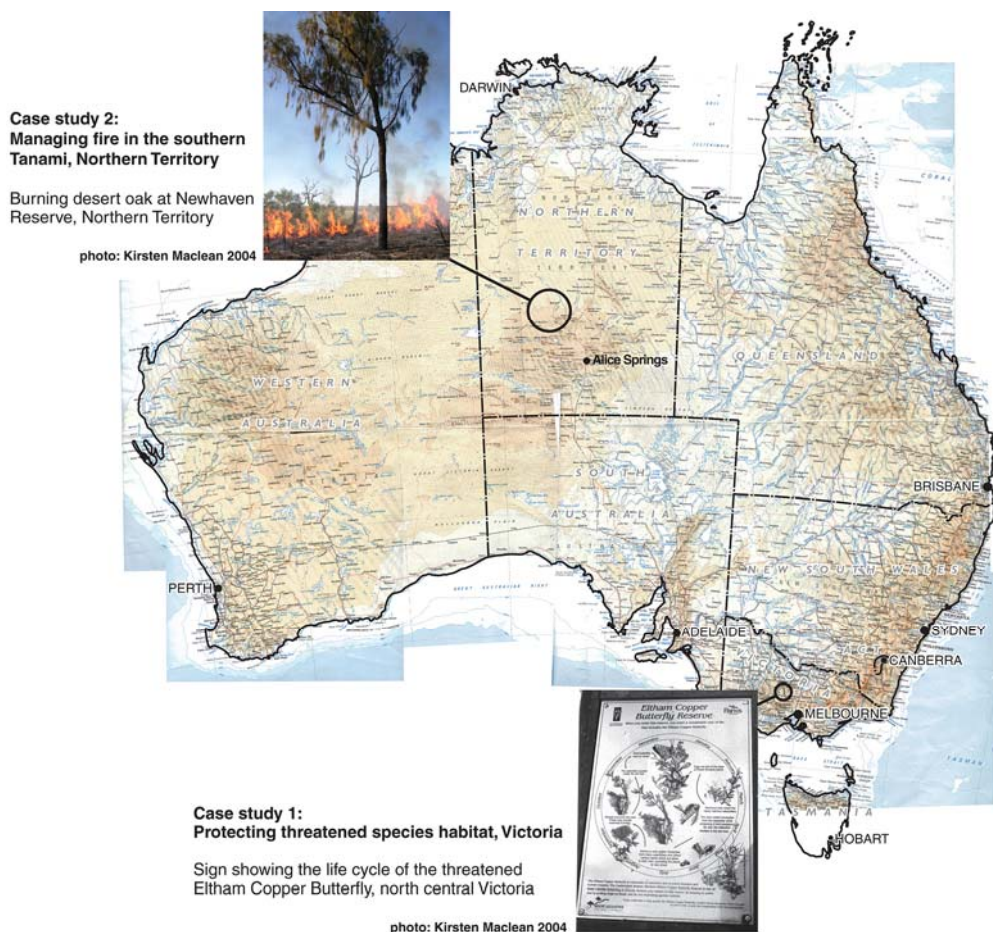


Figure 1.2 Map of Australia showing the location of the two case study projects

This research investigates the ways in which environmental governance and management are played out at the local. Two case studies form the basis to examine and critique the meta-narrative ESD. Throughout the thesis I draw upon the experiences of individuals working at the local environmental management and community development interface of two very different projects in Australia. I engage with these local experiences to demonstrate and celebrate the diversity of local voices working at the environmental management and community development interface in Australia and across the world. I conclude that valuing pluralism across the Australian landscape engages the potential to both maintain diversity and create a diversity of approaches for ESD. Following Gunderson and Holling (2002), this diversity is a key part of the resilience of any system. My particular focus is upon the processes whereby different interest groups work together to govern and manage the natural environment.

The two case studies that bring this research thesis alive are located in Victoria and the Northern Territory (see Figure 1.2). In the following discussion I introduce these two case studies with background details not repeated in the remainder of the thesis. In the following chapters I apply the previously mentioned applied peoples' geography to the two case studies as a means of opening the local spaces for social action and processes of cultural hybridity that are central to Bhabha's (1990) third cultural space.

Case study 1: Protecting threatened species habitat in Victoria

The project that forms the Victorian case study is primarily funded through the Community Grants Program of the Threatened Species Network (TSN). The TSN is

Australia's leading species conservation program, with more than 15 years' experience, we bring together science with community needs, on-the-ground action with Australia's decision-makers, and national issues with local concerns to help protect threatened species (WWF-Australia, 2006:1).

The TSN is a “partnership between worldwide fund for nature (WWF)-Australia and the Australian Federal Government's Natural Heritage Trust” (WWF-Australia, 2006:1). Funding for the TSN and the related Community Grants Program is provided by the Natural Heritage Trust and administered by WWF-Australia. Funding from the Community Grants Program must be administered by a specified government body. This funding must be matched by financial or in-kind support from this government body, as well as the local community groups who have applied for the grant. Spending and reporting must be complete within a one year period although flexibility of this timeframe is sometimes necessary considering the nature of on-ground conservation works for example, for the purposes of the effects of drought on revegetation projects. The Victorian case study project was funded via three Community Grants Program application rounds as explained below, and the works of community groups continue today under various guises.

The Victorian project is entitled “Protection & Enhancement of Threatened Species Habitat in the Goldfields Bioregion” (Project Application round 4, 2001:1). It is located in north central Victoria (see Figure 1.3). The genesis of this project developed from a collaboration between a bioregional manager at the regional Catchment Management Authority a senior flora and fauna officer of the then Department of Natural Resources and the Environment (now the Department of Sustainability and Environment) and the then Victorian coordinator of the TSN. These individuals combined the concepts of landscape planning approaches reflected in the then developing ‘bioregional recovery plans’ with the reality of localised biodiversity issues and the existence of local community groups working in landcare, conservation, activist and naturalist groups, to devise an innovative ‘whole of landscape’ (encompassing parts of the Goldfields Bioregion) approach to threatened species management.

The successful grant application was endorsed by the Catchment Management Authority, the Department of Natural Resources and the Environment and other partner organisations including the local Shire and the various landcare, conservation and naturalist community groups who would be primarily responsible for the on-ground works. Over the three years of the project ten community groups were involved to varying degrees. As subsequently discussed, the case study focuses specifically on the work of three of these groups.

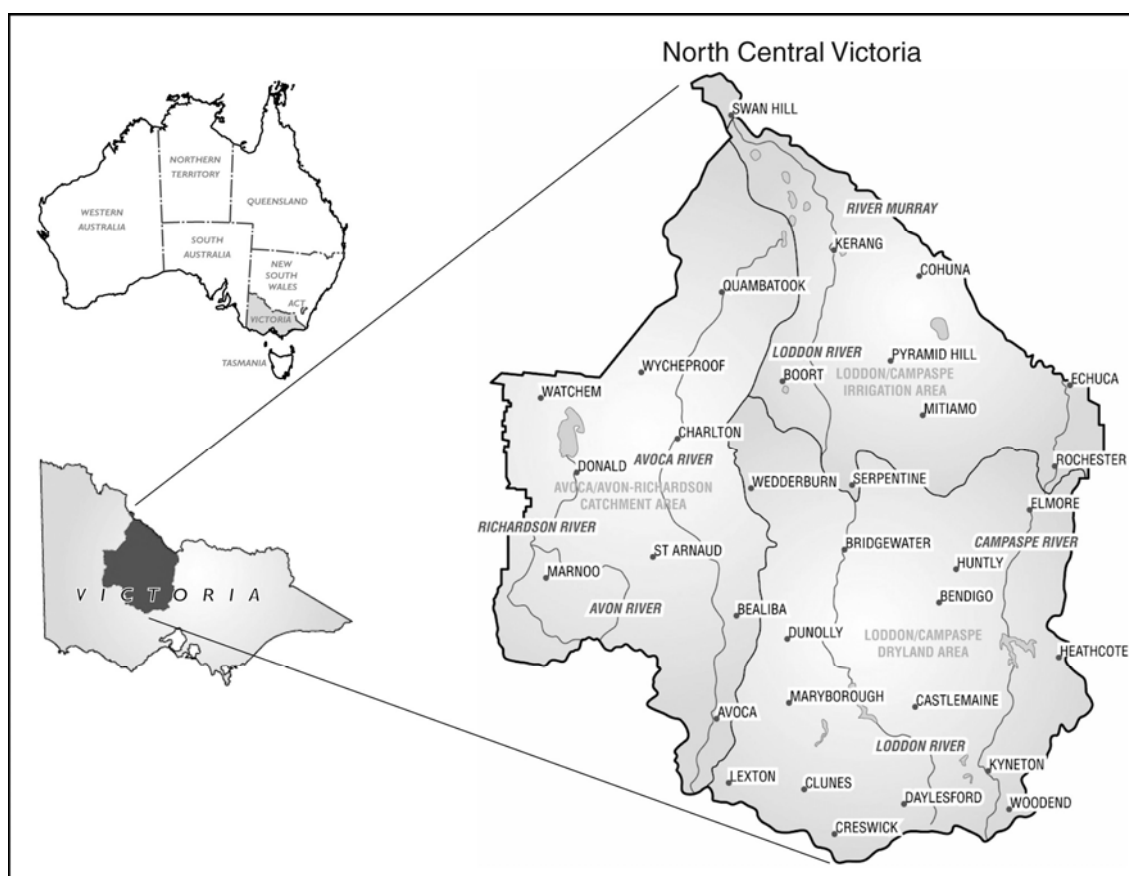


Figure 1.3 Map showing the location of north central Victoria
Source: NCCMA (2006)

The project has had various incarnations since its genesis in 2001. The original project summary was

community groups in the [specific zone] of the Goldfields Bioregional Plan will implement actions that protect and enhance habitat of a range of threatened species... integrated predator control, weed control, habitat restoration, and enhancing community participation are key aspects of this project (Project Application round 4, 2001:2).

The project objectives were

to implement priority actions identified in the Goldfields Bioregional Plan. The focus is on protection, management and restoration of habitat by a variety of stakeholders. The project aims to: improve community understanding of and participation in biodiversity conservation activities;

implement an integrated community based conservation plan that results in better conservation outcomes for a suite of threatened species and ecological communities (Project Application round 4, 2001:2).

A project officer was employed by the Catchment Management Authority in 2001 to assist the various identified stakeholder groups in the co-ordination and management of the overall project. A steering committee, created from representatives from each community group, met monthly with the project officer and the bioregional manager. This was the extent of combined community group involvement as each group worked in their own project area as determined by their interest. However, by virtue of the nature of any rural community, there is much overlay and interconnection between members of different groups, such that the resulting social network was, and remains, strong. A second application to the Community Grants Program of the TSN in 2002 that built “upon the existing TSN project currently being implemented in the Goldfields Zone” (Project Application round 5, 2002:2) was successful. This worked to “extend initial works and further strengthen the linkages and networks being supported in the first phase”, this project had the additional aim of working “to encourage and involve new groups in the processes underpinning the Goldfields Bioregional Plan” (Project Application round 5, 2002:2). As such previous project work continued and additional projects were added. See Figure 1.4 for a graphic diagram of the various actors and agencies involved with the Threatened Species project.

In 2003, two specific community groups were advised by the Catchment Management Authority project officer to apply separately for funding from round 6 of the Community Grants Program, to develop the work they had begun with money from round 4. Both groups were successful. The Victorian case study engages specifically with the work of these two projects and a third project. The first project, entitled ‘Protection and Enhancement of Eltham Copper Butterfly habitat in the Muckleford Zone’ “will enhance and restore two Eltham Copper Butterfly, *Paralucia pyrodiscus lucida*, habitats in [the region]” (Project Application round 6, 2003a:2). The second project entitled ‘locating and protecting threatened species on local roadsides’ aims to

increase the knowledge on the distribution of threatened species within the Shire via strategic surveys of roadside vegetation – these and selected existing sites will be managed to improve the long-term sustainability of the species present (addressing threats) and extend the range of the species (Project Application round 6, 2003b:2).

The third project developed from the original project (round 4), that also forms part of the case study is entitled ‘Threatened Species Bushland Link-up Project.’ Funding for this project continued out of Catchment Management Authority monies because of circumstances beyond the control of the community group. The aim of this project is “to promote and enhance native biodiversity by facilitating movement of native fauna and flora between [a specific] Bushland

Reserve and the [a specific] State Forest” (Bushland Link-up Project, 2002:1). Throughout the thesis this case study is referred to as the Threatened Species project (see appendix 1 for a list of the threatened species and ecosystems that are the focus of the project). I differentiate between project members by describing the arena from which they conduct their work. I speak of project members from the government arena and the community arena.

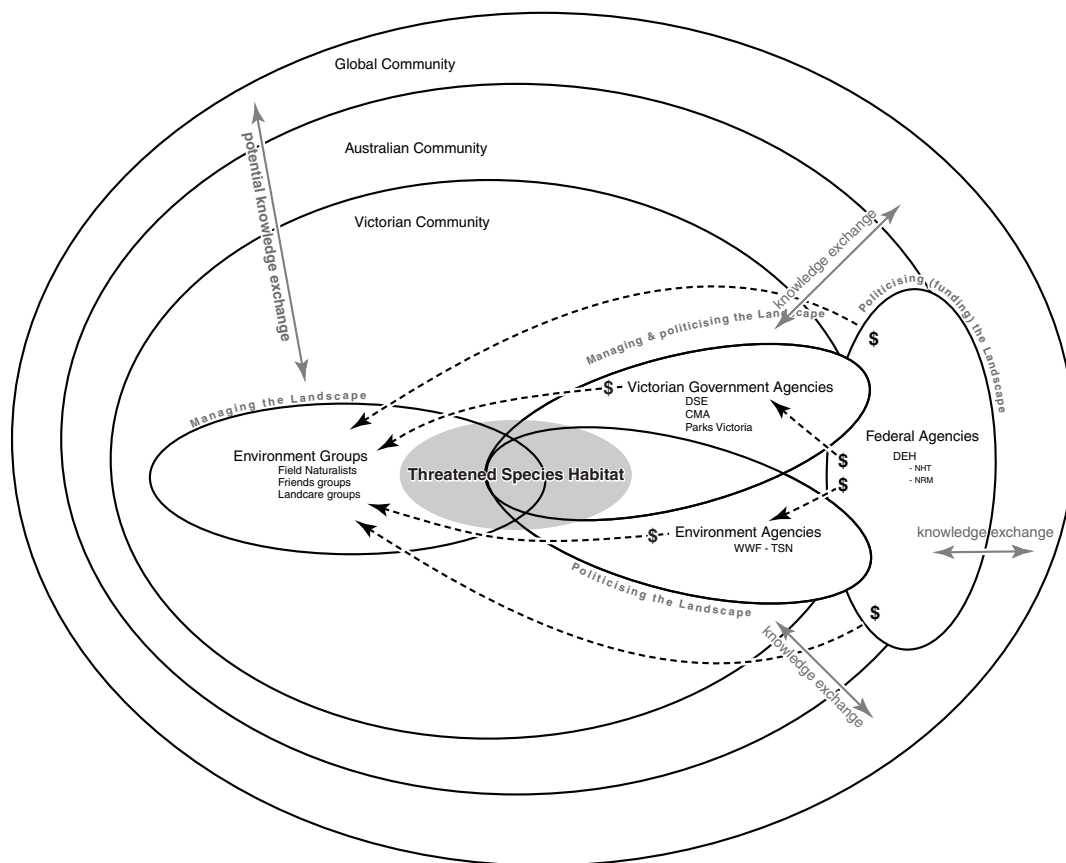


Figure 1.4 Graphic diagram of the Threatened Species project

This diagram represents the way in which the Threatened Species project is understood and critiqued throughout the thesis. This diagram locates threatened species habitat as the core focus for the environmental management community development project in Victoria. Three groups: environmental groups, Victorian Government Agencies (the Department of Sustainability and Environment and the Catchment Management Authority) and Environment Agencies (the Worldwide Fund for Nature and the Threatened Species Network) are depicted as active at the project interface. These groups are represented by the three ovals in the centre of the diagram. Knowledge exchange between the groups is represented by the overlapping ovals. Where the three main ovals coincide is the point where the project is created. This point represents the many situated knowledge networks of which the project is composed. Specific Federal Government Agencies are depicted in the diagram (the Department of the Environment and Heritage; the Natural Heritage Trust; the Natural Resource Management program). These agencies are active in financing on-ground environmental management work. The broken arrows represent these financial flows. The grey arrows represent either the actual or the potential for knowledge exchange across different environmental governance and management arenas. These arenas include the wider Victorian, Australian and Global communities.

I would like to acknowledge C. Hilliker for his assistance in designing this diagram.

Case study 2: Managing fire in the southern Tanami, Northern Territory

The project that forms the basis of the Northern Territory case study is a project of the Desert Knowledge Cooperative Research Centre (DKCRC). The DKCRC is one of 72 Cooperative Research Centres “operating in 6 sectors: environment, agriculture, information and communications technology, mining, medical science, and technology and manufacturing” (DEST, 2006:1). The Cooperative Research Centre (CRC) program is administered by the Australian Federal Government’s Department of Education, Science and Training and was established in 1990 to improve the effectiveness of Australia’s research and development efforts. The program emphasises the importance of “collaborative arrangements to maximise the benefits of research through an enhanced process of utilisation, commercialisation and technology transfer” (DEST, 2006:1).

The DKCRC “is established as an unincorporated joint venture among 15 Centre Partners, with an additional 14 Associate Partners and a number of sponsors” (DKCRC, 2006a:1) (see appendix 2 for a list of centre and associate partners). The DKCRC receives \$20.7 million from the CRC program, cash and in-kind commitments from its 29 partners. These funds create a total of \$90.5 million over seven years (2003 to 2010) (DKCRC, 2006b). The DKCRC is a “national research network linking Indigenous and local knowledge with science and education to improve desert livelihoods” (DKCRC, 2006a:1). There are presently six core projects that complement the vision and derived key results areas (see appendix 3 for a list of these projects, the DKCRC vision and key results areas). Between 2003 and 2005 the DKCRC was arranged around four themes: natural resource management; service demand and delivery; governance systems; and scaling up to the regional economy. The case study project was originally conceptualised under the natural resource management theme. Once these themes morphed into the six previously mentioned core projects, the case study project fell under core project 1: the development of social livelihoods (based on managing natural and cultural heritage) in desert Australia.

The case study project is part of the DKCRC Desert Fire project. This project encompasses 10 subprojects that cover a diversity of fire related focuses across desert Australia (see appendix 4 for summary of these projects). The title of the project upon which the Northern Territory case study is based is ‘Desert Fire: Managing Fire in the Southern Tanami’. This project (3a) falls under subproject 3 ‘fire regimes of the desert regions of Australia at a regional scale: case studies.’⁵ This project evolved from wide ranging interest in fire as a natural resource management issue in central Australia. This interest developed from widespread fire events between 2000 and 2002 when large areas of country in the southern Tanami region were burnt. These fires were the result of “three years of above average rainfall

⁵ The Desert Fire project includes 3 subprojects: 1. Fire regimes at a continental scale; 2. Fire regimes at a regional scale – overview and priority setting; 3. Fire regimes at a regional scale: case studies. See appendix 4 for full schema of these projects.

This project is composed of two interest groups. Firstly, the DKCRC partner organisations of which the initial stage of the Desert Fire is composed, which includes individuals from the Central Land Council; the Northern Territory Bushfires Council⁶; the Centralian Land Management Association; and individuals from the Northern Territory Parks and Wildlife. I refer to these project members as working from the government arena. Secondly those interest groups who are being consulted about fire. These include individuals from the relevant pastoral stations; the conservation land managers of Newhaven; consultant ecologists; traditional owners for country; individuals involved with the Indigenous Ranger Program; and Aboriginal peoples from communities in the region. Throughout the text I refer to these individuals as from the community arena. The Aboriginal people involved with this project are Warlpiri men and women. See Figure 1.6 for a diagram of the Northern Territory case study project.

Most individuals who were working with the project case study in Victoria are continuing their work. The funding for the original TSN project came to an end in 2004. The project officer employed at the start of the original project has recently taken up another position in the same region but in strategic planning rather than direct community engagement. At the time of my fieldwork in the Northern Territory the Desert Fire project was at an initial scoping stage whereby, individuals from specific partner organisations of the DKCRC were engaged in stakeholder consultation. The end of this scoping stage coincided with an evolution of the strategic direction of the DKCRC whereby the four previously mentioned themes morphed into six new core projects. Although the benefits gleaned from this project are many, the future of the project in its current form remains unclear. In addition, some individuals who were primary drivers of the project have since left the region, and the conservation reserve of Newhaven owned by Birds Australia during my research fieldwork period has recently been taken over by the Nature Conservancy.

⁶ The Bushfires Council, Northern Territory has since changed names to Bushfires, Northern Territory. Throughout the thesis I refer to the council as the Bushfires Council because that was the name at the time of the research.

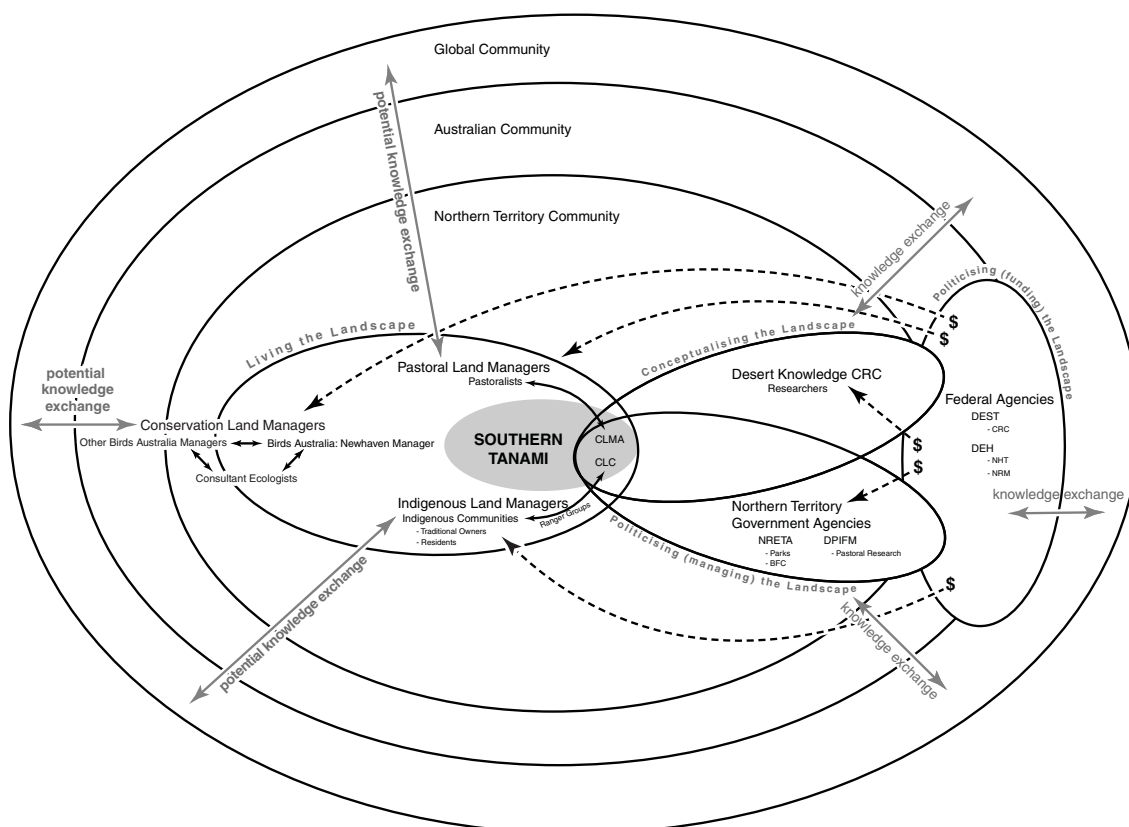


Figure 1.6 Graphic diagram of the Desert Fire project

This diagram represents the way in which the Desert Fire project is understood and critiqued throughout the thesis. This diagram locates the southern Tanami landscape as the core focus for the environmental management community development project in the Northern Territory. Three groups are depicted as active at the project interface. Firstly, those living the landscape which includes pastoral, conservation and Aboriginal land managers. Secondly, those politicising the landscape through specific management approaches which includes specific Northern Territory Government Agencies. Thirdly, those who are conceptualising the landscape, this includes the DKCRC. The Centralian Land Management Association (CLMA) and the Central Land Council (CLC) fit within all three groups. There is overlap between the Northern Territory Government Agencies (Nature Resources, Environment and the Arts; Primary Industries, Fisheries and Mines) and the DKCRC.

The three groups are represented by the three ovals in the centre of the diagram. Knowledge exchange between the groups is represented by the overlapping ovals. Where the three main ovals coincide is the point where the project is created. This point represents the situated knowledge networks of which the project is composed. Specific Federal Government Agencies are depicted in the diagram (Department of Education, Science and Training; Department of the Environment and Heritage, including the Natural Heritage Trust and the Natural Resource Management program). These agencies are active in financing on-ground environmental management work. The broken arrows represent these financial flows. The black arrows represent knowledge exchange across different environmental governance and management arenas. The grey arrows represent the potential for knowledge exchanged across the same arenas. These arenas include wider Northern Territory, Australian and Global environmental governance and management communities.

I would like to acknowledge C. Hilliker for his assistance in designing this diagram.

1.4 A thesis in six parts

Table 1.1 outlines the thesis. Part 1: Introduction and methodology (chapters 1 and 2) grounds the research and the researcher within the research discipline of critical human geography. Part 2: Frameworks for an applied peoples' geography (chapters 3 and 4) develops the thesis critique. Part 3: A cutting edge politics (chapters 5 and 6) critiques the political, cultural, knowledge and social landscapes in which the two case studies are embedded. Part 4: Local voices in the landscape (chapters 7 and 8) addresses the first research question. It unpacks the place-based spaces of environmental governance and environmental management at each case study locale. Part 5: Knowledge networks across the landscape (chapters 9 and 10) addresses the second research question. It considers the politics of knowledge at each of the two project case study interfaces. Part 6: Moving beyond dichotomies of exploitation (chapters 11 and 12) synthesises the applied peoples' geography and the cutting edge politics practised throughout the research with models from the social learning and community development literatures to provide theoretical and practical strategies for knowledge sharing at the local environmental management and community development interface. These strategies celebrate diversity and provide the creative space necessary for cultural hybridity. This part also highlights the methodological, empirical and theoretical significance that this research has for future ESD in Australia.

Table 1-1 Thesis chapters and main line of argument

Chapter	Main line of Argument
Part 1: Introduction and methodology	
1 Introduction	Introduction to the theoretical challenges, derived research questions, research epistemology and case studies of the thesis.
2 Methodology	Discussion of contemporary human geography, ethical responsibilities and personal journey of the research process. Overview of thesis methods-in-action.
Part 2: Frameworks for an applied peoples' geography	
3 Theoretical Context	An analysis of Australia's international commitment to ESD demands a critique of the epistemology of sustainable development theory, policy and practice. <i>This critique is developed from</i>
4 Analytical Tools	The four central constructs of ESD from which social realities are framed. I argue, understanding power as entangled; knowledge as situated and networked; scale as a relational social construct and nature as enacted social construct provides the analytical tools necessary to move beyond the inequalities of ESD. <i>These theoretical perspectives lead to</i>
Part 3: A cutting edge politics	
5 Political Landscapes	An analysis of natural resource management policy in Australia gives focus to the tensions between government policies and lived local realities. <i>Exemplified by</i>
6 Case Study Landscapes	The cultural and social interpretations of the landscapes at each case study location reflecting various local knowledges of the environment highlight the diversity of voices working to govern and manage the environment across Australia. <i>As such I argue that</i>
Part 4: Local voices in the landscape	
7 Spaces of Environmental Governance	A critique of environmental governance suggests that environmental knowledges move through the multiple, networked and entangled spaces of environmental management and community development projects (EM&CD). <i>And</i>
8 Spaces of Environmental Management	Individuals choose to engage with these local spaces of environmental governance and management for a variety of social livelihood reasons. <i>As such</i>
Part 5: Knowledge Networks Across the Landscape	
9 Politics of Knowledge	The success of any EM&CD project hinges upon acknowledging the value, power and limitations of local community knowledge. <i>Equally</i>
10 Varieties of Local Knowledge	Success depends upon <i>varieties of local knowledge</i> active in EM&CD projects. Each of these knowledge cultures is important for equitable and sustainable ecologically sustainable development. <i>'working together to better manage country' means</i>
Part 6: Moving Beyond Dichotomies of Exploitation	
11 Engaging the Third Space	Firstly, listening to the local voices of the two case study projects to derive principles for increased knowledge sharing at the EM&CD interface. Secondly, synthesising these principles with the thesis epistemology, social learning and tools from the community development literature to develop strategies that embrace the practice of cultural hybridity and work to engage the third cultural space and thereby harnessing the potential that lies between spaces of knowing the world. <i>Engaging the third space depends upon</i>
12 Conclusions	Firstly, celebrating local diversity, the power and limitations of local knowledge, and engaging in policies and practices to improve knowledge sharing between the many interest groups involved with EM&CD projects. Secondly, engaging in policy and practice activities that: work to unsettle current epistemologies of ESD; consider locally identified ingredients for social process; engage in equitable planning processes; and activities for increased knowledge sharing, will embrace the practice of cultural hybridity. These activities will result in the cutting edge politics necessary to move beyond the dichotomies of exploitation inherent in the meta-narrative of ESD in Australia.

Methodology

Chapter 2



Using maps to talk about country near Willowra,
Northern Territory

Photo: Kirsten Maclean 2005

Chapter 2: Methodology

2.1 Chapter aim and overview

The aim of this chapter is to describe the research methodology used throughout this research. I locate the methodology within the broader practice of human geography before presenting the methodology that corresponds to the epistemological stance of this research. I describe the research tools, justify why I used a case study approach, and expand upon the participatory research and action toolbox. I present the methods of analysis and constraints of the field research. I end with an account of the research ethics inherent to this kind of work. The purpose of this chapter is not only to present the methods used but also to give a reflexive account of the role of self-as-researcher which itself influences the research journey.

2.2 Methodological rationale and toolbox

we desperately need methodology to keep us erect, while we navigate a terrain that moves and shifts even as we attempt to traverse it (Burawoy, 1998:4).

As Burawoy (1998) suggests in the above quote, research is a journey. It is a structural journey where one must overlay and maintain a dynamic research methodology over the shifting terrain of reality. The researcher must maintain a clear research lens to enable the pursuit of the research as project with a beginning, middle and end. The researcher must also maintain the lens to enable the pursuit of the research as process as understanding leads to greater reflexivity in the research endeavour. This reflexivity in turn allows a process of refining, clarifying and focussing the research process. Research is equally a personal journey. This journey includes: the building of personal confidence as one develops knowledge of local places, people and histories and learns how best to implement the methodology. This journey is contingent on building a local reputation and thereby gaining the trust of local people.

The contemporary human geography that I practise as an academic apprentice complements this understanding of fieldwork. It engages with the core geographical concepts of power, knowledge, nature and governance scale⁷ (discussed in chapters 3 and 4) to devise an applied peoples' geography (after Harvey, 1984). This approach is embedded within the context of the young nation of Australia struggling with what it means to move beyond its colonial history. As the title of this thesis attests the overall aim is to move beyond western notions that knowledges of best practice environmental management are containable, definable and bounded to a sophisticated understanding that environmental governance and management in Australia is composed of different knowledges and local voices.

⁷ Howitt (2001a) identifies the five foundational concepts of geography as: space-time, place, nature, culture and scale.

The practice of geography (and anthropology) to describe social, physical and cultural landscapes has often worked to exclude and make invisible other ways of knowing. The language of fieldwork is embedded in colonising discourses of re-searching, exploring, collecting, journeying, examining, investigating, travelling, discovering (Howitt and Suchet-Pearson, 2003). This language assumes some kind of knowledge hierarchy with that of the researcher, who has been historically European, at the top. Clifford (1997:194) attests that “fieldwork has become a problem because of its positivist and colonial associations – the field as ‘laboratory’, the field as place of ‘discovery’.” In Australia some contemporary human geographers and anthropologists are confronting the post-modern challenge of moving beyond positivist social research practice and embracing polyvocality. Their work seeks to unsettle such discourses through practices and writings (for example: Davies, 1995; Howitt, 1999, 2001a, 2001b; Young, 1995, 1999; Rose, 1996, 2004; Baker, 1999; Baker et al., 2001; Brown, 2001b and Brown and Pitcher, 2005). This research thesis and methodology seeks to continue this unsettling.

The epistemological stance of this research stems from the critique of scientific knowledge claims to objectivity. This stance is outlined in detail in chapter 4. The intention of this critique is not to undervalue scientific knowledge generation. Nor is it to further dichotomise scientific knowledge as against other knowledge systems. Rather it is to conceptualise knowledge generation as essentially locally situated and socially derived. This provides a means to engage with the many voices of environmental governance and management in Australia. It also opens the space and the potential for greater interfacing between different kinds of knowledge, in working towards environmental governance and management in Australia. The research approach complements this epistemology. It acknowledges that social research does not occur within a vacuum of time, space and social and political contexts. Engaging with social and cultural processes is not about control and attempting to prove or disprove a particular hypothesis, but about interpreting the processes in light of the research aim. As such I engage with people connected to two specific community development and environmental management projects and work with them to tap into their perspectives, attitudes and hopes relating to the themes of this research. The research is grounded in the local and involves two-way research relationships, transparency, mutual participation and evolving processes. This qualitative approach assumes a dynamic and negotiated reality as opposed to more positivist quantitative methods (Furze et al., 1996).

2.2.1 Case study approach

Case study approaches allow “for in-depth exploration; are an examination of subtleties and intricacies; attempt to be holistic; explore processes as well as outcomes; and investigate the context and setting of a situation” (O’Leary, 2004:116). An investigation into the role of local knowledge and the local in community development and environmental management projects in

Australia requires such a case study approach. The project case studies are located in specific geographic places and are focussed around the phenomenon of community involvement in environmental governance and management in Australia. These projects are afforded boundaries by government process and project demarcation. They have been captured within project documentation and funding regimes. But they are in fact without boundaries because, as I argue here, the projects are created by social relations and social processes. These relations and processes are constantly negotiated and renegotiated as individuals learn, adapt and evolve within the project boundaries, as voices become stronger or are silenced (a process in which I am also involved). The projects are also a product of these geographic places. These places are unique and understood in many ways. The actual physical and material existence of these places is also dynamic, for example: animal species reproduce and migrate; plant species flower and die back; rain falls or indeed does not; spinifex grasslands reach their optimum burning, or cure rate and carry fire long distances, or burnout in localised patches; and winds rise and fall.

Based upon this realisation and the need for the researcher to maintain some kind of structure through which to pursue fieldwork research, I placed a research methodology template as my layer of engagement with the projects. This template, based upon the participatory research and action approach, weaves the different aspects of place, network, situated knowledges, situated engagement and situated answers together.

2.2.2 Participatory research and action approach

The intention of this study is to move beyond a descriptive, extractive research approach. The focus is on a research praxis of collaboration.⁸ This praxis dictates a participatory research approach which attempts to bridge the macro-micro divide (Booth, 1995). This approach complements the theoretical investigation of the thesis (introduced in chapters 3 and 4) because following a critique of the development narrative: it questions how seemingly devolved environmental governance structures look from the local point of view. In doing so it questions the capacity of devolution to strengthen grassroots social and political participation (Gaventa and Valderrama, 1999 and Gaventa, 2001). Similarly, following the postcolonial critique (see Sylvester, 1999), it investigates the embedded power dynamics inherent to environment and development initiatives. It questions whose knowledge is privileged and whose knowledge is silenced by these initiatives. When I speak of a participatory research and action approach, I speak of qualitative research methodologies that are *participatory* in nature that work to reveal power relationships between project members. These methodologies then take the research practice one step further to consider locally derived *actions* necessary for improved knowledge sharing for ecologically sustainable development at the local environmental management and

⁸ By research praxis, I mean a collaboration between researchers coming from a theoretical understanding of a given situation and individuals who are living the same situation.

community development interface. These methodologies are based upon the philosophy of ‘participatory rural appraisal’.

Participatory rural appraisal originated among non-governmental organizations in East Africa and South Asia and has since been adopted by government departments, training institutes, aid agencies and universities worldwide (IDS, 1998). It describes a growing “family of approaches and methods to enable local people to share, enhance and analyse their knowledge of life and conditions, to plan and to act” (Chambers, 1994a:953). Participatory rural appraisal provides strategies for local empowerment and sustainable development by ‘handing over the stick’ to those whose livelihoods are most affected by the decisions made by outsiders. Based upon critiques of participation itself, the critiques of participatory rural and appraisal are many. David (2002) points out that as it involves an aspect of social advocacy, it is almost impossible for the researcher to remain unbiased. This is dangerous ground particularly in regard to this research project because an attractive aspect of participatory rural appraisal is to attempt to move beyond the dichotomy of local knowledge/scientific knowledge not to invert it. In addition, Chambers (1994b) states that the label of participatory rural appraisal can be used to legitimize practices without an understanding of what it actually implies. In this light participatory rural appraisal can actually reinforce inequitable power relations because the participation is assumed good regardless of who is participating (Chambers, 1994b; Mosse, 1994; Cleaver, 1999 and Campbell, 2002) and how they participate: for example tokenistic and paternalistic involvement.

The spirit of participatory research and action that I ascribe to in this thesis is one of “inventiveness and improvisation” (Chambers, 2002a:4) hence there is no blueprint for this methodology. The mixed methodology approach introduces triangulation.⁹ The tools used during the research are listed below.

- **Secondary data review:** a review of newspaper and journal articles; policy and planning documents and processes; maps; threatened species action and recovery plans; funding applications; published local dreaming stories; pastoral biographies and anthologies.
- **Semi-structured interviews:** informal and formal discussions with key individuals from the different interest groups working with each project.
- **Participant observation:** observation of and involvement with, where appropriate, the project-in-action. Including: attending planning meetings; working to locate threatened plant species on roadsides in Victoria; working to manage tracts of country with fire in the Northern Territory.

⁹ Triangulation is defined as “the use of several different methods to test the same finding” (Babbie, 1979:90).

- **Transect walks with key stakeholders:** walking, driving, flying specific areas of country with key individuals or groups. This provides the opportunity to look at the land, biodiversity, natural resource (or however these are defined by different interest groups) and talk about for example: the importance of the land, the history of the land, the many uses and values of the land.
- **Network mapping:** asking interviewees to draw a network map to elicit where they see themselves in relation to other individuals involved with the project.¹⁰

2.3 Case study choices and fieldwork logistics

Field research is an evolving process. The negotiation of the project case studies began this process. My introduction to the Victorian case study began during a period of volunteer work with the Threatened Species Network Coordinator in Melbourne in 2002. The Victoria project was welcomed by the Threatened Species Network as an innovative whole-of-system approach to the conservation and protection of threatened species. It was also described as a multiple community group driven project working in partnership with local government and the Catchment Management Authority. From the United Kingdom I emailed the contacts in Victoria. I maintained contact with these people during the latter half of 2003 and I visited them within a few days of my return to Australia in November 2003. The response to my proposed research was positive, as was my proposed relocation to the community for a period of 3 months in early 2004.

Trying to negotiate the Northern Territory case study proved to be a more difficult process. I learnt about Desert Knowledge Australia through a contact in Alice Springs. Several unanswered emails left me wondering how to proceed. I was very aware of the politics of conducting PhD research with Indigenous Australians. A history of dispossession of country and of family, knowledge theft, and the exploitation of species under the guise of scientific research has understandably left many people scarred and suspicious. I refer in the first instance to the gatekeepers.¹¹ One such gatekeeper commented to me later: *I did think to myself, what relation does this person in Bristol have to me, here in the Northern Territory?* (NT-G-1). Faced with such difficulties I decided it would be best to wait until I was back in Australia and

¹⁰ This method was only used with individuals involved with the Victorian case study because this project had been running for two years and thus individuals perceived themselves as part of a wider network. See appendix 5 for an example of one such network diagram. In comparison the Northern Territory project had only just begun its scoping study and thus inter-related networks were yet to be uncovered.

¹¹ This term is used frequently in the qualitative social science literatures. It describes individuals who provide or prohibit the means to access certain groups of individuals. As such the term is also loaded with negative patriarchal connotations, particularly in relation to Indigenous peoples. I use and reclaim this term in a positive way to suggest the important role of particular individuals in facilitating the potential for equitable knowledge exchange between different cultural groups who otherwise would not have access to each other.

able to introduce myself and the proposed research personally. Once I had successfully transferred the PhD to the Australian National University I was able to apply for PhD research affiliation with the Desert Knowledge Cooperative Research Centre (DKCRC) which strengthened the potential for research collaboration and of becoming something of an insider to the project.

Developing trust and rapport with key individuals is an essential part of the qualitative research process. Equally, developing a substantial knowledge of local political, social and environmental processes is fundamental to meaningful and valuable engagement with project stakeholders. It was, therefore, necessary to spend an extended length of time in the field. I spent 3 months in Victoria and 7 months in the Northern Territory. I developed the interview guides *ex situ* around four main themes: the case study project, environmental governance, knowledges of best practice environmental management and community advocacy. In Victoria I used the same interview guide with all interest groups (see appendix 6). In the Northern Territory I devised three separate guides for the interest groups (see appendix 7). When culturally appropriate, all interviewees were requested to sign a consent form. All interviews were recorded using a dictaphone unless otherwise indicated by the interviewee. In these circumstances detailed notes were taken during the interview.

The Victorian fieldwork was conducted from 17 February to 14 May 2004. In the first month I met with the project leaders, attended meetings of the different community organisations, meetings of the local heritage committee¹² and other related meetings and workshops. I spent the following two months conducting the research. The project officer suggested key contacts involved with the project. Individuals were contacted by mail with a follow-up telephone call two days later. I met most informants a few times prior to the interview at community groups meetings, council meetings or workshops. Most interviews were conducted in a location chosen by the interviewee. I also asked the interviewee to map a network of individuals and organisations involved with the project (see appendix 5). The interviews varied in length from 1 hour to a full day spent with especially interested individuals. Some individuals took me on transect walks or drives around the area of focus to their work. In total I conducted 32 semi-structured interviews with individuals from the government and community arena.¹³

Transect walks included: visiting a landcare biodiversity corridor; visiting a private mine shaft where gold had recently been discovered by the interviewee, and a bush walk through a recently declared national heritage park with an interviewee from the local community arena. Participant observation included attending relevant meetings, workshops and project days.

¹² This included attending planning meetings for the newly acclaimed Box-Ironbark Heritage Diggings Park (the first national heritage park ever declared in Australia).

¹³ Although I do not cite excerpts from all these interviews in the thesis text, each interview has been instrumental to this research.

These included: Government Policy and Planning meetings;¹⁴ relevant workshops put on by environmental Non-government Organisations;¹⁵ a threatened species recovery team meeting; a research seminar;¹⁶ landcare workshops;¹⁷ community group meetings;¹⁸ as well as meetings held by the project officer. I became involved in hands-on project work as the opportunity arose including: assisting a group to locate threatened plant species along roadsides and weeding around tree seedlings planted the previous year. As it was early in the work season, not many group activities were planned.

The Northern Territory fieldwork was conducted between June 2004 and May 2005. I carried out three fieldwork trips to the Northern Territory. The first fieldwork period lasted 3.5 months, and two subsequent trips lasted 2 weeks for DKCRC student conference reporting, and 8 weeks for further fieldwork. Fieldwork in the Northern Territory had to be more flexible because of the ongoing evolution of the project, the size of country encompassed by the project boundaries and my less defined role as researcher. I met most project members from the government arena at project meetings. They suggested other individuals living in Alice Springs with whom I should speak. I contacted all Alice Springs interviewees by email and an interview time was finalised by a telephone call. I contacted the five pastoral families and the manager of Newhaven by email and further introduced my work to them with a follow up telephone call. I approached key Aboriginal people in person (when accompanying project members to communities or on country visits) and requested to speak with them about the project and their use of fire on country. Interviews were conducted in a location chosen by the interviewee. For example, I visited the five pastoral properties in the case study region to conduct the interviews. I conducted a total of 32 semi-structured interviews with key individuals connected to the Desert Fire project.¹⁹ Much time was spent in informal discussion and participant observation with key Aboriginal people on country. During those times the use of semi-structured interviewing was not culturally appropriate. In these circumstances, I asked questions in the more appropriate transect walk fashion. The distances that one must travel in the Northern Territory meant that I drove many an hour with project members or other related individuals and

¹⁴ These included a presentation on the new Native Vegetation Framework by individuals from the Catchment Management Authority and the Department of Primary Industries; an advisory committee meeting for the Heritage Diggings National Park and a related Indigenous Advisory Meeting.

¹⁵ This included an Environmental Protection and Biodiversity Conservation Act, 1996 workshop put on by Worldwide Fund for Nature in Melbourne and a workshop put on by the Environmental Defender's Office.

¹⁶ I attended the Eltham Copper butterfly Recovery Team Meeting, as well as a research seminar conducted by a zoology PhD student who was researching the butterfly.

¹⁷ I attended a Landcare Vision workshop run by the Catchment Management Authority over 2 days. I attended various landcare workshops organised by the local landcare facilitator.

¹⁸ Twice I was asked to give a brief synopsis of my work.

¹⁹ Although I do not cite excerpts from all these interviews in the thesis, each interview has been instrumental to this research.

could discuss the varied issues relating to the project and life in remote Australia. These conversations created a rich context for the project and my research.

I made all attempts to engage with land managers working in the region with fire. I completed a two day Wildfire Fighting Operations level 1 training course. I volunteered with Parks and Wildlife on two prescribed burns in two different Northern Territory Parks. I assisted a land manager from the Bushfires Council with prescribed burning on the Newhaven conservation reserve (see chapter 1 Figure 1.5). Towards the end of the first fieldwork period I was able to visit Lajamanu (see chapter 1, Figure 1.5), a community in the northern Tanami to spend a week job shadowing with the Central Land Council's Indigenous Protected Area Development Officer.²⁰ I also accompanied a local ecologist on a trip to Nyirippi Aboriginal community (see chapter 1, Figure 1.5). This researcher has been working for a number of years with women from this community.

During the third field work period (April to May 2005) I accompanied the now appointed Desert Fire Project Officer and the Central Land Council's project member on country visits to communities. Two such trips were arranged. The purpose of the first trip was to introduce the project to three communities and scope interest for further consultations. During one meeting we accompanied some Aboriginal women to an outstation where they proceeded to burn their country. The second trip was a follow-up consultation on country with a senior man and a group of young men. We travelled to the senior man's country where some of the younger men, as advised by the more senior men, lit up some areas of country.

I spent three days with a pastoral researcher employed with the Northern Territory Government Department of Business Infrastructure and Regional Development (now called the Department of Primary Industries, Fisheries and Mines) during this fieldwork period. A final weekend was spent at a pastoral seminar with other Desert Fire project members and relevant pastoral landholders presenting the Desert Fire project thus far. This was followed by an interactive discussion about fire in the region.

2.4 Methods of analysis and research challenges

Re-presenting the voices of research informants both accurately and respectfully is an important element of the research endeavour. When it was inappropriate to use a dictaphone or when informal conversations were carried out during transect walks or country visits I took detailed handwritten notes of exchanges with informants. Otherwise I transcribed every interview. The interview themes corresponded with the three overall questions of this research.

²⁰ Although Lajamanu does not fall within the project case study area many of the people living and working with the ranger program are Warlpiri people. Additionally issues to do with living in remote Australia, living in communities and working on country are similar across the Tanami region.

This facilitated analysis of the collected data. I read and re-read interview transcripts and all detailed notes to gauge particular themes and trends. I then coded the transcripts and notes.

To ensure the anonymity of interviewees in the research text I have coded interviews according to the interest group in which they are located. I give each interview a number according to the order in which they were interviewed. For example: in Victoria individuals fall into two distinct groups those working in the government arena and those working in the local community arena. I code the first individual I interviewed who works for the regional Catchment Management Authority as VIC-G-1: where VIC stands for Victoria, G for government and 1 for the order of the interview. I code the interviews with individuals from the local community arena as, for example, VIC-C-1. I use the same system for individuals involved with the Northern Territory project replacing 'VIC' with 'NT' to differentiate the projects. Appendix 8 gives an account of these codes with the corresponding dates of when the interviews were conducted. I further distinguish interview quotes in the research text by italics and, when greater than 3 sentences in length, the quotes are indented.

The fieldwork in Victoria ran very smoothly in comparison with the fieldwork in the Northern Territory. This reflects the very different social livelihood issues at each location. In Victoria the main challenges faced included the need to develop a sophisticated understanding of the local political, historical, social and environmental landscapes to enable me to engage intelligently with all research participants. In the Northern Territory the political, historical, social and environmental landscapes are more complex and entangled than those in Victoria (as discussed in chapter 6). Therefore developing comprehensive local knowledge was more of a challenge. Developing a sophisticated understanding of the challenges and tensions between Aboriginal and pastoral interest groups required cultural sensitivity. Navigating between individuals working for different government agencies, each with corresponding histories of conflict presented an interesting insight into the role of local politics upon project outcomes.

2.5 Self-as-researcher

Katz (1994) describes the fields of power of the qualitative research practice. The power of conceptualising, defining, creating the boundaries of the research lens; the power of first choosing and then working the field; the power inherent in writing the field; the potential long-term impacts of the finished product. Fieldwork and research are inherently discursive practices. Power is present in every arena beginning firstly with the field. This is described as a site of inquiry that is "necessarily artificial in its separations from geographical space and the flow of time" (Katz, 1994:67). Secondly, there is the academic field that defines or legitimates a field of inquiry (Katz, 1994) and, therefore, works further to create, for example, categories and vocabularies by which people can locate and define themselves (Keith, 1992). Thirdly, there is the interwoven power that connects the researcher and participants, and the participants to each other. The power dynamics are constantly changing especially when one considers that

the researcher depends entirely upon the wilful participation of the field actors (McDowell, 1992) and that the researcher holds the power to re-present or mis-re-present during both the fieldwork and the production of the research text (Parry, 1999). On a more personal and social level, fieldwork and research tests relationships made in the field, and questions these, because as England (1994 cited in Parry, 1999:91) so eloquently puts it “exploitation and betrayal are endemic to fieldwork.” Research is intrinsically descriptive and extractive. There is a danger that the researcher will write about the other once back in an academic setting and at such a distance that she neglects the fieldwork processes.

Acknowledging these different fields of power is central to attempting to practice self-reflexive, open and transparent research. By selecting the particular case studies as being based around specific projects I have perhaps minimised the abstraction of marking off a field, but my focus upon the projects works to reinforce these abstract realities. I am not only embedded in the single research case study but in multiple and extra-locale realities, realities that I am continually negotiating and renegotiating as my research identity both perceived and actual changes. I am at one time a researcher; a PhD student and colleague; a ‘new chum’ to the worlds in which I conduct the research. All the time I am trying to remain detached from the case studies; remain a passive observer who does not share her own opinion (indeed is perhaps constructed as opinion-less); always switched on to opportunity as it may arise. In this capacity I remain dependant on those around me to include and invite rather than exclude.

2.6 Practising research ethics

In Australia, research involving people must be approved by the Human Research Ethics Committee. The committee must comply with the guidelines set out in the National Statement on Ethical Conduct in Research Involving Humans in accordance with the National Health and Medical Research Council Act, 1992 (NHMRC, 2003). My research has been practised within these guidelines. Although I do not wish to engage in detail with the considerable body of literature and practice that is Ethics and Moral Philosophy, I will briefly discuss ethical and moral codes of practice before speaking about the ethical imperatives for the researcher to engage in ethical re-presentation of research findings.

Some researchers struggle to maintain complete transparency of their research aims. Advising all participants of the research may work to compromise the research somewhat. Parry (1999:90) speaks of her experience in meeting with a director of a leading public health research institute in the United States of America who assumed, because she had engaged with them in an interested and dynamic manner, that they shared, in the director’s words, “mutual interests”. She questions what these could possibly have been. I had a similar experience with one interviewee saying *now that you see what it is like, you will be able to share our side of the story, won’t you?* (VIC-C-12). Another participant approached me after I gave a brief presentation about some aspects of my research, saying *I would hate to think that you left the*

area with the wrong impression of [the use of fire] (NT-C-7). This statement possibly stemmed from my reporting on the research in a manner that did not please this particular individual.

This notion of research transparency is also interesting when I consider the number of comments made by individuals with whom I was working most closely, who joked with me about the *airy fairy* (NT-G-7) aspects of my research or the fact that *people keep asking me what you are doing, and I still can't give them an answer* (NT-G-5). One can be transparent with one's research aims but it is not possible to know how participants will retain and or share that information. This also highlights the tensions between the intangible nature of social research as compared with the more standard scientific research whereby figures, graphs and statistics offer tangible, and, therefore, more easily understood outcomes. Social research is equally as important, if not more so, precisely because one cannot put one's finger on it. Indeed often the importance of social process is overlooked or under-estimated for this reason. This difficulty breeds practices that perpetuate the exploitative dichotomies that are the focus of this research.

Informed consent is a fundamental aspect of this research endeavour. I did everything I could to ensure that no one was deceived as to the purpose of the research. Intellectual property particularly in relation to Indigenous knowledge and practice relating to fire is not an issue in this research as the Desert Fire project is not yet at a stage to be recording this information.

The ethical code of practice sets strict boundaries for research-in-action. Qualitative research is also guided by a moral code. A moral code for human geographers is based upon social responsibilities. These responsibilities include researching for social justice, listening to and representing the voices of those who are more often than not silenced or excluded by the dominant paradigm. Social research also presents the opportunity to facilitate knowledge sharing and understanding between those involved in the research. The future political position of anthropologists that Gupta and Ferguson (1997:39) define could also hold true for human geographers:

we see the political task not as sharing knowledge with those who lack it but as forging links between different knowledges that are possible from different locations and tracking lines of possible alliance and common purpose between them. In this sense, we view a research area less as a "field" for the collection of data than as a site for strategic intervention.

This moral code also includes self-reflexive research, acknowledging the role of the researcher to influence and direct the research endeavour. Such reflection must occur throughout because as Megaw (1997:87) states the "intrinsically extractive nature of much research and its disembodied use (and abuse) is another habitual ethical problem" of the research process.

McDowell (1994) speaks of the representational politics of textual construction and Smith (1996) refers to losing something in translation whereby translation in foreign language research

often does not convey original meanings and associations. Megaw (1997:83) acknowledges the essential tensions of representation and reflexivity in social research but notes that research that is dominated by discussions of the politics of practising research tend to be overlong, inaccessible and inappropriate for policy makers, and additionally “endless reflexivity about one’s political standpoint makes reaching policy implications impossible.” These researchers highlight the post-modern challenge, particularly in relation to polyvocality, where endless self-criticism throughout field practice and writing can become paralysing. The researcher must reach a point where she can acknowledge the influence she has upon the research direction, the research matter and the research outcomes, but be able to ‘get on with the job’ and complete the research process within the allocated time. Working productively within time constraints is a fundamental aspect of any research endeavour. However, if the research project is not itself an integral part of an ongoing and substantially funded project, the responsibility of the researcher continues once the project has come to an end. What will develop out of the research text into the future? This question highlights what I touched on above in relation to research transparency. It is the responsibility of the researcher to clearly communicate the research objectives and aims to all participants. These may evolve, develop and change throughout the research practice, but transparency is important at all times. What is the use of the core principles of participatory research and action and working to facilitate real social change from within any given community if the support networks are not in place to assist with follow-up requests from the community?

2.7 Conclusion

This chapter has presented the research methodology applied to the research that follows. I have also used the chapter to highlight some personal experiences that formed part of the research encounter. I have chosen to use these examples to indicate the complex and personal journey that is the basis of any research encounter. I have also used this chapter to write myself into this research, as it is impossible to remove the self from the research journey and process. I am acknowledging my instrumental and unavoidable role as the facilitator, driver, re-presenter and knowledge broker of this research. This does not detract from the research findings, nor does it suggest this research has no implications for policy, for further research and for methodological practices. Rather it is making the point that no research is devoid of the presence of the researcher, of the personal and of the emotional. Indeed, a healthy dose of self-reflexion is essential for all research endeavours. However, the researcher must not allow their own self-reflexive voice to be louder than the voices that form the tapestry of the research. As Marcus (1992:489) puts it: the researcher must try and avoid being “more (critically) reflexive than thou”.

Part 2: Frameworks for an applied peoples' geography

Research Context

Chapter 3



Guilford Plateau, north central Victoria

Photo: Kirsten Maclean 2004

Chapter 3: Research context

3.1 Chapter aim and overview

The aim of this chapter is to locate this research within the contemporary field of environment and development. First, it traces a trajectory through contemporary development theory and considering the role that community participation and local knowledge can have in meeting the goals of sustainable development. Second, it highlights Australia's international responsibility to the global issues of environmental and social degradation. It considers how international environmental governance processes inform environmental governance policy and practice in Australia. Finally, it contextualises how the questions posed by this research engage with these arenas to address the urgent issues of environmental and social degradation.

