UNDERSTANDING THE INTERACTIONS AMONG LOCAL COMMUNITIES, PROTECTED AREAS AND TOURISM: CASE STUDIES OF KRUGER NATIONAL PARK AND PURNULULU NATIONAL PARK

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Declaration

I declare that this thesis is my own account of my research and contains as its main content work that has not been previously submitted for a degree at any tertiary education institution.

____________________

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ABSTRACT

New management approaches for protected areas emphasise a ‘humans in nature’ perspective, with protected areas seen as intrinsically connected with surrounding human populations. Tourism often provides a connection between these communities and protected areas. While both protected area managers and tourism operators can benefit from tourism, only recently has concern been directed towards its effects on local communities. This study investigated these effects.

A mixed methodology combining ethnographic approaches with social-ecological system perspectives was used to gain an in-depth understanding of the complex and changing environment in which protected area tourism operates. Interactions among protected areas, tourism and local communities were investigated using guidelines for resilience assessment. This approach focussed on identifying system states, drivers and issues, using these to develop indicators for monitoring. Methods included repeat semi-structured interviews, participant observation and document review. Two case studies provided focus: Kruger National Park, South Africa and the adjacent communities of Cork and Belfast, and Purnululu National Park, Australia and the nearby Indigenous community of Warmun.

The research revealed a complex, multi-faceted relationship between protected area tourism and local communities. Some economic benefits accrued to community members, although these were not widely distributed. Members expressed a desire for greater access to the Parks and the associated perceived benefits. In the Purnululu case study, this included resolution of and greater involvement in Park governance. In both studies, local communities had a contested relationship with the Parks’ natural resources, with strong connections to nature and the Parks juxtaposed against perceptions of separation. Lack of skills, education and money impeded the accrual of benefits in both case studies.

The indicators derived focus on the interactions among local communities, the Parks and their tourism. Intrinsic socio-cultural values held by local communities for their protected areas and community involvement in and benefits from Park tourism are
emphasised. These indicators provide a much-needed basis for engaging these communities in Park-based tourism and monitoring the success or otherwise of these efforts.
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PUBLICATIONS ARISING FROM THIS RESEARCH

Journal articles:


Conference papers:


CHAPTER 1 INTRODUCTION TO PROTECTED AREA TOURISM SYSTEMS

People are part of the system; people are part of the ecology. If you try and isolate people away from their natural environment you are creating a false environment, because people should be part of that environment as well

[Staff member, Kruger National Park]

The ongoing association between protected areas and tourism offers mutual benefits: on the one hand, a unique and desirable setting to offer as a tourism product, and on the other, a source of revenue for authorities that can assist in ongoing biodiversity conservation. Beyond this mutual association, tourism in protected areas can entail considerable benefits for surrounding communities, as well as costs. These costs and benefits for local communities significantly influence perceptions of a protected area and of tourism. For this reason, the sustainability of both protected areas and tourism is predicated on due attendance to local contexts and needs (Michaelidou et al. 2002; Worboys et al. 2005) to gather support and broader constituencies for conservation.

Recognition of interdependency has led to a conceptual ‘broadening of scope’ for protected areas. Increasingly, parks are seen as fundamentally and inextricably linked with surrounding landscapes and people (Figueroa & Aronson 2006). Mutual interdependencies underscore the need to explore how and why local communities, protected areas and tourism co-exist, and calls for new investigatory approaches that are able to work with conditions of uncertainty, dynamism, and complexity (Plummer & Armitage 2007). This research addresses this need, by modifying and applying social-ecological systems/resilience thinking to the investigation of interactions among local communities, protected areas and tourism. This novel methodological approach, used in conjunction with ethnographic fieldwork, differentiates this study from previous park or tourism impact research.

This introductory Chapter sets the context for the remainder of the thesis. It first discusses the changing milieu of protected areas. Social-ecological systems and resilience thinking are then introduced as approaches suitable for investigating interactions among protected areas, tourism and local communities in a dynamic and unpredictable environment. Key concepts guiding the research are introduced and
explored in relation to protected areas, tourism and local communities. The Chapter concludes by outlining the research question and associated objectives guiding the study.

1.1 The evolution of protected area practice

Protected areas are defined as “a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values” (Dudley 2008 p8). Historically, the management of protected areas has followed the ‘Yellowstone model’, after the world’s first national park.¹ The Yellowstone model is a Western cultural construct and embodies ideas of ‘wilderness’ untouched by human presence (Brown et al. 2005; Langton et al. 2005). Accordingly, early thinking positioned the coexistence of humans and protected areas as inherently oppositional (Colchester 2004). Protected areas were perceived as isolated bastions and human communities excluded; the genesis of separation between nature and culture (Adams & Hutton 2007; Kothari 2008; Plumwood 2003).

‘Separation’ may intimate a person believes themselves as out of place or an intruder in a particular setting (Schroeder 2007). Historically, the establishment of protected areas occurred with little regard for resident or surrounding human populations. Conservation has long been utilised as a means of excluding local communities, criminalising traditional livelihood activities, abolishing property rights and enforcing involuntary removals (Hoole 2008; Uddhammar 2006). Economic, social or cultural implications were typically afforded scant consideration (Adams 2003a; Fortwangler 2003; Turner 2004), resulting in profound equity issues (McShane 2003). These persist today in the form of continuing marginalisation and impoverishment of many communities adjacent to protected areas.

There is a recognised need to address such equity issues (Adams & Hutton 2007; Chape et al. 2008; Kothari 2008; Worboys et al. 2005). No longer is it seen as ethically or politically acceptable to exclude local people from protected areas or their management (McLean & Stræde 2003). Further, local support is perceived as essential to the long-term sustainability of protected areas (Borrini-Feyerabend et al. 2004; Michaelidou et

¹ Yellowstone is the world’s oldest national park according to the World Database on Protected Areas. However, other protected areas preceded Yellowstone’s formation (Brockington et al. 2008a).
al. 2002; Shadie & Epps 2008; Worboys et al. 2005). Without local support, conservation efforts may be compromised, for example through deliberate contravention of park regulations and degradation of natural resources. Some contest this, arguing that conservation agendas can dominate regardless of local opposition (e.g. Brockington 2004; Brockington et al. 2008a).

However, the arbitrary nature of barriers between protected areas and surrounding landscapes have become increasingly apparent. Recognition of the fundamental and inextricable connections between parks and people has contributed to changing views regarding protected areas (Borrini-Feyerabend et al. 2004; Chape et al. 2008; Clark et al. 2008; Dearden et al. 2005; Francis 2008; Worboys et al. 2005). This changing ‘paradigm’ hinges on recognising protected areas as an integral part of broader society (Table 1.1).

Table 1.1: Key characteristics of old versus ‘new’ practices in the management of protected areas (adapted from Borrini-Feyerabend et al. 2004; Phillips 2003; Worboys et al. 2005)

<table>
<thead>
<tr>
<th>Old paradigm</th>
<th>‘New’ paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Established as separate areas of scenic value. Separation of humans &amp; nature, ‘island’ mentality</td>
<td>More holistic view, awareness of context. Managed for a greater range of purposes (including to benefit local communities)</td>
</tr>
<tr>
<td>High value placed on ‘wilderness’ qualities</td>
<td>Recognition of/as cultural landscapes</td>
</tr>
<tr>
<td>Run &amp; financed by central government, paid for by taxpayers</td>
<td>Run by many partners (both government &amp; non-government, including local communities). Financed by a variety of sources, including tourism</td>
</tr>
<tr>
<td>Based on notions of equilibrium &amp; stability</td>
<td>Open systems. Non-equilibrium conditions, importance of disturbance &amp; change</td>
</tr>
<tr>
<td>Managed with little regard for local communities, exclusionist in nature</td>
<td>Park-people relations/issues of community empowerment important. Socio-economic objectives integrated with existing conservation objectives</td>
</tr>
<tr>
<td>Viewed as national assets</td>
<td>Viewed as community assets. Management responsive to both international &amp; local/national contexts</td>
</tr>
<tr>
<td>Managed reactively, short-term outlook</td>
<td>Managed adaptively, long-term outlook</td>
</tr>
</tbody>
</table>

One major shift relates to holistic views that emphasise connectivity and locate protected areas within broader socio-cultural, political and economic contexts (Borrini-Feyerabend et al. 2004; Figueroa & Aronson 2006; Kothari 2008; Muchapondwa et al. 2009; Scherl & Edwards 2007). This view requires recognition of the multiple,
disparate worldviews held by protected area stakeholders. Management practices increasingly assign a much greater significance to park-people relations; with the delivery of benefits to local communities a central element (Table 1.1). Ever more, this park-people relationship includes tourism (Plummer & Fennell 2009).

Another major shift incorporates greater recognition and acceptance of non-equilibrium conditions. Previous command and control approaches assuming linear, predictable relationships and the ability of humans to ‘control’ outcomes, for example sustained harvesting levels, now appear misguided. Approaches cognisant of non-equilibrium emphasise the inherent complexity, unpredictability and dynamism of ecosystems, ideas based in a systems thinking approach (Adams 2003b; Chapin \textit{et al.} 2009; Folke \textit{et al.} 2009). Systems thinking outlines the idea of complex adaptive systems, which are characterised by non-linearity, uncertainty, emergence and adaptation across scales. These terms, along with others used throughout this thesis, are defined in Appendix 1.