3.2 A global environmental and social crisis?

After the Rio Earth Summit in 1992, Brown (1992)²¹ called for an Environmental Revolution. An environmentally sustainable future, he said, depended on a restructuring of the global economy, major shifts in human reproductive behaviour and dramatic changes in values and life-styles. In 2006, four years after the Johannesburg Earth Summit (Rio+10) how does the world look from this meta-perspective: do we still face global ecological and social crisis? Perhaps we can find an answer to this question in the recent United Nations Millennium Declaration, 2000. The United Nations Millennium Development Goals are part of the road map to the implementation of the Millennium Declaration (MDG, 2004). The 191 Member States have pledged to meet these goals by the year 2015. They fit under the broad themes of poverty eradication, education, gender equality, health, environmental stability and the evolution of a global partnership for development (UN, 2003)²². These development goals were declared at the turn of the 21st century as the building blocks for a more equitable and sustainable world. Perhaps not the revolution that Brown called for, they certainly signify a global commitment to overcome the previously mentioned ecological and social crisis. However, the significance of an inter-national commitment is lost if there is no follow up by

²¹Brown (1992) founded the Worldwatch Institute in 1974, ten years later he launched the State of the World reports and is winner of the United Nations 1989 environment prize.

²² The eight goals are to eradicate extreme poverty and hunger; achieve universal primary education; promote gender equality and empower women; reduce child mortality; improve maternal health; combat HIV/AIDS, malaria and other major diseases; ensure environmental stability (important to this discussion) to integrate the principles of sustainable development into country policies and programmes; reverse the loss of environmental resources; and develop a global partnership for development (UN, 2003). The goals were to be reassessed by Member States in 2005. To date, progress has not been very successful. Anti-development theorists see these goals as a perpetuation of the development industry, whereby the management and decisions about development are made by development professionals "whose specialised knowledge allegedly qualifies them for the task" (Escobar, 1995:52).

member nations to institutionalise these goals, and if positive actions already occurring on the ground are not acknowledged and reinforced in this process.

3.3 A critique of contemporary development theory

In this section I trace a trajectory through contemporary development theory. Important to this research is an awareness of how this theory informs the meta-narrative of ecologically sustainable development (ESD). A reading of this section will reveal the imperative to critique whose notion of development is privileged in environmental governance policy and resulting programs in Australia.²³ This critique is premised on the idea that knowledge does not simply reflect but also constructs reality and as such, it is political. Considering the trajectory is my take on development it must be remembered that “the map should not be mistaken for the territory” (Pieterse, 2001:13).

It is often argued that the contemporary development era began with the American President Truman’s inaugural address in 1949. Truman stated that it was the responsibility of the western world to aid the poorer nations to achieve increased economic development because “their economic life is primitive and stagnant” and “for the first time in history humanity possesses the knowledge and the skill to relieve the suffering of these people” (Truman, 1949 as cited by Esteva, 1992:6). Many policy makers heralded these words as signalling the end of the colonial white man’s burden, but in reality they echoed the myriad power dynamics at play during colonial times (Kothari, 1988). Truman’s depiction of a dichotomy equating ‘the west’ with all that was positive and advanced versus ‘the rest’ as undeveloped and backward was dubbed by Said (1979) as a form of cultural imperialism and is argued by some to be the basis for contemporary development discourse (Sachs, 1992; Escobar, 1995; Doty, 1996 and Adams and Mulligan, 2003). Words like modernisation and westernisation that are stated as synonymous with development reinforce this meta-narrative.

In the 1970s it was argued that far from alleviating the poverty of individuals living in the ‘third world’,²⁴ economic growth had compounded their continued marginalisation and poverty. Increased environmental destruction and degradation were also by-products of this economic development. Coupled with these self-evident truths was a growing body of literature critical of the hegemonic discourse of development ideology and practice. The supposed linear course of

²³ The critique of nature delivered in chapter 4 reveals the imperative to also critique ‘whose nature’ is privileged in these same policies and programs.

²⁴ There are many ways in which the developing nations of the world are classed this is always done in relation to the developed world. Signifiers such as North/South, first world/third world. The ‘second world’ was used to denote the socialist revolutionary regimes, which some researchers believe no longer exist; the ‘fourth world’ is sometimes used to refer to minority indigenous nations living in the ‘first world’, whose experiences of development: marginalisation, colonialism and under-development are said to be analogous to their ‘third world peers’ (Young, 1995). These signifiers are part of development discourse and have changed over time accordingly.

development as advocated in Rostow's (1960) five-stage model of development was questioned. For example Bernstein (1979) noted that the developed world may once have been undeveloped but has never passed through a stage of underdevelopment. Wallerstein's world systems theory based upon the dependency theory and spurred by the occurrences of what were termed the 'newly industrialised countries' suggested an interdependence of the first, second and third worlds. This suggests that underdevelopment occurs because countries are subject to inequitable trade regimes and the production of goods and services for the world market (Schoorman, 1993).

Following from this, anti-development theorists state that a developed state necessitates an underdeveloped other (Sachs, 1992 and Escobar, 1995). This dichotomy has been further perpetuated by past development practices that condone top down, prescriptive or directed development. For example the problem of underdevelopment was seen partially to be due to a science and technology gap between the more and less developed nations (Cohen and Uphoff, 1980) it was believed this could be alleviated by the transfer of science and technology. Implicit within the discourse and praxis of technology transfer is the assumption of a passive, ignorant populous waiting for help to improve their livelihoods. Indeed it assumes a linear continuum of development where 'underdevelopment' is just one stage. Shiva (1993a, 1993b), Crewe and Harrison (1998) and Chambers (1999) condemn what they see as an attempt to define the reality of the rural poor in the South by taking control of their means of production and adjusting it to suit Northern ideas of development in terms of sustained economic growth. Such technology is often viewed as inappropriate and its dissemination may be gendered in its dispersal, invention, use, production and distribution (Crewe and Harrison, 1998).

This technology transfer is inherently based upon knowledge transfer which Shiva (1993a) describes as the creation of 'monocultures of the mind', a form of intellectual imperialism which will inevitably lead to "intellectual and cultural impoverishment since it would displace other ways of knowing, other objectives for knowledge creation, and other modes of knowledge sharing" (Shiva, 1993b:32). This discourse and resulting practice homogenises all remaining knowledge as primitive, unscientific and wrong (Nygen, 1999). It also advocates that development efforts must seek to educate, direct and transform the minds of those who maintain these adverse knowledge bases (Scoones and Thompson, 1994 and Nygen, 1999). At the same time there has been an increasing interest in the development literature regarding the social dimension of development (Cernea, 1991). This is seen as a means of promoting equality, fostering freedom and engendering a sense of belonging and social purpose (Midgley et al., 1986). Without direct participation in environmental management projects for example people may benefit but not develop from a project (Finsterbusch and Van Wicken, 1987). This participation takes various guises as described in more detail in chapter 3 (section 3.5).

There has been a radical change in the way in which development has been theorised from the economic growth of Truman's era to the understanding of development in the mid 1980s as

the “enlargement of people’s choices” (UNDP, 2004a:1). To post- or anti-development theorists advocating the need for alternatives to development (rather than development alternatives) such as the unmaking of the third world which is stated to be a construct of the development era (Sachs, 1992 and Escobar, 1995) and alternative development theorists who aver the importance of the spiritual dimension in socioeconomic regeneration (Rahnema, 1997). As a result of the many critiques of the development process and the evolution of ideologies such as sustainable development there has been a shift from structuralism, that social realities are determined and patterned by macro structures, to constructivism, that social realities are socially constructed. The emphasis on agency has resulted in development thinking becoming more spatialized in the fact that it is taking more account of the local or regional and is starting to embrace diversity and differentiation (Pieterse, 2001). Pieterse (2001) argues that there are no more recipes for development, no blue print for development, but rather the singular is making way for a more plural, multidimensional, interdisciplinary holistic approach.

Gender, ecology, good governance, empowerment and participation are now prominent in development discourse and resultant agendas; however, some researchers question the reality of these ideologies positing them instead as buzzwords of development. These words echo the main themes of the Millennium Development Goals mentioned at the start of this chapter, and are seen as central to sustainable development. Of particular interest to this thesis is the seventh goal of the Millennium Development Goals: to ensure environmental stability to integrate the principles of sustainable development into country policies and programmes and reverse loss of environmental resources. But how does one reconcile environmental protection and management with poverty arguably the two most pressing issues to face humanity at the present time?

The first international environment conference that was held in Stockholm in 1972 placed environmental issues on the world’s agenda and resulted in the establishment of the United Nations Environment Programme. This conference clearly highlighted the multiple attitudes concerning the environment across the developed and developing nations of the world: “the rich world had to face up to the effluence of affluence” (Sandbrook, 1992:15) contrasted with the situation in the developing world where “of all the pollutants we face, the worst is poverty – we want more development” (I.Ghandi cited in Sandbrook, 1992:16).

Conversely, there is the argument that it is the poor who actually suffer more from environmental degradation. There are many examples of environmental stewardship and activism among poorer people in developing nations around the world. A pertinent example is the work of the first African woman Peace Prize Laureate. Wangari Maathai was awarded the 2004 Nobel Peace Prize for her work in promoting ecologically viable social, economic and cultural development in Kenya and Africa. Her work with the grass-roots organisation the Green Belt Movement empowers women to conserve their environment and quality of life through education, nutrition, family planning and planting trees. This work is based upon

engendering a secure and strong base for ESD that embraces democracy, human rights and in particular, women's rights (Nobel Prize, 2004).

(Ecologically) sustainable development clearly has different definitions depending upon the worldview: for example sustainable development as an enabling, empowering practice that embraces the local, or as a principle of economic globalisation. What are the arguments put forward for sustainable development?

3.4 The sustainable development era

The World Conservation Strategy in 1980 (published by the World Conservation Union and the Worldwide Fund for Nature International) first coined the term 'sustainable development' as a means of drawing attention to the environmental limits to economic growth. The World Commission on Environment and Development adopted this term in 1987 with a very different meaning. It has gained greater inter-national currency with the United Nations Convention on Environment and Development, 1992 and the more recent Johannesburg World Summit on Sustainable Development, 2002.

The Brundtland Report (1987:5) *Our Common Future* states that

[w]e have in the past been concerned about the impacts of economic growth upon the environment. We are now forced to concern ourselves with the impacts of ecological stress – degradation of soils, water regimes, atmosphere and, forests – upon our economic prospects.

As such it can be argued that the ideology of sustainable development (declared by some as an oxymoron) first advocated as a counter to the environmental degradation resulting from economic development, perpetuates that very same development. Adams (1990) suggests this economic dimension of sustainable development makes it more achievable and realistic considering we live in a world driven by world markets. The Brundtland Report defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987:87). These words are argued by many as being overly simplistic with no suggestion of what sustainable development actually means in practice (Beder, 1993 and Reid, 1995).

A central tenet of sustainable development is inter- and intra-generational equity. It must be questioned how this responsibility to future generations (itself a contested idea) can be met when there persists great inequity between current generations between and within different nations. As such critics continue to question the utility of sustainable development as a tool for change, questioning instead if it continues more imperial, anthropocentric and utilitarian attitudes towards development and, in particular, nature (Adams and Mulligan, 2003).

It is essential to recognise the different agendas of nations and indeed it cannot be denied that the number of people enjoying “the most basic capacities for human development” (UNDP, 2004a:1)²⁵ is far greater in more developed nations. But when one considers the social development aspects of sustainable development, certain similarities appear. These are related to the previously mentioned buzzwords: gender, good governance, empowerment and participation. It is interesting to consider how this plays out in the developed nation of Australia particularly in relation to minority groups such as Indigenous Australians. For example, Langton (2003) points out that in recent times there has been a cut to the very productive ethnobiology programme in the Northern Territory despite a recognition in the *National Strategy for the Conservation of Australia’s Biological Diversity, 1992* of “the contribution of the ethnobiological knowledge of Australia’s Indigenous peoples to the conservation of Australia’s biological diversity” (DEST, 1996:14). This in an area where many Indigenous languages and knowledge systems are in danger of being lost and where it can be argued Indigenous Australians community empowerment and participation is much lower than in other parts of Australia.

3.5 Sustainable development as participation

The following discussion critiques the notion that community participation can deliver equitable and sustainable ESD. This critique provides the basis for the investigation of this research into the role of local environmental management and community development projects in working towards ESD in Australia.

Dovers (1999, 2003a) states that sustainability and sustainable development are not the same thing: the first is a goal, the latter a process. The philosophy of participation (one of the base tenets of sustainable development) could also be described as a process. That is community participation as an ends to sustainable development rather than a means, although as will be discussed in the following section of this chapter, there are multiple definitions and expectations of participation, ranging from passive participation to self-mobilisation (Pretty, 1995) (see Table 3-1). In the Australian context Ross et al. (2002) see participation as embedded in natural resource management, varieties of participation range from community-

²⁵ The Human Development Report states that development is about enlarging people’s choices. Fundamental to this is the building of people’s capabilities: “the most basic capabilities for human development are to lead long and healthy lives, to be knowledgeable, to have access to the resources needed for a decent standard of living and to be able to participate in the life of the community” (UNDP, 2004a:1). Human development is measured using a series of indexes, these include: Human development index, the Gender-related development Index; Gender empowerment measure; the Human poverty index and the Technological achievement index. The Human Development Report was launched in 1990 and releases a report each year. It is an independent report commissioned by the United Nations Development Program authored by leading researchers, development practitioners and members of the United Nations Development Program Human Development Office (UNDP, 2004b:1).

based management to agency and corporation management. For the purposes of this research thesis, the ideology of participation is inextricably entwined with other concepts such as power, empowerment, community and local knowledge (the way in which the concepts of power and local knowledge are defined in this research are discussed in chapter 4 sections 4.2 and 4.3 respectively).

The discourse of a harmonious community has ingrained gender inequality and marginalised minority groups in the development process. This discourse has often resulted in elite capture (Corbridge, 2003) and accentuated local hierarchy and inequality (Ghimire and Pimbert, 1997). With the advent of critiques such as Gender and Development (Moser, 1989) this is beginning to change (see also Boserup, 1970; Jahan and Papenek, 1979; Shiva, 1989; Antrobus, 1991; Hays-Mitchell, 1995; Rathgeber, 1995; Williams et al., 1995; Burgess and Beilstein, 1996; Rocheleau et al., 1996; Fierlbeck, 1997; Goetz, 1997; Razavi, 1997; Afshar, 1998 and Ahmed and Laarman, 2000). Communities are anything but homogenous: they are made up of diverse and dynamic individuals who are working out ongoing power struggles and negotiations (Eyben and Ladbury, 1997). The discourse of participation has been mainstreamed in development theory by development practitioners such as Chambers who advocated this in the early 1980s in his work entitled *Rural Development: Putting the Last First* (Chambers, 1983). His later works, which include *Whose Reality Counts? Putting the First Last* (Chambers, 1999), speak of valuing local knowledge in environment and development initiatives. The phrase ‘handing over the stick’ encapsulates a philosophy of working with local people to assess their needs and to develop relevant environment and development programmes. Estrella and Gaventa (2003) develop this concept further. They argue that the monitoring and evaluation of development and other community-based initiatives should be conducted by local people. They advocate that questioning ‘who counts reality?’ may prove as significant as asking ‘whose reality counts?’ These approaches clearly condemn prescriptive development initiatives that marginalise local knowledge and minority groups.

The World Bank devotes a section of their website to issues of participation and civic engagement (see World Bank, 2004); however, many researchers critique the extent to which this rhetoric is actually put into practice (Power, 2003). Indeed, there is a significant body of literature that critiques the tyranny of participation. This is regarded as having resulted from “frenzied levels of global interest in participatory methodologies” whereby participatory processes became a condition for funding approval from agencies (Guijt, 1996:53). Cleaver (1999) suggests this is a problem if participation is considered a necessary good regardless of circumstance. Cooke and Kothari (2001) further this argument by describing the three tyrannies of participation. These are: the tyranny of decision-making and control, the tyranny of the group and the tyranny of method.

Table 3-1 Typology of participation

source: adapted from Pretty (1995:1252) and Jeffery and Vira (2001:3)

Passive participation	People participate by being told what is going to happen or has already happened. It is a unilateral announcement by administration or project management without any listening to people's responses. The information being shared belongs only to external professionals
Participation in information giving	People participate by answering questions posed by extractive researchers using questionnaire surveys or similar approaches. People do not have the opportunity to influence proceedings, as the findings are neither shared nor checked for accuracy.
Participation by consultation	People participate by being consulted and external agents listen to views. These external agents define both problems and solutions, and may modify these in light of people's responses. Such a consultative process does not concede any share in decision making and professionals are under no obligation to take on people's views.
Participation for material incentives	People participate by providing resources, for example farm labour, in return for food, cash or other material incentives. Much on-farm research falls into this category, as farmers provide the fields but are not involved in experimentation or the process of learning. It is very common to see this called participation, yet people have no stake in prolonging activities when the incentives end.
Functional participation	People participate by forming groups to meet predetermined objectives related to the project, which can involve the development or promotion of externally initiated social organisation. Such involvement does not tend to be at the early stages of project cycles or planning but, rather after major decisions have been made. These institutions tend to be dependent on external initiators and facilitators, but may become self-dependant.
Interactive participation	People participate in joint analysis, which leads to action plans and the formation of new local institutions or the strengthening of existing ones. It tends to involve interdisciplinary methodologies that seek multiple perspectives, and make use of systematic and structured learning processes. These groups take control over local decisions and so people have a stake in maintaining structures or practices.
Self-mobilisation	People participate by taking initiatives independent of external institutions to change systems. They develop contacts with external institutions for resources and technical advice that they need, but retain control over how resources are used. Such self-initiated mobilisation and collective action may or may not challenge existing inequitable distributions of wealth or power.

The critiques of participation are based mainly around the idea that participation is about power where empowerment is about the redistribution of power and really listening to the local is about handing over the power. Critics argue that under this guise participation continues to operate within a prescriptive development paradigm (Mayoux 1995; Rahnema, 1997; Rowlands, 1998 and Cleaver, 1999) whereby the participant is brought into the process and empowered to act within the structures of society. Bryant (1997) states that even in the most generous of participatory schemes the ultimate authority and control remains with the state. This statement has particular connotations for environmental management and community development initiatives where the survival of the resource in question often depends upon the involvement of local people in establishing and maintaining institutions and rules for environmental governance (Dalby, 2002). What is the role of the local and local knowledge in environmental management and community development initiatives?

3.6 Sustainable development as knowledge(s)

The following section critiques how local knowledge is constructed within the sustainable development meta-narrative. This critique provides the basis for the investigation of this research that considers the role of local knowledge in environmental management and community development projects, and what this means in working towards ESD in Australia. This research works from the perspective that local participation in any development initiative is integral to local sustainable development because it enables people to make decisions about resource use and management that directly impact upon their welfare and livelihoods (see Maclean, 2001). In order for environmental management to be sustainable it must engage local people (Brandon and Wells, 1992) since exclusion can cause problems such as lack of ownership of the environment and development initiative resulting in resistance to change and even sabotage of the resource itself.

I have already mentioned above the role of technology and knowledge transfer in past development practice and the criticism this has received from many researchers (see Shiva, 1993a; Crewe and Harrison, 1998 and Chambers, 1999). In response there has been a tendency for some advocates of local and Indigenous knowledge to reinvent the resulting dichotomy. The result has been the conception of local and Indigenous knowledge as providing a panacea for all environment and development problems caused by science (Bebbington, 1993; de Walt, 1994; Gubbels, 1994 and Nygen, 1999). This is problematic because it homogenises local knowledge and in relation to local Indigenous knowledge, it works to re-iterate romantic images of the noble savage existing in a pristine and sustainable state. In addition it places local knowledge in opposition to scientific knowledge. This perspective does not acknowledge that local and Indigenous knowledge may not necessarily hold all the answers to localised socio-environmental problems because they occur within a global setting (Bebbington, 1993). It also

fails to address the critical role of knowledge synergy and exchange as a possible way out of this divide.

Local and Indigenous knowledges are not necessarily unscientific (Murdoch and Clark, 1994), but neither are they necessarily in harmony with their natural and social environments, some local practices may be environmentally degrading. Equally, scientific knowledge is not necessarily asocial but it does often advocate a technocratic fix that is often devised in isolation from the local situation (Pretty and Scoones, 1997). What place is there, then, for knowledge interfacing between these knowledge bases? The generation and utilisation of knowledge involves all aspects of power and control inherent in social interaction (Long and Villareal, 1994). Is a 'knowledge in action' (Blaike et al., 1997) and resultant situated knowledge discourse a viable mechanism for knowledge exchange at the environment and development interface and a way out of the polemic debate that surrounds local versus scientific knowledge?

This research engages with the work of the following researchers to consider what it means to move beyond this divide. For example: Hajer (1995) speaks of the importance of developing 'discourse coalitions' between different stakeholders. These coalitions are not necessarily based on shared interests and goals but upon shared terms and concepts that give meaning to social and physical processes and the nature of the (policy) problem under consideration. In this way interdependencies are not only based on power and material gain but also on resources such as legitimacy, knowledge, meaning and argument. Murdoch and Clarke (1994) call for 'sustainable knowledge', the synergy between local knowledge bases (of which science is one) in working towards equitable knowledge exchange at the environment and development interface. They stress an approach to nature and culture, the local and the universal that stresses hybridity. This approach is based upon considering the extent to which these categories are inextricably mixed. Knorr-Cetina (1983) write about 'transepistemic communities' where different groups such as academics, activists, specialists, scientists and Indigenous peoples enter into resource relationships and knowledge is shared and transmitted between different agents. Finally, Brown (2001a, 2006) identifies five constructions of knowledge necessary for the governance of sustainable futures. She speaks of the importance of social processes to bring all knowledge constructions together "in making collective decisions and taking collective action" (Brown, 2006:1). These approaches can be used as a means of understanding the complexities and overcoming the tensions surrounding the role of local, Indigenous and scientific knowledge in environmental governance and management in Australia.

Holling et al. (1998) state that the phrase sustainable development is not an oxymoron. They state that it only appears as such from a conventional western resource management stance based upon reductionism and exploitative development, where natural resources are managed for sustainable yield. Such a stance does not include the integration of ecological, social and economic objectives of sustainable development. Nor does it allow for the unpredictability, complexities and dynamisms inherent to ecological, social and economic worlds. These

features of economic, social and ecological behaviours are argued to be non-linear, cross scale in time and space and have an evolutionary character. As such the only means for planning or managing for sustainable development is cross-scale in time and space, takes an interdisciplinary or holistic approach and acknowledges great creative potential of unpredictability in “opportunities for novel co-operation and feedback management” (Holling et al., 1998:357). Gunderson and Holling (2002) speak of ‘panarchies’ to describe the evolutionary nature of the adaptive cycles of social and ecological systems that are nested one within the other across time and space scale. Collectively the system for managing for sustainable development that these authors and others (for example, Dovers and Wild River, 2003 and Sayer and Campbell, 2004) call for is one of adaptive management.

3.7 Social and institutional learning for ecologically sustainable development

Adaptive management is based upon the premise that the only condition that is constant is change. It is built upon the recognition of the multiple realities as espoused by constructivism. As such it recognises that there is no single sustainable development because of the multiplicity of players, locations, scales (both temporal and spatial) and complexities inherent to social and ecological systems. It works from the ecological stand point that the more flexible a system or the more resilient a system is to disturbance, the more sustainable it will be. This system embraces change, because it recognises the unpredictability inherent in the numerous systems of this world. The only way to plan or manage or institutionalise for this dynamism is to be adaptive, inter-disciplinary and inclusive of it. Adaptive management celebrates the local and acknowledges the situated-ness of sustainable development. As such community participation is central to successful adaptive management of natural resources.

Following from the principles of adaptive management Dovers (2003a) calls for more adaptive policy processes and institutional arrangements. He believes this would offer a more flexible, informed and inclusive approach to ESD. He lists the following features of such an approach (2003a:4): respect for and combination of perspectives from the natural and social sciences; recognition of uncertainty, complexity and long time scales; construing policy and management interventions as driven by a defined purpose but explicitly experimental, consistently testing understanding and capabilities along the way; wide inclusion of stakeholders in a purposeful and structured fashion; design and maintenance of sophisticated mechanisms of feedback and communication between policy and practice and across different situations.

Work by other researchers (Dietz et al., 2003; Schultz et al., 2004) make similar assertions. Indeed, Dietz et al. (2003) embrace strategies that realise the agency of local regulatory institutions in the context of cross issues such as climate change. They encourage approaches that facilitate “dialogue among interested parties, officials, and scientists; complex, redundant

and layered institutions; a mix of institutional types and designs that facilitate experimentation, learning and change” (p1907). Schultz et al. (2004) speak of institutional arrangements that enable self-organisation at the local level, provide funding and “create arenas for collaborative learning.” They argue that arrangements which encourage creativity have enormous potential to reinforce localised adaptive management resulting in diverse and resilient systems.

Such institutional arrangements would not only encourage rich and diverse social learning, but would be constantly undergoing sustained social learning as part of the adaptive management process. McCool and Guthrie (2001) advocate social learning as crucial to addressing environment and development issues. This is because learning can only result when we understand the consequences of taking a particular action. Such social learning can take place in many arenas, not least the local environmental management and community development interface. At the local interface, Fien and Skoien (2002:281) identify that action competence (knowledge of the particular skills and learning needed to facilitate action); good social capital (relationship building based on trust, reciprocity and shared norms), and access to information (extended knowledge and communication networks, and participatory democracy) are important in community action projects because they provide the supportive and informative social conditions that can maximise social learning.

The work of these researchers, and others interested in social learning for ESD (Parson and Clark, 1995; Schusler et al., 2003 and Keen et al., 2005) emphasise the importance of co-learning between groups, that may be in conflict, to develop collaborative working relationships for improved environmental management and governance. Of central importance to this approach is the recognition of the potential and the importance of knowledge sharing and co-learning for future ESD. This sharing and co-learning can occur in many arenas. There is a wealth of literature advocating that successful planning for environmental management and governance is about much more than simply producing, for example, the final planning document. It is about social learning, relationship building, ownership and improved social and political acceptability (McCool and Guthrie, 2001). Indeed, the actual process itself can be as important, if not more so, than the outcome. Schusler et al. (2003:317) identify eight process characteristics that foster social learning in deliberate planning processes. These are depicted in Figure 3.1.

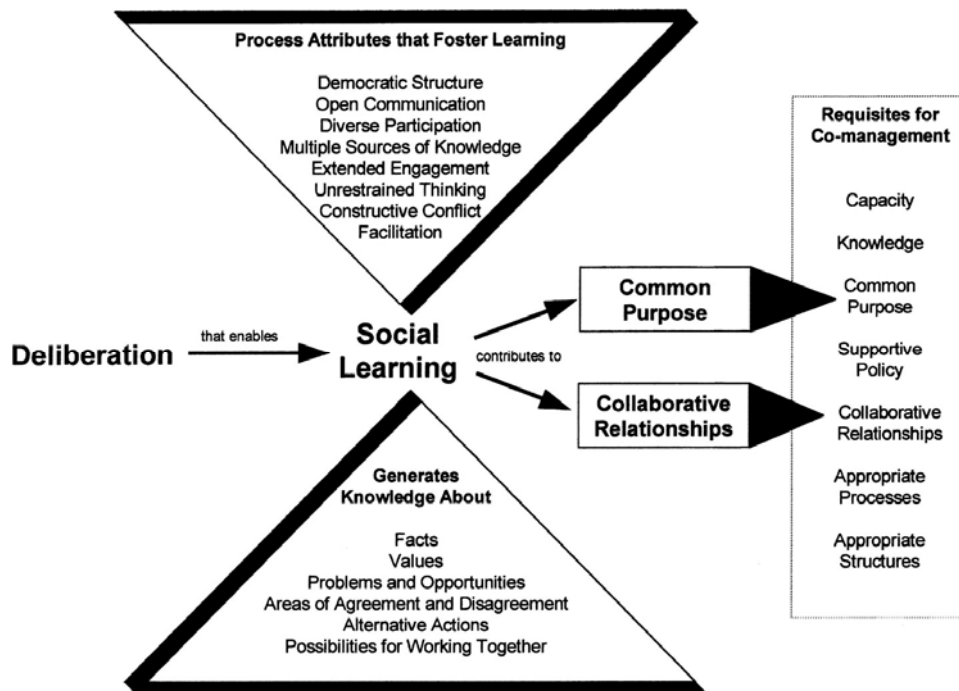


Figure 3.1 Eight process characteristics to foster social learning in deliberate planning processes

source: Schusler et al. (2003:317)

3.8 Environmental governance in Australia

Central to environmental governance decisions are those who make them. In the following discussion I critique how international environmental governance conventions and agendas inform national environmental governance policies and resulting programs in Australia. This discussion highlights how the meta-narrative of ESD that is embedded within these governance policies and programs privileges specific discourses of development, and of environment, that do not celebrate local diversity. I end this discussion by highlighting the importance of local diversity for equitable and sustained ESD. This discussion presents the impetus for the thesis investigation into the role of local and Indigenous knowledge in working towards ESD in Australia.

The World Resources Institute (2002:3) publication (compiled by the United Nations Development Program, the United Nations Environment Program, the World Bank and the World Resources Institute) defines environmental governance as being

about decisions and how we make them... about the exercise of power, about being in charge. It relates to decision-makers at all levels – government managers and ministers, business people, property owners, farmers and consumers. In short, governance deals with who is responsible and how they wield their power, and how they are held accountable.

The United Nations Conference on Environment and Development held in Rio in June 1992 that reaffirmed the Declaration of the United Nations Conference on the Human Environment adopted in Stockholm, 1972 resulted in the international Rio Declaration on Environment and Development. This declaration defined the rights and responsibilities of States to combat the growing environmental and social degradation. This conference also generated Agenda 21, described as the “blue print for global actions to affect the transition to sustainable development” (Strong, 1992:9), the Framework Convention on Climate Change and the Convention on Biological Diversity. The World Summit on Sustainable Development (WSSD) held in Johannesburg in 2002 did not attempt to renegotiate Agenda 21 but developed a Political Declaration and a Plan of Implementation to fill “key gaps that have impeded its implementation” (UN, 2002:2). This Summit also reinforced the importance of developing and strengthening Global Partnerships as a means to transition to more sustainable development.

The effect these conferences have had on international and national policies cannot be understated: the harsh reality that the current systems of development have led to poverty, environmental destruction and social inequity has been acknowledged at the global scale. But as Speth (2003) points out, at Johannesburg as at Rio the difficult issue of assuring accountability in the implementation process was largely ignored. In addition, he remarks, that governments were more willing to discuss the social and economic elements of sustainable development than the environmental and this is reflected in the weakness of the Plan of Implementation to address environmental issues. As such the environmental community has much work to do to bring attention to global and local environmental governance. The World Wide Fund for Nature called the WSSD the World Summit of Shameful Deals (WWF, 2002) and Greenpeace Climate Policy Director, Sawyer, states that the energy section of the Plan of Action “is not much of a plan and it contains almost no action” (Greenpeace, 2002:1). Despite the recent ratification of the Kyoto protocol by the Russian Parliament (October 2004), the Australian Federal Government (alongside the United States of America) still remains resolute not to ratify the protocol. Bearing this in mind, what is the Australian Federal Government’s commitment to sustainable development and what impact have these World Summits on Environment and Development had on environmental governance in Australia?

The governance of Australia’s natural environment is multifaceted and complex. It involves relationships between the Commonwealth Government, State, Territory and local governments, non-government organisations, community groups and individuals. In the following section I touch very briefly on the process engaged in to develop relevant policies that reflect the principles of ESD to consider the impacts of the earth summits on formalised environmental governance in Australia.

The concept of sustainable development was not new to Australia²⁶ where fulfilling a more international grand plan for the environment began with the *National Conservation Strategy of Australia* as a result of the Brundtland Report in 1987. But the response of the Australian Federal Government to Agenda 21 was the most intensive and broad policy process concerning the environment ever to be conducted in Australia (Dovers, 2003a). In response to the statement of Agenda 21 (UNCED, 1992:47) that “reflects a global consensus and political commitment at the highest level on development and environment cooperation [and] its successful implementation is first and foremost the responsibility of governments” the national government of Australia initiated a series of processes and public policy related to ESD. ESD is defined within these processes as “development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends” (ESDSC, 1992). Two main features distinguish this approach to development: the need to consider an integrated approach to the wider economic, social and environmental implications of decisions and actions; and the need to take a long-term rather than short-term view in regard to those decisions and actions.

The main outcomes of this ESD process were (after Dovers and Gullett, 1999:112): the *Intergovernmental Agreement on the Environment, 1992* and the *National Strategy for Ecologically Sustainable Development, 1992*; a range of national macro-policies dealing with problems such as land degradation (building upon the Decade of Landcare), biodiversity (*National Strategy for the Conservation of Australia’s Biological Diversity, 1992*), rangelands (*National Strategy for Rangeland Management, 1999*) and so on; a complex array of policies, programmes dealing with “various ‘meso’ and ‘micro’ policy problems”; active Local Agenda 21 initiatives across local government; a national state of the environment reporting process and some codification of ESD principles as statutory objects.

The ESD process in Australia has been exemplified internationally as a key national response to the global sustainable development agenda (Dovers, 2003a). The draft National Strategy for ESD was prepared by the ESD steering committee (comprising senior officials from the Commonwealth, State, Territory and Local Governments) and was the response to over 500 recommendations that arose from the ESD working group process that began in 1990 (ESDSC, 1992). This process involved nine sectoral working groups (non-government organisations, community groups, government, unions, industry). Although this whole-of-government and cross-sectoral approach certainly enriched the process with information from

²⁶ The final report of the Ecologically Sustainable Development Working Group (ESDWG) (1991:v) states “although the idea of ecologically sustainable development has come to international prominence only in recent years, the concept has been around somewhat longer. As early as 1961, Rachel Carson’s *Silent Spring* had highlighted the need for more concern to be shown regarding the effects that humankind was having on the environment.” It is interesting that the ESDWG refer back to work of an American Ecologist rather than acknowledging Australia’s own ecological pioneers (Mulligan and Hill, 2001).

different perspectives, local government was not explicitly represented, nor were Indigenous people, in addition general community input was too limited and too late to be properly effective (Dovers, 2003b).

Dovers and Gullett (1999) assert that although stated as an international exemplar, ESD lacked sustained implementation, adequate resourcing and institutionalization (lack of greater status and permanence through process, law, organisational capacity and so on) necessary for the long-term commitment it advocates. In addition, the whole-of-government and cross-sectoral approach advocated in the ESD policy process has not been complemented with continued practice in its implementation: this fails the modern idea of sustainability as being about an intended and integrated policy agenda. In fact the policy resulting from the ESD process could be argued to have succumbed to the policy ad hocery and amnesia pattern of other resource and environmental policy and management in Australia, that is what is done at any given time often appears uninformed by previous experiences and often previous policy and management attempts are not even recognised (Dovers, 2003b). In addition, Dovers questions the bad timing of the very collective, long term, holistic concept of sustainable development into a world dominated by world markets and neo-liberal ideals that sees the individual competing for the maximisation of profit in the short term. Market mechanisms of freer trade certainly have not eventuated in the development of green technologies.

The essential tension in environmental governance is that between top-down state initiated practices versus those of more localised, grass-roots groups. The *National Strategy for Ecologically Sustainable Development, 1992* and resultant government strategies in Australia work to include the local, but with whose discourse? Carr (2002) points out that grass roots environmental stewardship occurs because of the onset of complex environmental problems, rather than due to state policy development. Self-mobilisation, self-governance and resistance to institutional governance are essential driving forces in bottom-up environmental governance. As Proctor (1996:296) puts it “nature is a contested terrain”, there are certainly many varieties of environmentalism (Guha and Martinez-Alier, 1997) so whose nature should be protected? Whose management ethos should be advocated? In response to certain kinds of environmental governance, many social movements have emerged articulating struggles for cultural, ecological and economic survival (Routledge, 2002). The multi-dimensional aspects of these struggles are indicative of “an alternative politics seeking to create autonomous spaces of action outside of the state arena” (Peet and Watts, 1996:33). These social movements are in no way homogenous. They include for example, international pressure groups such as Greenpeace and more regional Aboriginal groups struggling against uranium mining in Australia.

Some researchers speak of environmental racism (Langton, 2003) when environmental governance policy favours the nature of the majority. The ethos of environmental justice (Deutsch Lynch, 1993; di Chiro, 1996 and Proctor, 1996) works to move beyond this divide, by bringing humans back into environmental discourse. This once again begs the question not only

of how knowledge about the environment is constructed, but equally, how is it disseminated, legitimated and contested (Eden, 1998)? How does it move and how is it transferred? This research attempts to answer these rhetorical questions by conducting an investigation into the role of local, Indigenous and scientific knowledge in environmental governance and management in Australia. The three mutually contingent investigations of this research are grounded in three questions. These questions explore: firstly, how knowledges of best practice environmental management move across and between international, national and local scales of environmental governance and community based environmental management; secondly, the role of community stakeholder groups and their knowledge in the networks surrounding environmental management in Australia; and thirdly, how greater knowledge sharing between the many interest groups involved in environmental management in Australia can be devised. The resulting discussions bring the research full circle to the notion of ESD as knowledge.

3.9 Conclusion

The purpose of this chapter has been to locate this research within the contemporary environment and development literature. It develops a critique that emphasises the importance of knowledge for ESD in Australia. The premise of this chapter suggests that the lack of genuine knowledge sharing between interest groups involved in environmental governance and management in Australia undermines the potential of local projects to overcome current levels of environmental and social degradation in Australia. Inherent to this premise is the idea that increased knowledge sharing between local, Indigenous and scientific knowledge cultures is integral to equitable and sustainable ESD in Australia.

Research Epistemology

Chapter 4



Snake near Nyirripi, Northern Territory

Photo: Kirsten Maclean 2005

Chapter 4: Research epistemology

4.1 Chapter aim and overview

The aim of this chapter is to introduce the four themes that are central to an investigation into the role of local, Indigenous and scientific knowledge in environmental governance and management in Australia. Definitions of the themes of power, knowledge, governance scale and nature are presented in this chapter as the basis for the research epistemology. This epistemology forms the conceptual toolkit for the applied peoples' geography (after Harvey, 1984:161) practised by this research. This applied peoples' geography provides tools to describe, analyse and understand the social world that are empowering and create the basis for social action (Harvey, 1984). This applied peoples' geography works to open up the local spaces of environmental governance and management in Australia.

4.2 Power is an entangled and complex force

Power is employed and exercised through a net-like organisation. And not only do individuals circulate between its threads; they are always in a position of simultaneously undergoing and exercising this power... individuals are the vehicles of power, not its points of application (Foucault, 1980a:98).

As Foucault (1980a) articulates in the above quote power is a complex phenomenon that pervades all aspects of social interaction and existence. This argument can start with the feminist tenet of the personal is political and can travel simultaneously outwards and inwards with Castree's (2001a:1) statement that "society-nature relations extend 'all the way down' ". This chapter constructs power relations through a selected trajectory of theoretical perspectives, empirical accounts and case study analysis. The power of narratives and discourse, the power of governance, and the power of participation were referred to in the previous chapter but little was said about the concept of power itself. This section considers the ways in which power has been conceptualised in the environment and development literatures and in related post-colonial and political ecology literatures to produce a working definition for this research project.

The work of Dahl (1957) is often quoted as still influential today in conceptions about power. Put crudely, Dahl asserted that power is when A has power over B to the extent that he or she can get B to do something that B would not otherwise do. This suggests a simple one-dimensional relationship between the two actors. The inference is that power is about domination and coercion such as the control of the state over the populus. This view of power is encapsulated in early development discourse relating to the role of the developed world to aid the undeveloped worlds with technology and knowledge transfer (for example Rostow, 1960). This view ties in with colonial discourse where colonial rule was justified as a means to bring civilisation to the uncivilised. Recent work by political geographers (for example Hinchliffe,

2000; Massey, 2000; Radcliffe, 2000 and Thrift, 2000) highlights how societies are much more complex and certainly less neat than more orthodox accounts have asserted. The State and more institutionalised forms of power certainly prevail throughout daily life; however, relationships and spaces of power are diverse and pervasive. Hence “relationships in the power webs of everyday mundane political and social practices are much more entangled – with many more spaces for resistance” (Sharp et al., 2000:7). This is how power is critiqued in this thesis.

Research on the development and workings of social and resistance movements, mainly those groups organised around opposition to the domination of the state or multinational companies has shed light on a range of forms of resistance. Contemporary examples include the anti-globalisation protests in Seattle: the Battle in Seattle during the World Trade Organisation discussions in 1999 (see Reynolds, 1999), anti-climate change protests in the Hague during the Climate Change Summit in 2000 (see Shah, 2000), and the more recent and international anti-war protests leading up to (and in response to) the invasion of Iraq by the ‘Coalition of the Willing’ (see CNN, 2003).

Academic debates about local everyday forms of resistance developed out of Scott’s (1985) work on peasant forms of resistance to dominant rule, such as foot-dragging and sabotage. Equally important was the advent of Subaltern Studies by post-colonial researchers such as Guha and Spivak (1988) and later Bhabha (1994). These researchers called for a new historiography for India. They claimed that Indian history to that point had been written from a colonial point of view, ignoring the important resistant role of the subaltern classes in structuring modern India. Spivak’s (1988) work about the subaltern voice, representation and post-colonial literature moves beyond the power of discourse in imperial history and literature to question the role of discourse in rewriting such histories. She asks whether those subjugated under colonial rule can actually move beyond their imposed self-learnt role as other to the colonial self.

Although there is no consensual voice for post-colonial studies (see McClintock, 1992; Mohanty, 1995; Parry, 1995; Slemon, 1995; Tiffin, 1995; Slater, 1998 and Sylvester, 1999), Rattansi (1997:481) introduces its central theme well, as

the investigation of the mutually constitutive role played by colonizer and colonized, centre and periphery, the metropolitan and the ‘native’, in forming in part the identities of both the dominant power and the subalterns involved in imperial and colonial projects of the ‘West’.

Willems-Braun (1997) states that there cannot be a global theory of colonial culture only localised theories and historically specific accounts that provide insight into varied articulations of colonialist and counter colonial representations and practices. Said’s (1979) critique of orientalism shows the power of language and discourse in creating and perpetuating exotic notions of place and culture. Said calls this the production of imaginative geographies that construct and calibrate a distance between the colonizing and colonized societies (Gregory,

2001). In chapter 6 I practise a cutting edge politics (after Howitt, 2001b) to investigate the many different ways of knowing the environment in Australia. This investigation works to further unsettle the dichotomies inherent in the colonial project.

A post-colonial conception of power is useful to this research as it highlights the complex, multiple and hybrid nature of colonial and post-colonial spaces. The themes of nationhood, identity and connection to nature are central to environmental governance in Australia. Therefore, it is important to critique the influence of colonial rule and the resulting and entangled discourses that influence environmental governance in Australia. This is highlighted by Willems-Braun's (1997) work about the politics of nature in (post)colonial British Columbia. He (1997:3) states that:

amid the current popularity of notions like sustainable development, biodiversity management...- which risk abstracting natural 'systems' apart from their cultural surrounds - it is essential to recognize the colonial histories and neo-colonial rhetorics that continue to infuse 'commonsense' categories and identities like 'nature' and 'resources'.

In chapter 5 I engage with these notions of power to unpack the way nature is constructed in environmental governance policy in Australia. These critiques highlight the importance of asking 'whose environment' is privileged in environmental governance policies and relating programs.

A coherent, appropriate and relevant critique of power is also provided in political ecology. This critique is useful in the analysis of community involvement in environment and development initiatives practised in subsequent chapters. Political ecology

combines the concerns of ecology and a broadly defined political economy [to] encompass the constantly shifting dialectic between society and land-based resources, and also within classes and groups within society itself (Blaikie and Brookfield, 1987:17).

Political ecology draws attention to the ultimate, as opposed to the proximate, causes and forces of environmental degradation and management. In particular, it talks about a politicised environment whereby relationships between actors and links between actors and the physical environment are conditioned by power relations (Bryant, 1992, 1997, 2001 and Peet and Watts, 1996). These relationships are characterised by control: control over access to and use of resources; control over the social prioritisation of environmental projects and regulatory regimes; essentially the control one party has over the environment of another (Adams, 1975). Accordingly, unequal power relations may be inscribed in the environment. I engage with political ecology to assist in unpacking the power relations embedded in projects that focus on engaging the local community in working towards ecologically sustainable development (ESD) at the local scale.

In summary, spaces of power are integral to geographical studies when thinking about the role of the individual and the local in environment and development initiatives and projects. Sharp et al. (2000) provide a useful way of conceptualising power when they speak of entanglements of power, which suggests that there are countless processes of domination and resistance that are always implicated in and mutually constitutive of each other. They use the metaphor of entanglements to suggest the many places, spaces and networks that sustain these power relations. Other post-colonial researchers (see Guha and Spivak, 1988; Spivak, 1988 and Bhabha, 1994) also advocate a multi-spaced and hybrid engagement with spaces of power. They question how the subaltern can move beyond a produced history, representation and discourse to create new spaces of self-representation. The post-colonial critique questions the power dynamics inherent in environment and development initiatives in Australia. Subsequent chapters in this thesis engage with these critiques to consider whose knowledge is privileged and whose knowledge is silenced in environmental governance and management in Australia. My objective is to show that by listening to the subaltern voice it is possible to gain insight into the many voices of colonial, neo-colonial and post-colonial times. This investigation seeks to demonstrate whether working to recognise these hybrid knowledge spaces enables the third cultural space that exists beyond the dichotomy of self/other. “The process of cultural hybridity gives rise to something different, something new and unrecognizable, a new area of negotiation of meaning and representation” (Bhabha, 1990:211).

4.3 A critique of knowledge generation

In the previous chapter, I spoke about past development practice as often being about technology and knowledge transfer. I agreed with the conclusion that these perpetuate imperialistic, colonial ideas. I also noted the work of researchers who have criticised the tendency to position local knowledge as the panacea for all environmental and development problems caused by past development practice. Such a stance homogenises local knowledges, ignores the value of so-called universal knowledges and perpetuates the unhelpful dichotomies posited above.

By suggesting that science is a socially negotiated practice, I juxtapose other local knowledge bases, not in opposition to the scientific tradition, nor as the negative to the scientific tradition's positive, but as precisely that: as other local knowledge bases of which science is one. I do not wish to homogenise science by providing a critique that suggests its very philosophy undermines any other form of knowledge generation; there are emerging scientific practices that value other knowledge bases (for example ethno-ecology). Nor do I wish to further dichotomise scientific knowledge with other knowledge systems. The critique raised here provides a basis for a conceptualisation of knowledge generation as essentially locally situated and socially derived as a means to engage with the potential for greater interfacing between different kinds of knowledge. My purpose is to investigate whether recognising

science as just one knowledge base amongst many allows an examination of what lies between spaces of knowing the world. I engage with this notion of knowledge to consider what it means to move beyond the dichotomies and binaries discussed in the previous section, towards processes that celebrate diversity. Moving beyond these dichotomies of exploitation creates the potential for knowledge synergies between apparently incommensurable knowledge cultures as is discussed in detail in subsequent chapters.

I begin the following section by providing a discussion of the work of the influential social thinkers Kuhn, Foucault and Latour. These researchers are interested in the 'making of natural knowledge' (Golinski, 1998). In this discussion, I question the political and social implications of this knowledge. I then examine the ideology that knowledge is locally determined and locally situated. Finally, I consider the idea that knowledge moves through networks between and across time and space rather than through hierarchical structures that work to reinforce the expertness, authority and legitimacy of science. By taking a social constructionist stance, I am in no way suggesting that a physical and material world does not exist; clearly it does. This research study acknowledges that knowledge generation as a social practice is value laden.

4.3.1 A foray into the history and philosophy of science

The scientific tradition claims an objective engagement with the natural world as its basis of knowledge generation. This quest for the understanding of natural processes was the principle focus of the early natural philosophers, the pioneers of modern western science. Until 1960, the philosophy of science saw scientific knowledge as pivotal to human knowledge (Kendall and Wickham, 1999). These ideas followed traditions in sociology which accepted scientific fact as universally and objectively true (for example, see Durkheim, 1915) and as progressing in a straight line (see Mannheim, 1952 and Popper, 1963). There were questions relating to how science worked, but not to the content of science itself. Even Marx did not question the practice of science. He saw the growth of capitalism as the direct cause of the development of the natural sciences to their highest point (Kendall and Wickham, 1999); he saw science as possibly benefiting the bourgeoisie, but believed the scientists' "knowledge claims within their precise research areas [were] non-ideological" (Mulkay, 1979:10). This claim is not shared by neo-marxist researchers such as Harvey (1996). For Harvey science is a powerful discourse. He states that:

discourses are manifestations of power... the power of certain kinds of political discourse may derive from the uncanny capacity of those seeking political-economic power to mobilize and promote certain deeply held beliefs, fears and so on, against others and utilize that mobilization to sustain, promote a certain configuration of power relations (Harvey, 1996:78-79).

Kuhn's (1962) *The Structure of Scientific Revolutions* forced a fundamental re-examination of the nature of science in scholarly circles including the history of science, sociology and later geography. As an historian of science, Kuhn looked at the way science as a discipline had been structured. He stated that, contrary to popular belief, it was not a cumulative or evolving knowledge base but had involved paradigms and revolutions. These revolutions occur when new scientific information goes beyond the confines of the accepted paradigms making the two incommensurable. Kuhn (1962) suggested that a paradigm forms the foundation for the practices of a scientific community. It provides the community with rules and standards to which to adhere and any subsequent work perpetuates that very research tradition. Unique to this work is the coherence and clarity of the scientific imagination, where certain perceptions and rules emphasised only a portion of the "too sizable and inchoate pool of information" (Kuhn, 1962:17). This was in contrast to the period of time pre-dating the emergence of the first paradigm (pre-Newton). During this time no standard set of methods was adhered to. This resulted in many and varied descriptions and interpretations of the same phenomena. In addition, without the selected vision that a paradigm provides, early fact gathering of these phenomena was random but also limited to the data at hand. This fact gathering, essential to the establishment of current day science, appears unscientific when confronted with current day standards.

Foucault (1972) published *The Archaeology of Knowledge* a decade after Kuhn's seminal work. Foucault sets out a history of knowledge depicting the way in which the corpus of knowledge has changed with each passing episteme. An episteme encapsulates a period of time where knowledge of the natural world does not exceed the limitations placed upon it by the order of society. An episteme is framed by the "totality of relations that can be discovered, for a given period, between the sciences when one analyses them at the level of discursive regularities" (Foucault, 1972:191). The episteme itself is not a type of knowledge, but rather is the social formation that leads to knowledge. Unlike Kuhn, Foucault's investigation goes beyond science to the "total set of relations that unite, at a given period, the discursive practices that give rise to epistemological figures, sciences and possibly formalised systems" (Foucault, 1972:191). Foucault sees the discourse of representation as extremely powerful, considering that everything we know we do so through representation (Kendall and Wickham, 1999).

During the Classical episteme, classification and order were the driving force for natural philosophy. It was during this time that Carl Linnaeus' (1707-78), the most famous naturalist of the enlightenment, developed his Binomial Nomenclature whereby the names of all life forms were generated according to taxonomic codes denoting the genus and species. This classifying of nature, the ordering of nature into boxes and tables, resulted in the creation of a hierarchy of nature, a hierarchy of species, and a hierarchy in the natural world, where humans inhabited the

apex of the pyramid.²⁷ During this time “the naturalist is the man concerned with the structure of the visible world and its denomination according to characters, not with life” (Foucault, 1970:161). In Foucault's Modern episteme, there is a break away from a science that is based on the representation and classification of nature, to a more thorough investigation into nature itself. Anatomy and botany become focal points in the need to make visible that which is invisible, to be able to understand the internal workings and secrets of the natural sciences.

Latour's (1987) *Science in Action* study modernises Kuhn's arguments by engaging with the contemporary world of the scientists and taking anthropology into the laboratory. Latour opens an investigation into the practicalities of scientific knowledge, the exhaustive process of refuting an accepted scientific fact. He (1987:6) states that

the equipment necessary to travel through science and technology is at once light and multiple. Multiple because it means mixing hydrogen bonds with deadlines, the probing of one another's authority with money, debugging and bureaucratic style; but the equipment is also light because it means simply leaving aside all the prejudices about what distinguishes the context in which knowledge is embedded, and this is knowledge itself.

Latour (1987) situates this procedure and secure culture as the practical process through which objective scientific knowledge is generated. He states that science is a local knowledge, local to the laboratory, but produces immutable mobiles that enable this local knowledge to travel long distances.

I engage with these debates to demonstrate that the generation of scientific knowledge is not purely an objective but also a social practice. Indeed, science practice occurs in myriad places involving many individuals with different skills, voices, practices, technical devices, theories, social strategies and collective work practices. The practice itself cannot exist outside of the agency of human actors as embedded in social process.

4.3.2 Knowledge is connected to place

The work of these researchers questions the foundation of the scientific tradition's claim to objectivity. I engage with these critiques to consider ways of moving beyond dichotomies that locate the scientific knowledge tradition as universal and independent of place, as opposed to other knowledges, such as Indigenous knowledge, as local, inherently place dependant, subjective and thus value laden. The work of researchers of the history and philosophy of science and of social constructivism posit that science is a socially directed practice of

²⁷Seddon (1997) points out that the hierarchical character of the Linnaean classification system is a reflection of assumptions of the natural and social order at the time. Schiebinger (1996) holds that the basis for the scientific study of nature were sexualised and gendered. At the same time, nature was used as a social reference point dictating the way in which women and men should behave. In the Linnaean system the nature of women was shown as unworthy.

knowledge generation and is place dependant. These researchers question nature and its production. They argue that constructions of nature work to reinforce the position of the knowledge makers (Latour, 1987; Haraway, 1991; Demeritt, 1998; Castree, 2001b and Castree and Braun, 2001). Central to this literature is the role of local knowledges, of which science is one, in generating ideas about nature.

Science, by separating its method of knowledge generation from the subjective and the social, separates itself from the world it is studying and reinforces a binary of objective/subjective or scientific knowledge/local or Indigenous knowledge. This discourse reinforces existing societal power relations, thus enabling the dissemination of scientific knowledge through a normative political hierarchy. In chapters 6 to 12, I investigate whether recognising science and, it follows, each disciplinary specialism, as just one knowledge base amongst many, is the first step in moving beyond dichotomies and binaries that separate the world and social experience into different and opposing categories and creates new spaces from which to consider ESD.

A further critique of scientific knowledge generation points to the use of discourse and narrative as a means of reinforcing the position of the owners of production. It is the owners of the means of production of scientific knowledge who benefit from a system that is supposedly neutral and universal, but in fact is grounded in social relations of race, gender and class (Haraway, 1989). Haraway (1991:187) points to the apparent universal concept of nature that is constructed by science, a practice that has been about “a search for translation, convertibility, mobility of meanings, and universality.” Haraway calls this universality reductionism when the language of science is enforced as the standard for all these translations and conversions. She (1991:191) refers to the rhetorics of science as 'god-tricks' that promise vision from “everywhere and nowhere equally and fully”. This practice and discourse does not accept a passive vision of the world, but is constantly and actively creating and recreating a way of organizing that same world.

Studies into the localness of science, an act conducted by individual scientists in a specific location, subsumes many of the previously supposed limitations of other knowledge systems as compared with western science (Watson-Verran and Turnbull, 1995). Many arguments have been put forward for the scientific value of local knowledges, as a means of moving beyond viewing the local as purely cultural. Perhaps such a stance works to perpetuate the dichotomy it is trying to override. But it cannot be denied in the current socio-political climate that the success of proponents of non-science based knowledges to acquire government funding, in particular in relation to environment, is often grounded upon their ability to convey meaning within the dominant framework of science. This practice indicates that there is still far to go in actualising equitable knowledge exchange at the environment and development interface. I engage with these debates to consider an epistemology that celebrates and creates the potential for equitable knowledge sharing at the environment and development interface. I contend that

conceiving of knowledge as locally situated in place, associated across time and space, is a core foundation of such an epistemology.

4.3.3 Situated knowledges move through networks

In this section I discuss Haraway's (1991) notion of situated knowledges. This ideology considers knowledges as negotiated, situated and partial and thus unique to each locale. This stance calls for a move beyond the realities of universal knowledge-from-above, to a more complex and even contradictory view of knowledge as inherently situated in place and in the body. Haraway (1991) challenges what she sees as the rhetorics of science: relativism, totalisation and objectivity with the feminist objectivity that embraces situated knowledges. She argues that the feminist practice of objectivity is about

limited location and situated knowledge, not about transcendence and splitting of subject and object [...where the] practice of objectivity privileges contestation, deconstruction, passionate construction, webbed connections and hope for transformation of systems of knowledge and ways of seeing (Haraway, 1991:191-92).

She calls for politics and epistemologies of location, a positioned, situated and partial reality. From this perspective,

all these pictures of the world should not be allegories of infinite mobility and interchange ability, but of elaborate specificity and difference and the loving care people might take to learn how to see faithfully from another's point of view even when the other is our own machine (Haraway, 1991:190).

In the previous section I introduced the social constructivist stance of this research endeavour as a forum for moving beyond the dualisms, dichotomies and binaries that work to perpetuate inequitable power relations in environment and development praxis. This problematic as Murdoch (1997a:321) eloquently articulates puts human geographers in a position where we constantly have to consider

unsavoury options... is it the state or the market that should receive our blessings? Should we ally ourselves to nature or society? Do we celebrate global forces of change or local strategies of resistance? Should we be objective analysts or subjective participants? ... it is natural that we should search for a 'third way', a route which permits a careful negotiation of the extremes and the development of a more sophisticated 'in betweenness', a more nuanced 'not quite here or there' kind of approach.

Massey (1991a, 1993) speaks of the power of geometry where place is the location of intersecting knowledge networks. Murdoch (1997b) uses actor-network-theory to speak of a world made up of heterogeneous associations. Watson-Verran and Turnbull (1995) speak of knowledge systems as assemblages of local knowledge. I use the work of these researchers to examine whether the way beyond conceiving of knowledge as hierarchical and dualistic is to

conceive of it as the product of the local, but also the extra-local, networked or associated across time and space.

According to Haraway, knowledge is situated and embodied in place. Other researchers conceive of knowledge in similar ways. For example Escobar (2001:143) believes that “we are, in short, placelings... place, body and environment integrate with each other.” Casey (1996:18) states that “to live is to live locally, and to know is first of all to know the places one is in.” Basso (1996:70) points out that many Indigenous cultures focus upon the importance of local understandings of place. He quotes an Apache man saying “wisdom sits in places.”

In these literatures, there is also the recognition (argued further in section 4.4) that people are not only local, but “indissolubly linked to both local and extra-local places through what might be called networks” (Escobar, 2001:143), and the local is “certainly not inhabited by rooted or natural identities but very much produced by complex relations of culture and power that go well beyond local bounds” (Escobar, 2001:146). So at once we are all local but also we are all extra-local. Massey’s (1993) notion of ‘power geometry’ shows how space is bounded into particular local and global networks and how these configure particular places. Places are points of intersection where networks of relations meet. Massey (1991a:28) argues that these networks of relations are “constructed on a far wider scale than what we happen to define for that moment as the place itself, whether that be a street, or region or even a continent.” In chapter 9 I engage with these debates to examine whether environment and development projects represent the intersection of environmental governance and management networks.

Murdoch (1997a) says that, although Massey’s idea of relational networks is similar to the work of actor-network-theory, it ignores the role of nonhuman entities in these networks. To move beyond the dualisms depicted above it is necessary to acknowledge the role and agency of the non-human in these networks. Where Massey speaks of the role of human forces in the relations and constellations of networks, Murdoch (1997a:321) speaks of the need to move towards a “geography of heterogenous associations” where the material world has agency in the previously mentioned networks; it is not just invested with properties of society and thus becomes the other to society. Actor-network-theory holds there to be exchanges that flow in both directions between the social and the material. This middle passage overcomes all dualisms, binaries and dichotomies argued here as causing the continued separation and universalisation of subject and object. These arguments are helpful in moving beyond the dichotomies of exploitation, discussed above, to an appreciation of the role of the self within a world of heterogeneous associations.

Watson-Verran and Turnbull (1995) state that although knowledge systems are different a characteristic that they share is their localness. What is interesting is looking at the workings of knowledge systems as a way of understanding power relations both within and between knowledge systems. Watson-Verran and Turnbull (1995) use the term ‘assemblages’ as a way of considering these power relations. They state that assemblages are also material in much the

same way that actor-network-theory speaks of non-human agents, or conceptual such as maps, theories, books, but their “common function is to enable otherwise incommensurable and isolated knowledges to move in space and time from the local site and moment of their production to other places and times” (Watson-Verran and Turnbull, 1995:118). They exemplify scientific theory building as heterogenous assemblages:

different viewpoints are constantly being adduced and reconciled...each actor, site or node of a scientific community has a viewpoint, a partial truth consisting of local beliefs, local practices, local constraints, and resources, none of which are fully verifiable across all sites. The aggregation of all viewpoints is the source of the robustness of science (Star, 1988 as cited in Watson-Verran and Turnbull, 1995:127).

In summary, to start from a critique of science as local may seem uneven in a discussion of local knowledges. It may appear to perpetuate the dichotomies and hierarchies central to the continued location of the scientific tradition as universal. I have used it above as a way of reinforcing local knowledge. I develop a critique of knowledge as inherently situated, place-dependant and socially directed as a means of investigating whether this assists in moving beyond knowledge dichotomies. It follows that knowledge is simultaneously local and extra-local, where each locale is tied to extra-local knowledges and experiences (Burawoy, 1998 and Tedlock, 2000). I engage with this argument to examine the fact that local knowledge cannot hold all the answers to localised socio-environmental problems because they are essentially extra-local, as are the individuals living them. I examine whether critiquing knowledge as both local and extra-local, situated and networked assists to understand where the individual and place are located across the many scales of environmental management and governance at the environment and development interface in Australia. I practise this critique throughout the thesis as a means of opening up local spaces of knowing and acting in the world. The following section leads an investigation into the conception of scale as a relational social construct when thinking about the important role of the local in environment and development initiatives.

4.4 Governance scale is a relational social construct

once scale is constructed or produced, where in the world is it? Scale is not as easily objectified as two-dimensional territorial space, such as state borders. We cannot touch it or take a picture of it (Delaney and Leitner, 1997:96-97).

As Delaney and Leitner (1997) suggest in the above quote: scale is the product of social relations through time and space, where space itself is defined as a social construct (Lefebvre, 1991), and scale is “a way of framing conceptions of reality” (Delaney and Leitner, 1997:95) where “the differentiation of geographical scales establishes and is established through the geographical structure of social interactions” (Smith, 1992:73). Developing an understanding of what scale means is essential to the investigation of this research. It provides yet another way to

interpret the social world in which this study falls: conceptualising scale as a social construction acknowledges the spatial form and political organisation of social relations. These relations often operate in ways that facilitate the power of dominant actors (Silvern, 1999). Such a conceptualisation can enhance social theorizing to understand geopolitics (Howitt, 1998) and improve attempts to effect real social change (Marston, 2000).

Challenging dominant metaphors and narratives about scale and exploring new ways of understanding provides new ways of engaging with the critical geopolitics of environment, difference, place and power (Howitt, 2000a). Further, Swyngedouw (1997:147) states that “scale reconfiguration challenges existing power relations, questions the existing power geometry and, thus, expresses the effects of sociospatial struggles.” A working understanding and definition of scale is pertinent to later analyses in this research project for three reasons. Firstly, it facilitates an understanding of the role of the local scale in environmental governance and management in Australia. Secondly, it encapsulates an acknowledgement of the power and the limitations of the local in environmental governance and management. Thirdly, it enables a consideration of ways to move beyond dichotomies of exploitation inherent in a hierarchical notion of scale. The following section gives a brief summary of current debates about scale, locates these debates in empirical cases within the literature and opens a platform from which to consider the relevance of these arguments to the investigation of this thesis.

What is geographical scale? Howitt (1998) posits that despite being one of geography’s foundational concepts, scale has been under-theorised as compared with other core concepts such as environment, space and place. Debates about scale emerged in the 1990s as a way of challenging dominant conceptions of political and social processes (Howitt, 2000a), and ideas about space and scale continue to be contested in the social sciences. It has been premised as neutral geographical space that is assumed fixed (Kelly, 1997). This ‘absolute space’ is characterised by the separate geographical domains of the global, the international, the regional, the national, the local, and the body. Physical geographers use several connotations to describe geographic data issues (Marston, 2000). Cartographic scale denotes the relationship between the distance on a map to the corresponding distance on the ground; geographic scale is the spatial extent of a phenomena or a study; and operational scale refers to the level at which relevant processes operate (Lam and Quattrochi, 1992). Scale also refers to the measurement or the level of resolution of a study, that is, large-scale as opposed to small-scale (Marston, 2000). Alternatively scale is argued by social theorists to be a social construct reflecting economic and geopolitical interests where the key process is the production of scale. Debates abound about whether scale is an ontological given or an epistemological construct. The debates are central to the investigation of this research project.

Scale has conventionally been thought of as hierarchy. Delaney and Leitner (1997:3) define it as “the nested hierarchy of bounded spaces of different size, such as the local, regional, national and global.” The idea of scale as hierarchy presupposes that political (also economic

and cultural) power and the territorial extent of that power is greater as you move up the hierarchy (Silvern, 1999). Such a notion is critiqued by many researchers. For example Gibson-Graham (2002) speaks about the discourse of globalisation. They see the global as positioned as an abstract space allowing the movement of capital and commodities, against the local, characterised and confined by its tradition, powerlessness and locale. This production of scale can work to create a dichotomy that works to undervalue local knowledge and action. In addition the local is positioned as reactive to more global processes. This downplays the importance of the local or regional contexts as formative constituents in the social production of the global scale (McGuirk, 1997).

Many researchers call for a more relational understanding of scale (Howitt, 1998, 2000a, McGuirk, 1997; Swyngedouw, 1997). Howitt (1998) states that scale is better understood dialectically rather than hierarchically. He states that scale should be considered as relational. He believes that understanding scale as a factor in the construction and dynamics of geographical totalities rather than simply as a product of geographical relations or a matter of size, as area, or level, as hierarchy, will provide more powerful insights into the nature and dynamic of complex geographical totalities. Swyngedouw (1997:140) speaks of scale as “the arena and moment, both discursively and materially [...as] both the result and the outcome of social struggle for power and control... empowerment and disempowerment.” In this way scale can be considered as a network where it is perpetually defined, contested and redefined, where the local and global are mutually constituted. Scales are not discrete entities but are fluid, multidirectional and mutually constitutive (McGuirk, 1997).

Cox's (1998) seminal paper mentions scale as a central concept in political discourse. He argues that the relationships that are developed when the struggles at the local move to other scales can be conceptualised as a political strategy of moving between spaces of engagement. Cox (1998) describes spaces of dependence as the fixed localized arenas where individuals are embedded, and spaces of engagement are the sets of relations that extend into and beyond the spaces of dependence. The relationship between these spaces works to “construct networks of association, exchange and politics” (Jones, 1998:25). At any one physical locale there are multiple spaces of dependence and multiple associations that extend to spaces of engagement. These spaces of engagement are not necessarily at different ‘levels’ but rather all scales are mutually constituted and implicated in any conflict or struggle. Scale should not be considered as a place or an arena but, as Jones (1998:26) states, a network

or a strategy linking local struggles to regional, national or global events [... in] building these networks, local groups practice politics by actively reshaping the discourses within which their struggles are constituted

So, are all politics local? Cox (1998) makes the interesting assertion that as a result of these spaces of engagement local politics “appears as metropolitan, regional, national or even

international as different organizations try to secure those networks of associations through which respective projects can be realized” (p19). In his commentary to Cox’s thesis, Smith (1998:40) suggests that what takes place at the local “may not be local politics at all but the localization of wider political games involving regional, national or global actors who have found local venues to mine and local actors to express their interests.”

So are the politics of scale inherently local or is the local merely an arena for extra-local politics? This question is central to an examination of the role of the local in environmental governance in Australia. This is because it questions whether the power of local knowledge is confined by the conceptualisation of governance scale as hierarchical. In his work about environmental injustice and racism in North America, Williams (1999) discusses how the production of scale can empower one group while often simultaneously disempowering other groups. Williams (1999:68) recognises that “empowerment lies across scales; disempowerment results from being defined by one scale of action.” Taking this further, Jones (1998) points out that the way in which actors link their local struggles to regional, national, global events and struggles is a means of creating scale networks and politically reshaping the discourses within which their struggles are played out: by representing their struggle as a global struggle they are able to create new spaces of engagement. In the Australian context McGuirk (1997) applies a non-hierarchical way of thinking of scale to an urban development program in Adelaide. She shows that critiquing regulatory planning mechanisms as mutually constituted rather than top-down opens new ways of explaining the active role of the local. She calls for a non-hierarchical approach to scale and a focus on the relationships between scales.

In summary, conceiving of scale as a relational social construct assists the investigation of this thesis in two ways. Firstly, it assists in a critique into the role of the local in environmental governance in Australia and secondly, it provides the opportunity for the transformation of existing power relations by seeking to “mobilize social networks, political institutions, economic resources and territorial rights to the task of creating new geographies, new landscapes of power and recognition and opportunity” (Howitt, 2000b:11). Subsequent chapters engage with this critique to consider how the role of the local is constructed in national and regional environmental governance policies and related programs. I investigate whether conceptualising of scale as a relational social construct assists in creating new spaces of engagement, new knowledge spaces and hybrid, situated knowledges spaces provides a platform from which social change can be actualised.

4.5 Colonial discourses of nature

In the Judeo-Christian tradition, and in mainstream western (scientific) thought, nature is often defined as a singular entity, separate from human culture and society. It has been described as the garden, the temple of God, cultivated by the human hand; and at the same time as wilderness, the wasteland of Satan, beyond civilisation. It has been created as the other and

used as a vehicle through which the western self has been justified. Nature has been personified and gendered. It has been acted upon, acted within, and made into a muse. It has been romanticised and ostracised. Nature has undergone many transformations, most strikingly from a wilderness to be dominated and cultivated to a wilderness to be protected and left in its natural state. It has been described as a singular 'it'; however, as these myriad descriptions suggest, it is multi-dimensional, pluralistic and understood in many ways. In this section I briefly touch upon the changing and myriad definitions of nature within the western tradition. A sophisticated understanding of the way in which the natural world has been and continues to be constructed provides yet another way to interpret the social world in which this study falls. This critique is central to an investigation into the role of the local in environmental governance and management in Australia because it highlights the power of entrenched discourses of nature.

'In the beginning.....' Eve took an apple from the Tree of Knowledge of Good and Evil, and offered it to Adam. This well known biblical story could be argued as providing the foundation for the way in which nature has been defined in the Old and New Worlds. The edenic narrative dictates, reinforces and justifies the relations between society and nature in the Judeo-Christian tradition. Man was thrown out of the Garden of Eden tempted by woman and has spent his time ever since trying to get back in. Alternatively he has spent his time trying to recreate such a garden through his labour and skill. This narrative is based upon the dichotomy of the garden as an enclosed sacred place where one can meditate and speak with God versus the wilderness a place away from God (Merchant, 1996).

In Europe during the time of the Renaissance and the Enlightenment wilderness was more a metaphor than a reality because many lands were agricultural. With the advent of scientific endeavour and colonisation, the European imagination came into contact with what it conceived to be wild lands. Accounts by individuals toiling against the ferocity of the wilderness in the New World formed the basis for the national identity of countries like Australia with notions of the pioneer heroically struggling to tame the supposedly unpeopled and uncivilised wildness of nature.

In contemporary times the unique lands of Australia remain as central and pertinent to the Australian identity. Indeed, the rich and evolving attitudes to country highlight the complexity of what Ward (1965) calls 'The Australian Legend'. The ongoing relationship with country is evidenced in the arts from May Gibbs' fictitious 'Bush Babies' to Dorothea Mackellar's poetic 'I love a sunburnt country'; the political sphere including the Franklin river campaign and the Mabo High Court ruling; and the search for identity with land that still separates Aboriginal and other Australian connections with country encapsulated by the following quote: "white man got no dreaming" (Muta a Murinbata, cited in Stanner, 1979:iii). The majority of migrant Australians choose to live on the east coast for myriad reasons but often for ways that complement A.D Hope's (1972:8) metaphor of migrant Australians looking back to Europe. In

his aptly named poem 'Australia' he describes the experience of the migrant population by the following words:

Where second hand Europeans pullulate
Timidly on the edges of alien shores.

European expansion was driven by several impetuses including the pursuit of gold and profits, the settlement of territories, biological endeavour and dreams of the exotica of India and China (Grove, 1995). Expansion for commercial and utilitarian purposes and resultant emerging frameworks of trade and travel also promoted rapid dispersal of scientific and environmental ideas. It also provided contact with other cultures and perhaps broader notions of what nature meant to different peoples and the opportunity for knowledge exchange. Many researchers, particularly those concerned with development (for example Sachs, 1992; Shiva, 1993a and Escobar, 1995), argue that the voyages of colonial nations to new and exotic territories in search of new lands, resources and other riches, robbed the so call exotic nations and peoples of their culture, autonomy and territory.²⁸ Langton (1998:9) suggests that Aboriginal Australians and their land management traditions have been rendered invisible in Australian landscapes by "...‘science fictions’ that arise from the assumption of superiority of western knowledge over Indigenous knowledge systems."

The discourse of orientalism (Said, 1979) is relevant to the way in which nature has been classified. Often peoples of distant and different nations were classified not only as the other but as being more closely linked to nature and a natural way of life; terms such as the noble savage (see Cronon, 1996; Slater, 1996) were coined depicting a people living in harmony with their natural environment. These people could be acted upon and civilised in much the same way as their environment because they were perceived as living so close to nature they could perhaps be identified as primitive wilderness in themselves. This narrative of the noble savage was used as a tool of colonialism; coupled with notions of social Darwinism, it became a tool of the disposessor. The classification of Australia as *terra nullius* in 1770 as unoccupied and open for claim by the Englishman Captain James Cook reflects this logic. This mindset persisted in Australian Law until the historic Mabo Decision in 1992 when the Australian High Court overturned the notion of *terra nullius*. The on-going land rights struggle is encapsulated by the words of the chairman of the Central Land Council, a statutory authority set up to represent and promote Aboriginal land rights in the Northern Territory, at the Inaugural

²⁸Grove (1995) refutes the work of many historians who write about the colonial experience as environmentally destructive and having its roots in ideologically imperialistic attitudes towards the environment. He suggests that much of the ideological and scientific content of the early French and British colonial conservationism was based on a heterogeneous mix of Indigenous, romantic, oriental and other knowledge.

Indigenous Land and Sea Management Conference. Ross (2005:1) states that “the land needs its people as much as the people need their land.”²⁹

The dual notions of noble savage and social Darwinism as a means of making the continent of Australia wild highlight the problematic term of wilderness. On the one hand, the land of Australia was considered wilderness: a land to which no one had made a prior claim (evidenced by the lack of English forms of property ownership represented by for example agriculture) the uncivilised narrative of wilderness. At the same time, the Indigenous peoples of Australia were seen as part of the wilderness itself. This idea is inherently contradictory and is touted by many researchers (Cronon, 1996; Proctor, 1996, 1998; Willems-Braun, 1997; Castree, 2001b and Castree and Braun, 2001) as one of the underlying inconsistencies in the definition of “‘nature’ (‘wilderness’)... constructed as a realm separate from ‘culture’” (Willems-Braun, 1997:3). The first claim of the inexistence of the Indigenous peoples is counter to historical fact and contested not only in Australia but in North America and other parts of the world (Haila, 1997). The second claim that the subsistence systems of aboriginal cultures had no influence on the natural environment is a complex one but equally false. Langton (1996:24), an Indigenous Australian, articulates that

just as *terra nullius* was a lie, so was this European fantasy of wilderness. There is no wilderness, but there are cultural landscapes, those of the environmentalists who depict a theological version of nature in posters, and those of Aboriginal people, present and past, whose relationships with the environment shaped even the reproductive mechanisms of forests.

Undeniably the process of colonialism transformed nature in particular creating new relations between human and non-human nature; in the process it created new ideologies of those relationships (Shiva, 1989). Ideas about nature as either economic resource or reservoir of pristine wilderness were an important element of the colonial ideology (Adams and Mulligan, 2003). European colonial power was based upon the separation and exclusion of colonized peoples and nature from civilised society thereby homogenising their diversity into one single stereotype (Plumwood, 2003). There is little doubt this legacy continues for example, the fortress conservation of colonial Africa. In post-colonial times and nations, what does this legacy of conservation mean? Colonialism was in no way a monolithic practice. It was composed of a range of discourses, knowledges and practices (scientific, religious, aesthetic) in different ways in specific locations. Decolonisation has meant different things according to

²⁹ Reynolds (1982, 1992, 1999) speaks of Indigenous resistance to the European invasion of Australia. Indeed the Mabo decision resulted from the ongoing struggle of Indigenous Australians against colonial laws. Challenges to colonial rule are evidenced by, for example, the historic walk-off staged by Gurindji people working as stockmen at Wattie Creek station (locally called Darguargu) in 1966. This act of protest represented their attempt to reclaim their country from the white pastoralists.

location. What this means and how it is played out in Australia are central concerns of this research thesis.

In summary, I argue that it is important to trace the way in which the natural environment has been described in western thought to gain an understanding of how it continues to be socially constructed. This claim does not suggest that a biophysical world does not exist but draws attention to the social meanings embedded in this world. It is essential to be aware of the history and present day conceptions of the biophysical world when considering environmental management and governance in Australia.

4.6 Conclusion

This chapter leads a trajectory through relevant theoretical works and debates about power, knowledge, governance scale and nature. These themes are identified as central to an investigation into the role of local, Indigenous and scientific knowledge in environmental governance and management in Australia. The thesis epistemology is based upon a conception of power as entangled, knowledge as locally situated, networked and associated across time and space, governance scale as relational and networked, and nature as a social construct. This epistemology forms the conceptual toolkit for the applied peoples' geography practised throughout the thesis. The epistemology and resulting applied peoples' geography provide the means for the conception and practice of strategies to overcome knowledge dichotomies that impede equitable knowledge sharing for ESD in Australia.

Part 3: A cutting edge politics

Political Landscapes

Chapter 5



Book cover for the Federal Government's regional natural resource management program

Source: NRM 2006b

Chapter 5: Political landscapes

5.1 Chapter aim and overview

The aim of this chapter is twofold: to introduce the political landscapes in which the two case study projects are embedded and to investigate whose notion of environment and whose notion of development, if any, is privileged in these political landscapes. Firstly, I detail the policy approach to what is articulated by the Australian Federal Government as regional natural resource management or NRM. I then depict the broader policy landscapes that influence the Victorian and Northern Territory projects. In the second part of this chapter I critique the Australian Federal Government regional natural resource management program to demonstrate whether the notion of ‘regionalism’ privileges any particular discourses of development and nature. I engage with the applied peoples’ geography presented in chapter 4 to unpack the complexities encapsulated in the Federal Government’s regional approach to natural resource management.

5.2 Regional Natural Resource Management in Australia

The Federal Government Department of Environment and Heritage is the Federal agency responsible for fulfilling Australia’s commitment to international environment and development conventions such as the *Convention on Biological Diversity, 1992* (DEH, 2005a). In partial fulfilment of this convention the Department of Environment and Heritage administers the *National Strategy for Ecologically Sustainable Development, 1992* and the *National Strategy for the Conservation of Australia’s Biological Diversity, 1992* (DEH 2006a). Both strategies emphasise the valuable involvement of all Australians in working towards ecologically sustainable development (ESD). For example, Chapter 22 of the *National Strategy for Ecologically Sustainable Development, 1992* speaks of ensuring “full participation by Aboriginal and Torres Strait Islander peoples in community progress towards ESD” (ESDSC, 1992:94) and Chapter 32 acknowledges “that progress towards ecologically sustainable development is supported by community understanding and action” (ESDSC, 1992:10,109). Also Objective 1.8 of the *National Strategy for the Conservation of Australia’s Biological Diversity, 1992* works to “recognise and ensure the continuity of the contribution of the ethnobiological knowledge of Australia’s Indigenous peoples to the conservation of Australia’s biological diversity” (DEST, 1996:14) and Objective 5 states “the involvement of all Australians is vital to the conservation of biological diversity” (DEST, 1996:36).

The *National Strategy for the Conservation of Australia’s Biological Diversity, 1992* also speaks of managing “biological diversity on a regional basis, using natural boundaries to facilitate the integration of conservation and production-oriented management” (Objective 1.2,

DEST, 1996). This is reflected by the commitment of the Federal Government to implement 'regional natural resource management'. The resulting regional natural resource management program is articulated under the slogan of "together let's give our land a hand" (see DEH, 2004:1). This program integrates the Federal Government's sustainable land management programs of, when relevant, the National Action Plan for Salinity and Water Quality, the Natural Heritage Trust, and the National Landcare Program. These programs are the result of the Federal Government's commitment to decentralisation and devolution (discussed in chapter 3 section 3.8). The push for decentralisation developed from events in both the international and local arenas: Australia's international commitment to ESD and the on-ground development of the landcare movement among farmers in regional Victoria and Western Australia (see Baker, 1997).

The National Landcare Program developed from the joint submission of the Australian Conservation Foundation and the National Farmers' Federation is entitled *A National Land Management Program*. This was put to the Federal Government in 1989 (see Toyne and Farley, 1989). In accordance with this submission, the Hawke Labor Government declared 1990 the Year of Landcare and the 1990s as the Decade of Landcare. The Federal Government committed funding packages totalling \$A320 million to be rolled out over ten years (Sobels and Curtis, 2001). Today the National Landcare Program is administered by the Federal Government Department of Agriculture, Fisheries and Forestry and complements the delivery of the National Action Plan for Salinity and the Natural Heritage Trust.

The Howard Liberal Government set up the Natural Heritage Trust in 1997. This was financed with money from the partial sale of the national telecommunications company Telstra. The purpose of the Natural Heritage Trust is "to help restore and conserve Australia's environment and natural resources" (NHT, 2006:1). It is claimed to "represent the biggest financial commitment to environmental action by any Federal Government in Australia's history" (NHT, 2005a:1). In 2001, the Howard Government extended the Natural Heritage Trust for a second phase of five years 2002/03 to 2006/07; a total commitment of \$3 billion. The second phase of the Natural Heritage Trust, known as NHT2, signified a move towards strategic planning and investment. This included bilateral agreements between Federal, State and Territory governments as well as the development of infrastructure for regional delivery of Natural Heritage Trust monies. As a bioregional manager from Victoria describes,

[the regional authorities] have become the banker for the landcare groups... the Commonwealth and State funding is going through the regions and [...the regional authorities] try to ensure that the funding is hitting the ground (VIC-G-6).

In addition to the development of these regional authorities (discussed in section 5.3) a network of over 800 facilitators³⁰ was developed to further encourage community involvement in sustainable land management practices (Lane and Corbett, 2005). This facilitation network recognises that “direct human support is a key driver to achieve social behaviour change and therefore on-ground NRM outcomes” (NHT, 2005b:10).

Among other things, the role of these facilitators has been to assist in the development of integrated natural resource management plans and investment strategies across Australia for the fifty-seven identified regions (see Figure 5.1). Most regions are based on catchments or bioregions (these bioregions come from the Interim Biographic Regionalisation for Australia: see Figure 5.2)³¹ and where possible they match the National Action Plan for Salinity regions.³² Integrated natural resource management plans are developed locally in partnership with local government, industry groups, non-government organisations and members of the local communities. Once accredited by State, Territory and National bodies the plans work as the blueprint for natural resource management planning, investment and on-ground works into the future. They are managed and implemented via regional agencies such as the Catchment Management Authorities in Victoria and the Landcare Council in the Northern Territory. The investment plans and strategies³³ are facilitated via the regions with monies from the Natural Heritage Trust and the National Action Plan for Salinity, where regions overlap, and a range of State and Territory funds. Under the Bilateral agreements, State and Territory Governments match Federal funding from the Natural Heritage Trust (NRM, 2005). To date almost all 56 regions have accredited plans (see NRM, 2006a)

³⁰ This network is comprised of facilitators from the Australian Government, regional facilitators, local government facilitators and local level facilitators and coordinators. The purpose of the network is to increase the engagement of Australians in landcare projects. There is also a 13 person strong Indigenous Land Management Facilitator network. The purpose of this network is to increase the engagement of Indigenous Australians in landcare projects. The need for this additional network highlights the ways in which the institutionalised approaches to landcare have and continue to exclude Indigenous people (see Baker, 1997 and Lane and Corbett, 2005).

³¹ The Interim Biogeographic Regionalisation for Australia (IBRA) breaks Australia into 85 bioregions and 404 sub-regions based upon major geomorphic features in each bioregion. This is used as the reporting unit for assessing the status of native ecosystems, their protection in the national reserve system and for use in the monitoring and evaluation framework in the Australian Government's current Natural Resource Management initiatives (DEH, 2005b)

³² In October 2000 the Howard Government committed \$700 million to the first comprehensive national strategy to address salinity and water quality problems in Australia (NAPSWQ, 2006). The National Action Plan for Salinity and Water Quality was endorsed by National, State and Territory Governments in November 2000. Twenty one regions across Australia were identified (see Figure 5.1).

³³ These come under various guises across Australia. For example, in Victoria they are called Regional Catchment Investment Plans and in the Northern Territory there is the single Regional Investment Strategy.

5.3 Regionalism in Victoria and the Northern Territory

Predating NHT2 the State of Victoria had been divided into 10 regions or catchments to facilitate sustainable land management across the State (see Figure 5.3). These catchment regions complement the natural resource management notion of regionalism (discussed in section 5.2). Collective natural resource management monies are administered in these regions by the Catchment Management Authorities. The Catchment Management Authorities, originally established under the *Victorian Catchment and Land Protection Act, 1994* as Catchment and Land Protection Boards, came into effect in 1997 as statutory authorities. These authorities develop and implement the *Regional Catchment Strategies*. The Victorian Government Department of Sustainability and Environment is responsible for the administration of the Natural Heritage Trust and the National Action Plan for Salinity across the ten regions. The Department of Sustainability and Environment is also responsible for the delivery of the *Victorian Biodiversity Strategy, 1997*. This strategy acknowledges the overarching goals and objectives of the *National Strategy for the Conservation of Australia's Biological Diversity, 1992* and the *National Strategy for Ecologically Sustainable Development, 1992*. It also fulfils the Victorian Government's *Flora and Fauna Guarantee Act, 1988* requirements for a strategy guaranteeing the survival, abundance and development in the wild of all taxa and communities of flora and fauna. This strategy divides Victoria into 27 bioregions for the purpose of biodiversity planning and implementation (see Figure 5.3). Under this strategy bioregions are further divided into zones or 'landscapes' to facilitate 'Biodiversity Action Planning', 'Landscape Plans' and the smaller scale 'Local Area Plans'. These plans are developed as partnership projects with the Catchment Management Authorities, local government and non-government organisations across Victoria (DSE, 2005a). They complement the Regional Catchment Strategies across Victoria.

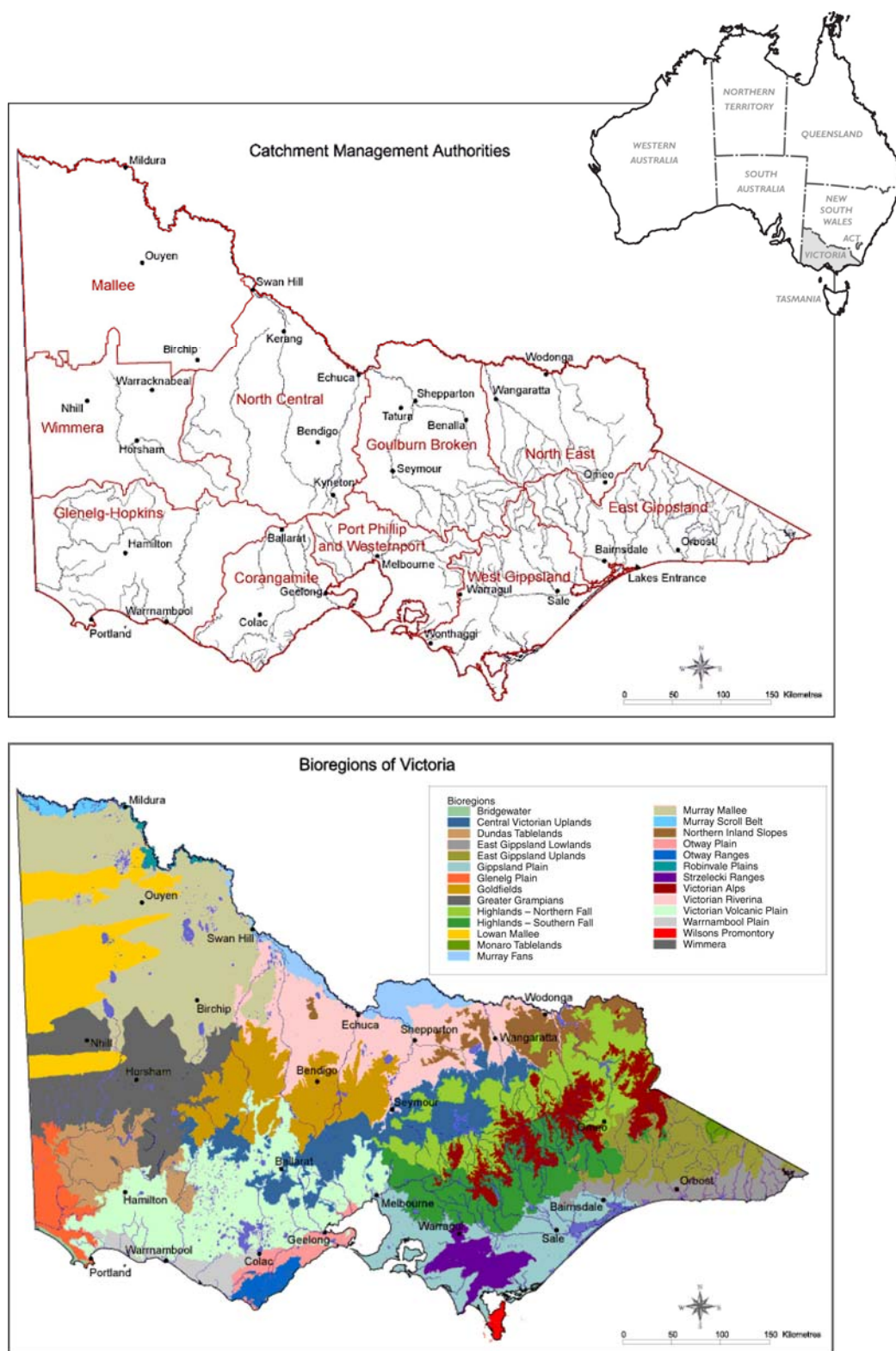


Figure 5.3 Two maps of the State of Victoria showing the 10 catchment management authority regions and the 27 bioregions designated by the *Victorian Biodiversity Strategy, 1997*
 source: DPI (2006)

In comparison to the many regions and subregions of Victoria, the Northern Territory comprises a single region for the regional delivery of natural resource management monies. In 2003 the Northern Territory Landcare Council³⁴ was designated as the regional body under the Bilateral Agreement between the Northern Territory and Commonwealth Governments, for the planning and implementation of integrated natural resource management through the Natural Heritage Trust (LCNT, 2005a). The resulting integrated natural resource management plan works to reflect important principles of the Federal Government's *Environment Protection and Biodiversity Conservation Act, 1999* as well as relevant Territory legislation and policies. In comparison with the natural resource management policy environment in Victoria the Northern Territory "natural resource management legislation is comprised of a substantial number of somewhat unrelated acts and regulations" and pulls upon "a diversity of important policies, plans and strategies which clarify the goals and future directions for many NRM issues" (LCNT, 2005b:25). Such policies include the still developing Northern Territory-wide Parks and Conservation Master Plan, the related *Territory Parks and Wildlife Conservation Act, 1976*, the Northern Territory *Pastoral Land Act, 1992*, currently under review, the Northern Territory *Bushfires Act, 1980*, and several other Territory Acts (see LCNT, 2005b). The integrated natural resource management plan works to complement these acts and strategies.

5.4 Case study 1: threatened species in the landscape

As detailed in chapter 1 (section 1.3), the Victorian case study is a project of the Threatened Species Network of the Worldwide Fund for Nature-Australia. The Threatened Species Network is described as a partnership project between the Worldwide Fund for Nature-Australia and the Federal Government Natural Heritage Trust (WWF, 2006). The Threatened Species Network provides "\$500,000 annually to more than 35 community projects conserving threatened species" (WWF, 2006:1). The Victorian case study project was developed between individuals in the Catchment Management Authority, the Department of Sustainability and Environment and later, members of the community. The application was submitted to the Threatened Species Network in 2001 with the title of "Protection and Enhancement of Threatened Species Habitat in the Goldfields Bioregion – Castlemaine zone" (Project Application round 4, 2001:1). This project explicitly links with *Victoria's Biodiversity Strategy, 1997*, and other Victorian policies, as well as the Federal Government's *Environmental Protection and Biodiversity Conservation Act, 1999*. Figure 5.4 provides an illustrative, rather than comprehensive, depiction of the wider international, national and state policy landscape in which the project fits. An intention of the project was to build partnerships between community groups, local government, regional State government and the regional administrative body of

³⁴ The Landcare Council of the Northern Territory was established in 1990 by the Northern Territory Cabinet and is comprised of two representatives from the government community and fourteen representatives from the non-government community (NRETA, 2006).

the Catchment Management Authority for ongoing species recovery into the future. Later Threatened Species Network projects that pull upon the original network have focussed more specifically on: the protection and enhancement of Eltham Copper Butterfly habitat in the Muckleford zone; the locating and protecting of threatened flora species on local roadsides and the threatened species bushland link-up project (these species are listed in appendix 1).

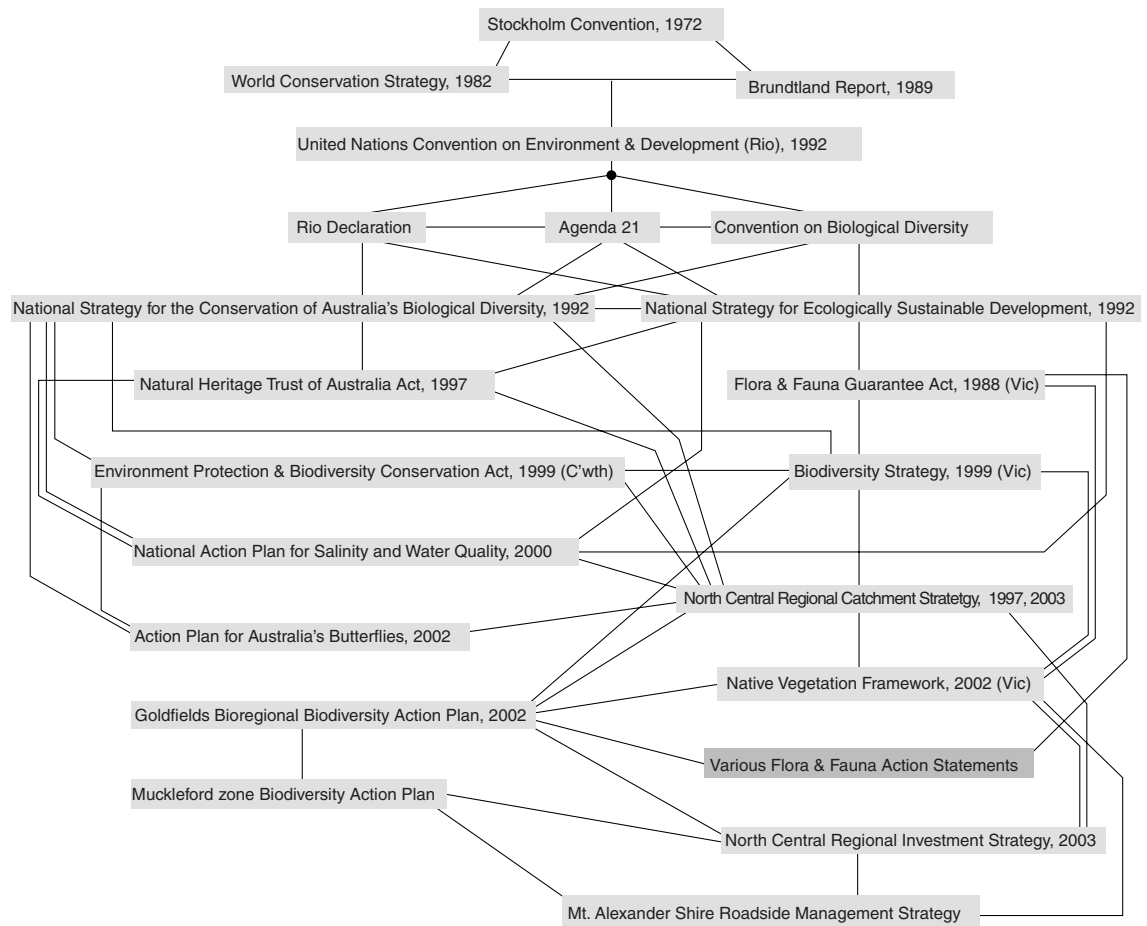


Figure 5.4 Network diagram depicting the wider policy landscape in which the Threatened Species project is embedded

5.5 Case study 2: fire in the landscape

The Northern Territory case study is based upon a project of the Desert Knowledge Co-operative Research Centre (DKCRC). The DKCRC is described as a virtual organisation. This description is indicative of the network of partner organisations and interest groups of which the DKCRC is composed (see appendix 2). The case study project was developed in partnership between individuals from various Northern Territory government agencies such as the Bushfires Council, the Central Land Council, Parks and Wildlife and the Centralian Land Management Association, the landcare organisation for central Australia. The project is embedded in the legislative and policy environments that direct and dictate the work of these land management

organisations. Figure 5.5 provides an illustrative, rather than comprehensive, depiction of the wider international, national and state policy landscape in which the project fits.

The Desert Fire project does not function in a vacuum. Although it is not directly linked to the Natural Heritage Trust as is the Victoria project by virtue of funding, it is indirectly influenced by regional natural resource management policies and resulting programs. One Desert Fire partner organisation, the Centralian Land Management Authority, is directly funded by the National Landcare Program. At the time of fieldwork, one employee of the Centralian Land Management Authority was directly employed as a Natural Heritage Trust local facilitator. The Desert Fire project representative from the Central Land Council was working closely with an Indigenous Land Management Facilitator. Many programs of the Land Management Division of the Central Land Council depend upon funding from the Federal Government's Department of Environment and Heritage funding as well as other external funding sources. Such programs include the Indigenous Ranger Programs and the Indigenous Protected Area Program. In addition, the purchase of the pastoral lease Newhaven was greatly assisted with funds from the National Reserve Programme of the Department of Environment and Heritage.

The integrated natural resource management plan has been developed in conjunction with stakeholders across the many interest groups in the Northern Territory. Many of the individuals connected to the Desert Fire project have invested their knowledge in this plan. The core driving principles of this plan, fire, ferals and weeds (LCNT, 2005a), are of central importance to land management in the southern Tanami. Any projects funded through the Northern Territory Landcare Council to engage in land management in the southern Tanami will connect with the principles of Desert Fire. Possible future outcomes of the Desert Fire project such as Indigenous Ranger fire management projects may potentially look to source funding from the Natural Heritage Trust.

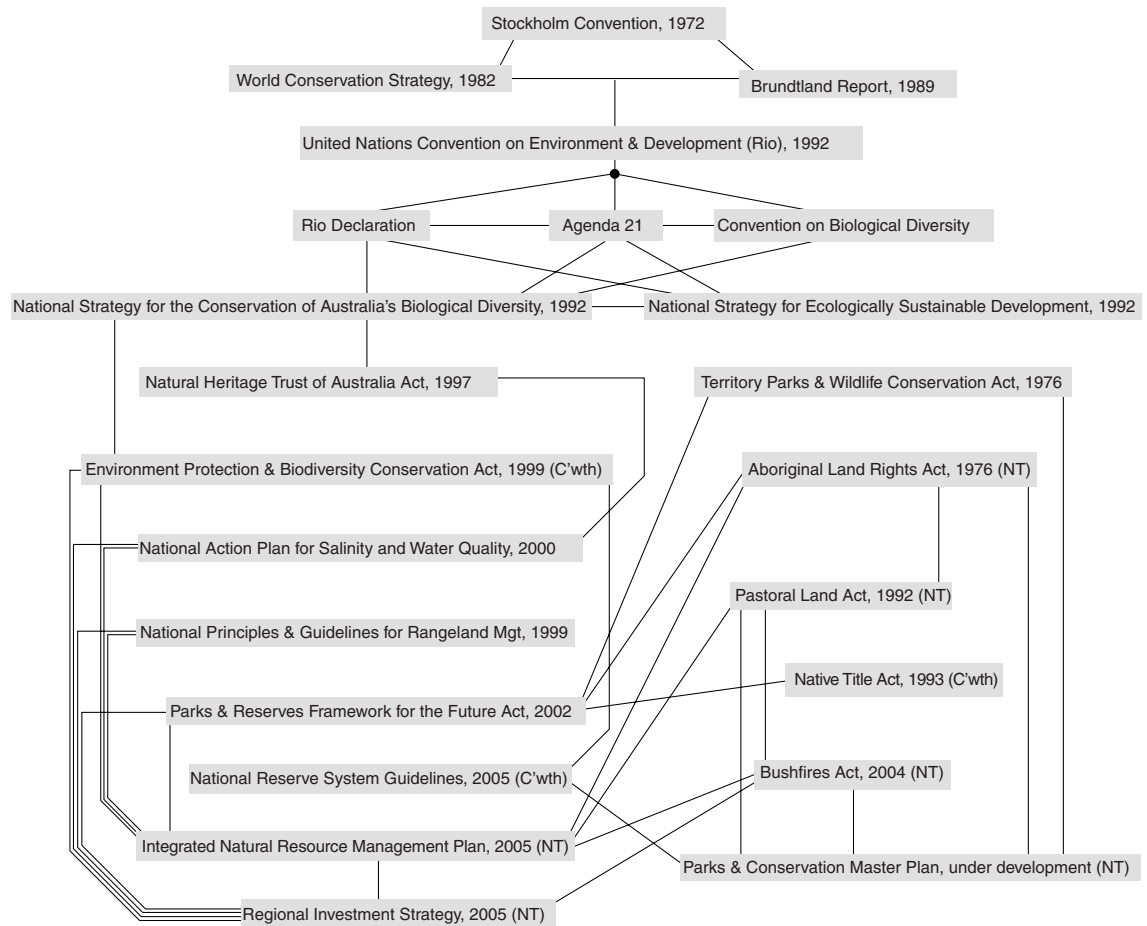


Figure 5.5 Network diagram depicting the wider policy landscape in which the Desert Fire project is embedded

In the discussion so far I have drawn from various policy documents and related government web pages to provide a description of the regional delivery of natural resource management policy landscape in Australia. In the remainder of this chapter I analyse the implications of these policy environments on natural resource management in Victoria and the Northern Territory.

5.6 Together, let's give our land a hand

The following analysis critiques whose notion of development and whose notion of environment are privileged in the regional natural resource management policies and resulting programs in Australia. This analysis practises the applied peoples' geography (after Harvey, 1984) articulated in chapter 4.

5.6.1 The complexities of 'together-ness'

The reality of environmental governance is much more complex than simply working together as is implied in the slogan 'together, let's give our land a hand'. The discourse of top-down versus bottom-up environmental governance and management ultimately works to reinforce the destructive 'them and us' dichotomies of the ESD meta-narrative. This is because

it reinforces hierarchies of scale, reinforces notions of homogeneity within the government sphere and at the same time undervalues the important role of both government and non-government forums.

Some pertinent examples of the complexities of together-ness confirm that environmental governance scale is networked across time and space. Environmental governance and management occur along what Lane and McDonald (2005:712) call “a sliding (even slippery) scale that ranges from the local to the central.” Individuals working for Federal Government agencies, for example, engage at both the national and the local scale; members of local communities make decisions at the local scale that ultimately inform individuals working at the national scale (as explored in chapter 7). The evolution of the landcare movement is one case in point which development from the on-ground experiences of farmers in Victoria and Western Australia responding to locally based environmental problems. A key factor driving the development of landcare in these states was the advent of increasing salinity levels across the landscape. As Campbell (1994:29) expresses “when you have a rising tide of salty groundwater beneath your farm, it is obvious that: (a) you need to act, and (b) you cannot solve the problem unless other people also act.” Individuals from the local community arena worked together to develop management plans to address the issue of raising salinity. The development of these plans facilitated local knowledge sharing between farmers, landcare groups and the government. A bioregional manager from the Victorian case study explains the landcare groups *were fundamentally based on communities owning the problem and they were responsible for advising government in how best deal with the problem* (VIC-G-6).

The same bioregional manager from the Victoria case study elucidates that when landcare began in the early 1980s there was not much Commonwealth investment in NRM at a state level at all [...but] all a sudden landcare groups started popping up [across Victoria] and then the Commonwealth got on the band wagon (VIC-G-6). The National Landcare Program developed originally from farmers who had little faith in the institutional governance policies and programs and, therefore, took full responsibility for the future of their lands. The bioregional manager testifies that when the

water tables came to the surface, people who had been farming in that landscape for years suddenly realised that they were basically being beaten by salt and there were two options they could take. One was that they could go or the other was that they could try and deal with it (VIC-G-6).

What later became known as the National Landcare Program and now receives international acclaim, grew from evolving local knowledge about salinity and ways to address it. It could be argued that the National Landcare Program grew out of local resistance to governance structures that neither provided the means nor the process to deal with salinity issues across the Victorian and Western Australian landscapes.

Similar complexities arise in relation to the regional delivery of natural resource management monies. The second phase of the Natural Heritage Trust, NHT2, began in 2002 and signified a shift towards regional strategic planning and investment in Australia. The current model for regional governance bodies originated from the successful Catchment Management Authority model that had been active in Victoria since 1997. The bioregional manager from the Victorian case study comments *what the Commonwealth has done, it's not immodest to say that Victoria leads the nation in terms of rehabilitation community approaches to NRM* (VIC-G-6). However, just because this model was successful in local arenas in Victoria, one of the two states where the landcare movement began for good reason, did not mean it would be successful across the diverse nation of Australia. It could be argued that the use of similar institutions that appear successful in the more populated, temperate southeast of Australia to govern natural resource management in arid Australia reinforces a narrative of nature that values productive farm lands over lands of desert Australia. Such a narrative perpetuates edenic and colonial discourses of nature as either tamed wilderness or wasteland.

5.6.2 Varieties of Regionalism

Chapter 2 (section 2.2) described the colonising legacy of the academic disciplines of geography and anthropology. The word geography often invokes images of maps, of voyages of discovery, of adventure and of confrontation with the exotic other. The theory and practice of regionalism could be argued as perpetuating this colonial legacy. This is because, as is discussed in chapter 6 (section 6.2), the act of understanding a landscape by creating divisions on a map is saturated with discursive practices that enact notions of power as a limited and static force. The following analysis does not suggest that regional delivery of Natural Heritage Trust monies is an unproductive practice. Rather, the discussion focuses upon the inherent power inequalities in current practice.

From the narrative shared in the opening section of this chapter, it is clear that regionalism has various connotations across Australia. For example in Victoria a jurisdiction covering 0.23 million km² (DIPE, 2004a:4) and 9 IBRA bioregions there are 10 Catchment Management Authorities further divided into the zones, landscapes and local areas of the *Victorian Biodiversity Strategy, 1997* (see DNRE, 1997). In comparison in the Northern Territory an area encompassing 1.35 million km² (DIPE, 2004a:4) and 23 IBRA bioregions is recognised as a single region under the natural resource management policies and programs. What do these enactments of regionalism mean for environmental governance and management?

An easy conclusion to draw is that regions are perhaps equated with resident population rather than comparative number of bioregions. In more densely populated parts of Australia, the eastern and southwestern sea boards, the statistics reflect 2.6 people per square kilometre. In the Northern Territory this figure decreases to 0.1 people per square kilometre. This low ratio is reflected in the Federal Government's funding commitment to land managers in the Northern

Territory. Between 1996 and 2002 a total of \$44 million was granted through the Natural Heritage Trust for natural resource management in the Northern Territory. This equates to 33.3 cents per hectare during a 6 year period, or 5.5 cents per year (DIPE, 2004a). If the Northern Territory were to be funded the equivalent per area rate of Victoria this would equate to an approximate total of \$1395 million for that same 6 year period. See Table 5-1 for a comparison of state and territory Natural Heritage Trust funding over the period 1996 to 2002.

Jurisdiction	Total Natural Heritage Trust funding (\$Amillion)	Area (million km²)	Natural Heritage Trust funding/km²
Australian Capital Territory	9	0.0024	3810
Northern Territory	44	1.35	33
Tasmania	151	0.068	2221
South Australia	148	0.98	150
Western Australia	185	2.53	73
Queensland	243	1.73	141
Victoria	235	0.23	1033
New South Wales	308	0.80	384

Table 5-1 A comparison of state and territory Natural Heritage Trust funding during the period 1996 to 2002

source: DIPE (2004a:3)

It could be argued that genuinely devolving power to the regions to govern regional landscapes must be coupled with sufficient finances to do so. Taking the Northern Territory and Victorian comparison further, this argument becomes more complex when considering studies conducted on landscape health across bioregions (see Morgan, 2000). Referring to the IBRA priority bioregions for the national reserve system (see Figure 5.6), it is clear there are large tracts of country considered as very high priority for conservation in the Northern Territory, as compared with a smaller area in Victoria. There is a clear correlation between landscape health and percentage of remaining native vegetation of these regions. Much of the land area in the Northern Territory is classed as relatively intact, compared with areas in Victoria where the State Government is using a technology called Ecological Vegetation

Classes (DSE, 2006a) to determine the native vegetation that previously grew in Victoria (discussed in chapter 6 section 6.4).

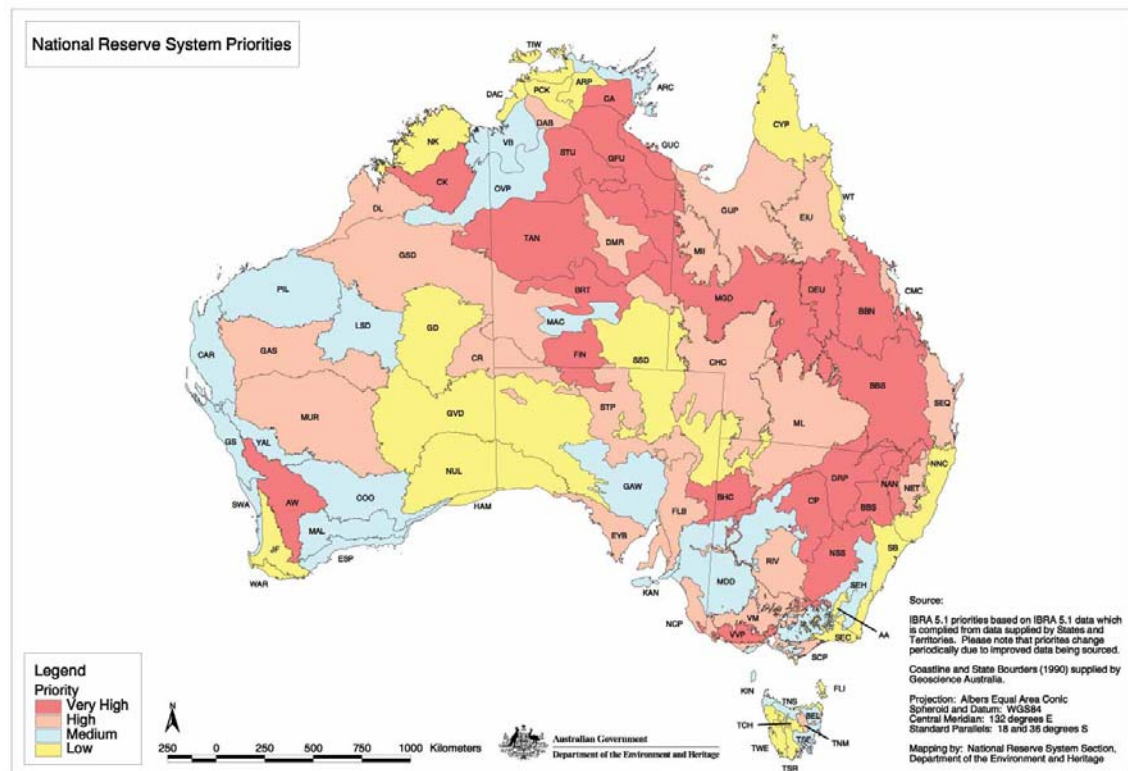


Figure 5.6 Map of Australia showing the IBRA priority bioregions for the development of the National Reserve System
source: DEH (2005c)

Conservation land in the Northern Territory totals approximately 7 million hectares or 5.4 per cent of the total land area. This is held as part of the National Reserve System³⁵ (DEH, 2005d). This is in comparison to the 4 million hectares that totals 14 per cent of the land area in Victoria (DSE, 2005d). Given the land tenure system of the Northern Territory, new parks and reserves can only be allocated through the acquisitions or resumption of pastoral leases and the development of Indigenous Protected Areas on Aboriginal land. Environmental management off-park is equally important as is reflected by the developing *Northern Territory Parks and Conservation Masterplan*. In addition, it is more sustainable to protect remnant vegetation and ecosystems than to recreate what previously existed. The aim of this discussion is in no way meant to undervalue the unique environments located in the State of Victoria, nor argue against protection for threatened species rather, it is to point out that the Federal Government allocated

³⁵ This includes land classified as conservation reserve, coastal reserve, historical reserve, hunting reserve, management agreement area, national park, national park (Aboriginal), nature park, nature park (Aboriginal), other conservation area, protected area, Indigenous Protected Area, National Park (Commonwealth) (DEH, 2005d). The Northern Territory also has three protected Marine areas (DEH, 2005e).

funds from the Natural Heritage Trust should be comparatively higher in the Northern Territory if decentralisation and devolution of environmental governance is to be taken seriously.

In addition to the financial support for management of country across the Australian landmass genuine decentralisation and devolution of governance must be reflected in the equitable sharing of Natural Heritage Trust monies across the Australian population. Lane and Corbett (2005:151) explore the level of Indigenous involvement in Federally funded landcare activities across Australia. They conclude that in the financial year 1999-2000 “total Indigenous expenditures comprised a mere 1.8 per cent of total expenditure under the NHT (approximately \$A300 million)” and of these funds “less than two per cent of the national total, were allocated to the management of the Indigenous estate which comprises approximately 15 per cent of the total land mass” of Australia.

A further interesting comparison between Victoria and Northern Territory relates to the value and relevance of regionalism to each jurisdiction. In Victoria, regional boundaries shadow closely those of the Catchment Management Authorities that have been in place since 1997. In the Northern Territory, genuine commitment to decentralisation and devolution should be indicated by more than one region. Regions could reflect land tenure in the Northern Territory. For example, they could be designated according to Indigenous language groups on Aboriginal land and in relation to arid, tropical or semi-tropical on pastoral lands. This practice would signify genuine devolution by acknowledging the strong connection to place of both Indigenous and pastoral knowledges. This is of particular importance for Indigenous cultures as specific country coincides with traditional ownership and often language.