Complex adaptive systems are comprised of diverse components (Berkes \textit{et al.} 2003; Folke 2006; Hartvigsen \textit{et al.} 1998; Levin 1998), for example human institutions, leaders and communities; ecosystem types or habitats; resources, goods and materials; and abiotic variables such as topography (Cumming \textit{et al.} 2005). The composition of and interactions between components determine system identity (Cumming \textit{et al.} 2005; Cumming & Collier 2005; Rosenau 1997). A systems thinking approach emphasises interrelations between components rather than the component parts themselves (Allison & Hobbs 2006; Meadows 2009). This research considers social-ecological systems, a particular type of complex adaptive system where social components play a central role.

\subsection*{1.2 Social-ecological systems}

The concept of social-ecological systems recognises the arbitrary character of divisions between social and ecological realms (Adger 2000; Folke 2006).\footnote{‘Social-ecological system’ also implicitly refers to economic components (Berkes \textit{et al.} 2003).} The two systems are explicitly interdependent and connected by reciprocal feedbacks where changes in one affect the other (Allison & Hobbs 2006; Gunderson & Holling 2002; Janssen 2006; Liu \textit{et al.} 2007; Walker \textit{et al.} 2006a; Walker & Salt 2006). The theory and principles underpinning complex adaptive systems also apply to social-ecological systems; in effect, they are a type of complex adaptive system (Gunderson & Holling 2002; Walker \textit{et al.} 2006a; Walker & Salt 2006).
& Salt 2006). Therefore, an understanding of context and interactions between system components is extremely important (Bennett & McGinnis 2008).

Generally, social-ecological systems consist of a set of resource users connected to one another and to multiple resources across scales, through multi-level governance structures (Janssen et al. 2007). Examples include national parks (Cumming 2004) and tourism-focused systems (Farrell & Twining-Ward 2004, 2005; Lacitignola et al. 2007). Protected area tourism³ is another example of a social-ecological system. Before considering protected area tourism further, key characteristics of social-ecological systems are detailed (Table 1.2) and resilience thinking presented as a framework through which to understand system interactions.

Social-ecological systems are inherently complex and characterised by dynamic interactions among system components. Complexity is compounded by the fact interactions with external environments occur and system components learn and adapt in response to their environment. That is, they are not ‘self-contained units’. Feedbacks, signals that regulate system behaviour, are a second characteristic of social-ecological systems (Table 1.2). Feedbacks either maintain stability or intensify processes and change within a system (Allison & Hobbs 2006; Meadows 2009; The Resilience Alliance 2007a). They allow a system to self-organise – to structure itself, learn and diversify. Social revolution provides an example of self-organisation (Meadows 2009), where a society transforms and redefines how it operates.

³ Also referred to as park tourism in this research.
Table 1.2: Key characteristics of social-ecological systems (adapted from Bennett & McGinnis 2008; Folke 2006; Walker & Salt 2006)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open systems</td>
<td>Interactions with external environments take place</td>
</tr>
<tr>
<td>Inherently complex</td>
<td>Systems are more than the sum of their components (emergence). Multiple interacting components require a broader, more holistic analysis</td>
</tr>
<tr>
<td>Non-equilibrium</td>
<td>Dynamic, change over time. External events can have significant effects</td>
</tr>
<tr>
<td>Multiple possible outcomes</td>
<td>Multiple perspectives &amp; realities are possible</td>
</tr>
<tr>
<td>Adaptive</td>
<td>Systems change in response to their environment; learning &amp; self-organisation are continual. The maintenance of diversity/redundancy is crucial</td>
</tr>
<tr>
<td>Cross-scale interactions</td>
<td>Panarchy: nested/hierarchical system connections over time &amp; space. Vulnerable to multiple shocks</td>
</tr>
<tr>
<td>Non-linearity</td>
<td>Systems are unpredictable: cause &amp; effect does not apply to interactions &amp; outcomes</td>
</tr>
<tr>
<td>Multi-scale feedback loops</td>
<td>Regulate system behaviour to provide self-organisation</td>
</tr>
<tr>
<td>Legacy effects</td>
<td>Historical contingency: past events have a great influence on current system conditions</td>
</tr>
</tbody>
</table>

Recognition of legacy effects is another element of social-ecological systems. Legacies imply that the current state of a system is ‘historically contingent’. That is, current dynamics result from the cumulative effect of complex and unpredictable interactions between social and ecological components (Leach et al. 1999; Levin 1998; McDonald 2009). The influence of past land use activities on current uses illustrates the idea of legacy effects (Wallington et al. 2005).

The centrality of interactions in systems thinking highlights reductionist analyses as inappropriate, as an understanding of relational information may be lost (McDonald 2009). Complex social-ecological systems cannot be understood from a single perspective (Berkes et al. 2003). Rather, interdisciplinarity and holism, a broader perspective, are required (Farrell & Twining-Ward 2004, 2005; Miller et al. 2005; Walker & Salt 2006). Ideas of complexity incorporating uncertainty, surprise and emergence across scales are fundamental (Allison & Hobbs 2006). These aspects of complexity apply with regards to protected area tourism.
1.2.1 Protected area tourism systems

The concept of social-ecological systems provides an integrative theory to explore interactions among protected areas, tourism and local communities, with the three components being interacting subsystems. The interconnectedness of protected areas with surrounding contexts, including the integral role of local community, is a fundamental precept in new paradigms for conservation. Tourism operations occurring within or based on protected areas is another integral component of protected area tourism systems (hereafter referred to as PATS).

Protected areas are the first key component of PATS. Protected areas themselves take several forms. The IUCN recognises seven types of protected areas: strict nature reserves, wilderness areas; national parks; natural monument/features; habitat/species management areas; protected land or seascapes; and protected areas with sustainable use of natural resources. The primary management objectives of these protected areas differ considerably (Dudley 2008).

The management authority for a given protected area also varies according to the differing management objectives (Eagles 2009). Traditionally, the state or government has been the management authority. This role is diversifying, however, and partnerships are gaining prominence (Moore & Weiler 2009). Increasingly, the management authority is vested in alternative arrangements involving a range of actors. Such arrangements include parastatal models; non-profit corporations such as non-governmental organisations; public or private for-profit corporations; and communities themselves. Co-management arrangements, where decision-making power is shared between two or more bodies, one of whom is government, is another emerging approach (Eagles 2009).

Tourism is a second key component of PATS. Protected areas and tourism have a close relationship and increasingly, protected areas present significant appeal for tourists (Bushell & McCool 2007; Bushell et al. 2007; Campbell et al. 2008; Reinius & Fredman 2007; Worboys et al. 2005). Very often, the existence of a protected area and tourism activity are intertwined and their respective influences difficult to separate. Here, protected areas and tourism are considered interdependent and referred to collectively as ‘protected area tourism’. Protected area tourism fits within the broader
undertaking of natural area tourism. Natural area tourism includes adventure, nature-based, wildlife and ecotourism (Newsome et al. 2002). An inclusive definition of ‘protected area tourism’ is adopted here to incorporate all tourism activities occurring within or based on protected areas (Strickland-Munro et al. 2010).

Local communities form the third key component of PATS. ‘Community’ is a highly contested term (e.g. Agrawal & Gibson 1999; Fabricius 2004; Leach et al. 1999; Liepins 2000) that has for many years been the subject of a “litany of critiques” (Fay 2007 p89). Given the need to draw system boundaries for research purposes, ‘local communities’ are defined to include residents living within or in close proximity to a protected area. This definition is, of course, entirely dependent on the research question and intent, which here centres on exploring the impacts of protected area tourism on nearby human populations. This use of geographical boundaries necessarily entails a degree of exclusion.

The protected area and associated tourism impacts on local communities both directly and indirectly through its existence and capacity to attract tourists. Often, this fosters a symbiotic relationship between local communities and a given protected area (WTO 2004). The spatially restricted nature of protected area tourism was a central factor underlying the choice of a geographically defined ‘local community’, as well as previous research indicating geographical location as an important defining context in determining ‘local community’ (Aas et al. 2005; Burns & Sofield 2001; Kepe 1999; Singh et al. 2003).

Geographical location does not imply uniformity in local attitudes or functional relationship to protected area tourism. Attitudes, involvement and dependencies of locals on protected areas (Eagles & McCool 2002) and tourism are diverse and context dependent (Burns & Sofield 2001; Mvula 2001). Attitudes in particular are influenced by length of residence; employment; degree of economic dependence; socio-cultural and economic distance between tourists and the community; and distance of community from the tourism area (Deery et al. 2005). Direct economic dependence on tourism has been shown to be the single most important factor affecting perceptions (Andereck & McGehee 2008; Andereck et al. 2005).
The definition of geographically based communities in this research does not imply that these communities exist as discrete entities isolated from ‘outside’ factors, institutions and processes. Rather, in keeping with systems perspectives, such communities are connected across scales and networks in space and time. External influences, and context-specific histories, have a profound bearing on how a community is structured and responds (Igoe & Fortwangler 2007) to protected areas and tourism.

Local communities comprise just one element of those interested or affected by protected area tourism. A wide range of potential stakeholders associated with protected areas exist and are also essential parts of the system. Others include those directly affected – visitors themselves, park management and tourism authorities, plus those further afield (Newsome et al. 2002). These other stakeholders represent ‘communities of interest’ typified by shared interests rather than a defined spatial location (Beeton 2006a). For Indigenous communities in Australia, these shared interests often centre on family-based affiliations to country.

This research was primarily concerned with interactions among protected areas, tourism and local communities and was therefore deliberately located at the local (micro) scale. However other scales, or dimension in space or time determined by research interest (The Resilience Alliance 2007a), are also important. Temporal scale for example, may be measured over days or years. Spatial scale can involve a focus on individual households or protected areas, regions, nations or may take an international perspective.

The idea of ‘panarchy’ recognises the existence of interactions within and across scales over both time and space (Gunderson & Holling 2002; Holling et al. 2002b) and helps describe these multiple scales. Panarchy recognises that a given system of interest is comprised of subsystems operating at lower (finer) scales as well as embedded within larger systems operating at higher scales (Anderies et al. 2004; Young et al. 2006). Figure 1.1 depicts the idea of panarchy, showing the focal system of interest, the local scale PATS, as nested within a number of higher scales. In turn, the PATS comprises smaller scale interacting subsystems of local community, tourism and protected areas.
Figure 1.1: A depiction of the multiple, nested scales within which PATS are situated.

Panarchy and interacting scales mean that depending on the level of analysis, what is considered a component of a system at one scale may itself comprise a system at a lower scale (Gössling et al. 2008). For example, this research is concerned with the local scale, and views protected areas, tourism and local communities as interacting components of a larger PATS. Yet, if this research focused on a household scale, each of these components would be considered a system in itself. Figure 1.1’s nested nature illustrates that influences arising at higher scales, for instance international pressure to halt elephant culling in South Africa, can influence outcomes at lower scales such as operational policies for a given protected area. Consider also the depletion of natural resource stocks in one region leading to bans on local harvesting.

Similarly, events at smaller scales can influence higher scales, such as when local activist groups succeed in influencing regional or national policy or localised ethnic violence disrupts regional tourism. Further, many issues associated with protected area tourism, including governance and tourist visitation, involve multiple scales. For example, Ramsar or World Heritage sites are internationally designated protected areas that directly link international scales with local communities and tourism. However, as interactions among protected areas, tourism and local communities are highly site-specific (Staiff 2008), this research focused at the local scale (Figure 1.1).
Social interactions at the local scale were of specific interest as conflicts between protected areas and communities can adversely affect the sustainability of protected area tourism. ‘Sustainability’ may be thought of as efforts to enhance benefits and minimise negative impacts for local communities, in concert with maintenance of the natural environment and resource base on which protected areas and tourism depend. Multi-stakeholder conflict, complexity and uncertainty are issues that remain unresolved and persistent in protected areas (Clark et al. 2008) and protected area tourism (Plummer & Fennell 2009). When problems persist and are not resolved by current interventions they may be classed as ‘messy’ or ‘wicked’ (Allen & Gould 1986; Rittel & Webber 1973) and may require a new paradigm to understand them. The juxtaposition of protected areas and their conservation mandates with adjacent cultural landscapes is one such ‘wicked’ problem (Hoole 2008), compounded by the presence of tourism.

In this respect, systems perspectives are being actively pursued in current research on tourism as a complex adaptive system (Baggio 2008; Farrell & Twining-Ward 2005; Lacitignola et al. 2007; McDonald 2009). Systems perspectives are appropriate as the issues associated with tourism and protected areas are inherently complex, multi-scaled and involve vertical and horizontal connections (Dredge 2006; Fennell 2004). Dynamism and transformative changes are to be expected (Plummer & Fennell 2009). In particular, the need to enhance knowledge of the factors underlying tourism outcomes with respect to poverty alleviation and nature conservation have been highlighted (Tassone & Van der Duim 2008).

Conceptualised as a social-ecological system, interactions among protected area tourism and local communities are assumed to exhibit the characteristics of a system. Interactions are hypothesised as intrinsically complex, portraying aspects of dynamism, adaptation, non-linearity, cross-scale influence and legacy effects. To ascertain whether these assumptions hold true for PATS, a holistic analytical framework is required. Complex systems perspectives provide this. First however, it is useful to review current methods for analysing sustainability of protected area tourism using a systems perspective.
1.2.2 Existing methods for analysing sustainability in protected area tourism

In many areas, tourism is seen as an answer to economic development, particularly in areas of great natural beauty. However, increasing arrivals often result in a range of socio-cultural and environmental problems. ‘Sustainability’, therefore, is often equated with addressing socio-cultural, physical and environmental impacts (Saarinen 2006), as measured by indicators. Currently, indicators in the context of tourism assessment often directly relate to the most important issues or impacts from the perspective of stakeholders (Miller & Twining-Ward 2005; WTO 2004) or experts (Bossel 2001; Reed et al. 2006) including park managers and scientists (Martin & McCool 1989). This can lead to a thematic approach directed by the sector making the assessment and a focus on their specific interest, for instance environmental or socio-cultural.

A substantial literature exists regarding the measurement of socio-cultural impacts. In the tourism field, impacts are commonly measured quantitatively using a Likert scale to investigate residents’ perception of impacts and attitudes to tourism (Deery et al. 2005; Gursoy & Rutherford 2004). Qualitative perceptonal research, involving community attitudes and self-evaluation of impacts (Brunt & Courtney 1999; Williams & Lawson 2001) along with the setting of benchmarks and indicators, are other common impact assessment methods.

A number of indicator-based frameworks conceive, predict and manage visitor impact on the environment. Those applied to visitor use of protected areas include the Limits of Acceptable Change, Visitor Impact Management, Recreational Opportunity Spectrum, Tourism Optimisation Management Model and the Visitor Experience Resource Protection frameworks (McCool et al. 2007; Newsome et al. 2002). These existing indicator-based frameworks contain several limitations as considered from a systems thinking perspective.

The first limitation relates to recognition of uncertainty. Uncertainty is a ‘situation in which there is not a unique and complete understanding of the system to be managed’ (Brugnach et al. 2008 p4). Assumptions of reductionism and sector bias inherent in many existing evaluative approaches do not fit with new ideas embracing complexity and uncertainty (Miller & Twining-Ward 2005; Plummer & Armitage 2007). Further,
managing system components in isolation, as opposed to interconnected in a wider social-ecological system, increases overall vulnerability to unexpected change (Chapin et al. 2009). This positions current approaches as incomplete as they cannot adequately deal with unforeseen processes and events (Farrell & Twining-Ward 2004, 2005).

There is ample evidence from case studies of interactions between people and nature where current theories are capable of explaining system behaviour in times of stability (Allison & Hobbs 2004, 2006; Gunderson & Holling 2002). However, in times of crisis and ensuing uncertainty these theories are unable to deal with periods of sudden change (Allison & Hobbs 2004, 2006). At best they replace inherent ambiguity with the veiled certainty of disciplinary knowledge and precise numbers. At worst the theories ignore the possibility that slowly changing ecological or social variables can suddenly cause a rapid change and flip a system into a functionally different state that may be effectively irreversible (Allison & Hobbs 2006). Examples include a shift from ecotourism to mass tourism (Newsome et al. 2002) or luxury to budget operations (Tyrrell & Johnston 2008).

Uncertainty is now a given, as evidenced by current global conditions including widespread economic recession and concerns over climate change, both of which impact directly on tourism (Bramwell & Lane 2009). Oil supply/prices present another major uncertainty (Quick 2008). As an unpredictable and interconnected system, tourism is vulnerable to outside disturbances (Mill & Morrison 2006; Russell & Faulkner 1999) such as the current global economic recession (UNWTO 2009), acts of terrorism (such as the 2002 Bali bombings, 2005 London bombing or September 11) and climate change (UNWTO 2003). These disturbances also influence protected areas. Instability in visitor numbers, exchange rates, political volatility, natural disasters and weather are further disturbances (Novelli & Scarth 2007) to which a protected area tourism system may be susceptible.

A second limitation of current approaches concerns the nature of interactions between components of protected area tourism. Existing frameworks do not consider complex interactions and interdependencies between resources and stakeholders in a system (Sirakaya et al. 2001). The nature of the indicators associated with these frameworks makes management of protected area tourism, when viewed as a social-ecological
system, problematic as social and ecological systems are explicitly interdependent across time and space.

A third limitation relates to recognition of context. Commonly, tourism researchers imply that the wider context in which tourism exists is a separate entity (Farrell & Twining-Ward 2005; Russell & Faulkner 1999). Current tourism approaches are largely confined to mathematical and economic outlooks where interactions with other systems are not considered or made explicit (Lacitignola et al. 2007) and social and cultural concerns are marginalised (Hampton 2005). Residents’ attitudes in relation to tourism are often unpredictable or contrary to researcher expectations (Lepp 2008a). Explanation of this may lie in complex systems theory, which suggests unpredictability is to be expected owing to multiple, complex factors interacting in ways that are often historically pre-determined. Such is the case with residents’ attitudes to tourism. Therefore, any tourism study conducted without explicit recognition of interacting variables e.g., political, social, cultural, historic, ecological and legal, will reveal an incomplete and possibly confusing picture, as the complex interactions between system components will not be apparent (Farrell & Twining-Ward 2005; Lepp 2008a).