5.6.3 A diversity of hands for Natural Resource Management in Australia

The discussion so far highlights the complexities of the natural resource management policy landscape in relation to the on-ground work conducted by local environmental management and community development projects. Lane and McDonald (2005:710) comment that community based environmental planning (and management) embodies inherent conceptual contradictions because it “seeks to secure the benefits of ‘bottom-up’ knowledge and action yet the opportunities and possibilities of community engagement are framed by state policy and action.” As explored in chapter 8 (section 8.3) this is particularly pertinent considering there is no single type of community involvement in natural resource management in Australia. As demonstrated in chapters 7 and 8 (sections 7.2 and 8.3) there are many varieties of environmentalism and varieties of participation in Australia. Do natural resource management policies and programs value the local? Do the governments of Australia fund projects for specific on-ground tangible outcomes, do they fund projects for the purpose of developing intangible processes or do they appreciate both aspects? The following analysis begins with the

consultation process of the Natural Heritage Trust's integrated natural resource management plans and ends with reflections upon natural resource management project application format.

The integrated natural resource management plans were developed in partnership between Federal, State and Local governments, industry, non-government organisations and local communities. However, the consultation for the plans was done with varying degrees of satisfaction across the regions. A landcare representative from the Victorian case study explains that

community consultation was the community dragging [the Catchment Management Authority] to the table, so it still wasn't great. Community workshops... didn't have assets for things like the community (VIC-G-4).

In the Northern Territory the approach was based upon targeting key organisations such as relevant government agencies, landcare groups, the Aboriginal land councils and so on. As a National Heritage Trust facilitator explains, individuals who did not fit within those groups could *access the process through the internet, if they haven't got internet they can get information through that post-paid thing to do it* (NT-G-2). These statements both raise questions about the extent to which the consultation process was as all-inclusive and equitable as that required for the development of local partnerships and local ownership of planning approaches and documents. The knowledge exchange that could result from such processes appears to be lacking in relation to the monitoring and evaluation of environmental management and community development projects that are funded by Natural Heritage Trust monies.

The Federal Government Department of the Environment and Heritage lists the processes of monitoring and evaluation as one of seven core foci of the extension of the Natural Heritage Trust. Indeed, "the NRM Ministerial Council is overseeing the development and implementation of a national monitoring and evaluation framework" (NHT, 2005b:14). Also "it will be necessary to determine the level of Trust funds required to support monitoring and evaluation at all levels of investment" (NHT, 2005b:14). These words suggest the monitoring and evaluation framework remains to be developed. This appears to support the reality of the project case studies of this research. Individuals involved with the Victorian case study speak of government statistics that include, for example, the number of trees planted in a particular year, but neglect to monitor how many actually survived and continue to survive as time passes. Individuals also discredit government reports that speak about the length (in kilometres) of fences built with Natural Heritage Trust monies but neglect to consider whether funds were adequate for sustainable fencing that will last into the future.³⁶ These comments reflect the Federal Government's commitment to local environmental management and community

³⁶ The practice works to dis-empower communities because they feel their knowledge and needs are not respected by Australian Governments and results in an increasing lack of confidence in and resistance to government approaches.

development projects. This attitude suggests that local scale natural resource management projects are valued as points of contact that fulfill funding mechanisms. If no mechanisms exist to indicate the success of tangible project outcomes it is hard to imagine that indicators for more intangible, process oriented outcomes are in place.

Considering how actual project application formats allow for diversity is also a good indicator of how the natural resource management policies and programs value local environmental management and community development project work. Lane and Corbett (2005) report several barriers for Indigenous involvement in devolved government funding projects such as the National Landcare Program and NHT2 projects. Firstly, they state lack of funding for the Indigenous Land Management Facilitator network as well as only 13 facilitators nationwide as compared with 800 non-Indigenous Natural Heritage Trust facilitators. Accordingly, access to these individuals and culturally appropriate advice was limited. The culturally inappropriate language of the natural resource management project funding applications and the length of these documents was a large barrier to involvement in these programs. Other factors include the mainstream western timeframes of projects. These timeframes are difficult enough for non-Indigenous participants to keep to let alone Indigenous individuals living with more complex local realities than mainstream Australia. These realities include working with the right people. For example, there are Traditional Owners who are the only ones who can speak for certain tracts of country and there are Indigenous residents of communities who may have interests in such projects (Lane and Corbett, 2005).

Another barrier for some people is the required project reporting, accounting and administration. This can be overcome with the assistance of local project officers and landcare workers assuming these positions exist. A further factor outside the control of individuals applying for grants is the powerful role of those making decisions about project funding. Often the interests of marginal groups are unrepresented in these fora. The recent experience of an Indigenous project funded by the Natural Heritage Trust in remote Australia exemplifies how certain views of environment are easily privileged over others. The continued funding of this project relied upon acceptance by the regional Natural Heritage Trust decision making panel. Individuals on this panel did not believe that fire management work carried out by a group of Indigenous Rangers equated with the conservation goals of the Natural Heritage Trust. These experiences echo those shared by Langton (2003) in chapter 3 (section 3.4) relating to the Northern Territory Government's cut to the very productive ethnobiology program.

5.6.4 The view from the local

From the narrative and experiences shared above it would appear the natural resource management policies and programs are not specifically conditioned to celebrate local diversity. Neither are they structured as learning institutions. The lack of direct monitoring and evaluation programs, as well as the ongoing cultural inappropriateness of funding applications for marginal

groups, is evidence for this. It would seem these structures are more about tangible project outcomes than intangible project processes of sharing knowledge, realising local capacities and engendering relationship building across governance scales. Given the entrenched power inequalities in these practices, it is understandable why some researchers call for the adaptive management framework to be applied in governance institutions (see Dovers, 2003a).

In chapter 7 I engage with the two case studies to consider the following questions. Firstly, how do environmental governance policies and relating programs appear from the local perspective? Are these policies considered as important and do individuals working in environmental management and community development projects engage with these policies?

I have made reference above to the varieties of environmentalism and participation that are experienced by individuals engaged with local scale environmental management and community development projects in Australia. Despite the limited adaptability of the natural resource management policies and programs of the Federal Government, there appears to be potential for unlimited adaptive management via local environmental management and community development projects. It is at this interface that learning, networking and location-specific innovation occurs. As is explored in following chapters, it would appear that project members and, or gatekeepers pull on the previously mentioned natural resource management policies and programs as best suits the outcomes they are working for.

Project funding from the Natural Heritage Trust are certainly useful for on-ground works. In the two project case studies innovation and capacity realisation occurs when project members and, or gatekeepers regard the Natural Heritage Trust money as just one means of sourcing funding for prospective projects. Interest groups are accountable to the stipulations of any government funding but having or developing a good knowledge of Federal, State and local funding structures as well as maintaining good relationships with individuals working for government agencies means there is potentially a larger pool of funds to access. As mentioned above, often marginalised groups and individuals do not have access to such knowledge or funds. Gatekeepers have a powerful role to play for the potential work of these groups particularly in overcoming the entrenched power inequalities that work to dis-empower and maintain their marginality.

5.7 Conclusion

This chapter investigates whose notion of environment and whose notion of development is privileged in regional natural resource management policies and resulting programs in Australia. I have discussed the complexities of the top-down/bottom-up dichotomy, the notion of regionalism and what it means for these structures to really value the local. In considering whose notion of environment and whose notion of development is embedded in these structures it is important to consider the reality of ecological uncertainty that complicates decision-making

for environmental governance and management across Australia and the world. Lane et al. (2004:113) argue there is no “single right scale for management.” Across Australia there seems to be no single practice of environmental governance. Equally there is no single conception of environment or development across Australia. Social learning that is committed to challenging the status quo has a difficult task precisely because there is no such thing. Systems that assume homogenous local realities and experiences reinforce power inequalities; continue to limit access of marginal groups to resources; perpetuate colonial notions of ‘nature’ and thereby stifle the potential and resilience of this young nation of Australia to work towards effective and appropriate ESD.

This discussion highlights the tensions between working within a system that does not value diversity and living with the reality of the diversity of local experience. These tensions could be managed in three ways. Firstly, by completely overhauling the institution and developing a new system that celebrates the diversity of local realities. Secondly, by working within the system, being innovative and using the structures to meet local needs. Thirdly, by engaging with the principles of adaptive management, that values process, conflict and diversity, and thereby developing a system that embraces institutional learning.

Case Study Narratives

Chapter 6



Signs at an Aboriginal and pastoral land tenure boundary,
southern Tanami, Northern Territory

Photo: Kirsten Maclean 2005

Chapter 6: Case study narratives

6.1 Chapter aim and overview

The aim of this chapter is to practise a cutting edge politics (after Howitt, 2001b) to highlight the diversity of approaches advocated by a variety of land managers to engage with the Australian landscape. Howitt (2001b:234) argues that practising an edge politics “grapples with ambivalence, uncertainty, change, overlap and interaction in ways that dislodge the old-style colonial metaphors of empty spaces and frontier heroics.”³⁷ The *cutting* edge politics practised in this chapter follows the critique provided in chapter 4 and shows by example the unique and complex politics that occur between different cultural groups. When I speak of a cutting edge politics I speak of a narrative that firstly sheds light on the multitude of ways in which the Australian landscape is interpreted and managed. Secondly, it juxtaposes these many ways of knowing the same landscape. Thirdly, it demonstrates that celebrating these sometimes conflicting interpretations and management approaches is the first step in working towards the process of cultural hybridity necessary for equitable and sustainable environmental governance and management in Australia.

More specifically, the cutting edge politics that I practice in this chapter acknowledges the importance of historical interpretations of the Australian landscape upon contemporary interpretations and resulting land management approaches upon the two case study regions. It explores the tension between these historical narratives and contemporary approaches to land management in north central Victoria and the southern Tanami region of the Northern Territory. It reveals the many layers of engagement with the landscape in these regions by considering the different knowledge cultures of the groups involved with the two case study projects. It critically examines the many layers of engagement with each project by considering the diversity of social livelihood issues faced by these groups. I end the discussion by highlighting the importance of considering which environmental governance and management discourses are embedded within each project. This discussion explains why the cutting edge politics called for in this chapter is an essential step in working towards equitable and sustainable environmental governance and management at each project interface.

6.2 Historical narratives

There is much debate about how Indigenous people impacted upon the environments in which they lived (for example see Jones, 1969; Flannery, 1994; Bowman, 1998 and Langton,

³⁷ In this quote Howitt (2001b) is referring specifically to historical and contemporary interpretations of the Northern Territory landscape. I engage with his notion of an edge politics as a means to explore the diversity of approaches of land management across Australia and specifically in Victoria and the Northern Territory.

1998). Although these debates are not the focus of this discussion I wish to establish that the investigations presented in this chapter are grounded in the fact that “the land the English settled was not as God made it. It was as the Aborigines made it” (Hallam, 1975:vii). The focus of this section is upon the way in which the colonial project interpreted and thus managed the landscape during the establishment of the Australian nation. These interpretations had and continue to have lasting influences upon the Australian landscape and culture (as is explored in section 6.3). The ensuing discussion demonstrates how colonial land management approaches practised in Victoria and the Northern Territory fulfilled the colonial utilitarian narrative of nature as wilderness (as discussed in chapter 4, section 4.5).

The first recorded European visit onto Dja Dja Wurrung lands (overlapping with the area now known as north central Victoria) was by the pastoral lands exploration party of Major Thomas Livingstone Mitchell in June 1836 (Gardiner, 1962). The way Mitchell describes the area is indicative of the colonial imagination of the time. Not only do his words reflect notions of *terra nullius* they also construct the landscape as a resource to be consumed by the colonial project. He writes (from Gardiner, 1962:13):

a land so inviting, and still without inhabitants! As I stood, the first European intruder on the sublime solitude of those verdant plains as yet untouched by flocks and herds; I felt conscious of being the harbinger of mighty changes; and that our steps would soon be followed by the man and the animals for which it seemed to have been prepared.

The Dja Dja Wurrung people were dispossessed³⁸ from their lands by this colonial project in two waves (Clark and Cahir, 2004). In 1839 they were dispossessed by colonial settlers who were moving inland with their flocks to take up available grazing lands.³⁹ The second wave resulted from the Victorian gold rush that began in earnest in 1851.⁴⁰ The discovery of gold at Ballarat in September 1851 and the alluvial pickings discovered at Forest Creek (in the project case study area) spurned the biggest and richest alluvial gold rush in the world (Serle, 1963 and Blainey, 1969).⁴¹

³⁸ Clark (1995) records 13 murders and massacres in Dja Dja Wurrung lands between 1838 and 1846. These did not all pass without retribution. Clark (1995) records that possibly the first Victorian inquest into an Aboriginal death in custody was held in Dja Dja Wurrung country in 1855.

³⁹ The Port Phillip Aboriginal Protectorate was created by the Colonial Office in London in 1838 and Assistant Protector Edward Parker set up the Upper Loddon Aboriginal Reserve in 1840 (Culvenor, 1992).

⁴⁰ Annear (1999) states that people had been finding gold in the Port Phillip District from as early as 1842 and when gold was discovered in May 1851 in NSW it was “as bad as a declaration of war against the embryonic Victoria” (p7). A Gold Discovery Committee was formed offering 200 guineas reward for the discovery of a workable goldfield within 200 miles of Melbourne. Three months later the gold rush began.

⁴¹ Some Dja Dja Wurrung people had a role in the gold rush. A publication documenting this involvement was released in 2004 (see Clark and Cahir, 2004).

The advent and the culture of the gold rush as well as the miners' attitudes towards the landscape reflect the prevalent utilitarian narrative of nature as wilderness. William Howitt (1972:98) recorded his impressions of the miners during his visit in 1852:

the diggers seem to have two especial propensities, those of firing guns and felling trees. It is amazing what a number of trees they fell. No sooner have they done their days work, than they commence felling trees.

The resultant clear-felling left a landscape that is described by Slattery (2003a:11) as

heaps of churned over gravels and rocks, creeks of yellow mud running through deeply entrenched gullies, hills denuded of understorey, with feeble coppiced eucalypts struggling to regrow on eroding, soil-less slopes, weeds recolonizing widely, and a dense network of tracks, roads and decaying settlements in many valleys

The vast international immigration to the Victorian goldfields in the 1850s⁴² has resulted in the region being proclaimed as the “cradle of modern Australia, radically reshaping the nation's destiny” (ECC, 2001:147). The importance of this gold mining history is reinforced by the naming of the areas as part of the Goldfields bioregion by the Victorian Biodiversity Strategy (see DNRE, 1997). The political uprisings of the Monster Meeting at the nearby Bakery Hill and the Stockade at Eureka⁴³ in 1854 are heralded by some to have “precipitated Australia into nationhood” (Annear, 1999:313). These two statements further illuminate the way the Victorian landscape was interpreted and managed during the early stages of nation-building. They reflect how the historical descriptions of Australia as *terra nullius* also worked to inform the Australian national identity⁴⁴ at the time.

Similar interpretations, descriptions and land management approaches perpetuated the colonial narrative of nature as wilderness on the lands of central Australia. Historically, central Australia was described as the wasteland and desert heart of Australia. These metaphors encapsulated the colonial confrontation with alien environments and with, as Howitt (2001b) describes, the incomprehensible Indigenous other. These lands were depicted as the frontier and the edge of the metropolitan centres of the colonial outpost of Australia. Furthermore, the heart of the Australian landscape was conceptualised as the primitive and inferior other to the superior lands and culture of the colonial centre. This narrative was further enforced by the then fashionable notion of social Darwinism whereby Australia was depicted as a land of living fossils, primitive nature and primitive peoples.

⁴² During this time the population of Victoria grew from 77,000 in 1851 to 540,000 by the end of 1859 (Powell, 1976).

⁴³ The Eureka Stockade was a rebellion fuelled by the ‘diggers’ over the system of licensing enforced by government officials and police troopers, some of whom were corrupt. This was based on the fact that gold deposits were and still are the property of the Crown. Many miners claimed the license was unfair and a tax upon labour.

At this edge of empire the aim of this colonial project was to empty the landscape of its primitivism and to fill it again with elements of European development. Indicators of this development included pastoral land tenure and related infrastructure as well as education and history. European plant and animal species were brought in to physically colonise these inferior landscapes. Griffiths (1997) argues that the practice of ecology and empire were interchangeable. Changing the local ecology, subverting the natural order and taming the great southern land were all part of a biological imperialism to control the dangerous and ancient landscape of Australia.

In central Australia the mapping of property by practices of demarking land with fixed boundaries perpetuated the colonial notion of Australia as *terra nullius*. This conceptualising of place as purely spatial property excluded other ways of knowing the landscape. For example, in contemporary times Indigenous Australians often describe their relationship to land in terms of their movement through it and their special relationships with particular places. Indeed *Jurkurrpa* (the Dreaming) is dependant upon people walking, singing and performing the country.

Early colonial narratives that depicted pioneering men and women living at the edge of empire toiling to subdue the primitive and wild centre of Australia formed the basis of the pastoral myth that is sometimes represented in contemporary times by the not entirely in jest motto of: 'if it moves shoot it, if it doesn't, cut it down.' The myth of the noble savage (as discussed in chapters 3 and 4 sections 3.6 and 4.5) aligned Indigenous peoples with the land as wild, natural and having no imprint upon the landscape. These myths not only perpetuated the colonial narrative of development versus primitivism and the inherent discourse of settlement versus a nomadic lifestyle, but they depicted two opposing groups of harmonious and homogenous communities. This dichotomy simplified both pastoral and Indigenous cultures and left unsaid the diverse experiences and histories of place that formed the basis of life in the region. These narratives represent the colonial interpretation of the social and physical landscape that silenced all other ways of knowing the land and thus ignored diversity. The following discussion touches upon the tension between these historical narratives and how contemporary practices allow for alternative readings of the diverse historical confrontations with the Australian landscape.

6.3 Contemporary realities

Contemporary readings of the Australia landscape increasingly reflect the voices and experiences that were silenced by the colonial project. Although the ideology of Australia as *terra nullius* before British settlement remains strong in certain parts of contemporary

Australian culture the challenge to the 'Great Australian Silence'⁴⁵ (see Stanner, 1968) began a recognition and investigation into Indigenous history. Auto-biographical writing by Aboriginal people as well as Aboriginal life histories written and recorded by non-Indigenous authors (for example, Beckett, 1958; Stanner, 1960; Batty, 1963; Rose, 1969; Hardy, 1976; Shaw, 1981, 1983; Morgan, 1987; Marshall, 1989 and Vaarzon-Morel, 1995) has confronted the previous orthodoxy of Australian history. These accounts have in turn encouraged some Australian historians to reappraise and rewrite Australia's past (for example, the work of Reynolds, 1982, 1992 and 1999). These works also speak about the complicated personal relationships shared between some colonists and white settlers and some Indigenous peoples that did not always reflect the dichotomy of colonizer and colonised (for example, Baker, 1999).

Having briefly discussed the cultural shift into the changing Australian narrative of Indigenous history, I now investigate how changing interpretations of the Australian landscape influence contemporary management approaches. I focus upon specific changes in land management in north central Victoria and parts of the Northern Territory. The declaration in November 2002 of the Box-Ironbark Forest and Woodlands national, state parks and reserves across the State of Victoria (DSE, 2005b) symbolise contemporary interpretations of the Victorian landscape. The declaration of these parks and reserves was complemented by the introduction of the National Parks (Box-Ironbark and other Parks) Bill into the Victorian Parliament (DSE, 2005c). These parks and reserves resulted from five years of Victorian State Government and community consultation. The *Box-Ironbark Forests & Woodlands Investigation Final Report* (ECC, 2001) was the main outcome of these consultations. As is declared by the Victorian Government Department of Environment and Sustainability (DSE, 2005b:1):

over 105,000 hectares of public land in north central and north east Victoria is now protected in a series of parks and reserves to halt the serious environmental decline in the Box-Ironbark area...[these] landscapes are unique. Not only do they have enormous environmental values, but also very strong cultural and community ties and traditions. These areas have been used by Aboriginal people for thousands of years, followed by the industry and recreational uses that have evolved since European settlement.

The long history of land use includes rich Aboriginal, non-Aboriginal, mining, forestry and more recently conservation heritages.⁴⁶ All the heritages are recognised by the declaration of these parks and reserves. Some parks, such as the first ever National Heritage Park declared in Australia, focus more upon certain cultural heritage values than others. The name of this park: 'the Diggings National Heritage Park' reflects the rich mining heritage that is protected by its

⁴⁵The Great Australia Silence refers to the many written historical accounts that excluded the Indigenous side of the story of colonisation and rendered the Indigenous peoples as passive and inactive (see Attwood and Foster, 2003).

⁴⁶ Other recognised land use practices include apiculture, recreation, tourism, eucalyptus oil production, grazing as well as water production and distribution (ECC, 2001).

declaration. Much of the work carried out by the project members of the Victorian case study is conducted in or around this park. The remaining discussion focuses upon the discord between the different cultural heritages represented in this park.

The declaration of the Castlemaine Diggings National Heritage Park represents the tensions between the historical colonial narratives of nature as wilderness represented by the discussion of the Forest Creek Goldfields above, and the great diversity of contemporary interpretations of the same landscape that represents rich Aboriginal heritages and the rich and important biodiversity played out upon and embedded within contemporary readings of the landscape. These tensions are articulated by a local community member from the north central Victorian case study region, who also works as a cultural heritage advisor to the Victorian Government's Heritage Council and Parks Victoria agencies:

there was no way [the environmental lobby groups] were going to get a national park here because biodiversity just wasn't good enough. We [Heritage Victoria] stepped in and made a case that [the region] had this incredible cultural heritage. We [environmental and heritage conservationists] are in general agreement that we can protect both values, but that's not the issue, it's more an ideological one: whether you have culture first or nature first and whether you celebrate the act that you think was responsible for destroying a wilderness (VIC-G-7).

Although this comment does not speak directly of the rich Aboriginal heritage in the region the speaker (who also works closely with Dja Dja Wurrung people in the region and was instrumental in the release of the first publication documenting Aboriginal involvement in the Forest Creek gold rush, see Clark and Cahir, 2004) is making a point about the tensions between culture and nature. A local historian encapsulates these tensions by proclaiming "it's a Goldfield, not a Box-Ironbark forest" (Slattery, 2003b:455). These comments and local realities reflect what researchers of the social construction of nature (see Castree and Braun, 1998 and Demeritt, 2002), advocate: that nature is culture and cultural interpretations of nature construct the way in which land is managed. These tensions are also evident in the contemporary approaches to land management in the Northern Territory.

The advent of the *Aboriginal Land Rights (Northern Territory) Act, 1976*, the historical High Court's *Mabo Decision, 1992* and the *Native Title Act, 1993*, challenged previously held attitudes about the role of Indigenous people in Australia at the time of British colonisation. In the Northern Territory these changes have had very real impacts upon the lives of Indigenous peoples. The Federal Government fostered land settlement and rural development until the 1970s and used lease tenures as policy instruments towards these goals (Holmes, 2002). Remaining vacant crown land, considered unable to support viable pastoral business, was declared inalienable freehold land. Following the *Aboriginal Land Rights (Northern Territory) Act, 1976* these areas were claimed by Aboriginal people and are now administered by a number of Aboriginal Land Trusts. These Land Trusts represent the Aboriginal connection to the

Australian landscape that was silenced by the colonial project. The Land Trusts also celebrate the great diversity of Aboriginal cultures and languages that were homogenised under colonial rule. Figure 6.1 shows the diversity of Aboriginal languages in Australia and more specifically, in central Australia.

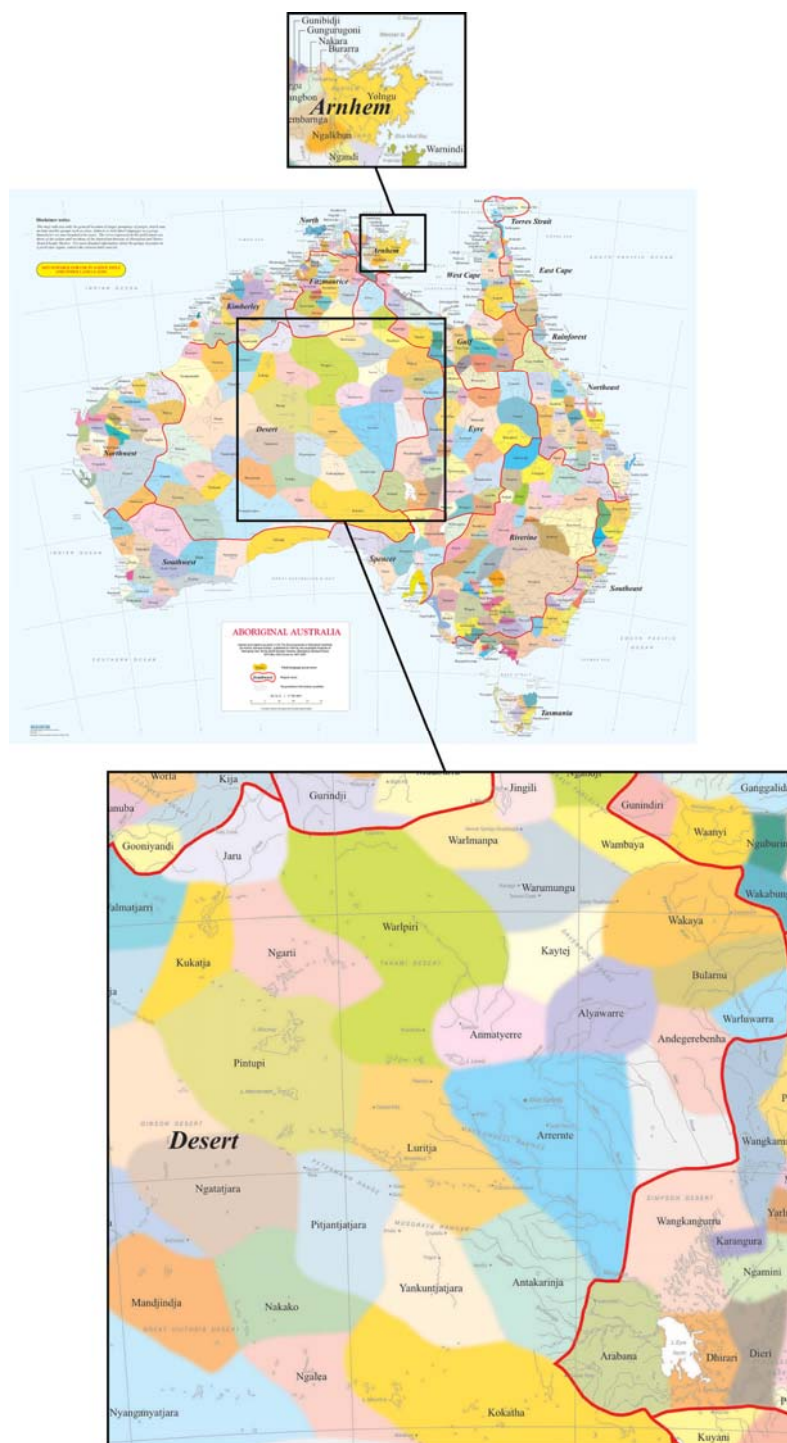


Figure 6.1 Aboriginal Australia wall map that shows the diverse Aboriginal language groups of Australia⁴⁷
 source: Horton D. R (creator), (1996)

⁴⁷ This map indicates only the general location of larger groupings of people which may include smaller groups such as clans, dialects or individual languages in a group. Boundaries are not intended to be exact. The views expressed in this publication are those of the author and not those of AIATSIS. For more information about the groups of people in a particular region contact the relevant land councils. Not suitable for use in Native Title and other land claims.

Slogans of the Indigenous statutory organisations, the Northern Land Council and the Central Land Council, that were set up to fulfil the land allocation that resulted from the *Aboriginal Land Rights (Northern Territory) Act, 1976*, further challenge colonial narratives of the centre of Australia as hostile wasteland or timeless desert. These slogans describe this landscape as: 'Our Land, Our Life' (CLC and NLC, 1995) and 'The Land is Always Alive' (CLC, 1995), and stand in testament against it being the edge, frontier or outback of some omnipotent centre.

Autobiographical accounts by some pastoralists are also beginning to contest notions of the pastoral community as homogenous and harmonious (see Bowman, 1991; Chisholm, 1999 and Coppock, 1993). Accounts of the land management practices of some pastoralists are challenging long held perceptions that all pastoralists practise unsustainable land management: a small number of pastoralists advocate land management approaches that value the quality of the land over the quantity of stock it can support (see Purvis, 2004). This diversity is also demonstrated by the various attitudes that pastoralists in the southern Tanami have towards fire (discussed in section 6.4).

Despite the growing landcare concern among pastoralists there is no doubt that the environmental aspect of colonial conquest (Griffiths, 1997) has brought large numbers of hard hoofed animals to the centre of Australia and has led to the spread of exotic grass species⁴⁸ across parts of central Australia. Equally, there is little doubt that since the Horn Expedition (see Morton and Mulvaney, 1996) wove its way through the central Australian landscape in 1894 conducting the first European ecological survey, there has been rapid land degradation, extinction of species and a noticeable change in vegetation communities and animal populations. The introduction of feral animals such as foxes, cats, camels and donkeys has also greatly affected the biota of central Australia.⁴⁹ Changing fire regimes as a result of a reduction in the number of people walking the country burning as they walked, introduced plant species such as buffel grass and the increased ability of people to travel much further in a shorter length of time have had a marked impact upon the landscape.

Many Indigenous Australians are concerned with this ongoing land degradation. But with the advent of the *Aboriginal Land Rights (Northern Territory) Act, 1976* they are voicing concern about the role placed upon them as Traditional Owners to overcome the degradation caused by decades of pastoral occupancy. The ongoing development of the Federal Government's Indigenous Protected Area Program (see DEH, 2006b) is the first attempt to

⁴⁸ The introduction of buffel grass in the Northern Territory continues to be a highly contentious issue between pastoralists and conservationists. Pastoralists value buffel as feed for their livestock with some trying to encourage the spread of seeds. Conservationists argue the grass should be listed as a noxious weed. This exotic species that is colonising the central Australian landscape is also highly flammable.

⁴⁹ The introduction of higher order predators has led to the extinction or close to extinction of many endemic animal species (see Paltridge, 1998, 2002; Edwards et al., 2001a; Edwards et al., 2001b; Edwards et al., 2002 and Paltridge and Southgate, 2001).

finance the important conservation works that can be conducted by Traditional Owners and Aboriginal people living on these lands. In central Australia there is the potential for the expansion of the Federal funded Indigenous Ranger Programs. These programs offer training and employment for individuals who are interested in working in the land management sphere.

As is the case across much of Australia, many pastoralists in central Australia are also expressing concern at the impacts of past land management practices upon their pastoral leases. This concern is reflected by the existence of the Centralian Land Management Association. This association is described by its Coordinator as the largest landcare group in Australia with a membership of over 40 pastoral properties in the Alice Springs region (Johnson, pers com, 2004).

The need to understand the multi-dimensional complexity of the central Australian landscape is reinforced by the reality of what Holmes (2002) calls the post-productivist transition. He argues that in Australia's most marginal lands "pastoral occupance is being displaced by renewed Indigenous occupance, conservation and tourism, with significant changes to land ownership, property rights, investment sources and power relations" (Holmes, 2002:362). There is certainly a growing imperative for the arid lands of central Australia to be managed in an ecologically sustainable manner.

Scientific research into land degradation in central Australia highlights the importance of ecologically sustainable land management with an increased focus upon biodiversity conservation (Ledgar and Stafford Smith, 1996). The introduction of various government legislation and programs are indicative of the changing land management cultures in the Northern Territory. These include: the previously mentioned Federal Government's Indigenous Protected Area program funded through the Natural Reserve System; the negotiations for joint management of parks and reserves in the Northern Territory following the *Parks and Reserves Act 2003* that will provide new opportunities for the conservation of biodiversity and Aboriginal communities across the Northern Territory (DIPE, 2004b); the current review of the *Pastoral Lands Act, 1992* to address issues relating to access, development, native vegetation clearing controls and Aboriginal community living areas on pastoral lands (DIPE, 2004b); the development of the *integrated Natural Resource Management Plan, 2005* (see LCNT, 2005a) and the ongoing development of the *Northern Territory Parks and Conservation Master Plan* (see NRETA, 2005). These plans certainly indicate the impetus for changing land management approaches in the Northern Territory, however it remains to be seen whether Federal and Territory Governments are willing and able to commit the funds necessary.

Herein lies the challenge of the Northern Territory case study project: Desert Fire. How can such a project incorporate the multiple values of pastoral production, biodiversity conservation and Aboriginal contemporary practice in considering the management of fire in the region? The following section of this chapter highlights further complexities of these tensions.

It illuminates the diversity of ways that the interest groups from each case study location interpret and experience the same environment.

6.4 Difference and diversity across the landscape

The previous section illuminated the way in which cultural interpretations of the Australian landscape determine specific land management approaches. This section further unpacks the basis of these cultural interpretations. Firstly, it examines how the interest groups of each case study know about the landscape where they work. This discussion draws attention to the diverse ways that the same landscape can be known. It investigates how threatened species are known in north central Victoria and how fire is known in the southern Tanami region of the Northern Territory. Secondly, this section reflects upon the diversity of social livelihood issues confronting the many interest groups. This analysis demonstrates the additional factors that influence why these people choose to be, or not be, involved with the environmental management and community development project that is the focus of each case study.

When analysing the different knowledges of the Australian landscape it is important to remember the reality of ecological uncertainty. Policy writers depend upon the knowledge of scientists who specialise in landscape mechanisms and interactions, such as ecologists, biologists, zoologists and so on, to determine best practice environmental management. This scientific knowledge is based upon statistical prediction and thus can never be 100 per cent accurate. This uncertainty is confounded by larger scale environmental interactions such as global warming and the effects of variables yet to be identified let alone researched. Ecological uncertainty in relation to the management of species habitat in Victoria is reflected by the use of ecological vegetation classes.

In relation to the management of fire in the Northern Territory ecological uncertainty is reflected by the fact that relatively little is known by western scientists about the effects of fire on biodiversity in central Australia. Indeed, it was not until work such as Jones (1969) that scientists began to consider fire as an essential part of the landscape. This ecological uncertainty is articulated by an ecologist who is part of the Northern Territory case study. In the following quote he speaks about ecological uncertainty but also the possible irrelevance of current scientific approaches to the ecological study of the central Australian landscape. He explains:

it took me years and years to realise that most other scientist just weren't seeing how it was happening out there they are just walking around blind. Aborigines say a lot of people walk round the bush like blind people, they can't see anything... I've tried to do experimental stuff... to show what was happening and... I soon realised that there is a lot of noise in the system... it is to do with the fact that Australia is the oldest continent on earth so it is messy... when you have got the mess on top of an incredibly complex system in a mess, science doesn't work... I just think that Australian science is going the wrong way. They are trying to apply the experiments that work in

physics where you can control everything nicely to the most complex system in the world. (NT-C-2)

An interesting contrast that will become apparent in a reading of the following discussion relates to the number of ways that individuals know threatened species in Victoria as compared with the number of ways that individuals know fire in the Northern Territory. In Victoria the knowledge of individuals from the local community arena, of individuals from the government arena and individuals from the science community is based upon the scientific method. In comparison, the knowledge of individuals from the local community arena including pastoralists and Aborigines is not always based upon the scientific method.

The title of the Victorian threatened species project reflects the project goal: “Protection and Enhancement of Threatened Species Habitat in the Goldfields Bioregion” (Project Application round 5, 2002:2). These habitats are classified according to what the *Victorian Biodiversity Strategy, 1997* calls ‘pre-1750 Ecological Vegetation Classes.’ They include the ecological communities of “Grassy Woodland, Creekline Grassy Woodland, Alluvial Terraces Herb-rich Woodland and the Temperate Woodland Bird community” (Project Application round 5, 2002:2). I consider there to be three main ways in which these threatened species and communities are known by individuals involved with the project.

Firstly, threatened species and ecological communities are known by certain individuals involved with the project through the practice of the scientific method. The species and ecological communities that are the focus of the case study project have been listed as threatened under the under the Victorian *Flora and Fauna Guarantee Act, 1988* and the Federal Government’s *Environment Protection and Biodiversity Conservation Act, 1999* according to specific scientific evidence.⁵⁰ This scientific evidence is generated by individuals engaged in applying the scientific method to natural systems. This work includes that of a PhD student who uses scientific methods to investigate the ecology and life cycle (preferred egg laying habitat, egg production rates and mortality rates) of the threatened Eltham Copper Butterfly. She also uses mathematical models to determine population viability of this threatened species, and this data reflects the habitat size necessary to sustain genetically healthy populations of the species. Also a zoologist who wrote the Action Plan for Australian Butterflies (Sands and New, 2002) uses scientific methods to investigate the taxonomy of related attendant ant species. These methods include the examination of specimens collected at specific sites to determine anatomy, physiology and invertebrate structures of species.

⁵⁰Under the Flora and Fauna Guarantee Act, 1988 a taxon or community is eligible to be listed if it is in a demonstrable state of decline that is likely to result in extinction or significantly prone to future threats that may result in its extinction (DSE, 2006b). Under the Environment Protection and Biodiversity Conservation Act, 1999 a native species (or ecological community) is in the critically endangered, endangered or vulnerable category if it meets any of the 5 criteria (or 6 criteria for ecological communities) as specified under the Act (Office of Legislative Drafting, 2000).

Scientists working for government also use taxonomic methods to identify, classify and ultimately manage flora and fauna species. Individuals working for government sometimes rely on local amateur scientists, who they describe as local gurus, to feed information relating to the identification and location of threatened plant species into the State-wide herbarium database located at the Arthur Rylah Institute for Environmental Research, Melbourne. Clearly these local amateur scientists are following rigorous scientific practices respected by professional scientists. As such these individuals also know threatened species according to their practice of science. This ongoing knowledge generation is essential for the management, protection and enhancement of threatened species habitat in Victoria.

The second way that individuals know threatened species in north central Victoria is by using derived scientific information for management purposes. The ecological communities that are the focus of the Victorian case study project are units of vegetation that have been derived for specific management approaches. Government representatives use pre-1750 Ecological Vegetation Classes as the benchmark for the conservation status and conditions of lands in Victoria to make decisions about biodiversity policy and management. Ecological Vegetation Classes are defined as consisting of “one or a number of floristic communities that exist under a common regime of ecological processes within a particular environment and bioregion or broader scale” (DSE, 2006a:1).⁵¹ Scientists have used remaining remnant vegetation, ecological processes and landscape ecology to determine what vegetation communities would have existed across the Victorian landscape prior to European clearing of the country. The notion of the ‘pre-1750 condition’ was proposed as the primary measure of naturalness prior to European development of the country (see Hopkins, 1999).

Pre-1750 Ecological Vegetation Classes are the basic mapping unit for the conservation status and condition of lands in Victoria. These mapping units are used in conjunction with the methodology of ‘habitat hectare’ (Parkes et al., 2003) and the principle of ‘net gain’ (see Oliver et al., 2002) as the basis for *Victoria’s Native Vegetation Management: A Framework of Action*, 2002. Community conservation projects are funded according to the conservation status of ecological communities. As is explored further in chapters 7 and 8 some individuals from the government and local community arenas engage proactively with these management languages to gain funding for locally desired conservation land management.

Finally, threatened species are known by certain individuals according to prescribed on-ground work. These individuals engage with both scientific and management principles to conduct on-ground species recovery works. These include individuals from the local

⁵¹ Ecological Vegetation Classes are a feature of Broad Vegetation Types. Broad Vegetation Types “categorise a diversity of indigenous vegetation assigned on the basis of existing vegetation and other biophysical parameters such as geology, rainfall, elevation and soil type” (DSE, 2006a).

community groups, amateur and professional scientists and government representatives working with the Victorian project case study. These individuals apply “mechanisms for more efficiently conserving key biodiversity assets and enhancing community participation, further effective integrated predator control, weed control and habitat restoration” (Project Application round 5, 2002:2). They also work to educate community “through planting days, weed control and education material is seen as a key element of this project” (Project Application round 6, 2003a:2). Furthermore, they strive to “increase the knowledge on the distribution of threatened species within the Shire” as well as “enhance biodiversity values of sites and provide long-term protection of threatened species; identify and mitigate threats to the threatened species on roadsides; and to put in place roadside conservation management strategies” (Project Application round 6, 2003b:2). As is explored in chapters 9 and 10 individuals engaged in on-ground species recovery work in Victoria know these species according to the impacts of potentially threatening anthropocentric activities.

The ways in which fire is known by people working with the Desert Fire project in the Northern Territory is more complex than the ways in which threatened species are known by people involved with the threatened species project in Victoria for reasons expressed previously. The impetus for the project is reflected in the project title: ‘Desert fire: Managing Fire in the Southern Tanami, Northern Territory.’ The project is embedded within the larger Desert Knowledge Cooperative Research Council network that is *aimed at generating new knowledge, new ways of doing things, new ways of thinking about things* (NT-G-10). The success of this project is dependant upon understanding the three ways in which fire is known by people working with the project⁵².

Firstly, some people know fire through the practice of science. These practices include those pertaining to the management of biodiversity for conservation. For example, the research work carried out by individuals working for the Northern Territory Parks and Wildlife Service. These practices also include the mapping of fire across the landscape. For example, the geographical information systems mapping and the related ground-truthing work conducted by a scientist at the Bushfires Council. This valuable work increases knowledge of fire histories and effects of fire upon biodiversity with a view to improved management of fire in the region. However, the application of this knowledge is not without its complexities. This touches upon the points made previously about ecological uncertainty. These complexities highlight the tension between government policy, management practices and the scientific knowledge upon which these practices are founded.

Scientists in central Australia openly admit their evolving knowledge of the region. Although there has been an increase in recent ecological research into the effects of fire on

⁵² See Verran (2002) for a postcolonial critique on alternative firing regimes of environmental scientists and Aboriginal landowners in northeast Arnhem Land, Northern Territory.

vegetation communities (see Griffin et al., 1983; Saxon, 1984; Allan and Southgate, 2002; Allan et al., 2003; Nano, 2006 and Wright, forthcoming) and bird communities (see Leavesley, 2005), relatively little is known about the effects of fire on biodiversity. For example, there is a lack of detailed information on the responses of most individual species, communities or environments to changed fire regimes (LCNT, 2005a).

Large areas in the southern Tanami region are managed by pastoral landholders. As such the practice of pastoral knowledge is important to the management of fire in region. As explored in chapters 9 and 10 attitudes to fire vary between pastoral landholders. Some individuals wish to keep it out of their leases because they see it as a threat to pastoral grasses and infrastructure. Others use it as often as they can; as such, the incidence of unwanted fires travelling onto their leases is greatly decreased. Others use fire primarily to create firebreaks. Although knowledge of fire on pastoral leases varies the purpose for the management of these lands remains the same: the *cattle take precedence* (NT-C-7). However, there are also various approaches to the management of the country for cattle. For example, one individual who describes fire as a grazing management tool and uses it as often as he can also speaks about the benefits of managing the land to promote diverse native grass species. In contrast he speaks of *old school pastoralists*, residing outside the southern Tanami region, who come under the watchful eye of the Government because they *don't think of the quality of stock, just the number* (NT-C-13).

The project case study area is predominately on Aboriginal freehold land. The practice of Aboriginal knowledge of fire in the region is paramount to the management of fire in the region. Although the ecological knowledge of many Indigenous Territorians still remains to be extensively documented and applied to land management issues, there is increasing interest in and recognition of the important role this knowledge can play. For example work by some researchers gives voice to traditional ecological knowledge (see Latz, 1995). The ongoing expansion of the land management division of the Central Land Council is indicative of increasing interest in, and government funding for, Indigenous land management. The ongoing development of Indigenous Protected Areas and Indigenous Ranger programs in the Northern Territory is evidence of this two-way interest. As is discussed in chapters 9 and 10, Aboriginal knowledge of fire in the region varies between individuals and its application is closely entwined with Traditional Ownership. Individuals describe fire in relation to 'caring for country' under traditional law. For example, it is used to clean the country to make way for new growth. Fire is also described as important for living effectively in the region. For example, people speak about using fire for hunting, cooking and heating. Fire is also pivotal for cultural practices such as ceremony. Individuals also speak about the important role of fire as a communication tool in the event of an emergency such as car failure.

What is evident from the discussion above is that the same landscape can be known in many different ways. This confirms a point made earlier that land management approaches

depend upon cultural understanding of the landscape. Sometimes these understandings may be in conflict as is the case with the use or the perceived use of fire in the southern Tanami. As the coordinator of the Centralian Land Management Association clearly articulates:

[fire] is a potential tool but it can get misused or underestimated. People may be [using it] for their right but these reasons might be someone else's wrong reasons [as such it is] a mis-valued tool (NT-G-3).

As explored in chapter 9 the politics of local knowledge, that is, the way that others perceive the knowledge held by different interest groups, are equally important to equitable and sustainable environmental governance and management. Of similar importance to equitable and sustained environmental governance and management are the social livelihoods issues faced by individuals that influence their choices to engage in environmental governance and management.

Individuals become involved with environmental management and community development projects for a variety of reasons. Chapter 7 (section 7.3) explores these reasons for the two case study projects and chapter 8 discusses the responsibilities of environmental management and community development projects to also provide for the development of sustainable social livelihoods. The remainder of this section presents the social livelihoods issues faced by individuals from the local community arena of each case study project. What becomes clear is the diversity of social livelihood issues faced by individuals engaged in environmental governance and management across Australia. This complements the claims made in chapter 3 (section 3.8) relating to the varieties of environmentalism that exist in Australia.

All individuals involved with the case study project from the local community arena in Victoria regard themselves as pro-actively engaged in working to protect and enhance the habitat of threatened species. Some of these individuals classify themselves as part of the community landcare movement, others speak of themselves as environmental conservationists, others speak of being political lobbyists and a final group of active community members define themselves as apolitical field naturalists. Many of these individuals are retired or semi-retired and have either chosen to relocate to the region for lifestyle reasons or have been living in the region for an extended period of time.

These individuals are aware of the power of their local knowledge and action. Indeed, many of them could be described as empowered individuals using government policy and funding networks to meet the requirements of their on-ground project work. Some individuals believe their work is limited by parochial small picture thinking among other community members and limited government recognition and funding. However, there is no doubt that these individuals choose to volunteer their time to engage with environmental management projects for the benefit of the whole community.

In contrast, the social livelihood issues faced by individuals from the local community arena, including pastoralists and Aboriginal people, involved with the Northern Territory case study project are more complex. These complexities are reflected by the development of the Desert Knowledge Cooperative Research Centre research network that aims to link “Indigenous and local knowledge with science and education to improve desert livelihoods” (DKCRC, 2006a:1). As such a core objective of this network is to “deliver sustainable livelihoods for desert peoples that are based on environmentally and socially sound natural resource and service enterprise opportunities” (DKCRC, 2006d:1). In relation to engaging with the project case study, individuals living in the southern Tanami are more socially disadvantaged than those in north central Victoria. This is particularly the case for Aboriginal people living in the region. As an individual working for the Central Land Council articulates: *people have got more important things to do with their lives like providing a roof over their head... or getting their kids to school or just finding enough to eat for the day* (NT-G-6).

Some Indigenous Australians are considered as third world in the first world (Young, 1995) or as fourth world people (Dyck, 1985) living in a supposedly developed society but not benefiting equitably with the rest of society. Evidence shows that Indigenous Australians living in remote parts of Australia are one of the most disadvantaged groups in Australia. They have a lower life expectancy⁵³ and lower attendance at schools. In fact, most remote communities in the Northern Territory do not offer post primary education.⁵⁴ Aside from the Community Development Employment Scheme that enables participants to exchange employment benefits for paid work and community development training (ABS, 2004), there are currently very few employment opportunities for Aboriginal people living in the southern Tanami region.

Although the situation for pastoralists is not as difficult as it is for Aboriginal people living in the southern Tanami they face social livelihood issues that are more challenging than those faced by individuals living in north central Victoria. For example individuals who live in remote regions of Australia⁵⁵ have decreased access to many of the services, such as health and education, offered by more populated centres. The livelihoods of pastoralists are also influenced by external factors. As a regional manager from the Northern Territory Government Department of Natural Resource, Environment and the Arts explains, pastoralists are also *trying*

⁵³ In the 1991-1996 census period life expectancy at birth for non-indigenous males was 75 years, females was 81 years as compared with Indigenous males 57 years and females 62 years (ABS, 2000). Indigenous Australians also continue to be at a greater health disadvantage to other Australians.

⁵⁴ Statistics reflect that in 1996 among children aged 16, only 57 per cent of Indigenous children were students compared to 84 per cent of all 16 year olds in the total population (ABS, 2000).

⁵⁵ Remoteness is calculated by the Australian Bureau of Statistics using the road distance to different sized urban centres, where the population size is considered to govern the range and type of services available. The five Remoteness Areas are: Major cities of Australia; Inner Regional Australia; Outer Regional Australia; Remote Australia; Very Remote Australia (ABS, 2004).

to make a living [...they] go from high to low [in relation to drought, interest rates and so on] (NT-G-4).

As these descriptions suggest the social livelihood issues faced by individuals living and working in the southern Tanami region are more complex and confronting than those faced by individuals living in north central Victoria. As such there must be tangible livelihood reasons for these individuals to choose to be involved in the case study project. Indeed, in contrast to individuals from the local community in Victoria, none of these land managers can afford to volunteer their time in working to meet project objectives and on-ground works.⁵⁶ In summary, the diversity of social livelihood issues faced by the individuals from the local community arena of each project influence their motivations for being involved with the project.

6.5 Embedded powers across the landscape

The two projects that are the focus of the thesis clearly highlight the varieties of environmentalism that are held and practised by land managers across Australia. For example, the knowledge held by pastoralists and Aboriginal land managers relating to the role of fire in the southern Tanami are quite different to each other as well as to the knowledge held by individuals working for the different arenas of Government in Australia. Indeed, these knowledges may sometimes be in conflict. It is imperative to evaluate the environmental governance and management discourses that are embedded in any environmental management and community development project because if the project structure silences any one group it will perpetuate the challenges that it is attempting to overcome.

Asking whose environment and whose development, if any, is favoured by the project structure is the first step in overcoming any embedded power inequalities. Engaging in strategies to overcome these inequalities is the second step in working towards equitable and sustainable environmental governance and management in Australia. In chapters 9, 10 and 11 I critique and demonstrate how the two project case studies exemplify the potential for working to overcome current levels of environmental and social degradation in Australia.

6.6 Conclusion

This chapter has practised a cutting edge politics (after Howitt, 2001b) to highlight the diversity of approaches advocated by a variety of land managers to engage with the Australian landscape. As presented in section 6.1, Howitt (2001b:234) argues that practising an edge politics “grapples with ambivalence, uncertainty, change, overlap and interaction in ways that dislodge the old-style colonial metaphors of empty spaces and frontier heroics”. I further this argument by stating that a cutting edge politics allows for a celebration of difference. Further it

⁵⁶ All individuals interviewed for this thesis did so of their own accord and no payment was made.

provides the practical means to begin the process of cultural hybridity that Bhabha (1990) argues is necessary to reach a third cultural space of cultural representation and understanding. These concepts are explored in detail in chapter 11.

Practising a cutting edge politics acknowledges the historical antecedents that continue to influence contemporary environmental governance and management practices. It also challenges historical narratives by juxtaposing them with contemporary institutions and counter-narratives. This juxtaposition opens the opportunity to reflect upon these complex and sometimes conflicting narratives. Critiquing these narratives paves the way for a conceptualisation of environmental governance and management as composed of different knowledge cultures and land management approaches and as motivated by diverse social livelihood issues. A cutting edge politics unpacks the many knowledges of environmental governance and management and provides strategies (as presented in chapter 10) to consider ways to overcome the conflict that arises from these different and diverse environmentalisms. It also considers who is silenced within any environmental management and community development project, how they are silenced and thereby affords the first step in overcoming the power inequalities that are embedded in any project.

Part 4: Local voices in the landscape

Spaces of Environmental Governance

Chapter 7



The National Land and Sea Management Conference, Ross River,
Northern Territory

Photo: Kirsten Maclean 2005

Chapter 7: Spaces of environmental governance

7.1 Chapter aim and overview

The aim of this chapter is to address the first question of this research, namely: how do knowledges of best practice environmental management move across and between international, national and local scales of environmental governance and community based environmental management? The literature reviewed for this research, the resulting applied peoples' geography and the cutting edge politics practised in this research suggest that knowledges of best practice environmental management move through local spaces of environmental governance and environmental management. This chapter considers how environmental governance appears from the local environmental management and community development project point of view, in particular from the Threatened Species project in Victoria and the Desert Fire project in the Northern Territory.⁵⁷ I demonstrate that a sophisticated awareness of how these individuals perceive environmental governance is integral to equitable and sustained environmental governance and management in Australia. This is because, as the findings of this research show, environmental governance consists of place-based, relational, networked and entangled local spaces of environmental management.

7.2 Environmental governance is connected to place

As elucidated in chapter 6 the projects in this study are located in specific geographic places that have multiple political histories of place and nation. The projects have evolved from these geographic places according to the identified issues of threatened species habitat destruction in Victoria and the increased incidence of large scale fires in the Northern Territory. The projects have been developed by local personalities and are defined by local politics. Project success (as discussed in chapters 9 and 10) is contingent on but not confined by local knowledge of these specific geographic places. This local knowledge is tied to place.

The geographic places where the projects are situated are also the point of intersection of knowledge networks. These knowledge networks are composed of people, of environmental governance policy and of environmental management practice including on-ground project work. As such these place-based spaces of environmental governance are the product of knowledge networks (after Massey 1991a, 1991b, 1993). These networks connect the local to the extra-locale. As Escobar (2001:143) articulates “we are all indissolubly linked to both local and extra-local places.” It follows that place-based spaces of environmental governance are “very much produced by complex relations of culture and power that go well beyond local

⁵⁷ Chapter 8 considers how environmental management appears from the same local point of view.

bounds” (Escobar, 2001:146). For example, the two case study projects gained Federal and State or Territory Government funding because the management of threatened species habitat and the incidence of fire have national implications. These complex relations are clearly exemplified by the wider networks of the two projects. The Victorian project has its genesis in a program embedded within and created by networks. A woman who was instrumental in the development of the Threatened Species Network articulates that

[the Threatened Species Network is] designed to take a state based approach... its very make up is looking at a regional approach but within the context of a nation because all of the work that the network does is boiled down from the National Strategy for Biodiversity and the Environmental Protection and Biodiversity Conservation Act... it operates at a local scale... but within the context of a national scale and in many cases with the species [for example migratory birds] on a global scale (VIC-G-8)

The Northern Territory project is embedded within the networks of the Desert Knowledge Cooperative Research Centre (DKCRC). A manager of DKCRC describes it as:

a research network. Primarily its work is aimed at generating new knowledge, new ways of doing things, new ways of thinking about things, through various types of research... it is about rubbing shoulders between research and every day aspects of society. That’s where we try to leave a lasting knowledge: in the development of a greater understanding of how to manage the self (NT-G-10)

The findings of this research demonstrate that environmental governance is place-based and, therefore, locally situated and connected to other locales by networks. The two project case studies provide the means to unpack these complexities and investigate what constitutes environmental governance. In particular, following the epistemology of the thesis, they provide the means to consider how environmental governance appears from these place-based locations (hereafter referred to as local spaces).

7.3 The relational characteristics of environmental governance

Project members from the government and local community arenas in Victoria and the Northern Territory speak of their work as having local, regional, national and global environmental governance ramifications. The following discussion elucidates how the findings of this research show that local environmental management decisions and actions cross multiple environmental governance scales. These findings support the arguments made in chapter 4 (section 4.4) for an understanding of environmental governance scale as relational.

The first analysis of this chapter shows that project members from the government arena of the two case study projects perceive their work as crossing multiple environmental governance scales. Individuals choose to work in government and non-government organisations for

diverse reasons. These reasons include: to conduct scientific research for the purposes of sustainable land management; to explore notions of community development and social justice; and to develop strategic landscape management approaches. This work extends over different environmental governance scales. It may encompass the national scale, for example, the work of the Federal Government's national, regional or local natural resource management facilitators. It may encompass specific jurisdictional scales as for example the work of the 10 Threatened Species Network Coordinators based in each State and Territory of Australia. It may span specific biogeographic scales determined by the Interim Biogeographic Regionalisation for Australia (IBRA) (discussed in chapter 5, section 5.2) to facilitate regional environmental governance across Australia such as the work of the many integrated catchment managers of the Victorian Catchment Management Authorities. It may extend over State-wide governance scale as, for instance, the work of local project officers of specific Victorian Catchment Management Authorities. Or it may span a specific geographic scale as determined by any environmental management and community development project, for example the Desert Fire project of the DKCRC.

Project members from the Victorian project speak of their work as having global ramifications. The project officer points out that one aspect of her role concerns raising community awareness of the fact that local actions have global impacts. She explains that *the personal is political... you can have an impact and this is what it is all about* (VIC-G-5). Scientists and land managers from the regional division of the Victorian Government's Department of Sustainability and Environment speak about their local threatened species work in the global context. One man explains that *the Eltham Copper Butterfly only exists in Victoria [...at] an international level it is the only population in the world [...accordingly] we have a responsibility to ensure that the habitat is protected for the species' ongoing survival* (VIC-G-2). These words bring attention to the connection between environmental governance decisions and environmental management actions. The local decisions made about best practice management of threatened species habitat in Victoria have regional, national and global ramifications. This is further highlighted by the Desert Fire project in the Northern Territory.

One aspect of the Desert Fire project is its role as a scoping case study to determine what it means to manage fire across different land tenures in the arid region of Australia. This scoping case study will inform national environmental governance because it evolved from national discussions about natural resource management in the arid zone. The project leader explains that

fire kept on coming up as a key issue [at facilitated natural resource management meetings] so that brought together a group of... people across Australia who were interested in fire in the arid area (NT-G-9).

In a similar way the project will also inform international natural resource management because as the project leader articulates *fire issues are global issues and fire in desert landscapes is a global issue* (NT-G-9). These words highlight the fact that regional, national and global environmental governance occurs at the local scale and is about place-based environmental management actions.

The importance of place-based environmental management actions and place-based ecological research actions for national and global environmental governance is further highlighted by the following words of Desert Fire project members. A land manager from the Central Land Council speaks of the local, regional, national and global significance of Aboriginal land management work. He explains that

the Indigenous Protected Area program, which is like the brand for Aboriginal land management, [...has] got national recognition [...and] international recognition. [The Aboriginal land managers] are not just regarded as black hippies any more: people are actually doing something (NT-G-6).

A researcher from the Northern Territory Parks and Wildlife Service speaks of the importance of place-based ecological research actions to inform environmental governance policy. He explains that

the [Federal] Government puts up a lot of money for... big strategies... but there is not enough money going into the research and management that could be increasing our knowledge and implementing knowledge to make a difference (NT-G-8).

In summary, project members from the government arena in Victoria and the Northern Territory speak of their environmental management work as having local, regional, national and global environmental governance ramifications. This is because decisions made about best practice threatened species habitat management in Victoria and fire management in the Northern Territory inform environmental management actions. These actions influence the longevity of threatened species and the spread of large scale wildfires for the whole of Australia and the world. As such these decisions constitute environmental governance. In essence, the multiple scales of environmental governance are performed through the enactment of place-based environmental management action as exemplified by the on-ground work of the two project case studies.

The following analysis clarifies how project members from the local community arena in Victoria and the Northern Territory perceive their environmental management work in light of environmental governance scale. Project members from the local community arena involve themselves in project work for various reasons. In Victoria project members engage with the Threatened Species project for the purposes of documenting the locations of threatened species, such as the work of the Field Naturalists Clubs. They engage in this work to develop land

management networks across the landscape as individuals involved with Landcare groups do. Other people such as those involved with environmental lobby groups are motivated to work with the Threatened Species project as a means of holding the government accountable to environmental legislation. A further group of individuals, such as those involved with Friends Groups, work with the project in order to protect and conserve specific areas of threatened species habitat. The following discussion reflects the views of their government counterparts because individuals from the local community arena in Victoria believe their work has local, regional, national and global ramifications.

Project members perceive the on-ground project work as constituting *something of global significance* (VIC-C-8). This is because although working with threatened species is a local priority, species extinction has global ramifications. For this reason local environmental management work must not be undervalued. A local farmer states that *if lots of people do tiny little bits, it all happens* (VIC-C-9). Another project member believes that the local is political. His attitude reflects the words of the project officer who advocates that the personal is political. This project member explains that global outcomes result from place-based actions because

changes of industrial technology on a national basis to effect greenhouse outcomes actually depend upon making decisions and taking actions to change those. That involves corporate, national arrangements and funding and policy decisions, but it has to come down to practical physical actions (VIC-C-2).

Another project member maintains that the power of local action can be likened to *a network, if everyone is doing something it will improve it regionally and eventually it will improve it globally* (VIC-C-4). The words of an active landcare member reveal that the power of local action is also about informing and inspiring people working in other locales. She elucidates that

[local successes] can inspire people at different levels: nationally, regionally even globally. Stories do come out, you are always reading wonderful stories of people in India or Bangladesh they take on some sort of local issue [...and] they produce something that is outstanding, so you have that link coming through, it can be a strong link from the local to the global (VIC-C-5).

In the Northern Territory, project members from the local community arena may choose to engage with the Desert Fire project for diverse reasons. Project members from the conservation community may be involved for the purposes of researching the effects of fire on local ecosystems to improve the management of conservation reserves such as Newhaven. Project members from the pastoral community may be involved because they wish to protect pastoral infrastructure from fire. Project members from the Aboriginal community may be involved as a means of ‘caring for country’ under traditional law and as a means of developing employment opportunities for their young people

The words of these project members further expose local perceptions of what constitutes environmental governance. All project members speak of their environmental management work as connected to place. Some speak of this place-based work as having wider environmental governance ramifications. Interesting to note is that the places identified by land managers in the southern Tanami as their local area are likely to be described by land managers in north central Victoria as regional or even state. These perceptions about what constitutes environmental governance scale reinforce the complex notions of environmental governance scale as a social construct. They give life to the arguments put forward in chapter 4 (section 4.4) explored relating to how notions of environmental governance scale as a fixed hierarchy have worked to under-value and marginalise local environmental management work.

All project members from the pastoral community speak of being locally-situated in their part of the southern Tanami but they have different views about the ramifications of their place-based environmental management actions. For example, one man speaks of his work as dictated by weather conditions in his part of the southern Tanami. His words highlight the variability of climate across central Australia where each pastoral station may experience different weather conditions. He explains that his station has not suffered from drought like other pastoral lands and this brought home to him the fact that his pastoral station *is the centre of the world as far as we are concerned* (NT-C-6). In comparison, other pastoralists perceive their work as crossing multiple scales. Firstly, one pastoralist speaks of his role as an advisor to pastoral boards, committees and lobby groups across central Australia. Secondly, another pastoralist perceives his work as having national ramifications and being part of the *big picture of actually catering not only for yourself but also other families* (NT-C-13).

The work of individuals from the conservation community in the southern Tanami is also connected to place. One researcher explains that the mess and noise of the southern Tanami (as discussed in chapter 6 section 6.4) dictates that the skills of observation necessary to understand plant ecology can only be developed in situ. This locally derived and place-based knowledge informs environmental governance policies for the region and is often financed by national environmental governance programs. For example, the work of a local ecologist⁵⁸ is considered important to environmental management of the southern Tanami region. This work is often funded by Federal Government programs. Some of this work also feeds into decisions made about best practice environmental management of the Newhaven reserve. Although at the time of the research Newhaven had a committee of managers located across Australia, it was the locally based manager at Newhaven who ultimately made decisions about on-ground management actions.

⁵⁸ Her work considers the responsibility of predators including cats, foxes and dingoes, for the decline of medium sized mammals in the region (see Paltridge, 2002).

As a manager of Birds Australia who is based in Melbourne explains

there is a bit of trying to manage Newhaven from Melbourne which is quite a challenge... the committee is spread all over Australia, with teleconferencing and email we seem to have done pretty well but we couldn't possibly do it... without a person on the ground (NT-C-9).

For the Aboriginal community, caring for country under traditional law is also determined by place. Traditional ownership determines who can speak for the country and conduct management activities on the country. Ownership is locally situated and culturally defined. One Aboriginal woman reflects upon the connection between place, traditional ownership and the use of fire for land management: *we only burn our own country... we can't burn on others country* (NT-C-10). Knowledge of country is also locally situated. However, this does not limit the reach of this knowledge and experience: locally situated knowledge is shared with others through networks. For example, many Indigenous land managers from all over Australia came together to speak of their local experiences at the Indigenous Land Management Conference held just outside of Alice Springs in 2005. At this conference land managers were able to learn from other peoples' local experiences and locally situated work. This example reinforces a comment made by a Victorian project member: local work and local stories can inspire people from across Australia. The work and lives of these land managers are tied to place for the reasons previously mentioned. But these local lives can have bearing on other place-based land management approaches. In the same way that place-based ecological research and pastoral experience informs environmental governance approaches, the experiences of place-based Aboriginal land managers should also inform governance approaches by acknowledging that environmental governance is closely connected to environmental management work that is inherently connected to place.

In summary, a significant number of project members interviewed from the government and local community arenas of both projects locate their work across multiple scales of environmental governance. They describe their work as having local, regional, national and global environmental governance and management ramifications. There are three ramifications of this. Firstly, environmental management work that protects species habitat in north central Victoria protects species that are found nowhere else in the world and managing fire on specific pastoral, Aboriginal or conservation lands amounts to the management of fire over vast tracts of the central Australian landscape. Secondly, decisions that inform best practice environmental management actions in these places amount to environmental governance. Thirdly, these decisions and knowledge generated from resulting management actions can inspire and inform environmental governance and resulting management actions in other locales. This final ramification connects strongly with notions of ecological uncertainty discussed in chapter 6 (section 6.4).

The findings of this research provide evidence for the conception of environmental governance scale as relational rather than as hierarchical. Firstly, environmental governance scale is relational because successful governance of the biophysical environment is entwined with knowledge of place. Secondly, the notion of governance scale is a social construct that is understood by individuals according to perceptions of their own place within the physical landscape and their own role within environmental governance policy structures. These findings provide the platform from which to consider how knowledges of best practice environmental management move from locale to locale.

7.4 The networked characteristics of environmental governance

Common to both the Victorian and Northern Territory projects is the importance of knowledge networks for successful environmental governance and management. In Victoria a significant number of project members locate the work of others within wider networks that cross environmental governance scales. In the Northern Territory, where project members perceive themselves as working in networks that cross environmental governance scales, the potential and possibilities for local environmental management expand. Indeed, most individuals who are not working in networks wish to be. The following discussion clarifies how the findings of this research show that local spaces of environmental governance are linked to the extra-locale by knowledge networks.

The Victorian project involves local community working with individuals from different government agencies in the region to protect and conserve threatened species habitat on specific areas of public and private lands. Project members from the government arena speak of the importance of networks for environmental governance. The bioregional manager explains that the Threatened Species project facilitates network connections that link people who operate at different scales of environmental governance. The longevity and success of this project depends upon the role of project structure to *leverage a lot of good connections [...enabling the project to] develop into something more long term or larger* (VIC-G-6). The local landcare coordinator speaks of his role of facilitating networks between community groups and government based upon two-way knowledge exchange. He highlights that effective and sustained environmental governance is improved by networks and partnerships between people who work in different jurisdictions and who have diverse areas of expertise. He is particularly enthusiastic about the *unpredictable synergies* (VIC-G-4) that can occur as a result of these networks, generating creative solutions to cross-jurisdiction challenges.

Project members from the local community arena in Victoria locate their work within a network of bigger picture environmental governance. As one landcare member articulates *[...the governance approach] has to be total picture stuff for it to be really effective* (VIC-C-7). She believes that the development of community-government networks is essential for local

environmental governance because these *give a focus for all the interest groups and government departments to work together to achieve something in the community* (VIC-G-8). These networks are based upon two-way knowledge exchange. In essence, project members working in the government arena are described by those from the local community arena as path finders for ongoing community environmental management work. For example, project members from the local community arena describe their government counterparts as facilitators. They facilitate the development of local networks, they inform the community of funding opportunities and update them on relevant changes to environmental governance policy. As a project member from the local community arena who is also employed by the Department of Sustainability and the Environment explains this is an important role because *sometimes community groups can be too green and it gets too political for them* (VIC-C-3). As such, project members from the government arena have an important role in assisting local community groups to *keep an eye on the bigger picture* (VIC-C-3). Project members from the local community arena have the important role of providing information to project members from the government arena. This two-way knowledge exchanges is essential because, as this active landcare member explains, *[government representatives] have to be able to work through people at local levels because if you can't have that, it is never going to happen* (VIC-C-5).

The success of the Desert Fire project in the Northern Territory also depends upon the success of knowledge exchange between project members from the government arena and project members living and working in the southern Tanami region. The project is fundamentally about cross-agency collaboration between project members from the government arena with project members from the local community arena to foster strategic approaches to fire management in the region. Project members from the government arena recognise that engagement of individuals living and working in the southern Tanami is fundamental to the management of fire in the region. This engagement complements the knowledge brokering role that some individuals perceive they have. For example, a project member from the Northern Territory Parks and Wildlife Service describes his role as linking scientific research work with Federal and Territory environmental governance policy. He explains that *sometimes my role is straddling that academic science and the land management government bureaucracy of looking after park estate* (NT-G-8). Another project member who works for the Central Land Council explains his role as being about two-way knowledge exchange for environmental governance in the region. He states that individuals such as himself work as

gatekeepers to help [Aboriginal] people that don't have ready access [to environmental governance structures and related] western and scientific information, but we are also gate keeping when [Aboriginal] people put across their ideas to people who are the government and other agencies (NT-G-5).

The coordinator of the Centralian Land Management Association describes her work with pastoralists in similar terms. She explains that *a lot of pastoralists say [to me] 'you are here to de-bofinise this stuff' ...we get information and help people to decipher it* (NT-G-3). For project members from the local community arena living and working in the southern Tanami successful local land management is contingent upon knowledge networks. Some individuals regard the success of their work as partly due to their involvement with government. For example, some pastoralists advise individuals from the government arena on their land management approaches and needs. One pastoralist speaks of sharing localised information with government agencies. He explains that he has given *so much information to so many different people that we sometimes forget who we gave information to* (NT-C-13).

This pastoralist explains that he works closely with government because he has not

got the resources to do the mapping, to set up paddock areas, to monitor phosphorus soil levels [indeed] most of the things we have done on the place have been done through the government agencies (NT-C-13).

Other pastoral managers speak of a lack of such networks. Two individuals speak of having a powerless relationship with the government. One man gets exasperated by what he perceives as the top-down approach of government. He feels that the government *are telling us what to do: we are living it and we are breathing it!* (NT-C-6). Another pastoralist suggests that changes in government approaches have resulted in bad relationships. He explains how he declined a telephone survey with a government representative by saying:

I haven't seen anyone from [the department] I haven't talked to anyone there so... in the old days when they were stocking us, they used to teach you, like they taught you how to spray and that sort of stuff but they aren't doing that anymore (NT-C-11).

This lack of networking is regarded by a researcher from the conservation community as the main issue confounding the successful management of fire in the region. He explains that the development of networks between the specific interest groups is essential for fire management in the region. This is because

we know what to do, the problem is getting everyone concerned happy with how we go about doing what we know we need to do [...we need to] get everyone together and work out the politics, the social aspects of [fire management] (NT-C-2).

Other project members from the conservation community believe that these networks are essential for the successful management of biodiversity in the region. A manager from Birds Australia who is based in Melbourne explains how they value the networks they can develop with individuals from the Northern Territory government and in particular with the traditional owners of Newhaven.

Individuals from the Aboriginal community also speak of the importance of networks between individuals working for government and pastoralists to the strategic management of fire in the region. One Aboriginal man explains that *if we can get all together to talk about it we can get some plan together* (NT-C-8). He also points out that although government agencies have wanted to work with Traditional Owners and Aboriginal communities in the past it has never come to fruition. He believes the breakdown of these potential networks can be traced back to the additional challenges of finding funding for fire management work on Aboriginal land. He explains that *whenever [the government agency] come near to doing [fire management training, they] have a problem with money* (NT-C-8).

In summary, a significant number of individuals interviewed for this research locate the work of individuals from the government and the local community arenas as forming part of their local network. The perceived success of both projects is based upon networks for three reasons. Firstly, networks facilitate two-way knowledge exchange between the government arena and the local community arena. Secondly, networks facilitate the exchange of resources, for example government funding and expertise to members of the local community arena. Thirdly, networks facilitate the development of relationships between project members that are the basis of successful environmental management.

The findings of this research provide evidence for the conception of environmental governance scale as networked rather than as a hierarchy. The success of the two projects is dependant upon these knowledge networks. These networks exemplify how knowledge of best practice environmental management moves from one locale to another. These relationships highlight the value placed upon local knowledge within these networks, either through choice or necessity. They also exemplify how perceiving environmental governance scale as hierarchical can severely limit the potential of place-based environmental management.

7.5 The entangled characteristics of environmental governance

Project members from Victoria and the Northern Territory speak with varying authority about the environmental governance policies related to their environmental management work. The following discussion reveals how all project members perceive environmental governance policy as only as relevant as it is locally appropriate and informed. The findings of this research show that the power and capacity of environmental governance policies to inform and direct local scale environmental management are complexly entangled with the power and capacity of local environmental governance and management practices.

Individuals from the government arena in Victoria locate their work as influenced by national governance policies and strategies more so than international governance conventions and agendas. The bioregional manager acknowledges that international conventions, national

strategies and regional policies share common aims, goals and language but he believes that the regional environmental governance policy interface as exemplified by the Regional Catchment Strategy (discussed in chapter 5, section 5.3) is of most importance for his work. This is because he feels that it is at this interface that the local community can inform policy. He enthuses that

to get really good [environmental governance] outcomes you need to involve the community, provide them with information, help them to interpret that information and acknowledge ... the diversity of opinions and aspirations that exist (VIC-G-6).

He explains that this interaction is essential because *enacting [environmental governance] on the ground has to happen at [the local community] scale (VIC-G-6)*. Taking this argument further, a regional employee of the Victorian Government Department of Sustainability and Environment speaks of the importance of local action and ownership of governance policy. He feels the Regional Catchment Strategy is evidence of the importance of local action and ownership. He describes it as *very appropriate for this region, and it's our document so we are very happy with [it] (VIC-G-2)*.⁵⁹

Considering that no project members from the government arena in Victoria identify the international *Convention on Biological Diversity, 1992* as influencing their work it may not come as a surprise that most project members from the local community arena in Victoria have not heard of the Convention, although many have heard of the Rio Earth Summit. Indeed, many of them are not familiar with the corresponding *National Strategy for Ecologically Sustainable Development, 1992* and the *National Strategy for the Conservation of Australia's Biological Diversity, 1992*. More had heard of the *Environment Protection and Biodiversity Conservation Act, 1999*, the *Flora and Fauna Guarantee Act, 1988* and the related *Victorian Biodiversity Strategy, 1997*. The words of this active landcare member reflect the way most project members from the local community arena feel about these environmental governance policies: *[the policy documents would] look fantastic in a library somewhere (VIC-C-9)*. A member of a local 'Friends of group' explains that: *I would be paralysed [if I tried to keep up with it all] if there was one document to read I would read it (VIC-C-2)*. Project members who have a good knowledge of these policy documents do so because they perceive that an aspect of their environmental management role is to hold government accountable to these documents because *they are often breached (VIC-C-8)* and *they are not policed enough (VIC-C-6)*.

Reflecting the bioregional manager's words reported above, most project members from the local community arena have heard of the *Regional Catchment Strategy, 2003*. Some had been involved in its development. One project member regards this document as instrumental

⁵⁹ There are also criticisms of the community consultation process for the Regional Catchment Strategy. For example the project officer explains that the original draft did not include *the people in the picture (VIC-G-5)*.

to land management in the region. She explains that although *it seems like a lot of paper work at the end of the day it does make a lot of sense* (VIC-C-3). One local farmer and president of his landcare group believes it is essential to be familiar with this document because *you've got to read these things if you want to argue with [government representatives] about things* (VIC-C-9). Another project member reflects that this document is valueless if there is *no government commitment to staff their departments and make sure that it is put into play. Do they have the people on the ground to make sure that that stuff works?* (VIC-C-8).

Project members from the local community arena are aware of environmental governance policies; however, they regard individual personalities and localised networks as more important to their work. This is demonstrated by the fact that some people perceive the Threatened Species project as a vehicle through which to further develop local networks to deliver on-ground project outcomes. The secretary of a local landcare group explains that the Threatened Species project work is neither about regional strategies nor Federal Government policies, rather it is about people. She articulates that

even though we've had this great presentation with the plan that was drawn up by [the Threatened Species project officer] we have to get commitment and if you don't have that kind of commitment and energy that will basically take people along with you, then it won't happen, and that's the same thing on the larger scale (VIC-C-5).

In the Northern Territory, the DKCRC developed from the need for research into sustainable desert livelihoods. This local vision was supported by the Federal Government. The leader of the Desert Fire project explains that

over the past few years [the Federal Government] has identified issues of the draining of rural Australia, people moving to the big cities or the coast [...and] so I guess the Federal Government has been actively trying to address that issue (NT-G-9).

The DKCRC can be regarded as working to fulfil certain aspects of the Federal Government's responsibility to international conventions and agendas. At the same time it is trying to deliver sustainable livelihoods, benefit sharing and protection of intellectual property, especially in relation to traditional ecological knowledge and biodiversity conservation. A manager of the DKCRC explains that this bottom line will assist in facilitating *the involvement of Indigenous people in land management* (NT-G-10)⁶⁰.

⁶⁰ Ironically because of the innovative focus upon creating networks between disciplines for better and more sustainable desert livelihoods, and because the DKCRC is outside the box of the typical Cooperative Research Centre (CRC) industry mould, it may be a one-off experiment; with the Federal Government reverting to more traditional science research structures. As an active Desert Fire project member states *[in] the next round of CRCs that have just gone through... similar socially oriented CRCs didn't get up* (NT-G-7).

In essence the Desert Fire project exemplifies the interface where international and national environmental governance policy intersects with local livelihoods. In fact project success depends upon listening to, engaging with and developing networks with individuals living in the southern Tanami. This project must work hard to overcome institutionalised bias that has neglected the Aboriginal point of view. As this individual who works closely with Aboriginal people explains,

historically Parks and Wildlife and certainly Bushfires Council have written down or have expressed ideas about fire management that has been pretty much exclusively western and from a particularly pastoral point of view, parks and wildlife, certainly the Aboriginal world view has been left out of it or [has been] a token add on (NT-G-5).

The various perspectives and attitudes of individuals living in the southern Tanami further exemplify the interface between environmental governance policy and the lived local realities of land managers. Project members from the pastoral community speak of the Northern Territory *Pastoral Land Act, 1992* as influencing their work and lives. One pastoralist explains how members of the pastoral board police this Act:

if [they] come out and see that the country is deteriorating year by year then they will step in and advise you or reprimand you... if you don't take notice of their recommendations then they will look seriously at the lease (NT-C-13).

Another pastoralist believes that personal relationships with members of the pastoral board are more important to the policing of this Act than the Act itself. He believes that lease renewal depends on *how well, I s'pose you get along with the person... whether he understands the situation or whether he is straight from university and hasn't got a clue (NT-C-11)*. Other Acts highlighted by pastoralists as impacting upon their livelihoods include the recently reviewed Northern Territory *Bushfires Act, 2004*. Some pastoralists were directly involved with the review. The words of the following pastoralist reflect those of an environmental lobbyist in Victoria previously mentioned who explains that environmental governance policies are only as good as the government's commitment to adequately resource them. This pastoralist explains that the *Bushfires Act, 2004* is only as good as the local scale policing of it:

I was one of the people who pushed very hard for the new fire fines in the Territory and all that, but that's only as good as the courts and catching the people doing it and I think that we are extremely weak in that (NT-C-11).

The *Aboriginal Land Rights Act, 1976* and *Native Title Act, 1993* are also cited by pastoralists as influential to their livelihoods. They speak of excised living areas and land claims as influencing their lives and the management of pastoral property. They also speak

about how these Acts, in conjunction with the *Pastoral Land Act, 1992*, allow traditional Aboriginal practices such as the use of fire on pastoral lands.

Individuals from the conservation community are influenced by various Federal and Territory policies. A manager of Birds Australia based in Melbourne speaks in similar terms as the bioregional manager in Victoria about the relevance of environmental governance policies. He explains that they know about the international Convention on Biological Diversity, 1992 but *it is a long way from Newhaven* (NT-C-9). He states that the management plan for Newhaven *implicitly integrates those pieces of legislation [Northern Territory's Pastoral Land Act, 1992; and Mining Act, 1980] but not in an obvious way* (NT-C-9).

Individuals from the Aboriginal community in the southern Tanami are influenced by various Federal and Territory environmental governance policy but, as previously mentioned, professionals from the Central Land Council often work as gatekeepers for Indigenous communities to assist them to navigate these environmental governance policies. Some Aboriginal people have been involved in the integrated natural resource management planning process (described in chapter 5, section 5.2). However, national and international strategies are too far removed from life in the southern Tanami to receive much direct attention by Aboriginal land managers. This is not to say that if they were familiar with them they would not be interested in them. Attitudes to the *Bushfires Act, 2004*, exemplify the relevance, cultural appropriateness and practicalities of such governance policies. An Aboriginal woman, who was not familiar with the *Bushfires Act, 2004* before our interview, speaks about the important role of gatekeepers from the Central Land Council. She explains that *some people would have [heard of the Bushfires Act, 2004] some wouldn't have. Depends if land council has been telling people about it or not* (NT-C-15). She also points out how this Act is probably inappropriate to the lifestyles and relationship to country of Aboriginal people living in the southern Tanami. She describes how difficult it would be for Aboriginal land managers to get a permit from the Bushfires Council each time they wished to burn their country. If she were to ring the Bushfires Council to get a permit the conversation would be as follows:

she would say: *oh yes, send it out to us*

to which individuals working with the Northern Territory Bushfires Council would respond: *ok, where are you now?* (NT-C-15).

She explains this in the context of a very large expanse of country with few phones, even fewer faxes to facilitate the permit process and high mobility of people travelling through.

In summary, it is clear that many local community arena project members from Victoria and the Northern Territory are not familiar with formal environmental governance policies. Where they are, there is a very strong consensus from individuals in both the government arena and the local community arena that these environmental governance policies are only as

important as they are locally appropriate and informed. Project members from the government arena in Victoria speak about the importance of local ownership of policy documents to satisfy local environmental management aspirations and approaches. Project members from the government arena in the Northern Territory recognise that project success depends upon developing successful networks with interest groups living and working in the southern Tanami.

The findings from this research show that local spaces of environmental governance are complexly entangled. As described in chapter 5 (section 5.3), the two project case studies are embedded within specific environmental governance policy landscapes. Both projects are funded by programs of this environmental governance policy landscape and so without this funding the projects would not exist in their current form or would cease to exist. However, environmental governance policies and programs are dependant upon the networks of individuals working to manage their local environment. Both the Threatened Species project and the Desert Fire project evolved as a result of individuals from the government arena navigating these policies and programs. For example project members from the government arena in Victoria worked to create opportunities within this landscape, which resulted in the innovative whole of landscape threatened species project approach. Similarly the DKCRC evolved out of a group of individuals who pushed the boundaries of these policy landscapes, to fund locally situated and appropriate environmental management practices.

7.6 Conclusion

This chapter investigated how individuals working with the Victorian and Northern Territory local environmental management and community development projects perceive environmental governance. The findings of this research demonstrate a complex and entangled conception of environmental governance that suggests environmental governance scale is a relational social construct rather than an asocial hierarchy. Firstly, the findings show that environmental governance is place-based. Secondly, they demonstrate that environmental governance consists of locally situated environmental management actions that have ramifications for regional, national and global environments. Knowledge generated from these actions has implications for regional, national and global environmental governance and management approaches. Thirdly, the success of locally situated environmental management depends upon two-way knowledge exchange that occurs through networks rather than hierarchical governance scale. These networks link locally situated environmental management places to extra-local environmental management places. These places constitute the intersection of diverse and various knowledge networks, the two case study projects exemplifying such places. Fourthly, these knowledge networks shed light on the complexly entangled intersection between place-based environmental management and big picture environmental governance policy. In essence, the environmental management and community development projects in Victoria and the Northern Territory exemplify the point of intersection between environmental

governance policy and the lived local realities of place-based environmental management. The entangled connection between the rhetoric of environmental governance policy with the lived local realities of individuals working in environmental management and community development projects highlights the fact that it is sometimes difficult to conceive where environmental governance ends and environmental management begins.

Spaces of Environmental Management

Chapter 8



Landcare breakfast workshop, north central Victoria

Photo: Kirsten Maclean 2004

Chapter 8: Spaces of environmental management

8.1 Chapter aim and overview

The aim of this chapter is to further address the first question of this research, namely: how do knowledges of best practice environmental management move across and between international, national and local scales of environmental governance and community based environmental management? As established in chapter 7 (section 7.1), knowledges of best practice environmental management move through local spaces of environmental governance and community based environmental management. This chapter considers what constitutes participatory natural resource management in relation to the two local environmental management and community development projects in Victoria and the Northern Territory. I demonstrate that a sophisticated understanding of the tensions between the rhetoric of participatory natural resource management and the local realities of environmental management is integral to equitable and sustained environmental governance and management in Australia. This is because, as the findings of this research illuminate, project success is synonymous with community involvement. As such knowledge about best practice environmental management move across and between the many arenas of participation at this interface and are influenced by the varieties of environmental management practised at each project location.

8.2 Project success is synonymous with community involvement

The discourse of participation is central to ecologically sustainable development (ESD) (discussed in chapter 3) but debates continue about what it actually entails. The multiple definitions and expectations of participation range from passive participation to self-mobilisation (Pretty, 1995), participation as a means or as an ends to the goals of ESD. In Australia Ross et al. (2002) speak of participation ranging from community-based management to agency-based management. Other researchers (Guijt, 1996 and Cooke and Kothari, 2001) speak of the tyranny of participation. The first analysis of this chapter demonstrates that the success of environmental management and community development projects is synonymous with community involvement. The following discussion illuminates how project members from the government arena perceive community involvement.

In the Victoria case study, project members from the government arena perceive community involvement as important for project success for various reasons. Firstly, project members from the local community arena carry out valuable work that otherwise would not be done by government agencies because they do not have the time or the resources. As an employee of Parks Victoria explains *there are a few parts to community [involvement]: it's*

ownership, it's understanding and it's also then turning round to say [their work saves the Government money] (VIC-G-9). Secondly, as a project member working for the Department of Sustainability and Environment expresses, the role that project members from the local community arena play in locating, recording and protecting threatened species is integral to a lot of species survival (VIC-G-2). Thirdly, as the following words of a bioregional manager from the Catchment Management Authority illustrate, the success of local environmental management projects is often dependant upon local community groups using environmental governance policies and programs to meet their own requirements, rather than being dictated to by these policies and programs. He explains that

historically the [community groups] that are really successful were the ones that have stuff happening at the local level and understood the planning landscape or the political landscape so they could make the system work for them instead of just being at the mercy of the system (VIC-G-6).

Project members from the government arena in the Northern Territory articulate that the future of the Desert Fire project is dependant upon the interest expressed by individuals from the community arena who are living in the southern Tanami. The perception that project success is contingent on community involvement is demonstrated by the ethos of the Desert Knowledge Cooperative Research Centre (DKCRC) that dictates projects must be practice driven rather than research driven. As a manager of the DKCRC articulates, the community have to want it... *[because at the end of the day] we don't want to see the money used to do research that isn't used (NT-G-10).* Project members also speak of the fact that the management of fire in the region is based upon community involvement. As this project member who is well versed in the scientific method articulates, there is a growing recognition that there are *a lot more social aspects to fire management than we have probably paid a lot of attention to in the past... we can't solve this simply by satellites and mapping fire. That is not what it is about (NT-G-7).*

Community involvement is integral to the management of fire in the region for the following three reasons. The first reason is based upon the fact that the land in the region is either freehold land or held under pastoral lease. Therefore, as this project member who works for the Central Land Council clearly articulates *nothing operational can happen without Traditional Owners being involved (NT-G-5).* The same holds for land managed by pastoral and conservation land managers. The second reason that is closely related to the first is that, as this project member from the government arena explains, *stakeholder consultation [is fundamental ...] if you don't have those people on side, irrespective of their backgrounds, you are doomed to fail (NT-G-4).* Finally, as the Desert Fire project leader makes clear, the future of the project that includes the development and implementation of a fire management strategy *depends on the stakeholders [in the southern Tanami] and their perceptions [of the strategy] (NT-G-9).*

The findings of this analysis clearly reveal the valuable, powerful and integral role that individuals from the local community arena play in managing local environments in Australia. In the context of the two case study projects, it becomes clear that we need to question who exactly is participating within the environmental management programs that result from Federal, State and Territory environmental governance policy? This question is explored in the following analysis. The second analysis of this chapter demonstrates that there are multiple arenas of participation active at any local environmental management project interface. The implications of these findings are twofold and are elucidated in detail below.

8.3 Varieties of participation

As discussed in chapter 7 (section 7.5) project members working from within the government arena do so within specific environmental governance policy and programs. Some project members perceive their work as connected to international conventions but most locate their work within regional and local arenas. Some of these project members have been involved in the development of regional plans such as the *Regional Catchment Strategies* and *Regional Investment Strategies* in Victoria and the *integrated Natural Resource Management Plan* and the *Regional Investment Strategy* in the Northern Territory.

Although the Threatened Species project is located in north central Victoria and administered through the Catchment Management Authority it is primarily funded through the Natural Heritage Trust (discussed in chapter 1, section 1.3 and chapter 5, section 5.4). The words of the project officer illuminate how her work is limited by the agenda of this policy landscape. She speaks of the potential of her role as limited by government funding structures: *I had 11 landcare groups when I first started on 20 hours a week to work with, it was obvious to me, I had to let go* (VIC-G-5). Another local project officer speaks of the reduced longevity of on-ground works because the money made available from the Natural Heritage Trust is

to fund a slightly dodgy fence... that reflects back on the project, on the Catchment Management Authority and ultimately on the Federal Government as well because the money has not been provided to do the job as well as it could be (VIC-G-10).

Although the local environmental management work is determined by the previously mentioned government agendas it is dictated to by the community. The project officer explains that

it is not always easy to follow the strategic line when you are working with community groups as you really have to work with where they are at and what their needs are and that can sometimes take you away from the big picture (VIC-G-5).

The local landcare coordinator exemplifies how project members from the government arena are working for the government but also they are working for the community. He locates his work within the Natural Heritage Trust agenda, as physically housed in the local government office but his role is guided by a community elected steering committee. He perceives his role as assisting the community to voice their dissatisfaction with government priority setting. Also he sees himself as a resource broker for the community, assisting them to

work their way through the maze of agencies and to assist community volunteer groups to increase their capacity to operate [within the bureaucracy... thus empowering] people to take control of the natural resource (VIC-G-4).

All individuals from the government arena are themselves participating within specific environmental governance policy and program landscapes. At the same time, they believe their work is dictated to according to *where the community is at* (VIC-G-5) and perceive the focus of their work is to empower the local community in the ways presented above. These perceptions raise questions about who is participating with whom.

The words of an individual who has been working with local community groups in the management of threatened species habitat for a number of years clearly articulate how the discourse of community participation within Federal Government environmental management programs do not reflect reality. She argues that

the whole issue of community involvement needs to be looked at because... it's a vital ingredient but who is it and what does 'the community' mean?...when funding programs talk about it they mean Joe Bloggs on the ground in the country...they are not including the big companies, the statutory authorities, themselves. They are saying here is us and there is the community... [this approach is] inherently flawed (VIC-G-8).

The voices shared above illuminate the complexities of the discourse of participation. This is because they expose the reality that the local community is not the only interest group who is participating. Project members from the government arena in Victoria and the Northern Territory are themselves participating within Federal, State and Territory environmental governance landscapes. The implications of this investigation show that, just as it is difficult to perceive when environmental governance ends and environmental management begins (see chapter 7, section 7.6), it is also difficult to perceive where the role of project members as environmental governors ends and their role as participants within those same governance landscapes begins. A further complexity of this discourse becomes apparent when we consider the genesis of each of the two case study projects.

In the same way that project success is contingent on community involvement, so too is it contingent on project members from the government arena participating within the environmental governance landscape to create new and innovative approaches to environmental

management. This is demonstrated by the fact that project members from the government arena in Victoria and the Northern Territory have been instrumental in tailoring the concepts of the two projects to capture funding opportunities as they arose. For example, the innovative whole-of-community landscape scale Threatened Species project was engineered by three individuals working in state and regional government arenas in Victoria. Once conceived, the project was introduced to several community groups for their potential involvement. The second example is that of the collaborative Desert Fire project. This project was further developed within the innovative DKCRC by a group of eclectic individuals based in Alice Springs and working as representatives for on-ground interest groups. The project was then taken to the specific interest groups to gauge its ongoing viability.

At each environmental governance and management interface, these individuals were working from within governance structures to create new environmental governance and management approaches. According to the typology of participation distilled by Pretty (1995) (presented in chapter 3, Table 3-1) these individuals could be classed as self-mobilising. Thus, individuals who are employed by institutions set up to further the principles of ESD are themselves participating. The findings of this analysis demonstrate the many and complex varieties of participation active within the government arena of the two project case studies. Further complexities of the discourse of participation become apparent from an analysis of what it means to participate from the local community perspective. The following analysis reveals that there are also varieties of participation active within the local community arena of the two project case studies.

Within the narrative of ESD, individuals from the community arena are encouraged to participate within given governance policies and programs in working towards localised ESD. This discourse undervalues the knowledge and work of individuals from the local community. Equally, it perpetuates a knowledge hierarchy that places the project leaders and administrators at the top. Evidence from both case studies clearly contradicts this discourse. In Victoria, project members from the local community arena use environmental governance policies and programs to assist them to conduct on-ground works that they have identified as important. This attitude is demonstrated in three ways. Firstly, one project member points out the importance of developing capacity and experience to engage with the environmental governance landscape. He explains that *you can have all these wonderful ideas but until you actually are able to use the system, the bureaucracy and the funds that are available, they will always stay nice ideas* (VIC-C-11). Secondly, another project member from the local community arena reveals how the involvement of his group in the Threatened Species project is more about leveraging funding for whole of park conservation. He points out that *the Eltham Copper Butterfly project is simply a specific focus... a lever for us to get a) interest b) participation and c) resources to look after the park generally* (VIC-C-8). Finally, another project member builds

upon this point by highlighting how the Threatened Species project is a means to an already determined end. He explains that, for his community group, the Threatened Species project is

one project of about four or five we have this year, apart from the other activities that are not grant driven projects so we are very busy... as long as we can see good things happening, coming out of the projects, that's all we want to achieve (VIC-C-2).

Project members from the local community arena articulate that they are engaging with the Threatened Species project on their own terms. For example, one project member recalls how the project officer approached her landcare group for support. She recollects that *the types of things that [the project officer] was wanting some support with [fitted in with] the types of things we were doing (VIC-C-7)*. Another project member speaks of the interdependent relationship between environmental governance and environmental management. He explains that in order for the Catchment Management Authority to gain funding for the project, they *needed [the community group] to apply (VIC-C-10)*.

The comments of another project member further articulate the complex notion of community participation. She speaks of the proactive role that she perceives her landcare group have in relation to the wider community. By working to convince others to participate in the Threatened Species project they are taking responsibility for project success. This is because it is in this role that *the responsibility comes back to the landcare group: to be able to encourage and convince people it is worthwhile saving or protecting these things (VIC-C-5)*. The findings of this analysis clearly articulate the many varieties of participation active within the local community arena of the Threatened Species project interface.

Within the local community arena of the Desert Fire project in the Northern Territory the local community responses to the project are still developing. This is because the project is still at a scoping stage. As such individuals are not able to reflect on project approaches to date; however, analysing the value they place on the aims of the Desert Fire project, and their potential role in this, illuminate similar perceptions about what it means to them to be involved in such a project.

Although individuals from the pastoral and Aboriginal communities in the southern Tanami have various attitudes about fire, it is interesting that their attitudes about what it would mean to be involved with the project are fairly similar. Comments from a variety of people suggest that involvement with the project will be on their terms. The following words of a pastoralist from the region clearly articulate this attitude. He explains that you can't *get people together who don't want to come together (NT-C-6)*. Consultations with the Aboriginal communities that fall within the Desert Fire case study area are still progressing. Aboriginal land managers are a vital part of the process and the potential project outcomes. Whether or not individuals are interested or willing to speak about fire on country is embedded within the wider context of living in remote Australia. In any project meetings and country visits with local

traditional owners and members of the community there is no sense that any traditional owners and community residents are participating. If anyone is participating, it is the project members from the government arena. This is because at any time they are dependant upon the wilful involvement of traditional owners and Aboriginal people living in the southern Tanami. Consultations depend on how much people are willing to, or wanting to share their time to work with fire on country. Indeed as a cultural advisor who is related to families in the communities by virtue of marriage states *some people like to sit around and impress white fellas with what they know. But others get sick and tired of it.* In relation to his own consultation work related to education, he might ask *'are you interested in talking about this'* and they reply *'no' so that's that* (NT-C-12).

Potential project members from the pastoral, the conservation and the Aboriginal communities speak about the importance of working together to manage fire in the region. None of these groups speak about participating within government led projects. The findings of this research demonstrate that working together has a different meaning according to each interest group. Individuals from the pastoral community have differing views about how the project will facilitate working relationships. The words of this pastoralist indicate that he is fairly sceptical about the approach of the project so far. He believes that

anything is possible, if you chuck enough resources at it, people will learn more about fire, raise awareness, management outcomes... there is only one certainty, and that is the scientific community is quite excited about it, they will get papers out of it, but a lot of good practical outcomes? I don't know (NT-C-7).

Another pastoralist speaks of the fundamental importance of working together for the successful management of fire in the region. He articulates that the project must get *as many stakeholders as possible involved, working together with fire. As it is now everybody is on their own, they go out on their own, there is no real communication between people* (NT-C-13).

Individuals from the conservation community speak of good relationships with traditional owners and neighbouring pastoral managers as essential to their work. Although a manager from Birds Australia who is based in Melbourne had not heard of the project, he notes that *the Aboriginal aspect to fire management in that region is just so important... we've really got to communicate and it's not easy, if that project facilitated that it would be brilliant* (NT-C-9). The then manager of Newhaven states that *if [land managers] can't get on with the Aboriginals, they will hit a brick wall* (NT-C-4). An ecologist speaks of the importance for equitable involvement of all interest groups in the Desert Fire project *[...we need] to get everyone together and work out the politics, the social aspects of it* (NT-C-2).

When asked what it would mean to manage fire on country across different interest groups in the southern Tanami, two Aboriginal land managers explain that *[we] can all work together and look after the country and work better to look after country* (NT-C-3) and,

there is only one thing missing: understanding, we need to get together... got to make people understand. That would be the first time that that has happened [meeting to speak about fire]. That would be good (NT-C-8).

The findings of this analysis demonstrate that project members from the community arena in Victoria are self-mobilising within given environmental governance landscapes to achieve self-determined outcomes (see Pretty, 1995). The findings also demonstrate that in the Northern Territory it is the project members from the government arena who must participate with pastoral and Aboriginal interest groups. Indeed, they rely upon the wilful involvement of the on-ground interest groups for project success. To them, this success includes the development and implementation of a fire management strategy in the region. For pastoral, conservation and Aboriginal interest groups, success depends upon working with each other to better manage country, to understand other ways of managing fire, to overcome any past misunderstandings. However, as is explored in section 8.4, being able to work together to manage fire in remote Australia requires more than choosing to do so and using the environmental governance landscape to self mobilise as is the case in Victoria.

The implications of these findings are twofold. Firstly, they challenge the notion that environmental management is about community participation in pre-determined environmental governance initiatives. This is because there is no clear delineation about who is participating with whom. The entangled social landscape of what it means to participate in environmental management and community development projects shows that there are multiple arenas of participation. Project members from the government arena operate within a given environmental governance landscape but they also are directed by and dependant upon the wilful involvement of project members from the local community arena. Individuals and project members from the local community arena in Victoria self-mobilise within the environmental governance landscape to achieve desired on-ground project outcomes. While individuals from the local community arena in the Northern Territory only engage in project work if it is going to benefit their desired outcomes, many of them highlight the fact that they are dependant upon building and developing relationships with other interest groups to better manage fire in the region. The wider implication of this finding is that individuals and project members from the local community arena in Victoria and the Northern Territory are engaged in and making decisions about best practice environmental management rather than merely participating in environmental management projects where project leaders, scientists and administrators are making the decisions on their behalf.

The second implication further illuminates the complexity of environmental management and community development projects across Australia. The experiences of individuals and project members from the local community arena in the Northern Territory as compared with those in Victoria suggest that, just as there are multiple arenas of participation, there are also varieties of participation. This is because the entangled and complex social livelihood issues

faced by pastoralists, conservation land managers and Aboriginal communities living in the southern Tanami region of the Northern Territory (discussed in chapter 6, section 6.4) dictate that these individuals are not able to self-mobilise. Indeed, although project members from the government arena are dependant upon their wilful involvement with the project, individuals from the local community arena are themselves dependant upon gatekeepers, such as land managers working for the Central Land Council or the Centralian Land Management Association, to navigate given environmental governance landscapes on their behalf. The genesis and evolution of the Desert Fire project is an example of this navigation.

The varieties of participation that are demonstrated by the findings of this research further exemplify how environmental management and community development projects revolve around varieties of environmental management in Australia. This is because, as demonstrated above, environmental management and community participation are complexly entwined. Furthermore, individuals from the local community arena are involved or choose to be involved in environmental management and community development projects for diverse reasons. The implications of these varieties of environmental management are investigated in the following discussion.

8.4 Varieties of environmental management

Chapter 3 (section 3.8) touches on the complex issues surrounding the varieties of environmentalism across the developing and developed worlds. This is a pertinent issue in Australia where, as discussed in chapter 6 (section 6.4), certain groups of citizens experience conditions not dissimilar to those in developing nations. For example, many Indigenous Australians are confronted with livelihood issues relating to poverty, social and environmental injustice and inequality. It is certainly pertinent and interesting to consider these issues when contrasting the two case studies of this research thesis and considering a concluding remark made above that working with the Desert Fire project requires more for some interest groups than choosing to self-mobilise. The final analysis of this chapter demonstrates the varieties of environmentalisms or the varieties of environmental management at the local environmental management and community development project interface in Australia. The findings illuminate why individuals from the local community arena in Victoria and the Northern Territory choose to be involved in environmental management and community development projects. These findings further the discussion begun in chapter 6 (section 6.4) relating to the diversity of social livelihood issues faced by these different interest groups. The implications are discussed below.

As highlighted in chapter 7 (section 7.3), project members from the local community arena in Victoria engage with the environmental management and community development project for diverse reasons. All choose to engage in volunteer work. Some project members are project drivers others are satisfied with simply doing the hard physical on-ground works. Some regard

their work as community advocacy others choose to remain apolitical naturalists. Political or apolitical, all are making a political choice to negotiate environmental governance landscapes to meet self-defined outcomes. Project success equates with the protection and enhancement of threatened species habitat. To many project members this success is about tangible project outcomes.

One project member from the local community arena explains that overall project success is about longevity of species. He believes he would know if the project had been successful if *they come back in 100 years and see that [the threatened species on roadsides] are still there!* (VIC-C-10). Species longevity depends upon several tangible factors including knowledge. As this project member explains: *we must learn from [the scientists] how to better recognise areas that are suitable habitat* (VIC-C-1); community education and awareness raising, as this project members indicates: *there would be a better awareness of the park itself and the existence and rarity of the butterfly* (VIC-C-2) and planning for the future. This project members elucidates further:

it's going to have to be ongoing, it can't just keep being a 12 month thing and not knowing what kind of on-ground work will be going for one year to the next, and a more broad action plan on what needs to be done in the park, just to give it a long term goal (VIC-C-3).

Intangible indicators of success include the strengthening of community networks: *it's getting a few extra people wanting to participate and do the tree planting and whatever they have to do, getting more and more landholders involved* (VIC-C-9). Also, as one project member explains, the existence of the project itself is an indicator of success because *it gives a focus for all the interest groups and government departments to work together to achieve something in the community, it's that networking [that is important]* (VIC-C-7).

In Victoria, individuals from the local community are already empowered, they consider themselves as working in networks with individuals from government agencies. It is not important who administers the project monies. What is important is achieving on-ground outcomes such as linking up areas of bushland for habitat of the threatened bush-tailed phascogale; learning how to survey and locate habitat of the Eltham Copper Butterfly for future protection; locating and recording threatened plant species to develop better management outcomes into the future.

As highlighted in chapter 7 (section 7.3), project members from the local community arena in the Northern Territory may engage with the environmental management and community development project for diverse reasons. They all do so as a means of improving their chosen approaches to localised land management. Additionally, their choice to be involved with the Desert Fire project is closely connected to social, cultural and economic survival. This is highlighted by the fact that these individuals do not volunteer their time to work with the project rather they are confronted with these livelihood issues daily. Although one pastoralist

highlights the fact that the development of a fire management strategy in the southern Tanami means stopping fires to protect property because *if you stop people lighting fires you save pastoral property* (NT-C-11). A significant number of individuals from the pastoral, conservation and Aboriginal communities identify social relationships and communication as central to improved management of fire in the region. For example, a pastoralist who uses fire as a management tool on this land explains that he would choose to be involved with the Desert Fire project because it would create working relationships between different interest groups to *work together with fire... Aboriginal, pastoralists, because of the majority of the land up there is owned by Aboriginal people they have got to be fair stakeholders in it* (NT-C-13).

Land managers from Birds Australia explain that the Desert Fire project would facilitate stronger relationships with the traditional owners of Newhaven. These relationships would be grounded in knowledge sharing about best practice fire management. Knowledge sharing would potentially evolve from conservation land managers working with traditional owners to manage Newhaven. Ultimately, as a previous manager of Birds Australia articulates, the project would aid clear and mutual communication between these interest groups.

I think it's us understanding their attitudes towards it and for them to understand our reaction towards it. It's as much about understanding where each other is coming from...we say we have got a big fuel load this year it's been a very big year to keep the fires down and this sort of stuff and there is a lot of nodding and we agree we understand, but we don't really at the end of it understand where they are coming from... fire knows no property boundaries. If people act in a coordinated fashion rather than trying to do it one by one I think [the project] would be a good thing (NT-C-9).

Taking this further, individuals from the Aboriginal communities in the region would choose to be involved with the Desert Fire project for tangible and intangible reasons that are not easily separated. It would mean working with other interest groups to better manage country but it could potentially bring other benefits to the community. The project could be about community development and social justice: empowering and employing people to work on their country thus affording greater access to land that continues to be held under pastoral lease. It could provide further funding to develop the Indigenous ranger programs. This would assist older people to share knowledge about their country with young people, an act that can often only be carried out in situ. This in turn would strengthen the desire to learn other ways of managing the country. The words of an employee of the Central Land Council articulate how the Desert Fire project could facilitate these tangible and intangible project outcomes. He explains that traditional owners

are beginning to worry a bit about fire management on country... the main thing is they want recognition for their use and ownership of the land they want to be recognised as "rangers", they like that term, they want to wear uniforms they want to have a vehicle, they want jobs, they want training they

want money in their pocket they want useful employment on their country
(NT-G-6).

The potential tangible outcomes of the Desert Fire project as it stands include tapping into wider governance funding structures for monies to further develop ranger programs further, conducting research into fire as a management tool on pastoral lands, assisting pastoralist and conservation land managers to put their fire management plans into action and opening up the channels for communication about fire into the future. These tangible outcomes are certainly necessary for the management of fire but they only address a certain aspect of what it means to work towards sustainable livelihoods in the southern Tanami. Bigger picture strategies for working towards sustainable livelihoods also address intangible social processes. In the context of the Desert Fire project this relates to processes of engaging interest groups to overcome conflict relating to fire. As one individual who works closely with Aboriginal people in the region articulates

there isn't a plan that is going to make any difference but there is a process and it would be one that is absolutely inclusive [...a] participatory process and in that respect it needs to be one that concentrates its resources in bringing people together... get them to talk because the single biggest thing is to get people to understand each other's perspectives and getting people to define their perspectives in a context for an enormous amount of education and extension... there is always room for improvement and a long process of defining how you use fire is as important (NT-G-6).

The final analysis of this chapter demonstrates the varieties of environmentalism or varieties of environmental management approaches that typify the environmental management and community development project interface in Australia. In Victoria, project members from the local community arena place tangible project outcomes over intangible project outcomes. This could be because they are already empowered to act. In the Northern Territory, it is clear that intangible project processes are regarded as crucial for the tangible project outcomes by a significant number of potential project members from the local community arena in the southern Tanami. This is indicative of the different environmental management and community development issues faced by individuals in the Northern Territory, as compared with those faced by project members from the local community arena in Victoria.

The implications of this analysis show that environmental management at the local community interface is about tangible project outcomes and intangible project process outcomes. When projects are the result of empowered groups of individuals working towards common environmental management goals, it is often easy to separate tangible and intangible outcomes. Such is the situation in the Victorian case study. But when projects are the result of gatekeepers navigating environmental governance landscapes on behalf of others, as is the circumstance in the Northern Territory case study, tangible and intangible outcomes are often closely entwined and inter-dependant. This results from the fact that the social livelihood issues

faced by these individuals are complex. Indeed conflicts that arise from these social livelihood issues, the causes and ways to approach these causes, may not be understood or identified until the project has begun.

This analysis furthers the discussion started in chapter 3 (section 3.4) relating to government agencies or groups making decisions about environmental management and community development projects on behalf of needy others. In the instance of the Northern Territory case study where individuals from the local community arena are not able to navigate environmental governance landscapes for the various social livelihood reasons touched upon in chapters 6 and 7 (sections 6.4 and 7.5), a project such as the Desert Fire project would not evolve without the assistance of gatekeepers. The reality is, unlike in Victoria where project members from the local community volunteer their time, the Desert Fire project revolves around money. Any work in remote Australia must be well resourced because of the vast distances to travel and the resources necessary to cover running costs. On-ground interest groups do not have the resources or the knowledge to initiate such a project. Problems relating to power, knowledge, social and environment justice arise (discussed in chapter 3, section 3.6) when decisions are made by gatekeepers on behalf of the needy others. It is at this interface that issues of inequality surface. It is for this reason (as explored further in chapters 9 and 10) that I argue any environmental management and community development project is responsible for identifying, exploring, critiquing and acting out the tangible project outcomes and intangible project processes so necessary for the decisions about best practice environmental management at the local interface in Australia.

8.5 Conclusion

This chapter investigated what constitutes participatory natural resource management at the two environmental management and community development project interfaces. The findings of this research demonstrate that participation is an entangled and complex notion because at any one time it is unclear exactly who is participating with whom. What is clear is that project success is synonymous with community involvement; there are multiple arenas of participation; and there are many varieties of participation active in any environmental management and community development project. In addition the varieties of environmentalism or the varieties of environmental management dictate that project success is not only about tangible project outcomes but also intangible process. For these projects to deliver equitable and sustainable ESD they must identify, explore, critique and act upon these tangible and intangible outcomes. As such knowledges of best practice environmental management also include knowledge of best practice social process and these knowledges can only be developed in situ. The evolution of these projects can work to inform best practice environmental management and community development projects in other locales around Australia.

Part 5: Knowledge networks across the landscape

Politics of Knowledge

Chapter 9



Discussing the management of Eltham Copper
Butterfly habitat, north central Victoria

Photo: Kirsten Maclean 2004

Chapter 9: Politics of knowledge

9.1 Chapter aim and overview

The aim of this chapter is to address the second question of this research, namely: what is the role of community stakeholder groups and their knowledge in the networks surrounding environmental management and community development in Australia? The findings of chapter 8 demonstrate that project success is synonymous with community involvement. The findings of this chapter further illuminate that project success of the environmental management and community development projects in Victoria and the Northern Territory is dependant upon local community knowledge. This is because local community knowledge is powerful. As demonstrated in this chapter it is powerful for three main reasons. It is powerful because: it is tied to place; it is not just about place but can and does encompass the diverse knowledge cultures identified as necessary for western decision making systems (identified by Brown, 2001a); and it informs perceptions of other knowledge cultures. Therefore, local community knowledge determines whether or not individuals from the local community arena will engage in project work with individuals from other interest groups.

9.2 The power of place-based knowledge

The research findings reported in chapters 7 and 8 demonstrate that knowledge of best practice environmental management moves across and between local spaces of environmental governance and environmental management. The implications of these findings show that the environmental management decisions made by project members from the local community arena in Victoria and the Northern Territory can influence environmental governance and management approaches at various governance scales. As such local community knowledge is powerful. The first analysis of this chapter considers how the place-based characteristics of local community knowledge influence project success.

As discussed in chapter 8 (section 8.4) the success of the Threatened Species project in Victoria would be indicated by the on-ground protection and enhancement of threatened species habitat in the region into the future. Many project members from the government arena in Victoria speak about the important role of place-based community knowledge in meeting the aims of the project. The characteristics of local community knowledge are juxtaposed with what is described as the nature of government. Where government roles change, employees are promoted or move offices, the place-based characteristics of local community knowledge means that it remains tied to place. An employee of the Victorian Government's Department of Sustainability and Environment explains that the community provides *project consistency*, *their project may have been through two of my predecessors but still they are consistently doing the same work and getting really good results* (VIC-G-1). The implication of this is that, as an

employee of Parks Victoria explains, project members from the local community arena often have *more information than [the government], so if we don't work with them we don't get that information* (VIC-G-9).

Although place-based knowledge is clearly regarded as important for project success by some project members from the government arena, they also acknowledge that by definition it is limited. For example, some individuals from local communities may not be well versed in whole of landscape management approaches. In this way local environmental management approaches may be to the detriment of the wider landscape. A woman who has been involved with the Threatened Species Network for many years explains in relation to community tree planting events,

it does make [the community] feel good, but it makes you feel even better if you understand why [you are planting trees....For example there are] huge numbers of trees planted [every year] by perfectly well intentioned groups, in grass lands (VIC-G-8).

The implications of decisions based exclusively upon place-based knowledge can be very powerful in further compounding environmental management issues. However, as the words and practices of project members from the local community arena in Victoria reveal, place-based knowledge generation is characterised by self-reflection, discussion and some amounts of local experimentation.