Systems thinking presents an opportunity to address these limitations in current approaches to tourism research. Existing ‘normal science’ approaches are ineffective at resolving complex situations characterised by multiple perspectives and uncertainty (Allison & Hobbs 2006; Bennett & McGinnis 2008; McCool 2009). Consequently, new ways of thinking position tourism as a complex adaptive system, consisting of multiple interacting components and characterised by uncertainty (Farrell & Twining-Ward 2005; Lacitignola et al. 2007; Lacitignola et al. 2009; Russell & Faulkner 1999). This new perspective provides an alternative to current linear processes, which aim to optimise selected system components (Schianetz & Kavanagh 2008).

New analytical frameworks are required to understand this complexity and dynamism in the context of protected area tourism. Resilience thinking, an “approach to managing natural resources that embraces human and natural systems as complex systems continually adapting through cycles of change” (Walker & Salt 2006 p10), is one such framework. Informed by systems perspectives, (Allison & Hobbs 2006; Nelson et al. 2007), resilience thinking acknowledges the complexity, uncertainty and dynamism that characterise social-ecological systems (Gunderson & Holling 2002; Nelson et al. 2007;
Further, resilience is increasingly linked to sustainability of complex systems (Adger 2003; Bingeman et al. 2004; Brand & Jax 2007; Holling 2001; Plummer & Fennell 2009) and is adopted in this research as a key theoretical perspective for thinking about and describing PATS as a social-ecological system.

1.3 Applying resilience thinking to protected area tourism

The concept of resilience originated in the field of ecology in the early 1970’s, through the work of C.S. Holling (Folke 2006; Walker et al. 2006b). Since this original ecological designation, meanings and measurement of ‘resilience’ have evolved such that it now holds heuristic, normative and metaphorical dimensions. No longer restricted to the investigation of ecological states and changes among these based on a clear, well-defined concept, resilience is increasingly viewed as an approach, way of thinking or perspective for analysing social-ecological systems in a manner that promotes cross-disciplinary communication (Brand & Jax 2007). This spectrum of ways to apply ‘resilience’ can be applied offers a wide choice to researchers, depending on research intent and interests.

Resilience is the ability of a social-ecological system to absorb or adapt to change without fundamentally altering structure (Berkes et al. 2003; Folke 2006; Gunderson 2003; Holling & Gunderson 2002). In this research, resilience is the ability of local communities to anticipate and respond to changes associated with protected area tourism and to minimise and adapt to disturbances to their livelihoods as a result. There is a focus on the ‘adaptive capacity’ of communities. Adaptive capacity reflects a set of pre-conditions that enable individuals and groups to respond to change (Kofinas & Chapin 2009; Tompkins & Adger 2004) without losing options or essential processes (Berkes et al. 2002).

In social-ecological systems, adaptations generally reflect behaviours designed to prevent or lessen the impact of disturbances temporally, spatially or socially (Pelling & High 2005). For example, protected area tourism has been influenced in recent years by terrorism scares and disease outbreaks, which limit the ability of people to travel. Adaptations in response to these disturbances include the diversification of tourism products and targeting of domestic rather than international tourists (Tyrrell & Johnston 2008). Increased demand for and use of protected area resources by local communities
is another disturbance facing protected area tourism. An adaptation in response to this may include the implementation of community outreach or harvesting programmes.

The capacity to adapt depends in large part on the absolute and relative amounts of capital, which provides a diversity of options that a system can draw upon to respond to disturbance (Lebel et al. 2006; Reid & Vogel 2006; Tompkins & Adger 2004; Walker et al. 2006a; Webb & Curtis 2002). ‘Capital’ is stocks of resources through which some specific endpoint may be achieved (Abel et al. 2006; Webb & Curtis 2002). Typically, capital is grouped into human, social, natural, physical, financial and technological domains (Table 1.3).

**Table 1.3**: Types of capitals contributing to adaptive capacity (after Productivity Commission 2003; Reid & Vogel 2006; Smit & Wandel 2006; The Resilience Alliance 2007a; Webb & Curtis 2002)

| **Human** | Available labour, human resources - e.g. knowledge, education, skills etc promoting personal/social/economic wellbeing - required to use other kinds of capitals |
| **Social** | Social resources people draw upon to pursue livelihood activities - e.g. social networks, connectedness, relationships of trust, reciprocity, exchange (includes cultural, political, institutional capitals) |
| **Natural** | Natural resource stocks used for livelihoods/ecosystems supporting humans - e.g. land, forests, erosion protection, biodiversity |
| **Physical** | Infrastructure, producer goods needed to support livelihoods - e.g. pipes, canals, dams, tractors |
| **Financial** | Access to money. Used to sustain, better livelihoods - e.g. flows of cash and stocks such as cows, car, houses |
| **Technological** | Technology available to improve or sustain livelihoods - e.g. investment, globalisation |

Natural capital, embodied in natural resource stocks as contained within protected areas, is the most fundamental form of capital, providing ecosystem services such as nutrient cycling, trees and water that enable human existence. Human, financial and social capitals (Table 1.3) are central determinants of adaptive capacity. Human capital, for instance labour, skills and education, is needed to use or employ all other forms of capital. Financial capital reflects access to money or resources that can be readily transformed into money (Reid & Vogel 2006), for example tradeable goods such as
cattle or vehicles. In terms of adaptive capacity, people with a higher financial status are thought to be more flexible and better able to diversify (Marshall et al. 2007).

Through maintaining a diversity of capital and options for change and renewal, resilient systems are flexible and more prepared for change and uncertainty (Folke et al. 2002). Increasingly, the building of resilience is equated with the long-term sustainability of social-ecological systems (Walker et al. 2002; Walker & Salt 2006; Walker et al. 2009), as it confers the ability to adapt to change over time. This ability to adapt fits with views of sustainability as in a constant state of flux and adaptation to changing human aspirations. Sustainability therefore is an ongoing process, rather than an endpoint (Berkes et al. 2003; Farrell & Twining-Ward 2005; Hjorth & Bagheri 2006; Walker & Salt 2006), as is resilience.

This research was particularly concerned with ideas of social resilience. Social resilience is the ability of human communities to withstand adversity or disturbance resulting from, for example, social, political, economic or environmental disturbance and change (Adger 2000). Folke (2006) frames social resilience as the capacity for renewal, reorganisation and development. Both understandings emphasise the ability to adapt and to maintain social function and structure. For this research, social resilience was conceptualised as the ability of local communities to adapt and respond to stressors, crises and opportunities offered by protected area tourism. Social capital, the social connections guiding human interactions and supporting livelihoods (Table 1.3), is an important source of social resilience (Folke 2006; Nkhata et al. 2009). Changes in social capital or the relationships that people have to one another affect the ability of actors to secure benefits via social networks or other social structures (Vermaak 2009). In protected area tourism, productive relationships may allow local communities to interact and gain some benefit from operations, whereas a situation characterised by poor relationships between stakeholders may limit local involvement and benefit accrual.

However, ‘resilience’ is not a directly measurable or observable phenomenon (Carpenter et al. 2005; Cumming et al. 2005). Nor is it a complete body of theory (Anderies et al. 2004) or testable hypothesis (Cumming et al. 2008). Resilience thinking

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4 Resilience is not always beneficial and is in some instances perverse, when it is resistant to change. Consider for example when a resilient system aids in maintaining the rule of a corrupt dictator (Cumming et al. 2005; Walker et al. 2004) or unjust societal relations, such as apartheid. In the context of protected areas, resilience may result in the maintenance of ‘fortress conservation’ models in which locals and their livelihoods are disadvantaged (Brockington 2003; Brockington et al. 2008a).
instead provides a framework for conceptualising dynamics and aiding understanding of social-ecological system.

A resilience framework is especially useful in understanding protected area tourism, which embodies a number of challenges that set it apart from tourism elsewhere. Protected area tourism occurs within an environment characterised by complexity, change and uncertainty, resulting in inherently ‘messy’ situations (McCool 2009; Plummer & Fennell 2009). Three key factors contribute to this ‘messiness’ and complexity. The first of these involves the dual mandate of many protected areas, which are charged with delivering both biodiversity conservation and recreation opportunities, often including tourism (Eagles et al. 2002). Sustainable tourism in protected areas involves similar trade-offs. Second, protected areas have many different forms of governance (Borrini-Feyerabend et al. 2006; Eagles 2009; Lockwood 2010) and a high level of state influence, resulting in diverse and often unpredictable institutional arrangements. Third, the existence of resource or economically-dependent communities associated with protected areas (Eagles et al. 2002) adds another layer of complexity.

1.4  Research questions and objectives

The aim of the research was to develop an understanding of the interactions among protected areas, tourism and local communities, with a specific emphasis on impacts on local communities. The following research question guided this study: How are local communities affected by protected areas and their associated tourism activities in South Africa and Australia? The complexity of interactions among protected areas, tourism and local communities led to an approach informed by social-ecological systems perspectives. In applying this perspective, the intent was to better understand and identify the complexity of local realities. This information was then used to develop indicators, which focused on monitoring the interactions and protected area tourism.