People working in the local community arena in Victoria are anxious to develop their place-based knowledge. As a project member who is secretary of her landcare group enthuses: *the more you can learn from other landcare groups the better* (VIC-C-5). Another project member speaks about the important role that scientific experts play in informing local management decisions and actions. Her words reflect upon the value of learning from these so-called experts but also how the limitations of place-based knowledge illuminate the limitations of other knowledge cultures. She explains that

we are certainly interested in learning ... knowledge like that gives you power to protect the park [...but] because there are a lot of experts coming in, unless we are trained [to develop] a knowledge base in [the local township], once the project is finished, those experts disappear (VIC-C-1).

The words of the following project member clearly demonstrate the important role that different knowledge cultures play in the ongoing protection of threatened species habitat in Victoria. He explains that

I'm willing to yield to the scientists on what needs to happen in regards to [threatened species research] and to participate in doing some work according to their [scientific] direction [...but] we were able to tell them about the potential threats [to the habitat of the Eltham Copper Butterfly...]

they needed to know what was going on here, so we had something to offer them (VIC-C-2).

The experiences of project members working with the Threatened Species project in Victoria demonstrate firstly that the place-based knowledge of project members from the local community arena is vital for the protection and enhancement of threatened species habitat in the region. Secondly, place-based knowledge taken separately is not enough to meet the aims of the project. Thirdly, the limitations of place-based knowledge illuminate the limitations of other knowledge cultures. For example, it would seem that scientists limit the success of their own work to protect threatened species in the region by failing to develop lasting relationships with members of the local community. These members of the local community could easily monitor the species precisely because they live locally and thus can feed valuable information back to the scientists. In addition, if scientists could further protect threatened species by teaching local people specific research and monitoring methods, according to the situation, and thus empowering local groups to act as the situation dictates. The final quote above demonstrates how place-based knowledge further informed scientists of potential threats to habitat that extended beyond the scope of scientific knowledge of species ecology.

As has been discussed throughout this thesis thus far, both the impetus of the Desert Knowledge Cooperative Research Centre (DKCRC) and the reality that land in the region is managed by pastoral, conservation and Aboriginal interest groups dictate that local community knowledge is integral to the success of the Desert Fire project. As expressed in chapter 8 (section 8.4) the ramifications of this success would be indicative of the ongoing development of sustainable livelihoods in the region and working to overcome conflicts relating to different land management approaches to fire. The remainder of this section demonstrates how the characteristics and power of place-based knowledge influence the successful management of fire in the region.

Individuals from the pastoral community speak of their knowledge as tied to place. A sophisticated knowledge of place, of past and present seasons and of past fire histories are identified by pastoralists as paramount to the management of fire in the region. A pastoralist explains the importance of this knowledge that is intimately tied to place-based knowledge generated in situ. He explains that *[fire management] is a seasonal thing and everybody operates different... people have different ideas and I think that every place has a different balance of feed (NT-C-5)*. The choice to use or not use fire as a management tool is equally about knowledge of place and place-based experience of fire. These various knowledges and experiences are demonstrated by the fact that one pastoralist in the region would prefer to exclude fire from his lease; another uses it as the opportunity arises; another uses it as a general management tool and burns as often as he can, depending upon the weather experienced by his lease.

As touched upon in chapter 6 (section 6.4) Aboriginal knowledge of fire is closely connected to traditional ownership that by definition is tied to place. The words of an employee of the Central Land Council who works closely with Aboriginal interest groups explain *there are people to speak for that country... who are the holders of such [fire] knowledge... and are able to talk about their country in relation to fire management of the country* (NT-G-5).

This place-based knowledge is highly valued by managers of the Newhaven reserve. It is considered very important for the sustainable management of fire on the reserve. The words of a manager of Birds Australia based in Melbourne demonstrate how they value this place-based knowledge equally to scientific approaches to fire management. He explains that

the Aboriginal aspect to fire management in that region is just so important... we as white fellas can sit here and talk as much as we like about our western science but cultural traditional knowledge [of fire is just so important] (NT-C-9).

As demonstrated above in relation to the place-based knowledge held by project members from the local community arena in Victoria, place-based knowledge of individuals from the local community arena in the Northern Territory is also limited by virtue of being tied to place. There is consensus among project members from the government arena that conservation land managers at Newhaven are limited by their lack of knowledge and resources. The words of a project member who works for the Northern Territory Government Bushfires Council explains that *they don't have a lot of experience in fire... they are prepared to use fire more but it's a big challenge because they are remote and they have many resources out there* (NT-G-7).

As indicated above, some pastoralists do not regard fire as a feasible management tool or even as beneficial, let alone integral, to the southern Tanami landscape. One pastoralist believes that the limitations of place-based pastoral knowledge whereby pastoralists do not learn from the experiences of others limit the potential of the pastoral industry and work to further degrade local environments. The place-based knowledge of Aboriginal land managers is also limited by its localness but for different reasons. An employee of the Central Land Council points out the complexity of these limitations

people still identify strongly with fire... it is a really important expression of Aboriginal culture, people hold strongly to it but they are not likely to want to be told what to do about it... but at the same time, people don't have that landscape perspective (NT-G-6).

Aboriginal people speak also about the fact that their knowledge and practice of fire is now limited by resources. They are only able to use fire on land where they can gain access. As one Aboriginal woman explains

in old days people, old people have travelled all over the place and when they see, you know, grass that's big they get a bit tempted to burn it [these

days] a lot of people don't have the opportunity and the only time that people can go out on country is when it is organised [by individuals who have access to cars and money for petrol] (NT-C-15).

As discussed above in relation to the Victorian project, the implications of decisions based exclusively upon place-based knowledge can be very powerful in further compounding environmental management issues. The very fact that individuals from the local community arena in the southern Tanami are interested in speaking about their attitudes and approaches to fire demonstrates their interest in developing their knowledge to improve the management of fire in the southern Tanami region. This is indicative of the dynamic power of place-based knowledge. As the words of two project members from the government arena demonstrate that the success of this project is closely connected to the dynamic and evolving nature of place-based knowledge. Firstly, the project is about *talking to the different partners involved, getting some of their ideas and looking for the commonalities and trying to work from those* (NT-G-5). Secondly, because the project is about generating new knowledge relating to the strategic management of fire across diverse interest groups with diverse place-based knowledges of fire *once [the many individuals involved in the project] discover something [new] themselves then it will become part of their ethos* (NT-G-6).

The dynamic nature of place-based knowledge is further demonstrated by the attitudes of individuals from the conservation, pastoral and Aboriginal communities. Firstly, as demonstrated in a quote previously shared, the land managers of Newhaven are very interested to learn from traditional owners about, what a manager of Birds Australia based in Melbourne calls, *cultural traditional knowledge of fire* (NT-C-9). Secondly, as the subsequent comment reveals, this pastoralist believes that his successful land management has been intimately connected to experimentation with other ideas. He explains that

you've got to get outside that [comfort] area and challenge yourself as well with other ideas... if you are prepared to do that you can achieve all sorts of results... we've had some failures here like anywhere but also a lot of good results that have come from it (NT-C-13).

Thirdly, Aboriginal land managers speak about the evolving nature of their place-based knowledge. For example, in relation to local practices, this Aboriginal elder explains that contemporary application of place-based knowledge of fire is founded upon contestation and debate: many people use fire and *sometimes the women disagree so the men are not able to light that fire, they have to be working together to make a better job of it* (NT-C-8). Another Aboriginal man involved with the Indigenous Ranger program speaks about the ways in which modern technology can assist Aboriginal land managers to engage in fire management on their country. He explains that

before [we] used to look at smoke and go to bushfire, two days to get there sometimes, now with technology, satellites can spot bushfires, [we] can go to

the location with proper protection, hats and so on, and teach young people and teach with the wind and back burn with fire (NT-C-3).

The experiences and attitudes of project members and individuals involved with the Desert Fire project in the Northern Territory further establish firstly that the place-based knowledge of individuals from the local community arena is integral to the strategic management of fire in the region. In reality the project exists because of the apparent dissonance between the different knowledge held and practised by the three interest groups living and working in the southern Tanami. For this reason and the fact that these interest groups manage large tracts of the southern Tanami land area, the project is contingent on these place-based knowledges. Secondly, as discussed in relation to the Victorian project, taken separately, place-based knowledge is not sufficient to meet the aims of the project. Thirdly, the fact that the project itself is hinged upon developing new approaches to fire management in the region dictates that in order to push the boundaries of the given approaches to fire management in the region, the project must mirror the dynamic and experimental nature of place-based knowledge, to facilitate progressive and locally relevant knowledge generation.

9.3 Local community knowledge encompasses diverse knowledge cultures

In chapter 1 (section 1.1, Figure 1.1) I introduced Brown's (2001a) typology of knowledge cultures in western decision making systems as a means of unpacking the knowledges necessary for equitable and sustainable environmental management in Australia. The second analysis of this chapter engages with this typology to consider the research finding that indicates local community knowledge is powerful because it is not just about place.⁶¹ Put in other words, this analysis demonstrates that local community knowledge encompasses more than simply place-based knowledge. The following discussion reveals in greater detail how project success is contingent on local community knowledge.

As discussed in section 9.2, the place-based knowledge held by project members from the local community arena in Victoria is integral to project success. The project officer points out that in the management of threatened species habitat depends upon *better land management decisions into the future* (VIC-G-5). As such the project must also empower people to develop their knowledge of local threatened species habitats; to realise their own capacity; and to voice concern in public forums. The power of this local community knowledge would be determined by the success of project members from the local community arena to be involved in, and to inform political forums relating to local environmental governance and management decisions. As such, in addition to place-based knowledge, local community groups will need to have

⁶¹ Chapter 10 takes this analysis further by extending Brown's (2001a) typology to conceive of all knowledge as local.

certain sets of specialised, strategic and possibly holistic knowledge to negotiate the futures of threatened species. The words shared in the following analysis show that, although not every individual possesses these kinds of knowledges, local community knowledge is constituted by diverse knowledge cultures identified by Brown (2001a) as: individual knowledge, local knowledge described in this research study as place-based knowledge, specialised knowledge, strategic knowledge and holistic knowledge.

Project members from the government arena speak about depending upon and learning from the knowledge of members from the local community arena. For example, an employee of the Victorian Government Department of Sustainability and Environment explains that *the networks we can develop with the community are really important as they teach us a lot and without them we would be buggered* (VIC-G-1). The local landcare coordinator is quick to acknowledge the role that local community knowledge has in regional, national and international threatened species monitoring programs. He points out that most of the information in flora and fauna databases that in turn works to inform state and national environmental governance and management of threatened species is underpinned by

lots of people's volunteer hours [...for example] how would you have an understanding of what is happening to the Australian bird population [without the] tens of thousands of hours that local birdos do? (VIC-G-4).

A further example demonstrates not only the important knowledge that local community groups can share with others but the international nature of this local community knowledge and experience. The bioregional manager speaks about learning from the experiences and shared local community knowledge of conservation movements in Bangladesh about how to improve local strategies to *incorporate local knowledge into decision making* (VIC-G-6).

These findings demonstrate that the local community knowledge of which these project members from the government arena in Victoria speak, is specialised enough to inform scientists working with the Victorian Government in the capacity of flora and fauna managers and decision makers; is rigorous enough to be depended upon as part of regional and national databases maintained by Government agencies, and is regarded as both specialised and strategic in the way in which it can inform bioregional managers about mechanisms to include local knowledge in decision making processes.

The way that project members from the local community arena in Victoria describe the diverse aspects of their environmental management and community development work further illuminates the specialised and strategic nature of their knowledge. Project members speak of their roles in the project as encompassing that of educators, of local technical experts, of project managers and of knowledge managers. For example, they work to educate *people about the role of biodiversity* (VIC-C-7); they source expertise from other local community groups which means that *the field naturalists have been helping quite a few other landcare groups with those*

technical things that they have the expertise in (VIC-C-11); they speak about learning project management skills by *going out for things like this [project...] we are going to learn a lot from it: how to manage it, how to get commitment and how we market that* (VIC-C-5). The strategic characteristics of local community knowledge include managing knowledge acquired by external agencies. For example, as this project member articulates: *we know the research was done, but where are the results?* (VIC-C-3). This knowledge brokering is essential for the successful protection and management of threatened species in the region. Another example of the strategic nature of the local community knowledge in Victoria includes holding Victorian Government Departments accountable to planning processes. As this project member explains, managing the boundaries of the local Box-Ironbark Park is essential for the ongoing protection of the Eltham Copper Butterfly habitat: *when the new National Park was declared [community members of the project] found that they had left a small bock of land out of it* (VIC-C-1).

The knowledge of pastoralists and Aboriginal land managers from the local community arena in the southern Tanami region of the Northern Territory is powerful because it is about more than simply place-based knowledge. It also has specialised and strategic characteristics. For example, pastoralists manage their land according to specialised knowledge of pastoral production. As this project member from the government arena who works for the Bushfires Council explains:

The most common expression that you will hear from the pastoralist perspective associated with fire and using fire is to control woody weeds [...they also] tend to burn their Spinifex country for the post fire response which may have benefit to their cattle and also to reduce the threat of fires coming out of the Spinifex country... some pastoralists have an almost complete fire exclusion... possibly associated with fear... but other pastoralists you know think of fire as the best tool that they have got on their property (NT-G-7).

The use of fire varies from pastoral lease to pastoral lease but there is no doubt that pastoralists possess specialised knowledge of what it means to manage land for pastoral production. The knowledge of some pastoralist is also very strategic. This is demonstrated by the fact that certain pastoralists may choose to be involved in the Desert Fire project. As discussed in chapter 1 (section 1.3), one impetus for the Desert Fire project is the level of conflict exacerbated by the use of fire in the southern Tanami region. This conflict originates mainly between pastoralists and Aboriginal communities. Pastoralists in the region have different attitudes about overcoming this conflict and certain individuals display particular strategic knowledge of how to alleviate these fire related conflicts. One pastoralist explains that Aboriginal use of fire on his lease can be mutually beneficial:

I don't have to [burn] a lot myself, me mates here do it for me!... I think that is too why we haven't had a lot of big fires because of all their hunting tracks. At night time if the wind isn't blowing they are probably putting all these little fires up... if they started lighting them up in our good grasses it

would be [a problem] but while they are just burning on the Spinifex then that doesn't matter (NT-C-5).

Another pastoralist speaks of fire as being part of Aboriginal peoples' lives for a long time and that *if you have a complete run in with the black fellas... they will beat you at the time. It's the wrong attitude to have with them and a lot of people still have that attitude on country* (NT-C-13). He explains that his strategy is to speak with the elders and the traditional owners of his pastoral lease, to keep them informed of the work he plans to do. He speaks of developing and maintaining mutually beneficial relationships with the Aboriginal people who live near his pastoral lease, such as assisting them to fix damaged car tyres and helping them hunt for kangaroos. He believes that *these little things develop rapport with them that keeps them on side because they can make things very difficult if they want to. And at some places they do* (NT-C-13). This same pastoralist speaks of the suspicion that some pastoralists have of government (discussed in detail in section 9.4). He has made a strategic choice to work with government. This is because, as he explains: *we couldn't achieve what we want to achieve on this place unless we involved the government, we haven't got the resources to do the mapping, set up paddock areas, phosphorus soil levels* (NT-C-13). As discussed in chapter 11 (section 11.3.2) this same pastoralist offers his strategic knowledge to suggest strategies to overcome conflict between the government, pastoral, conservation and Aboriginal individuals involved with the Desert Fire project. He suggests that there is always an opportunity to learn from each other. He explains how he learnt some of his specialised knowledge of fire from the Aboriginal people with whom he has worked in his pastoral career thus far. He would like to learn further from Aboriginal land managers: *how they get [the country] to burn when half the time I can't get it to* (NT-C-13).

Potential project members from the conservation community speak with much respect about the specialised characteristics of Aboriginal land management knowledge. For example, a local ecologist speaks of the specialised knowledge of Aboriginal women that has assisted with her ecological research. These skills include:

expertise for tracking species, identifying the numbers of predators present as well as their behaviour. For example the women could tell what the cat had done by looking at its tracks: it got a budgie here and a mouse there. Working with the women's daughters who are often bilingual, assists to increase communication (NT-C-1).

Another local ecologist reflects on the wisdom of Aboriginal burning regimes. His words show how specialised knowledge of fire and landscape ecology were, and continue to be, closely related to livelihood strategies. He states that Aboriginal people will light the country

whenever it is ready to burn. If you light it and it keeps going, it's ready to burn... it turns out to be the best way to manage the Spinifex. Burn it when it is ready, don't let it build up [...because then it] becomes a very big fire

and it burns all your country and leaves you sitting there in the middle of this black plain with nothing to eat [...in the past] they didn't even have to do it consciously 'cause they walked, they always carried fire sticks because making fire is hard work, so whenever you move someone was carrying the fire stick, when you carry a fire stick coals drop off and starts fires. So you didn't have to do anything, just walk around your country and let it do it itself (NT-C-2).

Aboriginal people speak of their knowledge of fire in a way that demonstrates firstly the close connection between this knowledge and social, physical and sometimes economic livelihood strategies, and secondly, the unique specialisation of this knowledge. Aboriginal knowledge of fire is an evolving and dynamic practice. It is connected to the past, to place and to action. Knowledge and use of fire is connected to a historical knowledge of the rhythms of the natural environment. This Aboriginal woman explains this specialised knowledge informs land management practices that facilitate hunting and the rejuvenation of the land. She tells how:

in the old days when they used to [burn] it's done in spring. That's when the animals come out, especially the goannas. [Burning] clears the whole land and the first lot of rains to come in and the new growth back into the country (NT-C-15).

Another individual speaks of the way that fire was used to bring rain: *people used to light fires when they wanted rain, there is a special spinifex to bring rain* (NT-C-8).

Contemporary practices incorporate historical, place-based and social knowledges of fire. Individuals continue these practices today in relation to keeping culture alive for ceremony. An Aboriginal woman from the region explains *they use [fire] during men's ceremonies. It symbolises the sons out in the bush, to keep that fire going for them* (NT-C-15). They also use it to assist them to continue to live in the region because, as this Aboriginal man explains, *in central Australia fire is really valuable, without fire you starve* (NT-C-3). Fire facilitates hunting, as this Aboriginal elder describes *[we burn] so that turkey can land there and snakes come out a lot easier too* (NT-C-8). Fire is also used by Aboriginal people as a land management tool. This Aboriginal man clarifies that *fire burning is only way to keep country clean, used to get green grass back and to make it easier for animals* (NT-C-14).

In relation to the Desert Fire project, Aboriginal people in the region speak about strategies to overcome conflict relating to fire. Most importantly project success depends upon working together to manage conflicts indeed, overcoming conflict is necessary to *work better to look after country* (NT-C-3). Individuals speak about the importance of strategically engaging with the project as a way of facilitating cultural burning on parts of their land they have not been able to access for an extended length of time. One man explains how the project could facilitate a link between more traditional approaches to using fire and western approaches. His words highlight contemporary challenges faced by Aboriginal people who feel their generation can see

the old ways and also the western ways: *these days in western world now [...we] have to think and live: how to look after country with bushfires or fire, got to look after [the country] in different ways* (NT-C-3).

The findings of the second analysis of this chapter demonstrate that the local community knowledge of project members and potential project members from the local community arena in Victoria and the Northern Territory is not just about place. Local community knowledge can also encompass specialised and strategic (following Brown, 2001a) knowledge cultures. The implications of these findings are twofold. Firstly, local community knowledge is powerful because it includes sophisticated knowledge of place, specialised knowledge of threatened species, of fire, of community development, awareness raising through education, and of project management and strategic knowledge of facilitation and community politics (explored in chapter 10 section 10.5). These knowledges are essential for project success in the relevant environmental management and community development projects. Secondly, the fact that local community knowledge is not restricted to place-based knowledge suggests that the knowledge of project members from the government arena is also likely to be composed of diverse knowledge cultures that extend beyond specialised scientific knowledge and strategic knowledge of governance policies and related programs. These implications are explored further in chapter 10.

9.4 Local community knowledge determines the success of environmental management projects

The final analysis of this chapter considers how local community knowledge informs perceptions of other knowledge cultures active at the environmental management and community development project interface. The findings show that local community knowledge is powerful because these perceptions determine whether or not project members and individuals from the local community arena will choose to engage in project work with project members from other community groups and the government arena. The findings also demonstrate that the experiences are different for individuals when the environmental management and community development project is based upon overcoming conflict. In such situations these perceptions may in fact be the cause of the conflict.

As explored in chapter 8 (section 8.4), project members from the local community arena in Victoria are empowered to use governance policy and programs to meet their self-determined project ends. They perceive themselves as part of a growing network of individuals working to protect and enhance threatened species habitat in the region. They have good relationships with project members from the government arena. These good relationships are indicative of their perceptions of these project members and the knowledge cultures to which they ascribe. In particular, project members from the local community arena value the localised knowledge of project members from the government arena. However, they are wary of government hierarchy.

As a local farmer who is the president of his landcare group explains *the field officer type people are good because they are actually doing the work ... once you get up a couple of rungs [in the government hierarchy] the people are too far removed from what's going on* (VIC-C-9). This perception is grounded upon experiences of dealing with individuals working in different areas of government. These perceptions are further compounded when, as was indicated by the words of two project members from the local community arena shared in sections 9.2, 9.3, experts who conduct research in the region disappear and take the results of their research with them. The power of the knowledge held by local community members thus influences how they choose to be involved with other individuals into the future.

As the findings shared in chapter 8 (section 8.4) demonstrate, individuals from the local community arena in the Northern Territory may choose to be involved with the Desert Fire project to improve their social, cultural and economic survival. These findings also show that the development and improvement of local livelihoods is closely connected to the development and improvement of relationships between pastoralists, Aborigines and conservation land managers in the region mainly because fire does not stop at land tenure boundaries. These relationships are very much determined by preconceived perceptions of the other. These perceptions are informed by local community knowledge. As such conflicts are often grounded in perceptions of other local knowledge cultures as opposed to the knowledge itself. The findings of this research demonstrate that these perceptions are powerful in two ways. Firstly, they can undervalue the knowledge of the other and, secondly, they can further confound conflicting social relationships. Both aspects can undermine the potential of social relationships developed from a project such as the Desert Fire project to overcome conflict and generate new knowledge about the management of fire across different land tenures in the region. Clearly the inverse is also true. The implications of these findings are twofold and are discussed here.

The power of local community knowledge is grounded upon the fact that the place-based characteristics of local community knowledge include knowledge of local histories and past relationships. The words of a project member from the government arena who works for the Centralian Land Management Association touch upon these subtleties. She explains that relationships

go deeper than what an outsider can understand so I don't think that I can properly appreciate where everyone is coming from out there but all I can say is that there are some serious issues there in terms of relationships between Aboriginal people and [one pastoral family] in particular (NT-G-3).

As indicated in chapter 6 (section 6.4) and demonstrated in section 9.3, pastoral attitudes to fire in the southern Tanami region vary greatly with each other. In a similar way, perceptions of the value of Aboriginal knowledge of fire in the region also vary. As the words of a pastoralist shared in section 9.3 reveal, some pastoralists believe they can learn from Aboriginal

knowledge of fire but others do not. Indeed some believe that the use of fire without a permit in the region should be outlawed as exemplified by the recent review of the Northern Territory *Bushfires Act, 2004*. Some pastoralists make comments one day that contradict previous statements: this is indicative of the complex, emotive and dynamic reality of fire. It also illustrates the situated nature of knowledge whereby the content and way in which information is shared is often context dependent. For example, one pastoralist states that Aboriginal people use fire *because they can, if people say its for hunting and gathering it's bull shit, its not necessary for them to be following those pursuits today as they have a truck that turns up every week and fills stores up for what they need* (NT-C-7). At a later date the same pastoralist speaks about the complexities and importance of understanding how different cultures view fire.

He explains that:

for white fellas fire is an issue, they are scared of it, but for black fellas fire has always been there, they have no fear, it is a natural thing. Therefore, it is very difficult to put a white fella's idea to a black fella. For example, the Tanami has been burning for the last 20,000 years so why stop it? It is a tricky situation (NT-C-7).

The success of the Desert Fire project is clearly connected to overcoming conflict in the region. By the same token the success of the project is about overcoming conflict that exists between potential project members from the local community arena and some project members from the government arena. The implications of this are twofold. Firstly, as mentioned previously local community knowledge is closely connected to local livelihood issues. If projects ignore these issues they may further compound tensions between the local community and government. As a project member from the government arena who works in natural resource management explains

when we design these programs [in terms of what is feasible and viable] we have a theoretical expectation of how those individuals out there can be involved... I don't think enough is taken into account of the social state of the community in that thinking (NT-G-4).

These approaches can often work to further develop the culture of suspicion that exists in the region. A pastoralist explains that these suspicions have evolved from a long history of government employees coming in and doing *the wrong thing. They have tried to be little generals in their own little area and alienated a lot of pastoralists* (NT-C-13). This culture of suspicion is clearly based upon pastoral perceptions of government: clearly not everyone in government behaves in this way. As this pastoralist articulates:

if you have got people coming in and [pastoralists] have got total suspicion, they are not going to be free with information. If the pastoralists are not free with information the researchers are not going to get any thing out of it as they can only get out what people put in (NT-C-13).

It follows that *if people think that their two bolts worth is not getting anywhere* (NT-C-13) they will not be actively engaged. He explains that *the more comfortable [the pastoralists] feel with [government and researchers] the more their information would be of benefit* (NT-C-13).

The implications of the words shared here are twofold. Firstly, they further reveal the power of local community knowledge in influencing project success. This is because local community knowledge informs perceptions of the other. These perceptions may be the result of past experiences such as the culture of suspicion evident between individuals living and working in the southern Tanami region of the Northern Territory with each other and with government. Or they may be based upon complex and entangled cross-cultural and cross-knowledge culture relationships. They may result from inter-personal relationships and be grounded upon personality conflicts. Whatever the circumstance, the implication is that these perceptions are powerful. They impact upon the future of an environmental management and community development project because at the end of the day the success of these projects depends upon the investment of knowledge, time and resources of all project members or, as is the case with the Desert Fire project, potential project members.

The second implication of this analysis reveals the intrinsic and instrumental values ascribed by individuals to the knowledge of others. The example given above in relation to pastoral suspicion of government shows how such approaches undermine their own work. This further reveals how all knowledge cultures can be limited.

9.5 Conclusion

The findings of this research reveal that the success of the Victorian and Northern Territory environmental management and community development projects is synonymous to local community knowledge. This is because firstly, a sophisticated historical and contemporary knowledge of place is essential for project success. Secondly, the specialised and strategic characteristics of local community knowledge are equally powerful in determining the ongoing protection of threatened species habitat in Victoria and the management of fire in the Northern Tanami. Thirdly, local community knowledge is integral to project success because it informs perceptions of other knowledge cultures which determines whether individuals will choose to engage with project members from other knowledge cultures.

Varieties of Local Knowledge

Chapter 10



Parks and Wildlife management burn at Traphina Gorge
Nature Park, Northern Territory

Photo: Kirsten Maclean 2004

Chapter 10: Varieties of local knowledge

10.1 Chapter aim and overview

The aim of this chapter is to further address the second question of this research, namely: what is the role of community stakeholder groups and their knowledge in the networks surrounding environmental management and community development in Australia? This chapter demonstrates how the findings reported in chapter 9 further illuminate the imperative of knowledge sharing for ecologically sustainable development (discussed in chapter 3, section 3.6) and thus the importance and potential of practising a cutting edge politics (after Howitt, 2001b) for equitable and sustained environmental management in Australia as practised in chapter 6. The findings illuminate that the potential of local community knowledge is encapsulated by its power and limitations. These findings expose the combination of knowledge cultures necessary for equitable and sustained environmental management of locally situated projects. As such they reveal the varieties of local knowledge active at the environmental governance and environmental management interface in Victoria and the Northern Territory.

10.2 The potential of local community knowledge

The first analysis of this chapter demonstrates that the potential of local community knowledge is encapsulated by its power and its limitations. The potential of any environmental management and community development project is not only dependant upon acknowledging the limitations of local community knowledge but also it is dependant upon acknowledging the limitations of other knowledge cultures active at this interface. The implications of this are explored in detail below.

As revealed in chapter 9 (section 9.2), the local knowledge held by project members from the local community arena is vital to project success. This is because, as a project member from the local community arena in Victoria expresses: *local knowledge is [not] superior to academic knowledge, for example, but without the local knowledge then the academic knowledge is pretty empty and so is political action* (VIC-C-8). However, as this comment reveals, in the same way that academic knowledge is *pretty empty* without local knowledge, local community knowledge alone is not sufficient to ensure equitable and sustained environmental management at the local project interface. This is because, as expressed in chapter 3 (section 3.6), local community knowledge may not necessarily hold all the answers to localised socio-environmental issues because these issues occur within a national and global setting. The words of a local ecologist from the community arena in the Northern Territory further illuminate the essential role as well as the limitations of local community knowledge cultures in locally situated environmental management and community development projects. In relation to the management of fire in the

southern Tanami, he explains that *Aborigines [and pastoralists] are incredibly useful but they are no use if you expect them to be scientists, you've got to know what their limitations are* (NT-C-2). A project member from the government arena in Victoria who has been working for Parks Victoria for most of his career speaks candidly of the limitations of government knowledge. He states that *we can only make decisions on what we know the same as the person who introduced rabbits or used DDT*⁶² (VIC-G-9).

The implications of this analysis are many. Firstly, in the same way that local community knowledge is limited by definition so too are other knowledge cultures active at the environmental management and community development interface. As is demonstrated in section 10.6, equitable and sustained environmental management of the local projects is contingent on first acknowledging the limitations of these knowledge cultures and then celebrating these limitations. Celebrating these limitations is the precursor to developing strategies for knowledge sharing at the local project interface (as discussed in chapter 11). Secondly, these findings expose the combination of knowledge cultures that are active and necessary for equitable and sustained environmental management at the local project interface. Thirdly, just as the findings shared in chapter 9 (section 9.3) demonstrated that local community knowledge encompasses diverse knowledge cultures, the knowledge held by project members from the government arena in Victoria and the Northern Territory also encompasses diverse knowledge cultures. In the remainder of this chapter I take each of these three implications in turn and in reverse order, to explore what they mean for a conceptualisation of all knowledge cultures as local.

10.3 Place-based characteristics of government knowledge

The diverse characteristics of local community knowledge explored in chapter 9 (section 9.3) illuminate the fact that knowledge held by project members from the government arena is also complex and diverse. For example, the experiences of the Victorian project officer exemplify the tensions between how local community knowledge is valued as compared with expert knowledge. She feels that her knowledge is more highly valued than that of local community members by virtue of her paid employment. She describes her role as project officer is to encourage local groups to realise the value and power of their own knowledge. She regards *them* as the experts and believes that if she *wasn't getting paid for [her expertise and knowledge but] was just a loud mouth volunteer wanting to be involved in everything, it would be a much different playing field* (VIC-G-5). Her words and experience demonstrate how easily she could have been cast as a local community volunteer. She was in fact employed by the

⁶²DDT or dichlorodiphenyltrichloroethane is a compound that was used as an insecticide but is now banned in many countries because of its toxicity to humans and other animals.

Catchment Management Authority by virtue of her place-based knowledge, her local community network connections as well as her specialised knowledge of ecology and community development theory and practice. In her own words, before being employed by government she *was a political campaigner... working for a landcare group on a small project [...and before that] a full time volunteer and studying community development* (VIC-G-5). Her experiences demonstrate that place-based knowledge is not only held by members of the local community arena. Equally, they illustrate how an individual can become an expert simply by virtue of her role.

The words of a project member from the government arena in Victoria who works closely with the local community in matters related to cultural heritage management in the region demonstrate that the success of expert knowledge depends upon place-based knowledge. He explains that *what makes you special after a while is the years and years of experience and mobs and mobs of contacts [that you have developed across the board] and that's what you can't teach any body* (VIC-G-7). Secondly, his words demonstrate that his expert knowledge⁶³ is only as successful as it is locally relevant and appropriate. He explains that

you have to seek the solution from the community that you are dealing with. I don't go to the community with whom I am working with set ideas. I sit down and I listen and usually I find that if I can engage them in enough discussions they will find a solution for themselves. Sometimes they say: 'oh that's a brilliant solution', and I say: 'well I didn't think of it, it came out of this discussion'. Sometimes it comes out of the most unlikely people (VIC-G-7).

The work of project members from the government arena in the Northern Territory further illuminate the fact that place-based knowledge of the southern Tanami is not limited to individuals from the local community arena. This place-based knowledge includes knowledge of the fire history of particular tracts of land, knowing the traditional owner of a particular stretch of country, and recognising that local experiences are particular to specific places. For example, an active project member who works for the Bushfires Council speaks of the importance of having an interactive knowledge of past fire events and of seasonal weather conditions. He explains:

we have had decent rain this year in that area and there has been a fairly quick response to the fuel loads there. The important thing is that the whole concept is to get in and burn before the fuel loads become big continuous bombs again (NT-G-7).

⁶³ Although his knowledge is described as expert for the purposes of this discussion, he does articulate that *I refuse to be an expert... I guess it depends on how you look at yourself in the world* (VIC-G-7).

An employee of the Centralian Land Management Association speaks about the connection of fire and relationships between interest groups living and working in the southern Tanami region of the Northern Territory.

She explains that

[overcoming stereotypes is] going to be a major key to solving a lot of the cultural issues and relationships issues between Indigenous and non-indigenous [people]... We are talking about [an area] nearly the size of Victoria so dealing with people's issues and their goals and ambitions, everyone is quite different, there are some common themes but how people get there, they are all quite different (NT-G-3).

Her words not only demonstrate her knowledge of place-based social histories, relationships and conflicts but they indicate that other knowledges of fire and of project planning and management will only be as successful as they are locally relevant and appropriate. This is because the goals, ambitions and issues that are closely determined by place and faced by individuals living and working in the region are different.

The implications of the second analysis of this chapter are twofold. Firstly, the words shared here reveal that it is incorrect to speak of local community knowledge as constituting one kind of knowledge and of expert knowledge and government knowledge as constituting other kinds of knowledge as is inferred in the discourse of community natural resource management. This is because each of these groups constitutes various knowledge cultures. Indeed some individuals from each of these groups have knowledge cultures in common. Secondly, it is clear that despite the diversity of knowledge cultures active in any environmental management and community development project, the success of any given knowledge culture is contingent on local relevance, appropriateness and adaptability.

10.4 Knowledge cultures active in local environmental management and community development projects

The third analysis of this chapter engages with Brown's (2001a) typology of knowledge cultures in western decision making systems (presented in chapter 1 section 1.1, Figure 1.1). This typology provides a useful way to conceptualise the knowledge cultures that are active and necessary for equitable and sustained environmental management at the local environmental management and community development project interface. Brown and Pitcher (2005:126) speak of the important and essential role of five different nested knowledge cultures in working towards whole of community "social learning for sustainability". They speak of a pattern of reality constructed by the contributions of individuals, the shared experiences of the local community whomsoever this may be, the sum of specialist interpretations, the strategic thinking of local organisations including local government, and the holistic perspective offered by the goal and practitioners of sustainability.

In this analysis I extend her typology by exchanging her notion of ‘local knowledge’ (see chapter 1, section 1.1, Figure 1.1) to ‘place-based knowledge’. This extension complements the findings presented in chapters 7, 8 and 9 that demonstrate the success of any knowledge culture is contingent on its relevance, appropriateness and adaptability to any given locale. As such, the full set of knowledge cultures depicted in Figure 10.1 is recognised as varieties of local knowledge. These knowledge cultures are not discrete or fixed. An individual’s construction of reality and resultant action may be based on one or all of these knowledge cultures. For example the bioregional manager in Victoria has his own individual knowledge and approach to the world which in turn informs the way in which he engages at the other knowledge interfaces. He has good place-based knowledge in relation to living in the region, working with other individuals in the region, being familiar with local networks and specific projects. He has specialised ecological and community development knowledge. He has strategic government knowledge. Considering his role in initiating and developing the whole of community Threatened Species project he has used various knowledge cultures to work towards an innovative holistic knowledge approach to biodiversity management in his local region.

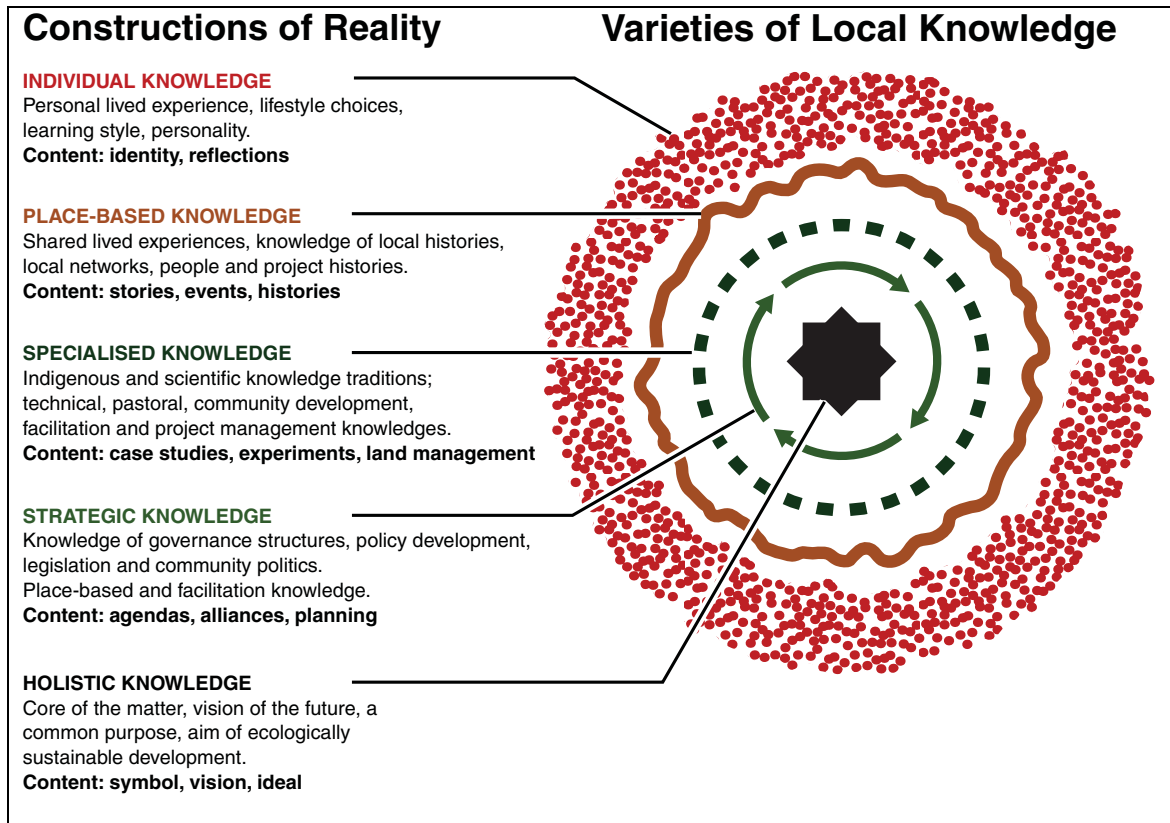


Figure 10.1 The diversity of knowledge cultures active and necessary for equitable and successful ESD in environmental management and community development projects.

The main point of departure between this Figure and Figure 1.1 (chapter 1, section 1.1) which depicts Brown's (2001a) knowledge typology, is the recognition that all knowledges are tied to place and thus local. In this way, the diagram depicts two layers of meaning. Firstly, it represents the different knowledge cultures active at the two project interfaces. Secondly, it represents the specific places in which these knowledges are enacted. Equitable environmental management and community development projects will recognise these two layers. These projects will result in the practice of cultural hybridity (discussed in chapter 11). As such, the practice of cultural hybridity will create further knowledge cultures which are not easily predicted but will result from synergies between the knowledge cultures depicted in this diagram.

Source: extended from Brown (2001a)

10.5 Knowledge cultures explained

Individual knowledge

In a discussion of the value of local knowledge and the local scale to ecologically sustainable development (ESD) in Australia, the importance of individual knowledge cannot be over emphasised. This is because the way in which we know and act in the world is dependant, in the first instance, on the knowledge that we embody as individuals. This is inherently influenced by other knowledge cultures discussed below, but we cannot deny the reality that knowledge originates and is contained primarily in the head of the individual. Individual knowledge varies across cultures, between genders and age groups and includes personal lived experience, lifestyle choices, learning style and personality (documented in Brown, 2006).

Place-based Knowledge

The findings reported in chapter 7 (section 7.2) illuminate that the Victorian and Northern Territory projects are tied to place. As such, place-based knowledge is essential for equitable and successful environmental governance and management in Australia. Without knowledge of place any project will fail to be equitable and sustainable. Knowledge of place is not just about knowledge of the biophysical environment. It also includes knowledge of local histories and cultures, local social networks, of people and, given the focus of this thesis, knowledge of specific environmental management and community development projects. As is detailed in Table 10-1 and Table 10-2 that follow, place-based knowledge is not only held by the local community.

Knowledge of local histories includes specialised knowledge of place, for example local geographic and biophysical environments; as well as cultural sites of significance. It comprises knowledge of environmental histories, such as those to do with changing land management, for example the declaration of the Box-Ironbark forests and woodlands parks and reserves in Victoria (see chapter 6, section 6.3). It also includes knowledge of cultural connections to country, and specifically in relation to the Desert Fire project, knowledge and effects of past events such as bush fire events. Local historical knowledge is also about people, past conflicts and different research traditions. It is also relates to local social realities, what are they and what historical and contemporary processes influenced and continue to influence these social realities.

Knowledge of local social networks includes familiarity with localised knowledge networks and the connected inter- and intra-groups politics based upon histories and conflicts. It embraces knowledge of localised expert opinion: who is the right person to speak to regarding specific matters. This kind of knowledge includes the ability to tie extra-locale knowledge to a specific place by drawing upon local networks and local expertise. Knowledge of people

overlaps somewhat with knowledge of local social networks in relation to knowledge of expert opinion. However, knowing the right person to speak with varies across social and cultural groups. This may include gatekeepers, experts, and traditional owners of country. Knowledge of people also relates to knowledge of different cultures, as well as of individual personalities and how best to engage with particular people. It also includes knowledge of local community politics. This last example can also be described as strategic knowledge.

Knowledge of locally situated projects comprises knowledge of past research projects as well as government funded projects relating to community development and environmental management. This knowledge is also about the successes, failures and potentials of past projects as well as the evolution and history of the specific project(s). Knowledge of locally situated projects embraces knowledge of the networks of other local projects currently underway. This includes knowledge of other projects in the region.

Specialised Knowledge

Specialised knowledge is held by many individuals working in the multiple arenas and composing the numerous knowledge networks that make up local environmental management and community development projects. Indeed there is over-lap between place-based knowledge and specialised knowledge. Specialised knowledge includes the Aboriginal knowledge tradition, the scientific knowledge tradition, pastoral knowledge and technical knowledge. It also encompasses knowledge of community development approaches and practices and related facilitation knowledge. It includes specialised historical and cultural knowledge, policy and planning knowledge as well as knowledge of project planning and management. Detailed accounts of these knowledge types follow.

The Aboriginal knowledge tradition comprises: knowledge of country, such as, in the language of western land management, local geology, geography, biophysical processes, climate and seasons and animal behaviour. It consists of knowledge of place: sites of significance in particular relating to sacred sites, funeral sites and men and women business camps. It includes historical knowledge of people, places and *jurkurrpa*. These practical knowledges could be described as equating with Aboriginal anthropology and archaeology. Of particular interest to this research is traditional and contemporary knowledge of fire relating to hunting, cleaning the country, when to burn, traditional uses for ceremony and making rain.

The scientific knowledge tradition comprises knowledge generation processes relating to research and development. As relevant to this research study, it includes knowledge of the history and philosophy of the scientific knowledge tradition as well as the applied ecological knowledge of zoology, botany, geology, geography. This knowledge culture embraces both professional and amateur practices. It also comprises fire ecology: the affects of fire on

ecosystems, the chemistry of fire, knowledge of what constitutes fuel loads and specific fire behaviours as well as the methods and theories of fire suppression.

Pastoral knowledge is comprised of knowledge of country: local geography, geology, local climates and environmental histories of specific places. In addition, this also comprises knowledge relating to pastoral production: the management of grasses, waters, infrastructure and the management of feral animals and exotic plant species. It includes place-based knowledge of fire management and fire suppression. Technical knowledge consists of the use of geographical information systems and mapping systems, the specific knowledge relating to the use of fire equipment, internet technology for viewing hotspots, how to conduct threatened species surveys, to build fences and repair 4-wheel drive vehicles. It also includes specific project management knowledge.

Community development knowledge comprises knowledge of specific theories and approaches to community development including practical tools for participatory democracy such as appreciative enquiry and community juries. It contains knowledge of theories and tools for education and empowerment relating to: capacity realisation, building and maintaining local motivation and related hands-on actions. In practise it includes keeping the community informed of governance structures and process and empowering them to use these structures to their own ends. In this discussion, community development knowledge is premised upon understanding, advocating and celebrating strategies for knowledge sharing between the diverse world views of project members.

Facilitation knowledge consists of knowledge of specific theories and approaches to facilitation, such as collaborative conflict management and values mapping. Central to effective and successful facilitation is the practical knowledge of the politics of working with people and working to broker wider knowledge. Central to effective facilitation is the knowledge and use of appropriate language, including verbal and physical languages as well as conducting facilitation activities in appropriate locations with the right people. Historical and cultural knowledge include knowledge of the disciplines and practices of anthropology, archaeology and history. Understanding cultural interpretations of place is a central tenet of this knowledge.

Knowledge of specific government policies and the process of government planning also fall under specialist knowledge. This knowledge is also central to the knowledge of governance structures as expressed under the following knowledge culture heading: 'strategic knowledge'.

Knowledge of project management and planning comprises knowledge relating to the development and implementation of management plans that are contingent on a knowledge of the processes of equitable community consultation. This also includes the knowledge relating to report writing and accountability of project planning and outcomes. Specific knowledge of governance structures (such as those discussed in chapter 5) and use of appropriate languages are essential for effective and successful project management. This holds true for the

knowledge of how to locate on-ground aspirations, plans and works within bigger picture governance structures. The latter examples are also forms of strategic knowledge.

Strategic Knowledge

Engaging with social, environmental and governmental structures strategically is essential in working towards ESD in Australia. Indeed, recognising that ESD is as much about people, their personalities, cultures and language, as it is about governance process is the first step in genuinely valuing local knowledge for ESD in Australia. Strategic knowledge plays a vital role in the development, implementation and process of any environmental management and community development project. There is much overlap between what can be described as strategic with what can be described as specialised and place-based. Strategic knowledge encompasses knowledge of governance structures and local community politics. It also includes knowledge of project management and planning, community development and facilitation, as well as place-based knowledge.

Knowledge of governance structures comprises historical and contemporary knowledge of legislation and relating policies (see chapter 5). It also includes the knowledge and ability to create, develop and implement policies and plans such as action and recovery plans. Central to this knowledge type is the ability and knowledge to use the appropriate language to influence, effect and use government structures to meet one's own ends. This is demonstrated by the use of governance structures to attract funding and to hold government accountable to legislation such as the *Environment Protection and Biodiversity Conservation Act, 1999*.

Knowledge of local community politics consists of knowledge of politics of and between different individuals and interest groups. This includes knowing when to align with groups; when to avoid groups; when to remain politically neutral as well as knowing the appropriate language to use when negotiating with other groups. Strategic knowledge is composed of several knowledge cultures already mentioned above. These include project management and planning, community development and facilitation knowledge as well as place-based knowledge.

Holistic Knowledge

According to Brown (2001a), holistic knowledge pursues the aim of sustainability by working to acknowledge, validate and integrate all the knowledge cultures that are operating at the environmental management and community development interface. In relation to the two project case studies it means working from within given government structures to create new visions and goals for equitable ESD. The two project case studies could be described as innovative approaches to this end. Although there is always room for improvement, for adaptive and equitable management of project process, the two approaches could be considered

as attempts at more holistic approaches to ESD. I argue that approaches that embrace pluralism, knowledge and the local as places from which to work towards the third cultural space (following Bhahba, 1990) are practising holistic knowledge.

The following section introduces matrices of the various knowledge cultures active in the two case study projects (see Table 10-1 and Table 10-2). Understanding which knowledge cultures are present at these interfaces is important as a way of conceiving of the value of each knowledge community. It provides a means of conceiving whether any knowledge culture is under-represented and could thus limit project success. In Victoria it is clear that increased specialised knowledge, in particular facilitation as well as historical and cultural knowledge would assist in improving project success. A reading of the Northern Territory matrix clearly shows that specialised knowledge relating to community development, facilitation, historical and cultural and project management and planning, as well as strategic knowledge of community politics and place-based knowledge are under-represented by the current environmental management and community development project.

	Place-based Knowledge	Specialised Knowledge	Strategic Knowledge	Holistic Knowledge
Government Arena	Project knowledge Some knowledge of people Some knowledge of local networks Some knowledge of local histories	Community development knowledge Facilitation knowledge Historical and cultural knowledge Project management and planning knowledge Scientific knowledge	Knowledge of government structures Community development knowledge Facilitation knowledge	TSN project creation
Community Arena	Knowledge of local networks Knowledge of people Project knowledge Knowledge of local histories	Some knowledge of project management and planning Some knowledge of scientific methods	Knowledge of local community politics Place-based Knowledge	Unknown

Table 10-1 Victorian case study: the knowledge cultures

	Place-based Knowledge	Specialised Knowledge	Strategic Knowledge	Holistic Knowledge
Government Community	Some knowledge of local networks Some project knowledge	Scientific knowledge Technical knowledge Policy and planning knowledge Some knowledge of project management and planning Some knowledge of community development processes Some knowledge of facilitation processes Some knowledge of local histories and cultures	Knowledge of governance structures Some Place-based Knowledge Some knowledge of facilitation processes	The vision and goals of the DKCRC
Aboriginal Community	Knowledge of local histories Knowledge of local networks Knowledge of people Some project knowledge	Indigenous knowledge Some technical knowledge Some knowledge of local histories and cultures	Knowledge of local community politics Place-based knowledge	Unknown
Pastoral Community	Knowledge of local histories Knowledge of local networks Knowledge of people Some project knowledge	Pastoral knowledge Some technical knowledge	Knowledge of local community politics Place-based Knowledge	Unknown
Conservation Community	Knowledge of local histories Some knowledge of local networks Some knowledge of people Some project knowledge	Scientific knowledge Some technical knowledge Some knowledge of community development processes	Some knowledge of governance structures Place-based knowledge	Unknown

Table 10-2 Northern Territory case study: the knowledge cultures

10.6 Celebrating the limitations of local knowledge

The final analysis of this chapter explores how equitable and sustained environmental management is contingent on first acknowledging the limitations of the many knowledge cultures active in the environmental management and community development projects and subsequently celebrating these limitations. This approach complements the cutting edge politics (after Howitt, 2001b) practised in chapter 6. The following investigation considers firstly, how the extension of Brown's (2001a) typology advocated in this chapter allows a reading of the possible commensurability of the knowledge cultures represented in the two project case studies. Secondly, this investigation is countered with a discussion relating to the dangers of further perpetuating the knowledge dichotomies inherent to the meta-narrative of ecologically sustainable development.

Despite the various world views exemplified by the knowledge cultures active in the two project case studies, these knowledges can be considered as possibly commensurable because all are necessary for equitable ESD at the environmental management and community development project interface. This thesis contends that if some of these knowledge cultures are absent, under-represented or under-valued, the resulting project will fail to be equitable. As a project member from the government arena in the Northern Territory who works closely with Aboriginal people articulates the Desert Fire project will only be successful if it practises *a realistic view of the world or rather a pluralistic view of the world* (NT-G-5). The words of a project member from the government arena in Victoria who works closely with local landcare groups echo the importance of acknowledging the many ways of knowing the same world. He critiques the tensions between the way our society values local community knowledge and the lived local realities. He articulates that

our culture doesn't... value other forms of knowing very easily, that might be women's knowledge or Indigenous knowledge or local knowledge or empirical knowledge gained by observation and trial and error [...it isn't validated] until it goes through the process of gaining credentials and a degree of acceptance [...and is] acknowledged by the experts (VIC-G-4).

The perceptions of these project members complement the discussion in chapter 3 (section 3.6) that presents the case for (ecologically) sustainable development as knowledge. Furthermore, the findings shared previously in this chapter complement the critique developed in chapter 4 (section 4.3) that all knowledge is locally situated. Such a conceptualisation of knowledge allows a reading of the potential commensurability of the many knowledge cultures active at the local environmental management and community development project interface. This reading does not contradict the call by this research to celebrate difference and diversity as important for ESD. Neither does it undervalue the importance of conflict in generating new knowledges and approaches for ESD. Indeed, the process of cultural hybridity (discussed in

detail in chapters 11 and 12) is ignited by conflict and negotiation. Rather, it provides a means to conceptualise the equal importance and of these diverse knowledge cultures for local environmental management and community development.

Individual knowledge is the basis for any environmental management and community development work. When individuals become empowered to own their knowledge, the potential for equitable and sustained environmental management is enhanced. By definition place-based knowledge is essential for successful environmental management and community development. Specialised knowledge is equally important and it can either be shared or extrapolated according to the situation. Strategic knowledge is diverse. Although some project members from the local community arena, for example, those working with the Threatened Species project in Victoria, are able to self-mobilise within certain environmental governance landscapes, it is not essential for all individuals from the local community arena to develop this kind of strategic knowledge. In relation to the local realities of many Aboriginal communities, project success many depend upon the important role of a project officer or gatekeeper who can work strategically across all knowledge cultures. Some argue that the more strategic the community is able to be, the more successful and empowered they will also be. Holistic knowledge is equally important to equitable and sustained environmental management and community development because it touches the core of the matter. Developing and maintaining a holistic understanding of the challenges, the goals and potential outputs of any environmental management and community development project is central to working towards equitable and sustainable ESD in Australia.

The different knowledge cultures exemplified by the two project case studies and presented in this chapter do not have to be considered in opposition to or contrary to each other. Holistic approaches to environmental management and community development are founded upon social learning strategies. These strategies consider ways to engage equitably with these many knowledge cultures to celebrate diversity and pluralism as the basis of ESD in Australia.

10.7 The dangers of knowledge dichotomies

It is clear from the local voices of this research that local community knowledge plays a vital and essential role in the networks surrounding environmental management in Australia. In Victoria, project members from the local community arena engage with both government processes and draw on knowledge networks in working to manage and protect threatened species habitat in their region. The local livelihood issues faced by potential project members from the local community arena in the Northern Territory are different to those in Victoria. The local community knowledge held by pastoral, conservation and Aboriginal land managers in the southern Tanami is essential in land management approaches and overcoming conflicts related to fire in the region. Working together with project members from the government arena to

manage fire in the southern Tanami is an important step in overcoming conflict which, in turn, is closely connected to the development of sustainable livelihoods in the region.

Conceiving of a world composed of varieties of local knowledge and celebrating these diverse voices is essential in working towards equitable and sustained environmental management in Australia. Perpetuating dichotomies that juxtapose scientific knowledge with local knowledge is a very dangerous practice. This is because these dichotomies are hinged upon paternalistic and colonial notions of 'we know better'. This not only breeds suspicion between interest groups, for example, in the pastoral and Aboriginal communities, but also leads to ongoing social and environmental degradation. This is because, as discussed in chapter 3 (section 3.6), local and Indigenous knowledges are not necessarily unscientific (Murdoch and Clark, 1994) but neither are they always in harmony with their natural and social environments because some local practices may be environmentally degrading. Equally scientific knowledge is not necessarily asocial but it does often advocate a technocratic fix that is often devised in isolation from the local situation (Pretty and Scoones, 1997).

Narratives and resultant practices that perpetuate the previously mentioned knowledge dichotomies ignore the many variables of knowledge. Firstly, knowledge selection is political. As discussed in chapter 6 (section 6.4) there is difference and diversity across the landscape. As such choosing one form of knowledge generation over another is based upon power rather than an essential objective truth. Secondly, as discussed in chapter 4 (section 4.3), the generation of knowledge is a social process. In all manner of knowledge generation the collection and analysis of data is dependant upon the individual or group of individuals engaged in the process of knowledge making. All individuals are story tellers. They interpret the biophysical and social worlds in ways characteristic to the social institution to which they belong. As such they perpetuate a given political agenda. For example, some individuals interpret the landscape as a sum of its parts; others interpret the very same landscape as one single entity.

The political nature of knowledge generation begs the question: when does knowledge become skills? The practice of such skills, for example, using equipment to collect data, using the correct words on paper, using the correct tradition in which to communicate, is very much a learnt practice. The example given in chapter 4 (section 4.3) that speaks of the success of proponents of non-science based knowledge bases using scientific language as a form of currency to acquire government funding highlights the fact that knowledge is about politics rather than purely proving or disproving given truths.

Perpetuating dichotomies that construct local and Indigenous knowledge as panacea to all environment and development problems are equally dangerous in working towards equitable and sustained environmental management in Australia. This narrative assumes that local practices will be in accord with the social and environmental principles of ESD. Assuming that the local knows best reinforces colonial narratives of, for example, the romanticised noble savage. In the Northern Territory such a narrative places full responsibility on Indigenous

owners to halt the degradation caused by years of colonial use. This degradation has resulted from the over-stocking of pastoral stations, the intentional or accidental introduction of feral floral and fauna species into these landscapes as well as the many other landscape changes that have resulted from the changing colonial notions of land management. Equally, it justifies minimal government funding (the Indigenous Protected Area program is working to rectify such practices) because Traditional Owners are constructed as individuals whose very lives are based upon ethics of stewardship. In reality, many Indigenous land owners are requesting the assistance and calling for increased funding to manage their heavily degraded lands.