A number of associated research objectives were developed to help answer this research question. These were:

1) Develop a conceptual framework to investigate the interactions among protected areas, tourism and local communities using social-ecological systems perspectives;

2) Apply this framework to two case studies;

3) Analyse these case studies in terms of framework components, and describe interactions with an emphasis on drivers and key issues; and
4) Derive potential indicators, based upon research findings.

The research focused on exploring the views of local community members, while also drawing upon diverse views from other stakeholder groups including Park managers/staff, tourism operators, government agencies and non-government groups. Further, the research was especially concerned with social resilience, the ability of local communities to cope with and adapt to change and opportunity provided by protected area tourism. This social focus bounded the study and is given greater emphasis than the ecological system on which protected area tourism depends, although social-ecological relationships underpin later Chapters.

1.5 Significance of the research

The research makes a significant contribution to the fields of protected area and tourism research by providing an alternative conceptual framework for investigating and monitoring the impacts of protected area tourism on local communities. The framework addresses calls in the literature for revised approaches based in interdisciplinarity and systems thinking (e.g. Farrell & Twining-Ward 2004, 2005; Miller & Twining-Ward 2005). It does this by demonstrating the use and applicability of social-ecological systems/resilience thinking to explore how protected areas and tourism affect local communities. While the framework components themselves draw on established literature, the application of the framework to protected area tourism is novel. Further, the use of the framework to generate indicators with a greater recognition of process, underlying interactions and context is an important contribution to both protected areas and tourism research.

The research is unique in combining a social-ecological systems approach with qualitative, ethnographic methods offering a strong ‘local’ emphasis. These two approaches, one deductive and one inductive, were integrated through the development and application of a conceptual framework. The framework was deductive in nature in that it was grounded theoretically in social-ecological systems perspectives. At the same time, the framework was informed inductively by the ethnographic fieldwork. This combined approach allowed for a synthesised and coherent method of investigation. Ethnographic methods offered a means of accessing in-depth insights into local context and issues, while the social-ecological systems/resilience perspective ensured the researcher looked for impacts and interactions at the interfaces between system
components. Using either of these approaches in isolation would have resulted in a less nuanced understanding of the case studies.

Practically, the research contributes to the knowledge base regarding the interactions among local communities, protected areas and tourism. Indicators developed in this research provide protected area managers with the beginning of a ‘decision-support’ tool that can be used in ongoing efforts to enhance the sustainability of protected area tourism. They do this through tracking changes in the relationship between protected areas, tourism and local communities.

1.6 Thesis structure

This thesis is divided into eight Chapters (Table 1.4).
Table 1.4: Thesis outline and structure

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Chapter 1:</td>
<td>Introduction</td>
<td>Provides an overview of the thesis &amp; explores the context in which protected areas exist. Introduces social-ecological systems &amp; resilience thinking as novel approaches for investigating interactions among protected areas, tourism &amp; local communities. Outlines aims of the research &amp; its significance</td>
</tr>
<tr>
<td>Chapter 2:</td>
<td>Research design &amp; methods</td>
<td>Explains the research design &amp; guiding conceptual framework. Introduces the case studies as well as data collection &amp; analysis. Explains the research focus on local community perceptions</td>
</tr>
<tr>
<td>Chapter 3:</td>
<td>Kruger National Park</td>
<td>Provides an historical overview of Kruger National Park, its tourism operations and relationship to surrounding local communities. The two research communities, Cork &amp; Belfast, are introduced</td>
</tr>
<tr>
<td>Chapter 4:</td>
<td>Purnululu National Park</td>
<td>Provides an historical overview of Purnululu National Park, its tourism operations &amp; potential, as well as relationship to surrounding local communities. Warmun Aboriginal community introduced</td>
</tr>
<tr>
<td>Chapter 5:</td>
<td>Interactions among local communities &amp; the Parks’ natural environment</td>
<td>This Chapter presents &amp; analyses data on how local communities interact with the natural Park environment. Four interactions are discussed: an intrinsic appreciation of nature; environmental education; use of Park natural resources; &amp; events involving damage-causing animals</td>
</tr>
<tr>
<td>Chapter 6:</td>
<td>Interactions among local communities &amp; Park tourism</td>
<td>Follows the same format as Chapter 5 to present &amp; discuss how local communities interact with Park tourism. Three interactions are discussed: visits by local people to the Parks; employment; &amp; involvement in Park governance</td>
</tr>
<tr>
<td>Chapter 7:</td>
<td>Monitoring interactions among Parks, tourism &amp; local communities</td>
<td>Presents a set of indicators developed based on inductive research findings (Chapters 5 &amp; 6) &amp; guided by a social-ecological systems/resilience framework. These indicators represent a means of monitoring interactions among local communities, Parks and tourism</td>
</tr>
<tr>
<td>Chapter 8:</td>
<td>Conclusion</td>
<td>Overview of main research findings; suggests areas for future research</td>
</tr>
</tbody>
</table>
CHAPTER 2 RESEARCH DESIGN AND METHODS

The previous Chapter presented a general overview of this research, including aims and objectives. Protected area tourism systems (PATS) were introduced as a type of social-ecological system consisting of a given protected area, its associated tourism activities, and surrounding local communities. In this Chapter the research design, guiding conceptual framework and data collection methods are described. The conceptual framework used to investigate PATS is of particular interest. Informed by social-ecological systems and resilience thinking, the framework is novel for the field of protected area tourism, and uses local communities to provide a focus for investigation. The latter part of the Chapter outlines research design, data collection and analysis, including the use of and rationale underlying the selected case studies.

2.1 Research paradigm

Paradigms are the fundamental models of reference used by people to organise their reasoning and observation (Babbie 2007). Commonly, these include positivism, post-positivism, critical theory and constructivism (Creswell 1994). This research is located within a constructivist paradigm, which recognises the social construction of ‘reality’ and existence of multiple ‘realities’ (Blaikie 2000; Riley & Love 2000). In contrast, a significant proportion of current protected area and tourism research is informed by a positivist paradigm advocating the existence of an objective scientific ‘truth’ and the removal of the researcher from respondents (Beeton 2006b).

Constructivism acknowledges human subjectivity and views the meanings and interpretations of everyday reality as consequences of people’s actions (Babbie 2007). This acknowledgement of subjectivity and the deterministic influence of humans on outcomes have led some to highlight the relevance of constructivist approaches to resilience thinking. This relevance stems from the ability of a constructivist approach to encourage a greater engagement with and recognition of normative concerns, subjectivity, wider contexts and alternative knowledge systems (Leach 2008). A constructivist paradigm, therefore, guided this research, along with a number of other theoretical and methodological elements (Table 2.1).
Table 2.1: Elements of the research design

Paradigm: Constructivism
Truth, knowledge & reality result from perspective. Meanings are constructed, not discovered. Value laden contexts, inherent uncertainty & complexity

Theoretical perspective: Social-ecological systems/resilience
Recognises social & ecological systems exhibit co-evolutionary, synergistic relationships. Emphasises understanding context & interactions between component parts of a system

Methodology: Qualitative, ethnographic approach
Interprets study phenomena (interactions among parks, tourism & local communities) in terms of the meanings people attach to them. Context is critical. Semi-structured interviews supported by grounded theory analysis of data

Unit of analysis: Protected area tourism systems (PATS) case studies
Used when a researcher has little control over events & wishes to investigate a contemporary phenomena (i.e. interactions among protected area tourism & local community) in its real-life context

Research focus: Local community within PATS

This research sought to develop an understanding of the interactions between protected area tourism and local communities. The use of social-ecological systems and resilience as theoretical perspectives was introduced in Chapter 1; the remainder of this Chapter explores the use of these perspectives in investigating PATS case studies, as well as outlining the qualitative, ethnographic approach to data collection and analysis.

2.2 Investigating protected area tourism systems: The conceptual framework

A conceptual framework (Figure 2.1) was used to investigate PATS. This framework represents a novel application of resilience thinking to investigating the relationship between protected area tourism and local communities. The framework can be used to consider the interactions between system components across multiple scales using multiple worldviews, although applied here largely at the local scale.
The framework is informed by central aspects of complex and social-ecological systems thinking (Allison & Hobbs 2006; Gunderson & Holling 2002; Schianetz & Kavanagh 2008; Walker & Salt 2006) as well as guidelines for the assessment of resilience (The Resilience Alliance 2007a, b; Walker et al. 2002). These guidelines, supplemented by developments in thinking arising from the Stockholm Resilience Centre, were modified for application to protected area tourism.

The Resilience Alliance guidelines (2007a; 2007b) provide a general protocol for applying resilience perspectives (Francis 2008) to social-ecological systems. While few published applications of the guidelines exist, they are consistent with principles of the general system dynamics and resilience assessment process adopted by Allison and Hobbs (2006). The guidelines are contained within two complementary workbooks that

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A multidisciplinary, global network of scholars and practitioners interested in understanding the resilience and dynamics of complex social-ecological systems (www.resalliance.org).
outline a series of steps through which to investigate resilience. These guidelines underpin the conceptual framework presented here.

The framework also draws on work regarding the resilience of social-ecological systems by Walker et al. (2009), Walker et al. (2002) and Carpenter et al. (2001). Parallel concepts of systems and complexity found in adaptive co-management and governance research (e.g. Berkes 2007; Carlsson & Berkes 2005; Kofinas 2009; Plummer & Armitage 2007; Plummer & Fennell 2009) contributed. Various other works inform discrete components of the framework; these are identified as applicable.

Although framework elements (Figure 2.1) themselves are not new, using the framework as an investigatory tool for PATS represents a innovative interdisciplinary application appropriate for times of increasing uncertainty and change. The uniqueness of this approach lies in the application of Resilience Alliance methodology, which can only be tested in real life situations, to protected area tourism. A recent paper follows a resilience approach to analyse the Galapagos Islands as a social-ecological system, but does not explicitly follow the workbooks (González et al. 2008). To date, only five case studies based upon the Resilience Alliance workbooks have been published (see http://wiki.resalliance.org/index.php/Case_studies and Walker et al. 2009), none of which relate to protected area tourism. For this reason, the guidelines were modified to reflect the novelty of their application to this new field as well as reflect the research focus on social interactions.

The Resilience Alliance (2007a; 2007b) workbooks outline five stages of assessment (Appendix 2). The research did not seek to address all of these but instead focused on the first three stages, which provide a description of the system both past and present. While initial explorations are made regarding the latter two stages of assessment, being the desirability of change/transformation and proposed interventions/management, these remain a task more appropriate for stakeholders and protected area managers.

Based on the workbooks, the conceptual framework depicted in Figure 2.1 was developed through several iterations. The first version was published as Strickland-Munro et al. (2010) (Appendix 3). As research progressed, it became apparent that this original framework required further modifications to better understand social aspects including values, community dynamics and socio-economic realities. Resilience
thinking, which has an ecological basis, often downplays such socio-political aspects (Miller et al. 2010).

In particular, findings indicated that governance permeated all phases of the conceptual framework, rather than being a stand-alone research phase as outlined in Strickland-Munro et al. (2010). Further, the lack of historical information on the social system in terms of interactions among protected areas, tourism and local communities proved an obstacle to attempts to develop thresholds for the case studies. For this reason, the fourth phase of research was modified to include the derivation of case-specific indicators (Figure 2.1). These indicators provide an interim step between the investigation and description of interactions and eventual development of thresholds, which lies beyond the scope of this research.

The final conceptual framework (Figure 2.1) guided research at the local community level (also referred to as ‘locals’). This focus recognises the necessity of involving local people in analysing and understanding protected areas and tourism, as they are most likely to be affected by policy development (Plummer & Fennell 2009). Although the conceptual framework has applicability to other scales, the context-specific realities of protected areas and their impacts on surrounding environments make a local focus best suited to developing indicators for the relationships between parks, tourism and local communities. A local scale of investigation further accords with Plummer and Armitage (2007) who similarly developed a scale-specific resilience-based framework for evaluating adaptive co-management that relies upon a local perspective. Given that other ‘communities of interest’ exist beyond the local community, relevant stakeholders were included from local, sub-national and national scales as appropriate. Their inclusion allowed the incorporation of multiple perspectives and interests beyond those primarily focused on the local scale (Strickland-Munro et al. 2010).

Figure 2.1 shows four phases of research, each contributing to a greater understanding of the PATS. These research phases may be undertaken simultaneously and represent somewhat arbitrary distinctions: (1) system definition; (2) past system change; (3) current system state; and (4) monitoring change. The application of each of these research phases is explored in turn, briefly outlining key components and sources of information. The phases are then expanded on in following Chapters in relation to this...
research and the two case studies, with some phases of research (phases 1-3) receiving more attention than others (phase 4).

### 2.2.1 System definition (Phase 1)

The initial step of the framework requires defining the protected area tourism ‘system’ and its boundaries (Figure 2.1, Phase 1). System boundary relates to how far the boundaries of the PATS extend for research purposes. This research adopted a geographical definition of ‘community’ and highly localised scale of analysis, for three reasons. First, local perspectives provide better insights into the context-specific realities of protected area tourism. Second, practical efforts to enhance adaptive capacity, which is commonly employed as a synonym for resilience (Tompkins & Adger 2004), typically take place at community scales (Smit & Wandel 2006). Third, indicators as developed in this research are one of the most effective ways of measuring social and cultural considerations at local scales (Choi & Sirakaya 2006). Those developed here by necessity have an important contextual basis (Plummer & Armitage 2007). As with defining system components, research interests partly determine system boundaries, in addition to practicality (Chapin et al. 2009; Cumming et al. 2006; Meadows 2009). It is necessary to recognise however that system complexity implies that there is no one specific scale that will completely capture ‘a system’ (Miller & Twining-Ward 2005).

A further aspect of defining the system boundary involved research focus on social interactions within the broader social-ecological system. In part, this focus was motivated by the dearth of social research in the two Parks. Although the ecological system received less attention than the social system, it is an integral part of the research and provides a central context for following discussions.

The drawing of these system boundaries around specific parks, tourism activities and geographical ‘communities’ necessarily entails a degree of exclusion. For instance, the highly complex, evolving and differentiated nature of ‘community’ is a vast topic of inquiry in itself. Similarly, the research focuses on the local scale and prioritises social over ecological interactions. In keeping with systems approaches, Figure 2.2 outlines the topics and influences considered most important to this study, contained within the

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6 Noting that there are two different ecological systems involved in PATS; these are the respective protected areas and the environments in which local communities reside.
‘endogenous’ and ‘exogenous’ circles. ‘Environmental’ factors are not considered in this thesis. Figure 2.2 is very general in nature and while it provides an overview of some of the factors focused on in the study, and those not considered, it by no means identifies all possible factors involved in influencing local interactions in the case studies.

![Figure 2.2: Factors considered within and external to system boundaries for the purposes of research](image)

This first phase of the conceptual framework is located in Chapters 3 and 4, which outline the research case studies and detail the system components of each. Stakeholder perspectives helped to define ‘the system’, as did research interests that focused on interactions among system elements. In this study, the system was defined to include interactions among protected areas, tourism and local communities. Each formed a central component of the overall system whose status or role was ‘fleshed out’ through stakeholder perspectives.

### 2.2.2 Past system change (Phase 2)

The second phase of the framework focused on past system change and provides insights into underlying drivers and historical influences (Figure 2.1, Phase 2). Two complementary processes helped to identify drivers influencing the status and change in PATS over time. First, the development of an historical profile and second, modelling
of system change using the adaptive cycle. These processes are explored below, prefaced by an introduction to the concept of drivers.

**Drivers**

Drivers are fundamental natural and anthropogenic factors that produce change (Nelson et al. 2006; Walker et al. 2006a) in how protected areas, tourism and local communities interact. An understanding of drivers and the processes underlying system change is necessary to develop appropriate management responses. While the literature typically categorises drivers as demographic, socio-political, economic, cultural, technological or biophysical (MEA 2005; Nelson et al. 2006), in reality they are highly interconnected and rarely operate in isolation (Smit & Wandel 2006). This is especially so for socio-political, economic and cultural drivers (Dwyer et al. 2008; Nelson et al. 2006). Examples of each category are listed below in Table 2.2.

<table>
<thead>
<tr>
<th>Table 2.2: Driver categories and examples (after MEA 2005; Nelson et al. 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Demographic</strong></td>
</tr>
<tr>
<td>Population change: fertility, mortality, migration/urbanisation, ageing</td>
</tr>
<tr>
<td><strong>Socio-political</strong></td>
</tr>
<tr>
<td>Governance: Institutional environment and policy; land rights; kinship; human and social capital; human conflicts e.g. war</td>
</tr>
<tr>
<td><strong>Economic</strong></td>
</tr>
<tr>
<td>Exploitation of natural resources; tourism; globalisation; poverty; mega-projects; external events e.g. recessions</td>
</tr>
<tr>
<td><strong>Cultural</strong></td>
</tr>
<tr>
<td>Change in social values, beliefs and norms; modifications to lifestyle or knowledge/education</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
</tr>
<tr>
<td>Introduction of new technologies; improvement in agricultural practices; access to technical/information resources; infrastructure; the Internet</td>
</tr>
<tr>
<td><strong>Biophysical</strong></td>
</tr>
<tr>
<td>Keystone species; climate change; land use change; disease; pollution</td>
</tr>
</tbody>
</table>

Before discussing Table 2.2, a number of caveats require clarification. One, even in situations characterised by extensive literature, information required to identify drivers is often lacking (MEA 2005). Two, drivers are often surrounded by significant ambiguity (Walker et al. 2009) and three, driver relevance varies with scale of analysis (MEA 2005; Shackleton et al. 2008) and research interest (Cumming et al. 2005).
Each driver category (Table 2.2) potentially applies to protected area tourism. Likely demographic drivers include flux in visitor numbers or population density in protected area surrounds. Socio-political factors may consist of land rights, employee strikes or blacklisting as occurred in apartheid-era South Africa. Government policies and legislation, while clearly involved in causing change, are not discussed as ‘drivers’ here as they are more proximal influences rather than fundamental determinants of change. Economic drivers affecting protected area tourism include recessions, significant currency fluctuations, access to new markets and tourism. Cultural drivers may comprise changing social values and improvements in education. Technological drivers include infrastructure development, for instance the construction of access roads and tourist accommodation as well as increased access to Internet resources, online booking systems and sophisticated marketing techniques. Finally, biophysical drivers with the potential to influence protected area tourism include climate change, disease, species extinction and natural events involving floods, droughts and hurricanes.