From this discussion, it is clear there are many dangers in perpetuating the knowledge dichotomies and resultant hierarchies inherent to the meta-narrative of ESD. Conceiving of all knowledge as local provides a means of moving beyond these knowledge dichotomies. Extending Brown's (2001a) knowledge typology to conceive of the many knowledge cultures active at the local environmental management and community development interface as local not only supports the voices of this research but complements the applied peoples' geography advocated by this thesis. Moving beyond the knowledge dichotomies inherent to the meta-narrative of ESD is the first step in addressing current levels of environmental and social degradation. The findings and discussion shared in Chapter 11 considers how to operationalise the principles shared in this chapter.

10.8 Conclusion

This chapter demonstrated how the findings reported in chapter 9 further illuminate the imperative of knowledge sharing for ecologically sustainable development in Australia. This in turn emphasises the importance and potential of practicing a cutting edge politics for equitable and sustained environmental management in Australia. This is because the potential of all knowledge cultures in working towards equitable and sustained environmental management and community development is encapsulated by their limitations. These limitations expose the combination of knowledge cultures necessary for successful environmental management of locally situated projects. The findings of this research demonstrate that the success of these knowledges is contingent on their local relevance and adaptability. Extending Brown's (2001a) typology of knowledge cultures in western decision making systems to acknowledge that all knowledges are local provides the means to first unpack the many knowledge cultures active at each project interface, second, to consider the possible commensurability of these knowledge cultures, and third, to reflect upon the dangers of perpetuating the knowledge dichotomies and hierarchies inherent in the meta-narrative of ESD. It also creates the platform from which to consider strategies for knowledge sharing between interest groups engaged in local environmental management and community development projects.

Part 6: Moving beyond dichotomies of exploitation

Practising Cultural Hybridity for the Third Space

Chapter 11



Using story books to talk about managing fire in the
southern Tanami, Northern Territory

Photo: Kirsten Maclean 2005

Chapter 11: Practising cultural hybridity for the third space

11.1 Chapter aim and overview

The aim of this chapter is to address the third question posed by this research: how can greater knowledge sharing between the many interest groups involved in environmental management and community development projects in Australia be devised? This chapter integrates the epistemology of the thesis as expressed through the applied peoples' geography and cutting edge politics practised throughout with the findings from chapters 7 to 10 pertaining to the power of the local to extend the theory that ecologically sustainable development (ESD) is about knowledge (discussed in chapter 3, section 3.6). The findings and arguments shared in this chapter reveal that equitable and sustainable processes to improve knowledge sharing between interest groups involved in environmental management and community development projects depend upon the practice of cultural hybridity. This chapter demonstrates that the practice of cultural hybridity is threefold. The chapter explores what it means to engage in and actualise the practice of cultural hybridity.

11.2 Processes for an applied cultural hybridity

The arguments advocated in this chapter complement the work of various researchers introduced in chapter 3 (section 3.6) who theorise strategies for overcoming the entrenched dichotomies of the meta-narrative of ESD that privilege one knowledge base over another. These researchers speak of 'knowledge in action' discourses (Blaike et al., 1997); the development of 'discourse coalitions' (Hajer, 1995); the hybrid nature of 'sustainable knowledge' (Murdoch and Clark, 1994); and the importance of 'transepistemic communities' (Knorr-Cetina, 1983) in working towards equitable and sustainable ESD (ESD). Of particular interest to this chapter is the work of Bhabha (1990) who speaks of the important practice of cultural hybridity in celebrating difference and diversity. I engage with his arguments to consider how the practice of cultural hybridity can open the opportunity to move beyond the previously mentioned knowledge dichotomies. I work from the stance that

the importance of hybridity is not to be able to trace two original moments from which the third emerges, rather hybridity... is the 'third space' which enables other positions to emerge. This third space displaces the histories that constitute it, and sets up new structures of authority, new political initiatives (Bhabha, 1990:211).

In chapter 10 (section 10.4, Figure 10.1) I extended Brown's (2001a) typology of knowledge cultures in western decision making systems to complement the epistemology of this research as well as the findings shared in chapters 9 and 10 that all knowledge is locally situated

and tied to place. This typology enables the theoretical mechanism to identify and unpack the knowledges of best practice environmental management active at the environmental management and community development project interface as well as the knowledge cultures necessary for successful and equitable environmental governance and management in Australia. In this chapter I expose how the practice of cultural hybridity not only enables a theoretical strategy to move beyond previously mentioned knowledge dichotomies, but also provides the basis for practical strategies for increased knowledge sharing at the local environmental management and community development interface. The following discussion establishes that applied strategies to actualise the practice of cultural hybridity are threefold. These strategies complement the impetus of the thesis. Engaging in cultural hybridity is firstly, about the ongoing practice of the applied peoples' geography advocated by this research; secondly, conceptualising social processes for planning and implementing projects that complement local voices; and thirdly, cultural hybridity is contingent on creating spaces for negotiation.

11.3 Practising an applied peoples' geography for cultural hybridity

The first analysis of this chapter complements the findings from chapters 7 to 10 by demonstrating that cultural hybridity is dependent upon the applied peoples' geography and resultant cutting edge politics, practised by this research. This applied peoples' geography provides tools to open up the local spaces of environmental governance and management in Australia in ways that are empowering and create the basis for social action (after Harvey, 1984). In doing so, it recognises the power of the individual as an agent for social action and change. In a discussion about the essential role and power of the local, one cannot look past the power and potential of the individual in working to move beyond the knowledge dichotomies inherent to the meta-narrative of ESD. Indeed, Church (1992) points out that so many of the key social changes throughout history have been down to the inspiration and commitment of just a few people. In the context of an ever-changing political world "the power of individuals to bring about change is as great or greater than it was when the United Nations was created" (Church, 1992:22). The following discussion illuminates the way that project members from the two project case study describe strategies for increased knowledge sharing at the local environmental management and community development interface can be aligned under four broad principles. These principles complement the research epistemology, reinforce the importance of the applied peoples' geography advocated by this research and exemplify the significance of practising a cutting edge politics for cultural hybridity. Although the four principles are common across the two project case studies, their exact meaning varies according to location.

These principles include:

1. Working to unsettle current epistemology of ecologically sustainable development (or land management in the Northern Territory);⁶⁴
2. Considering the ingredients necessary for equitable, adaptive and sustained social process;
3. Developing planning approaches for equitable environmental management and governance in Australia; and
4. Engaging in activities and techniques for increased knowledge sharing.⁶⁵

The remainder of this analysis elucidates what these principles mean for project members in Victoria and the Northern Territory.

11.3.1 Case study 1: principles for protecting and conserving threatened species habitat in Victoria

Project members involved with the Threatened Species project in Victoria offer three distinct arguments relating to the importance of engaging in processes to unsettle the current epistemology of ESD in Australia. Firstly, some project members from the government and the community arenas believe that sustainable environmental governance and management is based upon listening to and valuing all knowledges equally; breaking down knowledge stereotypes of experts and non-experts; and considering local knowledge networks as the locus for collectively finding solutions. Secondly, some project members believe that successful environmental governance and management is about revolutionary learning and action. A project member from the government arena articulates that this learning is dependant upon individual learning. He believes that the individual's approach to the world

changes when you get pushed into challenging your assumptions... you need something to shake your world view to make you question it and then look for change... that's where change and innovation happens (VIC-G-4).

Thirdly, some project members from the government arena believe that equitable and holistic environmental governance and management processes must acknowledge the reality that nature is a cultural construct but, in an inter-related way, must incorporate a sophisticated understanding between spiritual connection to place and resulting environmental governance and management in Australia.

⁶⁴ This principle forms the philosophical foundations upon which the other principles rest.

⁶⁵ Most of the ideas relating to the operationalisation of increased knowledge sharing between groups came from individuals in the Indigenous and pastoral communities. This supports earlier arguments that those living at the local environment and development interface are the ones with the knowledge of how to approach local challenges.

Project members identify various ingredients necessary for equitable, adaptive and sustained social process at the local project interface. These ingredients include recognising the role of people, of opportunity costs and of monitoring and evaluation in equitable and successful environmental governance and management. Some project members from the local community arena state that it is essential for government to employ the right people. These people must have good local knowledge and local networks and must be able to liaise and network with diverse individuals and groups. This is important because, as the words of a local landcare president express, *only good communicators will survive* (VIC-C-9). Other project members explain that these people must also have a flexible, supportive and opportunistic attitude to their work because working with community and other non-government groups requires making the most of opportunities as they arise. On a related point, effective social process is highlighted as important for project success by some project members. This is because equitable environmental governance and management is dependant upon listening to the local as the locus for ESD. Project members point out that these processes must be adaptable and must recognise social diversity as the key to equitable and sustained environmental governance and management. These processes must engage with and value different knowledges as well as recognise and accept the fact that change takes time. Of particular importance is the philosophy of working together rather than against each other. Many project members highlight group psychology, the role of individual personalities, effective communication and the building of trust are central to project success. A final ingredient to facilitate equitable, adaptive and sustained social process is the importance of monitoring and evaluating the social processes of which such projects are composed.

Project members strongly advocate the importance of developing planning approaches for equitable environmental governance and management. Some project members believe that planning approaches must be grounded in bigger picture thinking, they must focus upon the development of strategic and objective approaches, and they must develop an inter-group motherhood statement. Other project members believe that collective learning and knowledge synergies are central to any such planning process. Other ingredients highlighted as essential for equitable and sustained environmental governance and management include clear communication and the development of trust and social capital among individuals from the immediate project community as well as those from wider government and community arenas. Some project members from the local community arena in Victoria articulate the need for clarity of project aims, objectives and work approaches. This includes developing specific work schemas and realising that the specialised knowledge of external experts is often required. Project members believe that ongoing monitoring and evaluation of planning procedures is central to ensuring that the planning process itself is equitable and all-inclusive.

Project members from the government and local community arenas identify specific activities for increased knowledge sharing at the local project interface. These activities

include: the development of a project management approach that includes frequent committee meetings; the employment of individuals from the local community groups as project officers; as well as identifying who can do what, and thus considering what knowledge is needed to satisfy specific project outcomes. Other identified activities include the ongoing monitoring and evaluation of projects in relation to on-ground tangible project work as well as more intangible social processes and an increase in the number of field trips and field days offered by the project. One project member explains that these days are particularly important because they provide opportunities for place-based learning and knowledge exchange.

In summary, an overwhelming number of project members from the Victorian case study conceive of successful and equitable environmental governance and management as multi-faceted. Their words and opinions highlight the fact that project success is dependant upon firstly, achieving practical on-ground project works to protect and enhance threatened species habitat in the region; secondly, recognising the power of the local; and thirdly, developing processes to challenge current environmental governance epistemology and resulting environmental governance practice. A significant number of project members locate knowledge networks, social process and sustained knowledge sharing as central to equitable and successful environmental governance and management at the local project interface in Victoria.

11.3.2 Case study 2: principles for managing fire in the southern Tanami, Northern Territory

Project members involved with the Desert Fire project in the Northern Territory speak about the various benefits the project could bring to the southern Tanami region. There are also various opinions about what a strategy to manage fire in the region should encompass. For example, a manager of Birds Australia based in Melbourne believes the strategy should be a tangible document developed in consultation with all interest groups. There should be consensus about *the objectives and methods and then there should be a series of actions. This could end up being a booklet with series of maps, fires zones, people saying we are going to do this in this zone* (NT-C-9). A pastoralist from the region advocates that the strategy should be a living document: *once a book was put out then it is up to the [Bushfires Council] to have regular meetings* (NT-C-13). An employee from the Central Land Council who works closely with Aboriginal people in the region believes that fire management cannot be contained in a book. He explains:

there isn't a plan that is going to make any difference but there is a process and it would be one that is absolutely inclusive [...a] participatory process and in that respect it needs to be one that concentrates its resources in bringing people together, to understand each other's perspectives, there is always room for improvement and a long process of defining how you use fire is as important (NT-G-6).

The voices of these project members illuminate that a fire management strategy means different things to different people. As is elucidated in the following discussion, project members describe several strategies that inform the previously mentioned principles for increased knowledge sharing at the local environmental management and community development interface. Satisfying all four principles will eventuate in equitable and sustained environmental governance and management in the southern Tanami.

Some project members speak about the importance of working to unsettle current approaches to land management. In this context it means valuing knowledge equally. As an employee of the Central Land Council articulates, in relation to Indigenous knowledge of fire

you can say to people: look in your community you have got some amazing knowledge about burning and how to manage country and fire, this group of western scientists over here would like to know about it and they would like you to show them how to use it (NT-G-6).

Valuing local pastoral knowledge is equally important because, in the words of this pastoralist most of the pastoralists have got knowledge, all sorts of knowledge, from fire to drought. They have got to put that knowledge forward as everyone's area is slightly different (NT-C-13). On a related point, to some project members, working to unsettle current approaches to land management means living outside the paradigm. This pastoralist enthuses that

you've got to get outside that [personal comfort] area and challenge yourself as well as other ideas, to see if something is going to work, if you are prepared to do that you can achieve all sorts of results (NT-C-13).

Working to unsettle current approaches to land management is also about moving to the middle ground. The words of a local ecologist highlight the importance of this. He explains that

Of course there is a middle ground... but the trouble is that we [whitefellas] are not prepared to change... there are two different cultures... overlapping this much and we are saying you mob have got to move, we are not going to move an inch. Even if we moved a little bit it would make it easier but we are not prepared to (NT-C-2).

Living outside the paradigm and moving to the middle ground means acknowledging the existence and limitations of stereotyping people. For example, it is important to move beyond stereotypes of Indigenous peoples. The same local ecologist explains the importance of getting rid of the noble savage myth for a start because that is a huge impediment (NT-C-2). It is also important to unsettle stereotypes of pastoralists. For example, as a project member from the government arena who works closely with pastoralists articulates, contrary to popular belief *the*

great thing about [the pastoral] industry here is that most people are organic but don't go to the level of getting certified (NT-G-3).

Working to unsettle current approaches to land management also means considering local contradictions. The words of a pastoralist from the region touch upon this dynamic:

we are talking about stopping black fellas in inappropriate lighting of fires, but we are still actually burning. So I had one old fella, when I asked him why he burnt, say that I was burning that fire last week, so why shouldn't he? (NT-C-7).

Working to unsettle current approaches to land management also means working with, rather than being paralysed by, local realities. As a non-indigenous pastoral manager of an Aboriginal pastoral enterprise states *[Aboriginal] people want to work, maybe not every day, maybe only one day in 6 months, but they want to so surely it's a great labour force of willing people (NT-C-16).*

Project members identify various ingredients that are necessary for equitable, adaptive and sustained social process. These include adequate, responsible and ethical government employment practices, for example Aboriginal and pastoral individuals should be paid for their knowledge and expertise. Some individuals believe that this would not only send the message to these interest groups that their knowledge is genuinely valued by government and scientists but it would also assist in moving beyond the culture of suspicion that exists between pastoralists, Aboriginal people and employees of government agencies, that often lead to communication break down and conflict. This is particularly important because, as this pastoralist points out, *the government and research agencies need to realise that they only get out what local people are prepared to put in (NT-C-13).*

Some project members involved with the Desert Fire project believe that engaging with and developing planning approaches for equitable environmental governance and management is central to both overcoming conflict relating to fire in the region and the success of the project. An Aboriginal woman from the region states that the different groups have got to talk to each other and listen to each other because *if they did come together they could get a bit of an idea of why the other one is doing what they are doing (NT-C-15).* Planning approaches are particularly important considering that working together to overcome conflict is pivotal to better fire management in the region. As this Aboriginal elder points out *sometimes the women disagree so then men are not able to light that fire, they have to be working together to make a better job of it (NT-C-8).*

Some project members speak of the potential of planning approaches to assist the different interest groups in finding common ground and goals. The words of this Aboriginal woman articulate how planning processes have the potential to facilitate innovation. She explains:

maybe get the pastoralists to talk and say their bit and get our fellas [traditional owners] to say what they think and see what they come up with (NT-C-15).

Many project members working at the environmental management and community development interface in the Northern Territory identify the need to engage in activities and techniques for increased knowledge sharing. It is interesting to note that most ideas shared in the following discussion come from pastoralist and Aboriginal project members. These activities include discussions of the importance of people, place, tools and techniques for increased knowledge sharing between interest groups working to manage fire in the region. Pastoralists and Aboriginal people recognise the need to bring people together from far and wide to talk about the use of fire in the region. One pastoralist points out that such meetings must happen several times because once is not enough to galvanise relationships, develop approaches to fire management, and open the channels for equitable knowledge sharing between all interest groups. It is essential to get the *right* people together at these meetings. An Aboriginal woman from the region emphasises the importance of speaking to the right traditional owners. This not only relates to their right to speak for that country, but also their ability to inform the wider community about the meeting and to encourage the right people to attend.

Project members from both the pastoral and Aboriginal communities acknowledge that in order for the different interest groups to come together, indeed to *sit together* (NT-C-15), meetings must be held away from the politics of the community and the politics of land tenure. Meetings must be held on neutral ground *where people can concentrate* (NT-C-15). These project members identify specific tools and techniques to facilitate discussion which would involve, as this Aboriginal woman articulates, *getting people to talk their bit: [traditional owners] are happy to listen and to talk* (NT-C-15). These tools and techniques include, for example, the presence of interpreters and interactive materials such as videos and books with pictures.⁶⁶ In addition there should be mixed methods of engagement: the meetings should get the *[Aboriginal] rangers out burning and then talking about fire* (NT-C-15). A pastoralist points out the need for a good facilitator because *you can't have [pastoralists] being a bit outspoken, they have got to hold their tongue a little bit* (NT-C-13). Another project member who works closely with the pastoral industry speaks about the importance of engaging in values mapping activities. She explains that *we need to think of the way to move forward [beyond conflicts over fire], so we need to map areas of value, to identify areas that people want to protect* (NT-G-3).

Project members living and working in the southern Tanami have excellent suggestions for practical approaches to begin planning for the management of fire in the region. In order for

⁶⁶ Two such books were used as communication facilitation tools during the first stage of the Desert Fire project.

these approaches and strategies to be equitable and successful they must not embody specific power inequalities. For example, the use of maps and satellites images are incredibly helpful in both sharing fire management technology but also indicating the bigger picture issues of wide spread fires in the region. However, it is important that these maps do not give the wrong messages. For example, maps can be *very accusatory [they can] tell one kind of story. We need the map to be neutral and then see if these fires are an issue for people [in the region]* (NT-G-11).

Equally, although overcoming conflict and improving communication between interest groups are central to the successful and equitable management of fire in the region, it is also important to respect the wishes of different project members. For example, as project members from the pastoral and Aboriginal interest groups point out, the different interest groups can work together but do not necessarily need to be together. This relates both in terms of accommodation when interest groups may come together for meetings or work purposes. As a pastoralist explains *[Aboriginal people] like to go and camp by themselves and we like to camp by ourselves and I respect that... I don't believe in trying to mix groups and all this great social thing [multiculturalism] that Australia believes in* (NT-C-11). This is also reflected in personal relationships. As this Aboriginal man articulates *even though we fight we can work together to look after country* (NT-C-3).

In addition to the activities and processes detailed above, some project members speak about the role of public awareness raising. One Aboriginal woman believes there could be signs advising people not to use fire *along areas where pastoral leases are. [Aboriginal people travelling through] would see those signs and take note of them* (NT-C-15). These signs should also explain why it is important to be careful with fire. The signs should be instructive and clear but not unwelcoming. For example, an Aboriginal man suggests that signs could show the threatened species in the region and be *in the language of the other people [there are many tourists that pass through the area] like the French, the Germans, the Japanese, this will make them happy and they will be happy to be on that land* (NT-C-3).

In summary, as has been demonstrated by the local voices of the Desert Fire project case study environmental governance and management in the southern Tanami region is clearly about more than simply developing and applying a practical fire management strategy. The findings of this analysis highlight the fact that successful environmental management in the region is contingent upon acknowledging the complex and sometimes contradictory approaches to land management in the Northern Territory. It is dependant upon valuing local knowledge and working towards equitable, adaptive and sustained social networking. It is also about working within the social realities of the region to develop novel, innovative and all-inclusive approaches to knowledge sharing and on-ground land management approaches.

The first strategy advocated by this analysis is grounded in the practice of the applied peoples' geography for cultural hybridity. Practising this geography acknowledges the power of

the local in environmental governance and management in Australia. The four derived principles that have resulted from an analysis of this geography describe specific fundamental elements that are central to increasing knowledge sharing at the local environmental management and community development interface. These elements expose the reality that achieving success at the local environmental management and community development interface is multi-faceted and complex. It is equally about achieving practical on-ground works and developing strategies that complement local social realities for improved knowledge sharing between interest groups.

The four principles derived by this analysis constitute the first strategy necessary for the practice of cultural hybridity. However, taken in isolation they do not provide the means to actualise the potential for cultural hybridity. They do provide, however, the basis for a project planning and implementation process that embraces and celebrates diversity. Such a process aligns with theoretical methodologies that celebrate difference, social learning and conflict as catalysts for overcoming the many challenges of environmental governance and management. Section 11.4 draws upon the social learning and community development literatures (see chapter three, section 3.7) to introduce ways to conceptualise processes to enact the four principles derived in this analysis. The analysis of the following discussion provides a second strategy to actualise the potential of culturally hybridity for environmental management and community development in Australia.

11.4 Conceptualising processes for cultural hybridity

The second analysis of this chapter considers ways to conceptualise project planning and implementation approaches that embrace the four broad principles derived in the previous discussion. This analysis engages with three models⁶⁷ from the social learning and community development literatures and the five metaphors for Yolngu learning (Marika-Mununggiritj and Christie, 1995) to assist in conceptualising the planning and learning processes necessary for equitable and successful environmental management and community development at the local project interface. The models and metaphors are useful for two reasons. Firstly, they are a useful tool to demonstrate the importance of conceptualising the stages and cycles necessary for the practice of cultural hybridity. Secondly, an analysis of these stages illuminates ways to actualise the four principles derived in the previous analysis. The five Yolngu metaphors for learning are useful in providing another way, of many, to conceptualise the learning process.

There is a wealth of literature advocating that successful planning for environmental governance and management is about social learning, relationship building, ownership and

⁶⁷Although it may seem contradictory to this research epistemology to speak of models, it is possible to ground localised social learning and adaptive management in models that have open and dynamic learning, local knowledge, flexibility and adaptability as their core concepts.

improved social and political acceptability (McCool and Guthrie, 2001).⁶⁸ The actual process itself can be as important, if not more so, than the outcome. The role and power of the planning process cannot be over-emphasised. This is because both the way in which planning is conceived and practised can either embody the process of working to unsettle the epistemology of ESD (this equates with principle 1 derived above) or it can work to reinforce the power inequalities of the current meta-narrative of ESD. Equally, the planning process can be inclusive of the identified ingredients for equitable, adaptive and sustained social process (this equates with principles 2 and 3 derived above). Alternatively, by denying these ingredients, the planning process can continue to ignore local voices and local realities and thereby perpetuate prescriptive approaches to environmental management and community development that are almost guaranteed to fail for the many reasons extolled in the thesis thus-far. The three models presented in this chapter embody particular approaches to social learning and project management. Figure 11.1 demonstrates the importance of acknowledging the power of these models, if engaged with exclusively, to value intangible process outcomes on the one hand and tangible project outcomes on the other hand. As shown in Figure 11.1 all these models exist along a continuum of social process. This continuum has epistemology as the core concept at one end and community development practice as the core concept at the other. As discussed in chapters 8 and 9 the success of the environmental management and community development projects in Victoria and the Northern Territory is based upon both tangible project outcomes and intangible process outcomes. These models can be helpful to facilitate particular ways to conceptualise project planning and implementation processes that integrate the many aspects of such projects.

⁶⁸ These attributes reflect those articulated by individuals working at the local environmental management and community development project interface.

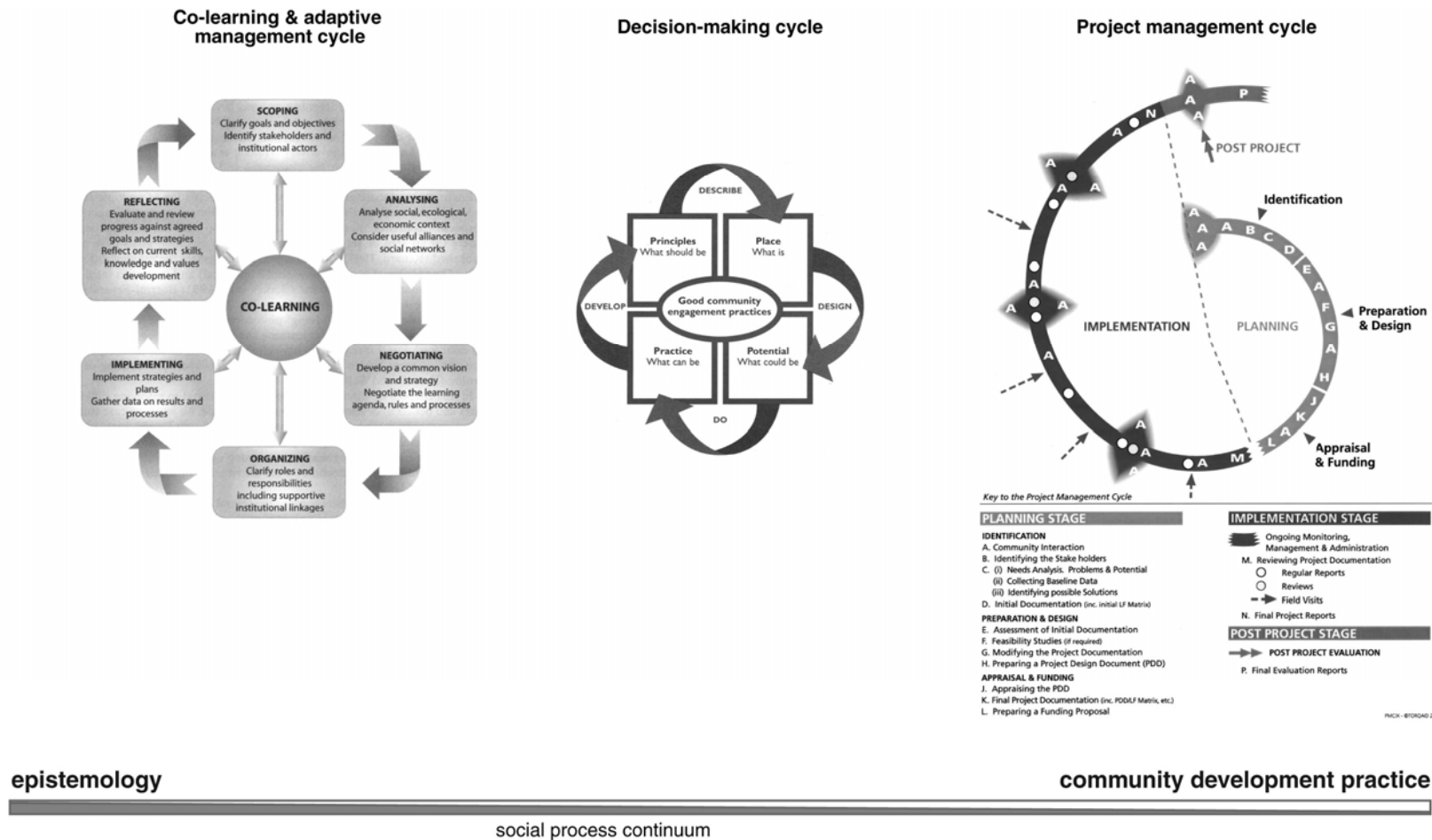


Figure 11.1: A continuum of learning cycle models

Sources L-R: Keen and Mahanty (2005:106), Aslin and Brown (2004:11) and Piper (2005).

The Co-learning Cycle (Keen and Mahanty, 2005:106) depicted in Figure 11.1 engages with the philosophy and practice of social learning. This model is useful in considering the essential and ongoing co-learning necessary for equitable and successful environmental governance and management at the environmental management and community development interface. The Decision-Making Cycle (Aslin and Brown, 2004:11) model also calls for ongoing learning processes. It speaks about practical ways and tools to engage at each stage of the learning and decision-making cycle. Both these models are informed by the adaptive management and social learning literatures. Equally useful is the Project Management Cycle (Piper, 2005). This model has evolved from community development literatures and experiences. This model is based upon project management and thus tends to describe distinct and, it could be argued, prescriptive stages of community engagement that do not recognise the need for ongoing learning and adaptive process throughout. As such this model exemplifies how specific conceptions of power can be embodied in planning and project management processes. However, this model is still a useful tool to highlight the stages of any project.

The Yolngu metaphors for learning are not expressed or fixed within a model. Rather they are encapsulated in five words: *galtha*, *dhin'thun*, *lundu-nha:ma*, *dhudakthun* and *gatjpu'yun* (Marika-Mununggiritj and Christie, 1995). The notion of *galtha* goes beyond the models presented above by speaking of a connecting spot or the importance of a unique place and time to learning. *Galtha* is “the spot where people make solid contact with the earth, they have been brought together from different places, and now they are having a discussion together to agree on a plan of action” (Marika-Mununggiritj and Christie, 1995:60). *Dhin'thun* speaks of research in relation to the specific methods used to discover information about the past which in turn inform the way in which decisions made during the process of *galtha* are pursued and followed up. *Lundu-nha:ma* literally means to “see the journey” taken by our ancestors, and this involves identifying the land and the people we have interacted with through the years, their motivations, their loyalties, their ideas, and everything else which has made them great” (Marika-Mununggiritj and Christie, 1995:61). *Dhudakthun* speaks about the importance of “learning to love and understand our homeland and the ancestors who have provided it for us, so as to create ourselves reworking the truths we have learned from the land and the elders into a celebration of who we are and where we are going in the modern world” (Marika-Mununggiritj and Christie, 1995:61). *Gatjpu'yun* means “that we are excited and hopeful and confident for the future. We know what we are looking for. It is not a discovery we are looking for, but the knowledge and skills to be true Yolngu in the modern world” (Marika-Mununggiritj and Christie, 1995:62).

Taken separately or together, these models and metaphors give practical ways of conceptualising the planning and the project management processes necessary for equitable and successful environmental governance and management of environmental management and community development projects. Table 11-1 demonstrates how the four principles derived in

section 11.3 align with various stages of the social learning and project management cycles depicted in Figure 11.1 and with the Yolgnu metaphors of learning described above. Engaging with these models and metaphors enables a foundation from which to conceptualise the processes necessary to actualise cultural hybridity. The first column re-introduces the four principles derived above; the second and third columns include the two specific social learning models relating to co-learning and adaptive management (Keen and Mahanty, 2005) and decision making (Aslin and Brown, 2004); the fourth column is based upon the project management cycle (Piper, 2005); and the final column includes the Yolngu metaphors for learning (Marika-Mununggiritj and Christie, 1995). As depicted in Table 11-1, these learning metaphors are not limited to any one stage of the learning cycle: they occur throughout.

Four Principles	Co-learning & Adaptive Management	Decision-making Cycle	Project Management Cycle	Yolngu Metaphors for Learning
Unsettling; Ingredients	Scoping; Analysing	Describe; Place	Identification	 <i>Galtha;</i>
Ingredients; Planning	Negotiating; Organising	Design; Potential	Preparation & Design	<i>Dhin'thun</i>
Activities	Implementing	Do; Practice	Implementation	<i>Lundu-nha:ma</i>
Ingredients; Planning; Activities	Reflecting	Develop; Principles	Post project evaluation	<i>Dhudakthun</i>
				 <i>Gatjpu'yun</i>

Table 11-1 The learning cycle matrix aligns: the four derived principles with the social learning and community development models presented in Figure 11.1 and the Yolngu metaphors for learning. Sources L-R: Keen and Mahanty (2005:106), Aslin and Brown (2004:11) and Piper (2005) and Marika-Mununggiritj and Christie (1995)

In summary, there are various ways to conceptualise, order and understand the tangible project outcomes and the intangible process outcomes of any environmental management and

community development project. As articulated in Figure 11.1 and Table 11-1 these outcomes are entwined with the different stages and cycles of social learning, project management and with the five Yolngu metaphors for learning. The analysis presented in this section illuminates the fact that actualising the potential for cultural hybridity is closely connected to learning cycles. The second strategy advocated by this chapter points to the importance of conceptualising processes to actualise the potential of cultural hybridity. Engaging with specific planning and project management models provides the tools to conceptualise such processes. A holistic and flexible conceptualisation for cultural hybridity acknowledges that at any one time various aspects of the learning process may be occurring. Equally, this learning process is necessary for an all-inclusive, evolving and locally owned environmental management and community development project planning and implementation processes.

11.5 Creating spaces for cultural hybridity

The third analysis of this chapter demonstrates how integrating the strategies presented in sections 11.3 and 11.4 further facilitate the potential for cultural hybridity. Taken together, the strategies advocated in sections 11.3 and 11.4 provide practical approaches for actualising local knowledge synergies within environmental management and community development projects. In this final section of the chapter, I argue that achieving approaches that listen to the local voices and engage in planning and learning processes for equitable and successful governance and management also require the creation of spaces for negotiation. The impetus for creative spaces, places and processes for cultural hybridity is the final strategy advocated in this chapter. The strategy presented in this section integrates the epistemology of the thesis as expressed through the applied peoples' geography and cutting edge politics practised throughout, the findings from chapters 7 to 10 pertaining to the power of the local and the two strategies advocated above with practical tools from the participatory community development literature to extend the notion that the practice of cultural hybridity is about creating spaces for negotiation.

Working towards greater interfacing between individuals and the interest groups they make up involves reaching a creative space where individuals are able to perceive other ways of knowing, other spaces of power, are able to conceive of reality as messy and power as entangled.⁶⁹ This creative space celebrates hybridity by welcoming the practice of objectivity that privileges contestation, deconstruction, passionate construction, webbed connections, and hope, for transformation of systems of knowledge and ways of seeing (Haraway, 1991). This space also paves the way for the Bhabha's (1990) third cultural space and allows individuals to consider what lies between spaces of knowing the world and social process. The negotiation of this space involves rich and diverse social learning. It is very personal and very individual. The

⁶⁹ The critique practised thus far in this thesis opens up such a creative space.

reality is: people must be ready and even perhaps searching for a way to live outside their *personal comfort area* (NT-C-13) or paradigm or wishing to *shake-up their world view* (VIC-G-4). This can perhaps be facilitated from within an open learning environment such as that expressed in section 11.4. Creatively negotiating spaces for cultural hybridity demands several practical and tangible factors.

Firstly, inspiring a creative intellectual space from which the individual is able to consider other ways of knowing the world as equally valid and important is fundamental to creating spaces for cultural hybridity. In practise this means valuing local knowledge, developing the power of the individual, celebrating diversity and conflict and creating an open and challenging learning environment. Secondly, genuinely negotiating spaces for cultural hybridity depends upon place. The project planning process, negotiation between interest groups, potential collaborative conflict management, and so on must be actively engaged in at a neutral place. This place must be devoid of implicit or explicit power relations that reinforce any one narrative or discourse. Engaging with all interest groups to decide upon a creative place is part of the process.

Thirdly, negotiating creative spaces for cultural hybridity is dependant upon the development of sustained and adaptive processes and practices. As such all individuals and interest groups need to move beyond previously held preconceptions of the other. They must genuinely listen to what others are saying. This kind of listening creates a forum in which all individuals feel confident to express their ideas, knowing they are really being heard. There are various tools and methods that can assist creative listening.⁷⁰ Fourthly, creative listening depends upon clear and comprehensible communication. Individuals must be clear on what they are trying to communicate, they then need to use appropriate language, symbols and approaches to convey their meaning. This may involve cross-cultural communication that does not reinforce any one narrative. There are various tools and methods that can assist creative communication.⁷¹

Finally, creating spaces for negotiation that engage in the practice of cultural hybridity for a third cultural space is very complex and difficult. Reality dictates such an equitable and genuine process will take time. Such a process is unique to any given situation. In practise a creative process is developed and owned by all those who choose to be involved. The goals, objectives, outcomes and criteria of the process are clearly understood and articulated by all those involved. The process and the on-ground works is monitored, evaluated and learnt from (see Table 11-2 for a simplified summary of the aims and purpose of each of these factors).

The learning cycle and project management models introduced in section 11.4 can assist in the development of such a creative process. There is a wealth of communication and planning

⁷⁰ The tools and methods exist in the community development literatures. The relevance of these are explored in appendices 9 and 10.

⁷¹ See footnote 70.

strategies in the community development practice literature that can provide specific participatory learning and action tools to further engage project members in the planning and implementation of such creative processes (for example, IIED, 1988-2006; Pretty et al., 1995; Allen and Kilvington, 2001a, 2001b; Chambers, 2002b; Walsh and Mitchell, 2002; Lambert et al., 2003; Eamer, 2004 and Claremont and Davies, 2005). There are also planning approaches, such as the logical framework approach (see Piper, 2005) that can assist in framing such creative processes. See appendices 9 and 10 for an example of how the three strategies advocated in this chapter can be synthesised with participatory learning and action tools within a given framework for social action.

Aim	Purpose
Creative Space	A creative intellectual space means celebrating diversity, difference and conflict. <i>Creating an open and challenging learning environment requires</i>
Creative Place	Engaging all interest groups to decide upon a creative and neutral place for negotiations and decision making <i>Equally</i>
Creative Listening	Developing sustained and adaptive processes for cultural hybridity demands a forum in which all individuals feel confident to express their ideas, knowing they are really being heard. <i>This also depends upon</i>
Creative Communication	Clear, dynamic and interactive communication. <i>Cultural hybridity is situated in</i>
Creative, Adaptive Process	A creative process that is developed and owned by all those who choose to be involved. The goals, objectives and outcomes of the process are clearly understood and articulated by all those involved.

Table 11-2 Mutually contingent factors for creating spaces of negotiation

11.6 Conclusion

The findings and analysis presented in this chapter reveal the fact that equitable and sustainable processes to improve knowledge sharing between interest groups involved in environmental management and community development projects in Australia depend upon the practice of cultural hybridity. Engendering this practice is contingent upon three strategies. Firstly, practising an applied peoples' geography for cultural hybridity further acknowledges the power of the local in environmental governance and management by celebrating the power and potential of the individual as an agent for social change. The four derived principles for improved knowledge sharing at the local interface are evidence of this power and potential. The second strategy advocated by this chapter pertains to the importance of conceptualising processes for cultural hybridity. This strategy engages with social learning and community development models as well as the five Yolngu metaphors for learning to articulate the stages and cycles of project planning, implementation and learning processes. These stages and cycles clearly correspond to the four derived principles previously mentioned. The final strategy advocated by this chapter recognises the importance of the five factors essential to creating spaces for negotiation between the many interest groups involved in environmental management and community development projects in Australia. This final strategy integrates the epistemology of the thesis, the four principles derived in the first strategy and the project planning, implementation and learning processes argued for in the second strategy. Taken together these three strategies provide the impetus, the process and the space necessary to move beyond knowledge dichotomies inherent to the meta-narrative of ESD. These strategies have the potential to engage Bhabha's (1990) third cultural space for equitable and sustained environmental governance and management into the future.

Conclusion

Chapter 12



Pastoral landscape in the southern Tanami,
Northern Territory

Photo: Kirsten Maclean 2004

Chapter 12: Conclusion

12.1 Chapter aim and overview

This chapter illuminates the methodological, empirical and theoretical significance that this research has for contemporary research, policy and practice in the field of environment and development. First I revisit the motivation, aim and questions of the research. Next I demonstrate the significance that the epistemology presented and practised in parts 1 to 3 has for exposing and engaging with the local spaces of environmental management and community development in Australia. I articulate how the findings of the research that are presented in parts 4 to 6 shed light on the tensions between the rhetoric of environment and development policy and practice and the lived local realities of individuals engaged in environmental management and community development in Australia. I then discuss the value of this research: I explain how the theoretical and practical strategies practised and advocated throughout the thesis provide the potential to move beyond the dichotomies of exploitation that have been demonstrated in parts 3 and 5 as inherent to the meta-narrative of ecologically sustainable development (ESD). Following this I discuss the value of these findings for the field of environment and development. I end with suggestions for the future.

12.2 The thesis revisited

This thesis is grounded in the conviction that the meta-narrative and resulting policies and projects of ESD are in fact unsustainable because they perpetuate the intra- and inter-generational inequalities they propose to overcome. In relation to best practice environmental management in Australia, institutionalised policy and practice are based upon dichotomies of self/other and us/them that work to privilege global knowledge over local knowledge. This research study asserts that equitable and sustainable ESD is dependent upon moving beyond these dichotomies. The resulting aims of this thesis are twofold. First, the research works to expose the place-based realities of environmental governance and management in Australia. Second, the research considers what it means to move beyond entrenched knowledge dichotomies. These aims are enacted via three research questions:

1. How do knowledges of best practice environmental management move across and between international, national and local scales of environmental governance and community based environmental management?
2. What is the role of community stakeholder groups and local community knowledge in the networks surrounding environmental management in Australia?
3. How can greater knowledge sharing between the many interest groups involved in environmental management and community development projects in Australia be devised?

The theoretical and practical complexities of these questions are explored via two case studies. These case studies provide the means to pursue the two aims of this thesis. They give life and meaning to the more theoretical investigation of the thesis.

12.3 Epistemological frameworks for social action

The methodology presented in chapter 2, practised by this research project both in relation to fieldwork and qualitative data analysis, corresponds with the thesis epistemology. This epistemology is grounded in the assertion made in chapter 3 (section 3.6) that equitable and sustainable ESD is fundamentally about knowledge and knowledge sharing. This epistemology imparts the conceptual toolkit for the applied peoples' geography (after Harvey, 1984) practised throughout the thesis. The significance of this applied peoples' geography to expose and engage with local spaces of environmental management and community development cannot be overlooked. This is for two reasons. First, it provides the means to unpack the complexities of environmental governance policy and environmental management practice in Australia. It promotes a critique that weaves together theories from the disciplines of political and cultural geography (for example, Massey, 1991a; Harvey, 1996; Howitt, 2001a, Sharp et al., 2000, Thrift, 2000 and Adams, 2003), post-colonialism (for example, Said, 1979; Guha and Spivak, 1988; Bhabha, 1994 and Willems-Braun, 1997), political ecology (for example, Bryant, 1992, 1997, 2001 and Peet and Watts, 1996), post-structuralism (for example, Foucault, 1980a), post-development (for example, Escobar, 1995, 2001), the social construction of nature (for example, Haraway, 1991; Castree and Braun, 1998 and Proctor, 1998) and the history and philosophy of science (for example, Kuhn, 1962 and Latour, 1987) to question 'whose development' and 'whose environment' are privileged by government processes and projects. This applied geography is strengthened by drawing from the previously mentioned related disciplines. The significance of this applied geography is demonstrated in the analysis of the political landscapes in which the two project case studies are embedded in chapter 5. Second, it opens up the local spaces of environmental governance and management in Australia, provides the means to conceptualise the power of the local and as such opens up the opportunity for social action. This approach informs the analysis of the empirical evidence developed from this research and articulated in chapters 7 to 11. The significance and value of these analyses are demonstrated in section 12.4.

The opportunity for social action that is opened up by the applied peoples' geography is further reinforced and expressed by the cutting edge politics (after Howitt, 2001b) practised directly in chapter 6 and indirectly in chapters 7 to 11. The significance of the cutting edge politics for creating opportunities for social action is twofold. First, it extends the theory of the applied peoples' geography into practice by exposing the many layers of engagement with country (historical and contemporary) and forms of environmentalism practised by individuals engaged with each of the two case study projects. The cutting edge politics acknowledges

diversity and celebrates difference. As such it is an integral step in working towards the potential of cultural hybridity and a third cultural space of representation (after Bhabha, 1990) for local environmental management and community development in Australia. The significance of this is discussed in more detail in section 12.5. The second significance of the cutting edge politics is in demonstrating that the environmental, social and political complexities of place are inevitably played out through environmental management and community development projects. Conceptualising environmental management and community development projects in this way facilitates an analysis of the embedded power inequalities of such projects. This is of utmost importance to equitable and sustainable environmental management and community development for two reasons. First, it exposes the potential for any one group to be silenced by the project structure. Second, it opens up the opportunity to challenge the entrenched dichotomies that these projects are attempting to overcome thereby creating the potential for the practice of cultural hybridity.

12.4 Empirical reflections for social action

The following section reflects upon the implications of the empirical findings of this research. It takes each research question in turn to highlight the importance of the question, what the empirical findings demonstrate, how these findings inform the overall thesis aims and the significance of these findings to the field of environment and development.

12.4.1 Local voices in the landscape

The first research question reflects upon the means by which knowledges of best practice environmental management move across and between international, national and local scales of environmental governance and community based environmental management. The significance of this question is twofold. First, it works from within the meta-narrative of ESD as played out in international and national environmental governance strategies and policies, including the *Convention on Biological Diversity, 1992*, and Australia's *National Strategy for Ecologically Sustainable Development, 1992* and *National Strategy for the Conservation of Australia's Biological Diversity, 1992*, and institutionalised through Federally-funded programmes (such as the Natural Heritage Trust) to critique what the narrative of community participation means in working towards ESD. Second, given the epistemological stance of the thesis, it considers how environmental governance and management appears from the local point of view. The question is explored and answered in two separate but mutually contingent investigations. These investigations begin from the analyses presented in parts 2 and 3, which articulate how knowledge of best practice environmental management moves through place-based spaces of environmental governance (embodied by individuals from the government arena) and environmental management (embodied by individuals from the local community arena). Chapter 7 critiques the narrative of environmental governance. It considers the many spaces of

environmental governance that are embodied at the local environmental management and community development project interface. Chapter 8 critiques the narrative of participatory natural resource management. It examines the many spaces of environmental management at the local project interface.

The findings shared in chapter 7 demonstrate a complex and entangled conception of environmental governance. The findings show that environmental governance is place-based, is made up of locally situated environmental management actions and is informed via a two-way knowledge exchange that occurs through knowledge networks rather than between hierarchical governance scale. The findings shared in chapter 8 reveal that participation is an entangled and complex notion because at any given time it is unclear exactly who is participating with whom. As such these projects are composed of multiple arenas of participation and many varieties of participation. Equally, there are many varieties of environmental management at this interface. What is clear from this analysis is that project success is synonymous with community involvement and project success is as much about tangible project outcomes as it is about intangible project process.

The findings of these chapters inform the overall thesis aims in two ways. First, they further critique the meta-narrative of ESD as perpetuating knowledge dichotomies that favour one kind of knowledge over another. The findings show the entangled connection between the rhetoric of environmental governance policy with the lived local realities of individuals working in environmental management and community development projects. These entanglements highlight the fact that the nexus between what is constructed as environmental governance and community participation in the institutionalised practices of ESD is better conceptualised as the nexus between environmental governance and environmental management. This interface is composed of the varieties and multiple arenas of participation and of diverse environmentalisms. These diverse environmentalisms influence why and how individuals choose to be involved in these projects. Second, they open up the opportunity for social action because they demonstrate that environmental governance and management in Australia is composed of diverse local experiences that are tied to place. It is composed of networked and place-based local voices across the landscape. That is environmental governance and management is locally situated, locally negotiated and diverse. This is demonstrated by the fact that the environmental management and community development projects embody entangled, complex, networked and various place-based spaces of environmental governance and management in Australia. Knowledges of best practice environmental management move through and between these local place-based spaces. These knowledges are negotiated, adapted and practised in unique ways in each of these places.

These findings complement the work of researchers cited in chapter 4 (for example, Foucault, 1980a and Sharp et al., 2000) who conceptualise power as entangled and others (for example, Guha and Spivak, 1988, Spivak, 1988 and Bhabha, 1994) who advocate a multi-

spaced and hybrid engagement with spaces of power. The findings also support the work of researchers (for example McGuirk, 1997; Swyngedouw, 1997 and, Howitt, 1998, 2000a) who call for a relational as opposed to a hierarchical understanding of scale. They also complement theoretical conceptualisations of knowledge as situated and embodied in place (for example Haraway, 1991; Basso, 1996 and Casey, 1996), moving from the local to the extra-local places via networks (for example, Massey, 1993; Watson-Verran and Turnbull, 1995 and Escobar, 2001). These findings are further explored in section 12.6.

In turn these findings contradict the narrative of community participation and the related conceptualisation of environmental governance scale that is institutionalised through environmental governance and management programmes and projects of, for example, the Federal Government's Natural Heritage Trust. Contrary to the narrative and discourse of these institutions, knowledges of best practice environmental management do not move from larger global scales to smaller local scales. Similarly, and in contrast to the narrative of community participation, individuals from the local community arena are not brought in to participate. The two case studies show that the reality of environmental governance and community participation is more dynamic, entangled and complicated than that articulated through the institutionalised practices of ESD. The importance of these findings cannot be ignored and are discussed in section 12.6.

12.4.2 Knowledge networks across the landscape

The second research question investigates the role of community stakeholder groups and local community knowledge in the networks surrounding environmental management in Australia. This question is significant for this study for two reasons. First, it works from within the meta-narrative of ESD to critique the narrative of community stakeholder groups and local community knowledge. Second, it extends this critique by considering the many knowledges of best practice environmental management that are active at each case study interface. This question is explored and answered in two mutually contingent critiques. Both engage with the two project case studies. Chapter 9 explores the politics of local knowledge at each environmental management and community development project interface. Chapter 10 investigates the varieties of local knowledge active in each project.

The findings from the analysis of chapter 9 reveal that the success of the Victorian and Northern Territory environmental management and community development projects is synonymous with local community knowledge. This is because local community knowledge is powerful as it is about place; it can and does encompass the characteristics of diverse knowledge cultures; and it informs perceptions of others. The findings from chapter 10 expose the varieties of local knowledge active at the local environmental management and community development interface. These local knowledges are distinguished by specific characteristics that are embodied by individual, place-based, specialised, strategic and holistic knowledge cultures.

These diverse local knowledge cultures are equally important and necessary for equitable and successful environmental management and community development at the local project interface.

The findings of chapters 9 and 10 inform the overall thesis aims in two ways. First, they further expose the discrepancy between institutionalised practices of the meta-narrative of ESD and lived local realities. They do this by exemplifying how the power of local community knowledge not only determines project success but by example highlights the limitations of other knowledge cultures. Second, the findings clearly demonstrate the importance of knowledge sharing for equitable and sustainable ESD at the environmental management and community development interface. Any project or approach that embraces knowledge sharing should also reflect reality by first valuing all knowledge cultures according to whether they are locally appropriate and adaptable and second by acknowledging the important contribution each knowledge culture can make to overall project success. These findings point to a conceptualisation of environmental governance and management as composed of knowledge networks across the landscape.

These findings further support the applied peoples' geography and the cutting edge politics advocated for in section 12.3. They also complement the work of researchers cited in chapter 3 (for example, Shiva, 1993a; Crewe and Harrison, 1998 and Chambers, 1999) who critique the role of technology and global knowledge transfer as the answer to all environment and development challenges. Equally, they support researchers (for example, Bebbington, 1993) who argue that local and Indigenous knowledge do not necessarily hold all the answers to localised socio-environmental problems because they occur within a global setting. These findings reinforce the work of researchers (for example, Knorr-Cetina, 1983; Murdoch and Clark, 1994; Hajer, 1995 and Blaike et al., 1997) who call for specific strategies to move beyond the dichotomies inherent in the meta-narrative of ESD that locate, on the one hand, science as a universal and colonising knowledge base, and on the other hand, local and Indigenous knowledges as providing the panacea for all environment and development problems. The findings expressed in chapter 10 support and extend the work of Brown (2001a) who proposes a theoretical strategy to move beyond knowledge dichotomies and hierarchies. They extend it by conceiving of all knowledge as tied to place and thus local. This extension paves the way for practical strategies to move beyond these knowledge dichotomies that complement and operationalise the theoretical strategies advocated by this thesis. These strategies are explored in more detail in section 12.4.3.

In turn, the findings contradict the institutionalised practice of ESD in two ways. First, they expose how the ESD notions of community stakeholder groups and local community knowledge perpetuate unhelpful dichotomies of self/other and us/them. This suggests that rather than working to alleviate social and environmental degradation in Australia these dichotomies create institutions and practices that perpetuate such social and environmental

degradation. Second, these notions do not reflect lived local experience. This is because they do not acknowledge the power of local community knowledge, they do not acknowledge the varieties of local knowledge active at the local project interface, nor the varieties of knowledge necessary for project success. The significance of these findings cannot be overlooked. The implications are discussed in section 12.6.

12.4.3 Moving beyond dichotomies of exploitation

The third research question considers how greater knowledge sharing between the many interest groups involved in environmental management and community development projects in Australia can be devised. The significance of this question is twofold. First, it builds upon and moves beyond the critique of thesis parts 4 and 5 (chapters 7 to 10) to propose mechanisms for knowledge sharing between the interest groups involved with the environmental management and community development projects. Second, it proactively engages the epistemological frameworks for social action (see section 12.3) with the empirical reflections for social action (see section 12.4) to propose practical strategies that actualise the potential for cultural hybridity and what Bhabha (1990) calls the third cultural space. This question is explored and extended in two ways. First, through an analysis of what project members perceive as fundamental for improved knowledge sharing for project success. Second, through the integration of the four principles derived in this analysis with strategies from the social learning and community development literatures to consider ways that operationalise the principles and provide the potential for the practice of cultural hybridity so necessary in overcoming the knowledge dichotomies that are entrenched in the meta-narrative of ESD.

The findings of this analysis advocate three strategies that provide the potential for the practice of cultural hybridity. These strategies show that improved knowledge sharing at the local project interface is firstly dependent on listening to the local voices and devising principles to guide tangible project outcomes as well as intangible project processes for ESD. Secondly, equitable and sustained project process is contingent upon conceptualising project planning and implementation processes. Thirdly, cultural hybridity is dependent on creating spaces for negotiation.

These findings inform the overall thesis aims in three ways. First, they necessarily move beyond the critique of the meta-narrative of ESD to demonstrate the power of local voices to articulate principles for improved knowledge sharing at the local environmental management and community development interface. Second, they provide locally situated evidence that equitable and sustained ESD is about knowledge and in particular knowledge sharing for environmental management and community development. Third, they provide strategies that celebrate the practice of cultural hybridity, acknowledge the importance of the third cultural space whereby knowledge dichotomies and hierarchies are challenged by processes of renegotiation. These processes reflect the ongoing negotiation of cycles of social learning,

project management and creative spaces necessary to both move beyond dichotomies of exploitation and engage the third cultural space.

The findings complement and extend the research cited in section 12.4.2 on the importance of engaging in processes that acknowledge and celebrate diversity, place and knowledge as situated to both reflect reality and provide the means to create new social spaces of engagement for equitable ESD. They do this by providing practical strategies to actualise theoretical conceptualising. These findings bring us full circle to the notion that equitable ESD is about knowledge. Equally, equitable knowledge sharing is the basis for moving beyond the entrenched dichotomies of the meta-narrative of ESD. This in turn provides the means to overcome and challenge current levels of social and environmental degradation in Australia.

12.5 Working together to better manage country

The challenge of this research thesis has been to engage with the meta-narrative of ESD to consider theoretical and practical mechanisms to overcome the intra-generational inequalities inherent to this meta-narrative, and resulting institutionalised practice. The aim of the thesis has been to consider ways to move beyond the dichotomies of exploitation inherent in this meta-narrative. In this section I present the four general conclusions of the thesis. These conclusions synthesise the claims made for the epistemological frameworks for social action in section 12.3 with the empirical reflects for social action that have been derived from the research findings in section 12.4. The conclusions also provide theoretical and practical mechanisms for moving beyond the dichotomies of exploitation that are discussed throughout the thesis. The theoretical mechanisms are contingent upon the practice of the practical mechanisms. Thus the practical mechanisms themselves are grounded in the praxis between theory and practice.

The first conclusion provides a theoretical mechanism for moving beyond the previously mentioned dichotomies. Practising the applied peoples' geography (after Harvey, 1984) advocated by this research in chapter 4 and practised in the following chapters provides the means to consider the theoretical complexities of environmental governance and management. This geography recognises knowledge as situated and networked across time and space; power as entangled; governance scale as relational and networked; and nature as socially constructed. Practising this geography opens up the multiple, entangled and networked spaces of environmental governance and management to consider the nexus between global spaces of environment and development and local spaces of environmental management and community development. This geography provides a foundation for the social action necessary to alleviate current levels of environmental and social degradation. The following three conclusions are practical mechanisms that both embody the theoretical basis of this geography and provide approaches that facilitate this social action.

The second conclusion represents the praxis between the theory and the social action advocated in the first conclusion. Practising the cutting edge politics (after Howitt, 2001b) advocated by the thesis in chapters 5 and 6 provides the means to actualise the theoretical mechanism advocated above. This practical mechanism unpacks the tensions between government rhetoric at the environment and development interface and the livelihood realities of individuals working to manage the environment at the local scale at the environmental management and community development interface. Understanding the complexities of the political, cultural, knowledge and social landscapes at any environmental management and community development interface demonstrates that equitable and sustained environmental governance and management must recognise local specificity. Institutions that celebrate local diversity enable the adaptive management process that is necessary for resilient, equitable and sustained ESD in Australia.