Of these many possibilities, the literature suggests that five or less key drivers control system behaviour (Holling et al. 2002b; Walker et al. 2006a). Ecologically, these controlling drivers tend to change slowly, whereas social resilience may be controlled by a combination of both fast and slowly changing variables (Walker et al. 2006a). This differentiation into ‘fast’ or ‘slow’ reflects the fact that change occurs at different rates (Table 2.3). This thesis uses the terminology of fast and slow variables when discussing drivers.

**Table 2.3:** Temporal classifications characterising drivers (MEA 2005)

<table>
<thead>
<tr>
<th>Temporal classification</th>
<th>Time to effect change at lower scales</th>
<th>Time to effect change at higher scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast</td>
<td>&lt;1 year</td>
<td>&lt;2 years</td>
</tr>
<tr>
<td>Slow</td>
<td>&gt;5 years</td>
<td>&gt;20 years</td>
</tr>
</tbody>
</table>

Fast drivers tend to operate at smaller spatio-temporal scales, generally influencing system interactions within a year at lower scales (Table 2.3). Consider for example the effect of disease outbreaks (Nelson et al. 2006) like SARS, employee strikes, resource allocation processes (Holling et al. 2002b), exchange rates, fuel prices (Walker & Salt 2006) and individual preferences (Holling et al. 2002b). A particularly relevant example

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7 Severe Acute Respiratory Syndrome.
is provided by economic crises as embodied in the recent global recession (Bramwell & Lane 2009; UNWTO 2009). Technology drivers are also generally fast (MEA 2005).

Slow change is characterised by cumulative accumulations of influence over time such that slow drivers typically take longer than five years to effect change at lower and may take more than 20 years to effect change at higher scales (Table 2.3) (MEA 2005). A resilience-based management approach emphasises the investigation of slow variables, linking them to resilience (González et al. 2008) through their ability to control well-being and effective governance (Kofinas & Chapin 2009). This is because slow variables define underlying system structure and promote stability by enabling a ‘remember’ effect (Armitage & Johnson 2006; Gunderson & Holling 2002).

Demographic and socio-political variables are generally ‘slow’; examples include population growth; long term and traditional institutions including constitutional rules; land tenure/property rights; and agricultural policies. Cultural variables are also slow, for example social values and norms (MEA 2005), cultural ties to land (Chapin et al. 2009) and myth and legends (Holling et al. 2002b). Slow variables are also a source of vulnerability (Chapin et al. 2009). The slowly changing nature of poverty for instance, a key driver in southern Africa (MEA 2005), implies local communities are unable to adopt alternatives or draw on other resources. This inability or limited ability to adapt potentially makes them more vulnerable to change and disturbance (Cinner et al. 2009).

Slow variables can also be a source of vulnerability if the ability to influence or control them lies beyond the authority of local people. For example, Walker et al. (2009) sustainability in Australia’s Goulburn-Broken catchment was influenced by slow drivers including values, economy, infrastructure, biophysical function and biodiversity. Control over these slow variables lay predominantly beyond the influence of the local catchment authority, resting instead with government at local, sub-national and national scales. This inability to control major slow variables makes a region more vulnerable to change, undermining local resilience (Walker et al. 2009). International influences may also be relevant when considering the ability to influence slow variables and local resilience, for example climate change. These findings have implications for local communities in this research, who are similarly hypothesised as lacking influence over key slow variables. Indeed, management control and power over protected areas commonly rests with government agencies whose head offices are typically remote
from the park of interest (Balint 2006), meaning that local people are not able to effect change.

**Historical profile**

Resilience thinking emphasises the importance of investigating historical relations in social-ecological systems (González et al. 2008; Liu et al. 2007). An historical analysis allows investigation of change over time in values, perceptions and priorities, as well as the effect of major external events on a system (Bunce et al. 2009; The Resilience Alliance 2007b; Walker et al. 2002). To develop an historical profile, the frequency and nature of characteristic disturbances occurring were identified, for example fluctuations in visitor numbers or tourism policy, or whole governments, disease outbreaks, drought or natural disasters. Information regarding past change was sourced from review of relevant published and unpublished literature, including Park management plans, scientific reports and social impact analyses. This was supplemented by information gained from respondent recollections, which provided further insights into disturbances affecting the local system.

Historical profiles help to identify slow variables that may play an important role in controlling a system (Allison & Hobbs 2006; Walker et al. 2002). Once developed, information within the historical profile was used to model system change over time, using the adaptive cycle heuristic. Adaptive cycle modelling helps to provide further insights into past system change and slow variables.

**Adaptive cycle**

A metaphor to analyse system behaviour over time (Allison & Hobbs 2006), the adaptive cycle is a fundamental concept for understanding complex systems (Holling 1986; Holling et al. 2002b). It consists of four phases: exploitation, conservation, release and reorganisation (Figure 2.3) (Holling & Gunderson 2002; The Resilience Alliance 2007b), each of which is associated with changes in capital, connectivity and resilience (Holling 2001; The Resilience Alliance 2007b; Walker & Salt 2006). These stages and their cyclical nature are analogous to that presented in Butler’s long-standing tourism destination life cycle model (Petrosillo et al. 2006). The two models differ in that the adaptive cycle allows for adaptation, and recognises that reorganisation can
occur following a decline or disturbance (Farrell & Twining-Ward 2004; Petrosillo et al. 2006).

Figure 2.3: The adaptive cycle (adapted from Farrell & Twining-Ward 2004)

The ‘front loop’ of the adaptive cycle, the exploitation (r) and conservation (K) phases, is characterised by initial rapid growth underpinned by the availability of opportunities and resources. Consider for example the presence of entrepreneurs exploiting new opportunities (Walker & Salt 2006) or the potential associated with a new socio-political system or government. Resilience is high because the diversity of options and resources allows a system to absorb a wide range of disturbances. Over time, ideas and resources become entrenched in maintaining a particular system state. This is the conservation (K) phase, which is characterised by lessened diversity and flexibility, diminishing a system’s ability to resist disturbance (Gunderson et al. 2002; The Resilience Alliance 2007b; Walker & Salt 2006).

The ‘back loop’ of the adaptive cycle, the release (Ω) and reorganisation (α) phases, is argued as the most important part of the cycle (Allison & Hobbs 2006). During these phases the tightly regulated and connected system, although efficient, is more prone to disturbance, for example local economic collapse. Disturbance changes established conditions and disrupts connections between system components, resulting in the redistribution of resources (Walker & Salt 2006) and typically, new system conditions (Gunderson 2000; Nkhata et al. 2009). Reorganisation (α) in social-ecological systems often entails institutional change and includes renewed investment in resources (Abel et al. 2006).

A system’s position within an adaptive cycle relates to its probable stability (and hence the persistence of the impacts currently occurring) or conversely, likelihood to change
(Walker & Salt 2006). For instance, Walker et al. (2009) used the adaptive cycle to argue that the Goulburn-Broken system is on the cusp of a release phase and subsequent regime shift/transformation. Likewise, Bramwell and Lane (2009) discuss the recent economic recession in terms of an adaptive cycle for tourism, as exemplified by historical patterns of boom/bust.

However, the adaptive cycle is a general metaphor; not an absolute or fixed entity (Cumming & Collier 2005; Walker & Salt 2006). Exceptions exist and systems will not always follow an adaptive path (Holling et al. 2002b; Walker et al. 2006a). For example, some systems will not move back into the exploitation phase following reorganisation. In these systems, the capacity to adapt is either constrained or missing (Carpenter & Brock 2008) and systems may move into maladaptive cycles characterised by rigidity, poverty or ‘lock in’ traps (Allison & Hobbs 2006).

Similarly, the adaptive cycle is not a testable hypothesis (Carpenter et al. 2001) and is typically informed by historical analysis (Carpenter et al. 2005). As retrospective examinations based upon varying sources and qualities of data, models are inherently subjective and cannot be conventionally proved or disproved. Inferences of system change and causes thereof represent only one possible explanation (Abel et al. 2006; Bunce et al. 2009) and some disagreements about phases should be expected (The Resilience Alliance 2007a). Models of change using the adaptive cycle are located in Chapters 3 and 4. Insights regarding system drivers gained through this modelling are located in Chapters 3, 4, 5 and 6.

### 2.2.3 Current system state (Phase 3)

This third phase of the conceptual framework investigates the current state of the system, focusing on key issues and governance (Figure 2.1, Phase 3). This phase of research overlaps greatly with previous phases and insights generated regarding system identity and drivers of change. Ideally, these three phases of research should be undertaken concurrently.

**Key issues**

Current and future issues relating to social values and benefits, conflicts and challenges associated with protected area tourism were explored. For local stakeholders, issues
associated with protected area tourism may include, but are not limited to, economic benefits, aesthetics, access and resource usage restrictions, employment, decision-making powers, cultural maintenance, communication with protected area staff, tourist presence and biodiversity conservation. An understanding of issues arising from this phase of research offer protected area managers an important decision-support tool (Fu et al. 2010). However, issues important to a community may not be those that are fundamental to how the system functions. Less obvious aspects that provide social benefits, for instance species conservation or carbon absorption, are commonly unrecognised by stakeholders (including local community), at least initially (Coad et al. 2008; The Resilience Alliance 2007b).