The third conclusion is also grounded in the praxis between the theory and the social action advocated in the first conclusion. This practical mechanism celebrates the cutting edge politics called for in the second conclusion. Engaging with and extending Brown's (2001a) typology of knowledge cultures in western decision-making processes provides the means to consider the complexity of entangled knowledge cultures and knowledge networks of which environmental management and community development projects are composed (as discussed in chapters 9 and 10). Accordingly, it sheds light on the many and diverse varieties of local knowledge necessary for equitable and sustained ESD in Australia. This mechanism highlights the power, value and limitations of these knowledge cultures. In doing so it provides a practical mechanism to overcome theoretical debates that position these knowledges as incommensurable and therefore irreconcilable.

The fourth conclusion represents the praxis between the three previous conclusions. Practising strategies that celebrate cultural hybridity provides practical mechanisms to move beyond dichotomies of exploitation (as described in chapter 11). This is because "the process of cultural hybridity gives rise to something different, something new and unrecognizable, a new area of negotiation of meaning and representation" (Bhabha, 1990:211). Strategies that deliver both tangible project outcomes and engage with intangible project processes will result in improved knowledge sharing within environmental management and community development projects. These strategies create the foundation for the alleviation of current levels of environmental and social degradation in Australia. Such strategies and projects enable engagement with the third cultural space. This is because these strategies and projects are premised upon working together to better manage country.

12.6 Contributions to the field of environment and development

Chapter 3 locates the work of this research within the ongoing debates in the contemporary environment and development literature regarding the role of both scientific and indigenous participation in sustainable development initiatives. These debates have been critical of the precedence given to western scientific knowledge in such initiatives with some researchers asserting that science can be imperialistic and its application can sometimes lead to social inequity and exclusion. In response, local and Indigenous knowledges have often been perceived as a panacea for all environment and development problems. The overarching conclusions of the thesis provide theoretical means to move beyond these unhelpful dichotomies. These conclusions complement Haraway's (1991) assertion of plural and situated knowledges; Hajer's (1995) notion of discourse coalitions; Murdoch and Clarke's (1994) concept of sustainable knowledge; and Knorr-Cetina's (1983) idea of trans-epistemic communities. However, this research project goes one step further. It suggests practical strategies that translate these theoretical mechanisms into practice.

For example, the final conclusion speaks of strategies that practise cultural hybridity as a means of moving to Bhabha's (1990) third cultural space. These strategies integrate the theoretical mechanisms advocated in the applied peoples' geography, the cutting edge politics and the extension of Brown's (2001a) knowledge culture typology with the derived principles for success to suggest a social process necessary for improved knowledge sharing at the local environmental management and community development interface. The thesis also engages with practical strategies from the community development literature to produce an un-prescriptive approach to further translate theory into practice (see appendices 9 and 10). In doing so the thesis provides one way to bridge the divide between the many interest groups including academics, policy writers, scientific experts, individuals working in the government arena, individuals working in the non-government arena, and individuals working in the local community arena engaged in practices to govern and management the environment in Australia.

Chapter 3 also locates the thesis at the nexus between environmental governance and management policy, and environmental management and community development practice in Australia. Consequently the findings of the thesis are significant for the process and pursuit of ESD because they provide the opportunity to imagine what ethical institutions for social action and change should comprise. Given the political and social instability of global politics and the ecological and social uncertainty of responses to these politics predicting the future is impossible. Following the work of those who advocate the practice of adaptive management (for example, Dovers, 2003a; Dovers and Wild River, 2003 and Sayer and Campbell, 2004), social learning (for example, Parson and Clark, 1995; McCool and Guthrie, 2001; Fien and Skoien, 2002; Schusler et al., 2003 and Keen and Mahanty, 2005) and the lived local realities of

individuals in Victoria and the Northern Territory I call for institutions and processes that celebrate diversity as the basis for resilient and sustainable ecological, cultural and social landscapes across Australia. Institutions and processes that are premised upon adaptive management and thereby genuinely listen to local experiences and engage proactively with processes of monitoring and evaluation and social learning should dictate the future of environmental governance planning and practice in Australia.

In section 12.6.2 I suggest diversity can be celebrated and realised through the management and facilitation of an extensive network of environmental management and community development projects. In section 12.6.1 I discuss the importance of institutional culture in facilitating adaptive management. In addition, a greater number of individuals with knowledge and experience of what it means to engage actively in adaptive management must be employed to work within these institutions. The knowledge, experience and skills of these kinds of managers would complement that of the local community facilitators called for in section 12.6.2.

As the following words of a project member from the government arena in Victoria clearly elucidate, ethical institutions for equitable and sustained environmental governance and management should actively involve people and actively support social process and the creation of effective networks. He states that environmental governance and management is

about linking local government, the Catchment Management Authority, the local community, and the Department of Sustainability and Environment. Those sorts of connections are critical to having natural resource management work. It works beyond the level of the project: it creates networks and partnerships that are very powerful and if they are not there nothing works (VIC-G-3).

His words also hint at the reality that equitable and sustained social processes for environmental governance and management involve three separate but mutually contingent arenas: formal government institutions, on-ground projects and the individual or the self. In the following discussion I imagine the role and the approach of each of these arenas in working towards equitable and sustained environmental governance and management in Australia. I begin with formal government institutions.

12.6.1 Imagining formal institutions for social action

Formal government institutions that are committed to equitable and sustained ESD would be founded upon the reality that environmental governance and management is about diverse knowledge cultures including for example: the specialised knowledge of scientists, Indigenous people and pastoralists; and the strategic knowledge of government officers and project managers. The synergies that result from the sharing of these diverse knowledge cultures have real potential in alleviating current levels of social and environmental degradation in Australia.

These synergies reflect the reality that knowledge is always evolving, that all individuals are makers of knowledge and all individuals are political agents who have the potential to be agents for social change. These government institutions would also recognise that, just as knowledge is always evolving, so too is the goal of ESD. In this way ESD is as much about ongoing social process as it is about achieving a particular goal. Furthermore, decision making for ESD is not contingent on a single answer or the search for a particular set of truths rather it is grounded upon negotiation and locally appropriate approaches. These formal government institutions would reflect the reality of lived local experience that demonstrate how each place in the landscape and each environmental management and community development project is the product of geographic places and unique networks comprising people and their knowledge cultures. As such the institutions would represent the collection of localities of which the Australian landscape is comprised. The institutions would recognise that these many places and localities that exist within Federal, State or Territory jurisdictions are connected together by networks, and not hierarchy. Furthermore, the culture of these institutions would recognise that formal institutions are not about a group of people working with a specific budget in a building in Canberra or any other city, but they constitute groups and individuals networked across the Australian landscape.

The main role of these institutions would be to manage and facilitate these networks in a way that creates spaces for local negotiation relating to best practice localised environmental management. These creative spaces would provide the potential for cultural hybridity. The best way to facilitate these creative spaces is through environmental management and community development projects. The role and potential approaches of these projects is discussed in section 12.6.2. The management of these networks would connect localised networks to the bigger picture of regional, national and inter-national environmental governance and management, and thus they would meet the goals and imperatives of national strategies and legislation and international conventions and laws. The facilitation of these networks includes the implementation of national and international strategies, conventions and laws in ways that do not limit or contradict the power of localised networks. Implementation would include structures such as the Federal Government's Natural Heritage Trust, the Threatened Species Network and the Desert Knowledge Cooperative Research Centre that coordinate funding, provide the vehicle for partnerships, collaboration and networking between different interest groups and knowledge cultures and encourage networking. Implementation would also include iterative learning processes such as realistic and feasible monitoring and evaluation whereby the bigger picture government institution genuinely listens and learns from localised experiences. In this way these institutions would be more creative, engaging and productive in governing the Australian environment than institutions whose main goal is to ensure that designated monies are hitting the ground. By example, these institutions would be about creating hope for the future.

The approaches that these institutions would take to manage and facilitate the said networks are multiple. The management of these networks would be conducted by regional bodies such as the Victorian Catchment Management Authorities. Each network, project and individual is fundamental to equitable and sustained environmental governance and management in Australia and this would be managed locally via institutions that are connected to a larger network of similar institutions nationally. The form of these regional institutions would vary according to the capacity and requirements of each region. This would reflect the unique reality of place-based environmental governance and management but it would also acknowledge that without intra-generational equity, inter-generation equity for ESD is not possible. As such these regional bodies would be locally appropriate but also equitable. This would not limit the networks rather it would create an interface where these networks and resulting projects and processes could be managed. For example, as suggested in chapter 5 (see section 5.6), in the Northern Territory they could be designated according to land tenure type or Indigenous language groups. In central Australia the land management division of the Central Land Council is a good example of management according to designated and appropriate regions. In Victoria the current Catchment Management Authority systems appears to be a successful way of managing local networks and funding. These regions would be well funded to not only manage the networks and provide funding for projects but to also develop monitoring and evaluation processes that would be a cornerstone driving each institutional body. The culture of these institutions and practices would be one of creativity and imagination precisely because it is impossible to predict what will happen at the project interface. Any other institutional culture would contradict the potential to create spaces for negotiation for environmental governance and management in Australia both at the project interface and within the institution.

These institutions would facilitate these networks via environmental management and community development projects. This would be a means of celebrating and realising the diversity discussed above. These projects would be enabled through funding. Funding accountability would not be dictated to by traditional western time-frames, for example to be used within a given financial year, but would be determined by locally relevant and appropriate approaches. It would be managed through regional bodies. Project proposals would be facilitated by individuals who are employed by these institutions for their knowledge of community as well as their knowledge of facilitation and cross-knowledge-culture communication. Preferably these individuals would be from the local region and would possess a bigger picture knowledge of environmental governance and management across the region and Australia. Part of their role would be to work with local groups to realise their own potential and power: to realise that the local is global. These facilitators would be able to draw upon and work to build larger networks of individuals with varying knowledges (place-based, specialised, strategic, holistic) and skills. The project officer for the Threatened Species project in Victoria

is a good example of this role. However, it is important to note that her personality is fundamental to her success in this role as discussed in chapter 11 (section 11.3). The role of personal attributes is discussed below in relation to the individual or the self as arena for social action.

These networks would be regarded as key to the success of the projects to deliver knowledge synergies for ESD. The Threatened Species Network of the Worldwide Fund for Nature is a good example of an institution set up to broker networks and knowledge sharing across localities with the aim of developing environmental management and community development projects. The success of project proposals would be determined by the extent to which the projects work to facilitate network building across diverse knowledge cultures. For example, how many potential interest groups and knowledge cultures would be involved, would this project build upon existing networks and broker new ones? Integral to this process is the recognition that potential project members must not be forced into a mould whereby the success of project applications is contingent on the use of a mainstream language such as science. In a similar way it is important that the project proposal facilitators do not consider themselves as experts in each knowledge culture. This is because the projects are about facilitating knowledge sharing and synergies across different knowledge cultures. These projects are imagined by this research as the main arena in which diverse knowledge cultures have the potential to create innovative and locally appropriate strategies for environmental management and community development. These strategies and potential knowledge synergies create the potential for the practice of cultural hybridity argued by the thesis as fundamental in working to alleviate current levels of social and environmental degradation in Australia.

12.6.2 Imagining projects for social action

As has been demonstrated by this research the environmental management and community development project arena is the nexus where environment and development policies meet environmental management and community development practice. Localised environmental management projects are thus integral to the alleviation of current levels of social and environmental degradation. The project arena draws together all that which the formal government institutions facilitate. The role of the project arena is thus as the locus for diverse knowledge networks to create the space for cultural hybridity and the creation of new knowledge. It is at this arena that tangible project outcomes and intangible social process outcomes are negotiated. Also, it is at this arena where knowledge sharing for cultural hybridity has the most exciting and immediate potential. The approaches taken at this arena to fulfil the project role would and must be multiple. Firstly, it is essential that individuals working at the project interface appreciate that the local is global. It is also essential that individuals working at the local project arena have a sophisticated understanding of the varieties of participation active at this interface. Not only would an awareness of this work to break down ‘us and them’

dichotomies between government, the local community and experts, but it would also acknowledge the important role of gatekeepers in navigating environmental governance structures on behalf of certain groups of individuals. Secondly, it is at the project arena that all individuals must develop an understanding of the complexities of knowledge. This includes, as mentioned in section 12.4, the value, power and limitations of local knowledge. Such an awareness would demonstrate the essential role of the five knowledge cultures (as advocated by Brown, 2001a) in working towards equitable and successful ESD at the local interface. Developing a sophisticated and critical understanding of the equal role of all knowledge cultures at the environment and development interface would create the opportunity to engage with ideas of a third cultural space. Thirdly, working with individuals at the local project arena to conceive of a third cultural space, particularly in contexts of conflict, would create the space where theoretical postulating collides with practical process.

This research demonstrates that at the project arena intangible processes are as important for environmental governance and management as tangible project outcomes. Given the urgency of species extinctions in the Victorian case study and the social livelihood issues connected to the management of fire in the Northern Territory case study, engaging in lengthy social processes may seem futile. These processes are essential, however, to alleviate current levels of environmental and social degradation in Australia. At the project interface engaging in planning processes that provide strategies for successful knowledge sharing to both deliver tangible project outcomes as well as intangible process outcomes is integral in working towards ESD. These strategies are based on planning, practising and engaging in project work on the ground. Appendix 9 gives a non-prescriptive example of potential planning and implementation strategies for project success (see appendix 10 for a detailed account of related planning and implementation activities). This appendix was developed from a synthesis of what project members working at the local environmental management and community development project arenas in Victoria and the Northern Territory described as the principles necessary for project success (expressed in chapter 11, section 11.3) with the epistemology of this research and practical approaches from the community development (for example, IIED, 1988-2006; Pretty et al., 1995 and Walsh and Mitchell, 2002), and collaborative conflict management literatures (for example, Lambert et al., 2003 and Claremont and Davies, 2005).

12.6.3 Imagining the self as an arena for social action

Section 12.6.1 states ethical institutions for equitable and sustained environmental governance and management are comprised of people, social process and networks. Section 12.6.1 articulates how the institutional arena is about managing and facilitating networks and section 12.6.2 explores how the project arena is about negotiating social processes at the locus where these networks intersect. Both discussions have alluded to the important role of the

individual or the self in these networks and social processes. This discussion explicitly expresses the role of the individual as an arena of social action.

Formal institutions and projects are comprised of individuals. The role of these individuals is to make decision about best practice environmental governance and management. These individuals exercise various amounts of power according to their knowledge and their role within a given institution or project. But, as expressed in chapter 4 section 4.2, this power is not a static or limited entity but rather, as Foucault (1980a:98) expresses:

[p]ower is employed and exercised through a net-like organisation. And not only do individuals circulate between its threads; they are always in a position of simultaneously undergoing and exercising this power... individuals are the vehicles of power, not its points of application.

The role of the individual or the self as an arena for social action cannot be under emphasised: it is the individual who is the political agent for social change and social learning. This is because, as has been demonstrated throughout this research, the local is political. As Brown (2001a) states, knowledge originates in the head of the individual, and as I show in chapter 11 (see section 11.5) the process of creating spaces for cultural hybridity must also begin in the head of the individual. Indeed, I argue that the first step in working towards greater knowledge sharing for environmental management and community development at the local project arena is about individuals reaching a creative intellectual space where they are able to perceive other ways of knowing, other spaces of power, and are able to conceive of reality as messy and power as entangled. This creative intellectual space celebrates hybridity by welcoming the practice of objectivity that privileges contestation, deconstruction, passionate construction, webbed connections, and hope, for transformation of systems of knowledge and ways of seeing (Haraway, 1991). The negotiation of this space involves rich and diverse social learning that is very personal and very individual. The reality is that the individual must be ready and even perhaps searching for a way to live outside their *personal comfort area* (NT-C-13) or paradigm or wishing to *shake-up their world view* (VIC-G-4). Thus it follows that the individual or self must be imagined as a fundamental arena for social action.

Just as the individual is the foundational arena for social action so too is this arena the basic unit of diversity. Celebrating diversity and difference among individuals is fundamental to successfully realise the power of diverse project arenas as the basis for future equitable and sustained environmental governance and management in Australia. Therefore the approaches that individuals take in working towards equitable and sustained environmental governance and management must reflect the reality of inter-personal diversity. Individual approaches will vary according to life history, personality, knowledge base and whether the individual aligns the self with the formal institutional arena or the on-ground project arena. In both of these arenas the individual or the self has the potential to imagine spaces of hope for sustained and equitable environmental governance and management into the future. The individual must take

responsibility for working with others to create these spaces. The individual must work to create locally appropriate spaces that work within local community and inter-personal politics and acknowledge local limitations. The individual must realise the importance of inter-personal relationships, the role of personality and group psychology in creating these spaces. Fundamental to the role of the individual as arena for social action is an awareness of others, of other ways of knowing, communicating and listening.

Clearly not all individuals will be capable of or interested in their potential role as an arena for social action. However, for those individuals who are interested in this role, these approaches are integral for working towards and engaging in processes of ESD. These individuals have an important role to play in facilitating the development of networks and knowledge sharing and synergies between the many interest groups involved in environmental governance and management in Australia. By example, the thesis advocates an epistemology that celebrates local diversity as the basis for equitable and sustained ESD. This research study provides the tools of an applied peoples' geography and a cutting edge politics as means to create spaces for negotiation at the environmental management and community development interface (see appendix 11 for a diagrammatic account of this toolbox). By example, the research demonstrates theoretical and applied strategies whereby the individual can begin to perceive the self as an arena for social action. Thus we come full circle in this applied peoples' geography.

12.7 The future

The future is full of creative potential. Future research directions resulting from the thesis include the following suggestions. First, this research stresses the value of the local, and equally the power of the role of the researcher. Studies that develop our understanding of local knowledge cultures are needed. It is essential to continue to challenge the meta-narrative of ESD, as it stands, and consider ways of moving beyond the dichotomies and power hierarchies that typify current approaches to environmental and social degradation across Australia and the world.

Second, given the time constraints of the thesis I was unable to take the four derived principles, and the strategies for success, presented in chapter 11 (and appendices 9 and 10), to workshop with the interest groups at the two project case study interfaces.⁷² Any future study

⁷² During the course of the PhD I have actively presented findings in several different fora. I have maintained ongoing dialogue with the project officers in Victoria. I have sought feedback from community project members in Victoria via research update letters in which I provided my contact details. I will present a workshop of my findings to a group of biodiversity project officers from the Catchment Management Authority and the Department of Sustainability and Environment as well as a separate workshop with community project members in September 2006. I have also maintained research relationships with project members in the Northern Territory. In 2004, I presented research findings at the annual Desert Knowledge Cooperative Research Centre (DKCRC) student forum, Alice Springs; in 2005, I presented findings to a

that engages in this iterative process should be carried out in partnership between researchers, the project officers and other individuals who are living and working at specific environmental management and community development project interfaces. In addition, complementary research that engages with environment and development projects already engaging with the logical framework approach as well as strategies from related community development literatures could also be conducted. Such research would critique the success of such planning approaches and consider if locally derived principles were applied.

Further research is required to examine the prevalence of knowledge relating to the principles and practice of adaptive management by individuals working in various spheres in government departments dedicated to issues of environment and development. Where individuals are familiar with the principles of adaptive management are they active in applying these to their work? Equally, how do they feel the government structures in which they are embedded relate to these principles? Such research could consider strategies to successfully introduce the principles of adaptive management into government institutions. Similar studies could be conducted relating to the theory and practice of social learning. This thesis serves as a platform for further research into theoretical and applied strategies for cultural hybridity to challenge and alleviate current levels of environmental and social degradation in Australia. Future research of this kind would increase our understanding of the role of knowledge for ESD.

group of DKCRC managers, Desert Fire project members and general land manager and community project officers at the Australian Commonwealth Scientific and Research Organization (CSIRO) seminar series in Alice Springs. In February 2006, I presented a paper at the annual DKCRC conference in Alice Springs and in November 2006 I will be involved with the Desert Fire project team in presenting my findings at the Desert Knowledge Symposium, Alice Springs. I am actively seeking funding (from DKCRC and, or Land and Water Australia) that will enable me to present findings to the various pastoral, Aboriginal and conservation land managers in the southern Tanami region. I will engage with these interest groups in locally appropriate ways.

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Appendix 1: List of threatened species and threatened ecosystems of the Victorian case study project⁷³.

Threatened species and/or ecological communities (common name)	Threatened species and/or ecological communities (scientific name)	Status under state law (if known) ⁷⁴	Status under national law (in the schedules of the EPBC Act) ⁷⁵
Ecological communities			
Alluvial Terraces Herb-rich Woodland		Endangered	
Creekline Grassy Woodland (Goldfields) Community		Listed	
Temperate Woodland Bird Community		Listed	
Fauna			
Barking Owl	<i>Ninox connivens connivens</i>	Endangered	
Brush-tailed Phascogale	<i>Phascogale tapoatafa tapoatafa</i>	Vulnerable	
Bush Stone-Curlew	<i>Burhinus grallarius</i>	Endangered	
Eltham Copper Butterfly	<i>Paralucia pyrodiscus lucida</i>	Vulnerable	Under consideration for listing as vulnerable
Grey-crowned Babbler	<i>Pomatostomus temporalis temporalis</i>	Endangered	
Macquarie Perch	<i>Macquaria australasica</i>	Endangered	Endangered
Painted Honey-eater	<i>Grantiella picta</i>	Vulnerable	
Powerful Owl	<i>Ninox strenua</i>	Endangered	
Speckled Warbler	<i>Chthonicola sagittata</i>	Vulnerable: nominated for listing	

⁷³ As recorded in the Project Applications from Round 4, 5 and 6 (see Project Application round 4, 2001; Project Application round 5, 2002; Project Application round 6, 2003a, b)

⁷⁴ Under the Victorian Government's *Flora and Fauna Guarantee Act, 1988*

⁷⁵ Under the Commonwealth Government's *Environmental Protection and Biodiversity Conservation Act, 1999*

Threatened species and/or ecological communities (common name)	Threatened species and/or ecological communities (scientific name)	Status under state law (if known) ⁷⁴	Status under national law (in the schedules of the EPBC Act) ⁷⁵
Square-tailed kite	<i>Lophoictinia isura</i>	Endangered: nominated for listing	
Striped Legless lizard	<i>Delma impar</i>	Endangered	Vulnerable
Swift Parrot	<i>Lathamus discolor</i>	Endangered	Endangered
Flora			
Arching Flax-lily	<i>Dianella sp. aff. longifolia (Benambra)</i>	Vulnerable	
Broad-lip Leek Orchid	<i>Prasophyllum patens</i>	Rare	
Clover Glycine	<i>Glycine latrobeana</i>	Vulnerable	Vulnerable
Creeping Grevillea	<i>Grevillia repens</i>	Rare	Rare
Crimson Spider-orchid	<i>Caladenia concolor</i>	Endangered	Vulnerable
Emerald-lip Greenhood	<i>Pterostylis smaragdyna</i>	Rare	Rare
Fryerstown Grevillea	<i>Grevillia obtecta</i>	Rare	Rare
Golden Cowslips	<i>Diuris behrii</i>	Vulnerable	
Goldfields Grevillea	<i>Grevillea dryophylla</i>	Rare	
Hairy Anchor Plant	<i>Discaria pubescens</i>	Vulnerable	Rare
Lanky Buttons	<i>Leptorhynchos elongatus</i>	Endangered	
Late-flower Flax-lily	<i>Dianella tarda</i>	Vulnerable	
Leafy Templetonia	<i>Templetonia stenophylla</i>	Rare	
Matted Flax-lily	<i>Dianella amoena</i>	Endangered	Endangered
Naked Beard-orchid	<i>Calochilus imberbis</i>	Rare	
Purple Eyebright	<i>Euphrasia collina subsp. muelleri</i>	Endangered	Endangered
Scented Bush-pea	<i>Pultenaea graveolens</i>	Vulnerable	
Smooth Grevillea	<i>Grevillea rosmarinifolia subsp. glabella</i>	Rare	
Southern Shepherd's Purse	<i>Ballantinia antipoda</i>	Endangered	Endangered
Spiny Rice-flower	<i>Pimelea spinescens subsp. spinescens</i>	Endangered	Vulnerable

Threatened species and/or ecological communities (common name)	Threatened species and/or ecological communities (scientific name)	Status under state law (if known) ⁷⁴	Status under national law (in the schedules of the EPBC Act) ⁷⁵
Veined Spider Orchid	<i>Caladenia reticulata</i> s.s.	Vulnerable	

Appendix 2: Centre and associate partners of the Desert Knowledge Cooperative Research Centre⁷⁶

Centre Partners

- Central Land Council
- Charles Darwin University
- Commonwealth (Office of Indigenous Policy Coordination)
- Australia Commonwealth Scientific and Research Organization (CSIRO)
- Curtin University of Technology
- Department of Agriculture, Western Australia
- Desert Peoples Centre (Batchelor Institute of Indigenous Tertiary Education)
- Desert Peoples Centre (Centre for Appropriate Technology Inc.)
- Griffith University
- James Cook University
- Murdoch University
- Newmont, Australia
- Northern Territory Government
- Optus Singtel Pty. Ltd.
- University of South Australia
- Department of Conservation and Land Management, Western Australia

Associate Partners

- Australian Inland Energy and Water
- Australian National University
- Bowerbird Enterprises Pty. Ltd.
- Department of Water, Land and Biodiversity Conservation, South Australia
- Flinders University: Centre for Remote Health
- Northern Land Council
- New South Wales Primary Industries
- Southern Cross University
- Tapatjatjaka Community Government Council
- The University of Adelaide
- University of Queensland
- University of Western Australia
- University of Wollongong

⁷⁶ See DKCRC (2006b).

Appendix 3: Vision, key result areas and 6 core projects of the Desert Knowledge Cooperative Research Centre

Vision: Desert Knowledge Cooperative Research Centre Vision is a Sustainable Future for Desert Australia.

The Desert Knowledge Cooperative Research Centre supports the development of thriving knowledge economies in desert Australia. It will:

- Increase the inland's self reliance and promote regional networks
- Contribute to the sustainable prosperity and livelihoods of all remote desert inhabitants, in particular Indigenous Australians.

It will engage regional desert economies in excellent research and development that meets the needs of its diverse clients. It will deliver:

- **Sustainable livelihoods for desert people** that are based on environmentally and socially sound natural resource and service enterprise opportunities
- **Viable remote desert settlements, particularly remote Indigenous communities**, as a result of improved and efficient governance and service delivery
- **Thriving desert regional economies** built on desert competitive advantages, bringing together Indigenous and non-Indigenous communities, government and industry.

(see DKCRC, 2006c)

Key Result Areas: The Desert Knowledge Cooperative Research Centre will create thriving desert economies by engaging its client groups in six key result areas.

The six key result areas include:

- **New desert land uses and management options** using our natural environments innovatively and sustainably and employing appropriate business models to contribute to desert livelihoods;
- **New service-based enterprises and demand-based delivery systems.** Providing remote communities with sustainable infrastructure and viable service options at lower cost;
- **Capacity-building and training.** Innovatively linking cutting edge research and Indigenous knowledge to solve local problems;
- **Better local, national and international networks** for sharing knowledge and doing business. A multi-faceted Desert Network using information and communications technologies tailored to desert conditions;
- **Adaptive approaches to policy and management** which work in variable desert environmental, economic and social conditions;
- **Sound institutions and integrated investment decisions** across private sectors, public structures, and jurisdictions.

(see DKCRC, 2006d)

Core Projects: The Result Areas of the Desert Knowledge Cooperative Research Centre will be addressed through 6 Core Projects.

The Core Projects are:

- Core Project 1: Livelihoods based on managing natural and cultural heritage
- Core Projects 2.1, 2.2, 2.3: Key industry opportunities in remote areas (bush products industry; self-drive tourism industry; and pastoralism)
- Core Project 3: Supporting the emergence of small business in desert Australia (including Indigenous small business).
- Core Project 4: Viability of settlements (what are the drivers of viability).
- Core Project 5: Services to settlements (including approaches to delivering services to remote communities, reducing costs and increasing efficiencies, and models for business and institutional structures).
- Core Project 6: Desert regions as integrated systems (including understanding a desert region as an integrated system, designing a thriving sustainable region).

(See DKCRC, 2006d)

Appendix 4: Summary of the Desert Fire projects⁷⁷

This project was developed as a result of the fire workshop held in August 2003. An overview of historical patterns of fire and methods for managing the impact of fire on environment and infrastructure will be explored through a blend of western and traditional techniques and knowledge. The project is structured around three sub-projects:

1. Fire regimes of the desert regions of Australia at a continental scale. This subproject will provide an objective, continental perspective on the size and frequency of fire events across the DK-CRC desert regions of Australia for the period 1998 to 2003, using data derived from NOAA AVHRR and MODIS satellite images.

2. Fire regimes of the desert regions of Australia at a regional scale: overview and priority setting. This subproject will identify priority areas for fire management research (workshop and extension), and review of current 'scientific' knowledge relating to environmental impacts and management of fire in desert areas.

3. Fire regimes of the desert regions of Australia at a regional scale: case studies. This subproject will use case to:

(a) examine existing knowledge, develop new knowledge and disseminate knowledge for improved management of fire in the southern Tanami Desert where frequent, large, uncontrolled wildfires are common;

(b) collect economic information on the impact of the recent period of widespread fires in central Australia;

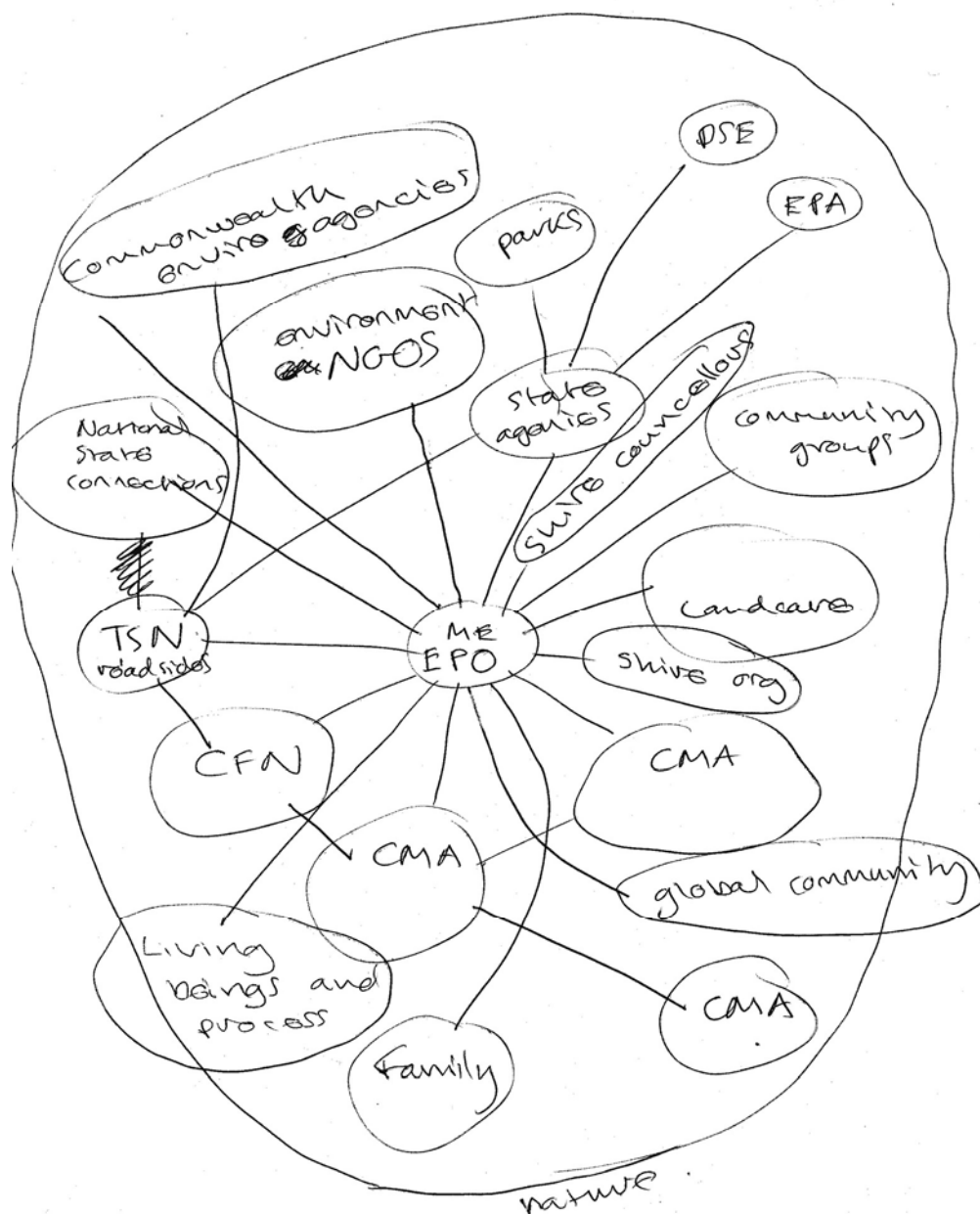
(c) review will examine the history of wildfire and fire management on conservation reserves and the goals and practices of contemporary fire management;

(d) use the changes in the distribution of mulga (*Acacia aneura*) spinifex (*Triodiasp.*) as a bio-indicator of landscape change at the short, medium and long term; and

(e) develop a database of the responses of different plant species to fire, in collaboration with similar activities for the northern (wetter) parts of the Northern Territory (Natural Heritage Trust funded).

⁷⁷ See Edwards (2006).

Appendix 5: An example of a network diagram created by a member of the Victorian case study project.



Appendix 6: The Victorian interview schedule

1. Case Study Project entitled:

- What are the aims and objectives of the project?
- What is your role?
- Who do you interact with to perform this role?
- What are the other 'stakeholder' roles? (stakeholder means the other groups/individuals who have an interest and are involved with the project)
- Who manages the project?
- What are the strengths of the project?
- What are the weaknesses of the project?
- How would you define 'success' in this project?
- When will the project end?

2. Environmental Governance

- Which government policy or legislation does the project follow?
- Do you have any comments on this?
- Have you heard of:
 - o The International Convention on Biological Diversity;
 - o The National Strategy for the Conservation of Australia's Biological Diversity;
 - o The Environment Protection and Biodiversity Conservation Act
- If so, what do think about this policy/legislation?
- How can you influence it?
- What do the terms local, regional and global mean to you?
- Where do you think the project fits? Why?
- Where do you think your role with the project fits? Why?

3. Environmental Knowledges

We have spoken of the Convention on Biological Diversity and the National Strategy for the Conservation of Australia's Biological Diversity. These talk about 'sustainable development'; 'biological diversity' and 'community participation'.

- Have you heard of these terms?
- If so, what do they mean to you?
- What do the words 'nature' and 'natural' mean to you?
- How do you *know* about 'nature'?
- Where do you look for this?

4. Advocacy

Thinking about the terms 'sustainable development'; 'biological diversity'; 'community participation'; 'nature' and 'natural', and your role with the project:

- Do you think there are accepted definitions for these terms among the different stakeholders involved with the project?
- If so, what are these? If not, what are the results of this?
- How is communication between the different stakeholder groups?
- How do you think this could be improved?

Appendix 7: The three Northern Territory interview guides

Interview guide for Desert Fire project members, conservation land managers and other interested individuals based in Alice Springs

Personal

- How would you describe the work of your agency?
- How long have you been working here?
- What is your role?
- What is the agency's role in relation to the Desert Fire project?
- Is this synonymous with your role in relation to the DF project?

Desert Fire Project: managing fire in the southern Tanami

- How did this particular project develop?
- What is the aim of this project?
- Who are the 'stakeholders' and how were these decided upon?
- What does 'stakeholder' mean in this context?
- Is there anyone else that you think should be included in this project?
- What do you hope this project will bring to the region?
- How would you define success of this project?
- What would you see as the strengths/weaknesses of this project?
- What form will the 'fire management strategy' take?

Environmental Governance

- What are the specific governance structures that this agency works within?
- How would you say these are related to the project?
- Have you heard of : Convention on Biological Diversity?
- National Strategy for Ecologically Sustainable Development?
- National Strategy for the Conservation of Australia's Biological Diversity?

Environmental Knowledges

- What is fire? What does fire mean to you?
- Do you use fire?
- Why/how do you think Aboriginal people involved with this project use fire?
- Why/how do you think the Pastoralists involved with this project use fire?
- Do you work with either of these groups to use fire? Would you like to?
- How do you think they could learn from you? How would you go about sharing your knowledge with them?

Other

- Beyond land management, what are the other issues that people living in the remote areas covered by this project are confronted with?

Interview guide for pastoral land managers

Personal

- How long have you been living here? Family history on this land?
- What does this land mean to you?
- Could you explain to me what a pastoral lease means?
- Who are your neighbours?

Environmental Governance

- As a pastoral land manager are there any government strategies, legislation that you abide by?
- What do these mean to you?
- How do these play out in terms of influencing your land management practices?
- How do these play out in relation to Indigenous land use?

Environmental Knowledges

- What is fire? What does fire mean?
- How have you learnt about fire? Do you teach others about fire?
- Do you use fire? When do you burn? Why?
- How was fire used in the past?
- Why do you think your Aboriginal neighbours use fire?
- How do you think they use fire?
- Do you work with your neighbours (pastoral and Aboriginal) to use fire?
- Can you think there would be benefits of doing so?
- How do you think they could learn from you?
- How do you think you could learn from your neighbours?

Desert Fire Project: managing fire in the southern Tanami

- What do you know about this project?
- What do you hope this project will bring to this region?
- What do you consider the strengths/weaknesses of the project?

Other

- What are the other issues that are important to you living here?

Interview guide for Indigenous land managers (rarely used extensively)

Personal

- How long have you been living here?
- What does this land mean to you?
- How do you look after this country?

Fire

- How have you learnt about fire? Do you teach others about fire?
- When do you burn? (ie different times of year)
- Why do you burn?
- How do other people use fire? (ie do men and women use fire in different ways for different reasons?)
- How was fire used in the past?
- Has this changed to how you use fire?
- Do you think your pastoral neighbours use fire? How?
- How do you think they could learn from you? How would you teach them?
- Do you think you could learn from your pastoral neighbours?

Desert Fire Project: managing fire in the Southern Tanami

- Have you heard of this project?
- What do you think of this project?
- What should a 'fire management strategy' be about?

Other

- What are the other issues that are important to you living here?
- Do you know about the Bushfires Act? If so, what do you think of this?

Appendix 8: Interview codes

Case study 1: Threatened Species Project, Victoria

Interview code	Date of interview
Community	Codes
VIC-C-1	24 March 2004
VIC-C-2	26 March 2004
VIC-C-3	29 March 2004
VIC-C-4	30 March 2004
VIC-C-5	1 April 2004
VIC-C-6	4 April 2004
VIC-C-7	6 April 2004
VIC-C-8	7 April 2004
VIC-C-9	13 April 2004
VIC-C-10	15 April 2004
VIC-C-11	16 April 2004
VIC-C-12	29 April 2004
Government	Codes
VIC-G-1	8 April 2004
VIC-G-2	8 April 2004
VIC-G-3	20 April 2004
VIC-G-4	21 April 2004
VIC-G-5	26 April 2004
VIC-G-6	26 April 2004
VIC-G-7	27 April 2004
VIC-G-8	5 May 2004
VIC-G-9	7 May 2004
VIC-G-10	10 May 2004

Case study 2: Desert Fire Project, Northern Territory

Interview code	Date of interview
Community	Codes
NT-C-1	5 August 2004
NT-C-2	10 August 2004
NT-C-3	20 August 2004
NT-C-4	27 August 2004
NT-C-5	30 August 2004
NT-C-6	31 August 2004
NT-C-7	1 September 2004
NT-C-8	6 September 2004
NT-G-10	17 September 2004
NT-C-9	November 2004
NT-C-10	12 April 2005
NT-C-11	4 May 2005
NT-C-12	10 May 2005
NT-C-13	11 May 2005
NT-C-14	18 May 2005
NT-C-15	25 May 2005
NT-C-16	28 May 2005
Government	Codes
NT-G-1	17 June 2004
NT-G-2	12 July 2004
NT-G-3	15 July 2004
NT-G-4	21 July 2004
NT-G-5	23 July 2004
NT-G-6	27 July 2004
NT-G-7	28 July 2004
NT-G-8	28 July 2004
NT-G-9	30 July 2004
NT-G-10	17 September 2004
NT-G-11	28 May 2005

Appendix 9: A non-prescriptive example of a project planning and implementation matrix

	Objective summary	Indicators	Means of verification	Strategies and tools ⁷⁸
Goal	To develop an all-inclusive, equitable learning process between different interest and knowledge groups working at the environmental management and community development interface in Australia			
Purpose	Ongoing, evolving and equitable environmental management and governance in Australia			
Outputs	1. Unsettling of current ways of thinking about knowledge. Creative space	Individual/s employed, possibly including representative researchers from each interest group as project officers	Employment of project officers/representative researchers	
		These individuals may need some training	Requested training identified and delivered Training manuals Certificates	
		Project officers work with representative researchers to gauge the interest group	Identification of those who wish to be included in the interest group	
		Project officers work with representative researchers to scope interest within groups for the specific project	Some form of report of the researching conclusions for scoping work	
		Project officers work with representative researchers to describe local circumstances to be shared with others, as agreed by each interest group	Some form of appropriate documentation to be shared with all interest groups	
		Individuals actively work to challenge own assumptions, stereotypes and worldviews	Successful intra- and inter-group planning workshops	
			Desire for on-going collective planning and project implementation	
			Multi-way knowledge sharing training workshops	
	2. Clear, concise and creative listening and communication between interest and knowledge groups	Project success is dependant upon local knowledge and local networks as locus for collective learning, problem solving and ESD	Ongoing development of local networks across the landscape	
			Some form of record of this workshop that states the decided goals, purpose, outputs, activities and indicators	
		Each interest group develops clear goals, purpose, outputs, activities and indicators in relation to what they want out of the project	Some form of record of this analysis that can be shared with the larger forum	
		Each group develops a form of stakeholder analysis for all interest groups potentially involved in the project	Some form of record of this workshop, including improved listening and communication when interest groups come together	

⁷⁸ Normally In a standard Logical Framework Approach Matrix this column reads 'assumptions'. Typically this column is a way of evolving some kind of risk analysis for the 'project'. I use this column instead to suggest ways of putting the output activities into action.

	Objective summary	Indicators	Means of verification	Strategies and tools ⁷⁸
		Interactive, creative and locally appropriate training in relation to creative listening and creative communication and collaborative conflict management is held with each interest group	Some form of record of this workshop, workshop schedule, training manual, video footages, picture books	
		Interest groups come together for an extended workshop on neutral territory, at a place where they can concentrate. The workshop is developed in partnership with elected representatives of each interest group	Evidence of collaborative conflict management - values mapping, development of some kind of consensus building agenda	
			Some form of record of this workshop, workshop schedule, training manual, video footages, picture books	
	3. Development of creative, adaptive and sustained project management processes	Collaborative conflict management	Identification of common ground and of points of conflict Development of some form of schema (both visual and written) of agreed goals, purpose, outcomes, activities, indicators. This may include individuals deciding to work together or separately	
		The workshop is successful in beginning dialogue between interest groups	Agenda and date for next workshop has been developed by interest groups	
			First agenda for commencement of activities (on-ground activities) has been developed	
		Project officer continues to work with representative researchers/project officer, workshop follow-up exercise with interest groups. This includes follow up on agreed activities.		
		Monitoring and Evaluation of process thus far		
Activities	1.1 Employ project officer	Employment of external project officer/s by month x	Employee pay sheets Employee contracts	
	1.2 Employ representative researchers	Project officers visit with interest groups and work with key individuals to identify potential representative researchers.	Some form of evidence of meetings	
		Representative researchers are employed by month x	Employee contracts Employee pay sheets	
	1.3 Training	Project officers work with representative researchers to identify training needs	Some form of report of training needs	
		Project officers deliver training or outsource training	Training manual Certificates	Use Participatory learning and Action (PLA) sources and manuals
	1.4 Identify interest group	Project officers work with key contacts and representative researchers to identify potentially interested peoples	Minutes of meetings Names of individuals (if appropriate)	May include working with Indigenous organisations, anthropologists, project officers, local government
		Project officers work with representative researchers and interested community to develop interest group	Minutes of meetings Names of individuals (if appropriate)	
	1.5 Scoping work	Project officers work with representative researchers to interview individuals in the interest groups	Interview transcripts	Develop interview schedule, most

	Objective summary	Indicators	Means of verification	Strategies and tools ⁷⁸
			Scoping report	likely qualitative rather than quantitative
	1.6 Description of the wider context	Project officers work with representative researchers to consider what fits into the wider context report. Representative researchers and project officers may use tools such as PLA to develop cultural maps of the area	An appropriate report developed with wider interest community to be shared with others	PLA such as mapping, maybe ranking. Also consider relevant policy review, histories
	1.7 Individuals work to challenge own assumptions	Individuals continue to work with project officers and representative researchers	Well attended meetings – attendance lists	
	1.8 Project success is dependant on local knowledge and local networks	Individuals continue to share their knowledge and develop local networks	Ongoing challenging open learning environment, evidence of innovation, ownership and developing networks	
	2.1 Workshopping for Logical Framework Approach Matrix	Project officers and representative researchers work to develop best tools from PLA to workshop goals, purpose, activities, indicators with interest groups. Deliver the workshop	An appropriate report of this workshop, with a developed Logical Framework Approach Matrix to convey clearly information to other interest groups	PLA tools, then worked into some form of culturally appropriate Logical Framework Approach Matrix
	2.2 Stakeholder analysis	Project officers work with representative researchers to develop best tools from PLA to workshop with interest groups the whos and hows of other interest groups	An appropriate report of this workshop with a developed stakeholder analysis to convey clearly information to other interest groups	PLA tools, then worked into some form of stakeholder analysis
	2.3 Communication training	Project officers work with representative researchers to develop best tools from PLA (as well as considering what people are already doing) to open up creative ways of listening and communicating.	An appropriate report of this workshop. Potential new tools to share with others regarding creative listening, communicating and collaborative conflict management	PLA tools Values mapping Role playing
		Workshop also is about conflict, how do individuals/groups work with conflict? Discuss collaborative conflict management and tools such as values mapping.		
		Deliver workshop		
	2.4 Workshop	Project officers and representative researchers work together to decide upon a neutral location to hold the workshop; workshop schema; workshop guidelines and hoped for outcomes, identify potential conflicts	An appropriate report of this workshop. Workshop outcomes reported in next set of activities	PLA tools for communication, listening, working together to problem solve Use of visual tools Interpreters
		Deliver workshop		
	2.5 Collaborative Conflict Management	Project officers work as facilitators. Do they need training? Or have external conflict facilitators? Working towards consensus? When conflict arises Values mapping at this workshop? For next workshop?	Values map Schema of common ground and points of conflict	Values mapping PLA tools
	3.1 Shared Logical Framework Approach Matrix	Project officers and representative researchers work with all interest groups to develop a shared log frame Identification of potential activities and who will be involved	Logical Framework Approach Matrix Consensus building?	PLA tools
		Identification of common ground and points of conflict Identification of indicators for both activities as well as		

	Objective summary	Indicators	Means of verification	Strategies and tools ⁷⁸
		the process		
	3.2 Agenda for next workshop	Interest groups decide whether follow up workshop is necessary. If so, agenda and purpose for next workshop is decided upon.	Some form of agenda is created and circulated later via the representative researchers	
	3.3 Agenda for first round of activities is developed with interest groups	This is developed from the Logical Framework Approach. What is required, who will carry it out.	Some form of agenda is created and circulated	
	3.4 Monitoring and Evaluation of the process thus far	Monitoring and evaluation is carried out by project officers and representative researchers with each interest group, collectively or separately	Some form of report, and ways to improve the process thus far	
	3.5 Begin identified activities	Project officers and representative researchers work to facilitate agreed activities with specific interest groups	Some form of evidence of activities, i.e. videos, training manuals, focus group transcripts	

Appendix 10: Detailed account of the activities suggested in appendix 9

1. Unsettling of current ways of thinking about knowledge

Activity 1.3 – Training

The project genuinely values local knowledge as central to success by employing and working with local representative researchers. This not only shows commitment to local needs, aspirations and knowledge but is also a genuine attempt to hand over the stick to the local. Individuals employed as representative researchers may need to develop skills that complement their skill-set, in order to fulfil their potential commitment to the project process. Project officers will also need to develop skills and local knowledge. Project officers should work with representative researchers to identify mutual training needs. Skills the project officers may need to develop will depend upon each specific location and relationships with representative researchers. This can be developed in situ.

In relation to the project process, representative researchers could develop skills in:

- developing and conducting interviews and focus groups;
- using participatory learning and action tools; and
- how to conduct literature reviews.

Some of these skills may not be necessary and other skills may need to be added. Working together to identify necessary skills is a genuine attempt at self-motivated, open learning. Acknowledging there are many skills the project officer can learn from the representative researchers is a genuine commitment to valuing different knowledges, unsettling potential power hierarchies and handing over the stick to the local representative researcher.

Activity 1.5 - Scoping

If project success is acknowledged as being dependant upon local knowledge, local ownership of the project/process, local knowledge networks and building local capacity and knowledge realisation, then local interest in the project is essential. The project officer and representative researchers should work together to scope local interest in the project. This could involve interviews and/or focus groups. The project officer and representative researcher should work together to develop a relevant interview schedule being mindful of what they wish to find out. They should introduce the project goal and purpose to individuals and then ask them questions that touch on the relevancy of the project to their local needs; what the project could bring to them and their community. It is equally important to ask personal questions relating to past experiences with projects, and personal histories.

Activity 1.6 - Description of the wider context and social profiling

No project occurs in a vacuum. If project success is genuinely based upon local knowledge and so on, it is essential to understand the complexities of life at the local, as well as the dynamics of wider historical, political and social processes, that all work to create the system in which any project or process is a part. Working to describe the wider context is interconnected with speaking with people about their interest in the potential project. The project officer should work with the representative researchers and the local interest group to determine and describe local issues, extra-local issues that impact upon local livelihoods and goals and so on. These activities are closely related to and will feed into the processes of developing a stakeholder analysis to determine the goals, purposes, outputs, activities and indicators of the potential project. The project officer and representative researchers could then work together to describe the wider political, social, economic and environmental context in which the project would fall.

2. Clear, concise and creative listening and communication between interest and knowledge groups

Activity 2.1 - Workshopping for Logical Framework Approach

The Logical Framework Approach speaks of developing shared goals, purposes, outputs and activities. Aslin and Brown (2004) speak of developing values, principles and criteria; Eamer (2004) advocates for working collaboratively with all interest groups to develop guidelines, goals, action lists and indicators; Walsh and Mitchell (2002) emphasise the importance of supporting local people to talk up, work as a group, plan and put their ideas into practice. The development of clear, concise and articulated goals, purposes, outputs, activities and indicators for success are an essential part of the project process.

Individuals must be clear on why they are doing what they are doing; how they are going to approach the issues; what actions they will take to address these issues; and how they are going to determine success of these actions. It is important to be clear for several reasons. Identifying these criteria determines ownership of the project/process; individuals may develop a new understanding of their situation; by identifying actions to take and ways to measure the success of these actions, individuals realise their own potential and direct their own learning. Logistically it is important that individuals are not talking at cross-purposes; are able to develop a somewhat unified voice; or are able to work collectively to find common ground.

The elements of this process include:

- Developing the overall goal: what do we want to achieve in the bigger picture?
- Defining the specific purpose for this project: what does this mean in the smaller picture?
- Deciding upon the outputs: what are the important ingredients to achieve the purpose and the goal?
- Creating the activities: what are the actual on-ground works that we need to do to achieve the outputs? The short term tangible wins.
- Evaluation indicators: how are we going to measure success and learn from what has gone before?

Project officers should work collaboratively with representative researchers to decide the most appropriate and relevant participatory learning and action methods to use (for example see Pretty et al., 1995, Walsh and Mitchell, 2002; Lambert et al., 2005).

Questions to facilitate discussion could include:

- What are you doing on your country now? What do you want to do on your country in the future?
- What are the important issues in your community? What future do you want for the community? What are the barriers to this happening?
- How are all these issues inter-connected?
- How could you do this? What on-ground works would be needed? How would you determine success?

Activity 2.2 – Workshopping for a stakeholder analysis

As articulated in chapter 8, separating individuals into distinct stakeholder groups has worked to perpetuate ‘them and us’ dichotomies that are products of knowledge and power hierarchies. Stakeholder analyses have often been done by others, describing the realities of those with whom they wish to aid. In this appendix, stakeholder analysis is suggested as a tool for interest groups to work collectively to articulate how they are affected by the challenges the project wishes to address; what their ability and motivation is to address the challenges, and what their relationship is like with other interest groups. This tool helps individuals determine for themselves who the other interest groups are. This tool helps to focus specifically upon the challenges the project could potentially address as well as the relationships between interest groups. This tool can be helpful to articulate firstly the perceptions that each interest group has

of the situations of other interest groups. Secondly, it can facilitate role reversals: how do other interest groups really feel about the given situation? Sharing these perceptions with other groups may be a step towards self-reflection and collaborative conflict management into the future. Done in this way, the stakeholder analysis can also be used as an evaluation tool in the follow-up process.

A primary stakeholder analysis could ask the following questions:

- Who are the stakeholders or interest groups?
- How are they affected by the identified challenging situation?
- What is their ability and motivation to address these challenges?
- What is their relationship with other stakeholders or interest groups?

A secondary stakeholder analysis can be carried out by the project officers and representative researchers after all groups have come together to share their stories, attitudes and aspirations. This analysis works to draw the different perceptions together. It could also be used as a form of monitoring and evaluation of the process.

It could ask the following questions:

- Who are the identified stakeholders or interest groups?
- What are their main objectives?
- What are the positive impacts and benefits of these objectives in the wider context?
- What are the potentially negative impacts and benefits of these objectives in the wider context?

Activity 2.3 – Communication

The role of effective communication has been a central tenet of this thesis. Creative listening and creative communication form the basis of the notion of creative engineering posited above. All the tools discussed thus far rely on clear articulation and workshopping of individual's ideas, hopes and aspirations. I do not need to argue further that communication is the key to many challenges and conflicts that arise in environmental governance and management in Australia. Communication is about verbal and body language; culture, histories between different individuals and groups; personal confidence and personal ability to use language effectively and efficiently. Communication is about genuinely listening to what others are saying; equally it is about genuinely understanding the messages that you wish others to hear. Workshopping creative listening and creative communication skills is essential in enabling individuals to work effectively together; and enabling interest groups who may have

different cultures and worldviews, or may be in conflict with each other, to develop collaborative working relationships. Being able to understand, analyse and accept, but not necessarily agree with, what individuals from a different cultural background believe is the first step towards better environmental governance and management at the local level in Australia.

There is a suite of methods used in the participatory learning and action literatures to help individuals challenge their own assumptions and worldviews; develop creative listening and communicating skills; and prepare them for potentially conflicting situations. Project officers and representative researchers should workshop many of these methods with interest groups to prepare them for the workshop where all interest groups will come together and share their own personal logical framework approaches and stakeholder analyses.

Specific questions to ask in working towards developing better understandings of the dynamics of communication include:

- How do others see the world?

These practices can then feed into considering how others view the ‘challenge’ that the project is facing. Equally important is considering how others view the self.

Activity 2.4 – Workshop

A workshop that brings all interest groups together is a pivotal part of this learning and action approach. The purpose is to develop common ground where interest groups and individuals can work collaboratively to problem solve impending or current challenges. Individuals may decide to work separately on solving these issues, equally they may decide to work collaboratively. Either-way, actually facilitating a workshop where individuals get together and share their stakeholder analyses, in whatever form they take; their developed logical framework approach; and engage in communication workshops to develop collective understandings of what it is to genuinely listen and communicate effectively. This is doubly important if individuals come from different cultural backgrounds. A good facilitator, either the project officers or an external facilitator, is necessary at this workshop. A clear and detailed workshop agenda is equally important, as is deciding on the length and time-line of the workshop. Interpreters may also be a necessary addition to this workshop.

In this session it is important not only to share what the different interest groups perceive as central to overcoming the project challenge. It is also important to develop notions of ‘the other’. Equally, this workshop is about collaborative conflict management.

Activity 2.5 - Collaborative Conflict Management

Collaborative conflict management is a process that is done together via discussion, with a professional facilitator, role play or values mapping. A first step may result from the workshop where different interest groups are able to share their points of view in an open learning environment. This may result in learning by other interest groups either, being able to see the perspective of others. Individuals may have already engaged in a form of values mapping, this may have been shared at the workshop. Another exercise would be to engage in values mapping together with the assistance of an external facilitator. Other exercises involve role-playing – where individuals come together as a collective group and *swap* roles. They spend time in the shoes of those with whom they have conflict. They are then asked to feed back to the group the various challenges they face, in these shoes, in relation to the project challenges. Groups then work to consider potential solutions to such challenges. This exercise may assist in developing a deeper understanding of opposing points of view. Individuals are not expected to *agree* with opposing points of view, more to *understand* why others hold these opinions. As already mentioned, new and radical ways of approaching environmental governance and management may develop out of conflict.

3. Shared Logical Framework Approach Matrix

Activity 3.1 - Shared Logical Framework Approach Matrix

As has been discussed already, the logical framework approach is a useful tool to consider the ‘whats, whys and hows’ of a project. It assists in working to develop and order goals, purposes, outputs, indicators of success, and project activities. Working with all interest groups to develop a logical framework approach is an important step in developing transparency of project process and goals, as well as agreeing upon what needs to be done. All individuals will already be familiar with this process, having worked through it in their individual groups with project officers and representative researchers (as in activity 2.1). Again this may be developed at the workshop (as discussed in activity 2.4) or a subsequent workshop (as time and situation dictates).

Appendix 11: Non-prescriptive toolbox for the individual as an arena for social action