**Governance**

Governance refers to the rules and processes guiding the management of protected area tourism. It determines how power and responsibility are employed, decisions made and stakeholders involved (Graham et al. 2003; Lebel et al. 2006). Access to resources is of particular interest (Ribot & Peluso 2003; The Resilience Alliance 2007b). Protected area tourism resources include charismatic attractor species such as lion, cultural sites, geology, tourism spaces and infrastructure. Access to these resources determines the ability to benefit. Access is determined by complex social patterns and relationships to resources, which vary spatially and temporally in accordance with power relations (Ribot & Peluso 2003).

According to Plummer and Fennell (2009 p151), power is the “root cause of conflict between local people and government”. Except where governance is highly participatory, it is hypothesised that protected area/tourism authorities and governments will hold primary power over resources and access to them. This occurs as governments operating at higher scales set and enforce policy and practice for protected areas and tourism, not local communities. The resulting power inequities between protected areas and local community may result in the former becoming focal points of local dissatisfaction.

In examining governance and power relations, consideration was given to property rights, tenure conflicts, access matters and their transparency/acceptance by

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8 In reality government control may not always exist, as in many ‘paper parks’ (Brandon et al. 1998; Francis 2008), where there is little or ineffective on-ground management.
communities. Power inequities with respect to these and other issues may result in mismatch, where the scale or realm of an issue differs from its management (Biggs et al. 2004; Cumming et al. 2006). Mismatch causes ambiguity and conflict in expectations and over resource use (Yandle 2007). This can inhibit learning and adaptation, thereby reducing system resilience (Abel et al. 2006; Carpenter et al. 2001). Property rights mismatches are particularly common (Shadie & Epps 2008; Yandle 2007). A relevant example for protected area tourism is difficulties reconciling European land tenure with traditional ownership systems and conflict between Western style management boards and traditional authorities. Consider also the arbitrary borders delineating protected areas. In reality, ecosystems cross state and national borders, causing difficulties in achieving an appropriate scale of management to address cross-border issues (Biggs et al. 2004). The evolution of transfrontier parks is an example of an intervention intended to overcome this mismatch.

Property and tenure represent one group of factors affecting benefit. Others include access to technology, financial capital, markets, labour and labour opportunities and authority and knowledge. Access derived through social identity or negotiation of social alliances including friendship and reciprocity is also important (Ribot & Peluso 2003). Historical profiling assists in analysis of these interacting factors and their effect on governance.

Governance was further investigated by determining central policies, regulations and legislation facilitating or constraining interactions between protected area tourism and local communities. For communities, facilitative aspects may include park liaison and benefit sharing policies, land rights legislation and sustainable and/or responsible tourism guidelines. Constraints may include enclave operations (Mill & Morrison 2006; Novelli & Scarth 2007), which can foster the separation of local community from protected area tourism and may restrict benefit accrual. Regulations prohibiting resource use and a lack of participatory meetings/opportunities for community involvement in the management of protected area tourism may also influence the accrual of benefits. Any exploration of governance needs to recognise that many factors influencing interactions between protected area tourism and local community arise at scales other than the local. Accordingly, an awareness of linkages within the local scale as well as vertical links between levels of organisation (Berkes 2007) is required.
As this phase of research overlaps with previous phases, aspects, particularly governance and policies, are reported on in the case study backgrounds (Chapters 3 and 4). Key interactions for the case studies are reported in Chapters 5 and 6. Governance (Figure 2.1, Phase 3) and key system drivers (Figure 2.1, Phase 2) inform these.

### 2.2.4 Change and thresholds (Phase 4)

The final phase of the conceptual framework rests on monitoring change in the PATS (Figure 2.1, Phase 4). This final phase of research explores possible future scenarios and develops indicators to monitor changes in how protected areas, tourism and local communities interact. These are explored below, and reported on more fully in Chapter 7.

*Future scenarios*

Future scenarios, plausible accounts of how a system may develop in the future, can be theorised to assist managers with decision making which by necessity occurs within a context of high uncertainty and difficulty of system control (Allison & Hobbs 2006; Cumming et al. 2005). Future scenarios were constructed in this study by selecting a few uncertain or uncontrollable driving forces around which scenarios can be developed, for example a fall in tourist numbers or increase in resource harvesting by locals. Each scenario is essentially a brief outline connecting past and present events with hypothetical future actions, tracking strategic indicator variables (Peterson et al. 2003; The Resilience Alliance 2007a). These are presented in Chapter 7 as a precursor and aid to developing indicators.

*Indicators*

The use of indicators is a key component of monitoring change in systems. Signals that measure a phenomenon of interest (WTO 2004), indicators provide information about a certain condition and help to compile a picture of status and trends (Hockings et al. 2006). Indicators developed using this framework were informed by social-ecological systems perspectives, which differentiates them from more traditional indicators used in protected area and tourism research. Rather than being symptomatic of the current state itself (Nkhata & Breen 2010), the indicators focus on processes and drivers underlying the current state of the PATS and seek to monitor changes in the interactions between local communities and protected area tourism.
Indicators help to monitor changes in the relationship between Parks, tourism and local communities. For example, is the system heading in a desired direction as determined by stakeholders, or towards an undesirable state? While indicators were derived from stakeholder views regarding drivers and key issues, there remains a need to consult with ‘experts’ or managers to ensure that all areas of concern or aspects of sustainability are included (Reed et al. 2006). Initial efforts at this ‘cross checking’ measure took place through discussions of the indicators with scientists and Park managers, as well as academic colleagues with relevant experience. However, the ongoing refinement and subsequent testing of the indicators remains a task for Park managers.

**Thresholds**

An additional step contained in the final phase of the conceptual framework (Figure 2.1, Phase 4) is the investigation of various ‘non return’ points or system thresholds. Thresholds are critical levels separating different patterns of operation and functioning for social-ecological systems (Lacitignola et al. 2009; The Resilience Alliance 2007a). They delineate between qualitatively different states of behaviour for PATS. Once crossed, a system shifts into an alternate state controlled by different feedbacks, with attendant changes in system dynamics. Examples include loss of biodiversity, degradation of ecosystem services or change in economic basis (Petrosillo et al. 2006), for example a shift from primary to tertiary economies (Allison & Hobbs 2006). Shifts in tourism offerings, such as backpacker to luxury tourism, provide a further illustration. Certain thresholds like species extinction (Lyytimäki & Hilden 2007) may be irreversible (Folke et al. 2004; Walker & Salt 2006).

Although intuitively appealing, thresholds are difficult to identify prior to being experienced. Part of the difficulty lies in the fact thresholds vary depending on context (Lyytimäki & Hilden 2007; Walker & Meyers 2004) and spatial, organisational or temporal scale (Kinzig et al. 2006; Lindenmayer & Luck 2005). The immense ability of humans to adapt also complicates identification (Pollard et al. 2008). Typically, the existence of a threshold is only realised after being physically experienced or derived from historical analysis (Nelson et al. 2007; Walker & Meyers 2004). While this may seem disheartening, it may be more important to discover factors moving a system towards thresholds, than it is to precisely define the thresholds themselves (The Resilience Alliance 2007a). These weak signals, or ‘thresholds of potential concern’ are probably of greater interest as, once a threshold has been reached, a system is already at
crisis point and management to return the system to a previous state is made much more problematic, if at all possible (Biggs & Rogers 2003; Rogers 2003). Even so, the discovery of thresholds of potential concern is often hindered by a lack of information and historical literature on the functioning of social-ecological systems (Shackleton et al. 2008). As such, this task was not part of this study.

2.3 Research design

The deductive conceptual framework guided the research and outlined parameters of interest for investigation. These parameters were explored using an inductive fieldwork approach, where a qualitative methodology was used to explore stakeholder perceptions of interactions occurring within PATS. Common in tourism research, qualitative methodologies help to interpret study phenomena in terms of the meanings people attach or ascribe to them. They require an understanding of social contexts and interactions (Blaikie 2000; Riley & Love 2000) and are described as relativistic, inductive, subjective and flexible (Blaikie 2000).

A focus on local perceptions and context prompted the use of ethnographic methods. Ethnography is fundamentally interested in cultural processes and attempts to place events and understandings into a fuller, more meaningful context. Ethnographic methods help historically, politically and personally situated accounts or descriptions of human lives to emerge. Both micro-level interactions between people and processes and macro-level factors influencing these interactions are examined, for example political context and economic structures. Detailed understandings of a given organisational system are possible (Herbert 2000; Schneider 2006; Tedlock 2000).

While offering detailed accounts of local processes, ethnographic methods recognise a given geographical place as having multiple external connections and social relations constructed across multiple scales (Gille & O'Riain 2002, in Lapegna 2009). Broader scales and processes, as well as the role of history, are recognised and used to explain changes at local scales (Lapegna 2009). The ability of ethnographic methods to provide a detailed understanding of context correlates with systems perspectives, which emphasise the centrality of context to understanding.

Case studies provided the unit of analysis for these ethnographic methods (Table 2.1). Case studies are an empirical inquiry that “investigates a contemporary phenomenon in
depth and within its real life context, especially when the boundaries between the phenomenon and context are not clearly evident” (Yin 2009 p18). Utilised in social anthropology, sociology and the political sciences (Blaikie 2000; Yin 2009), case studies are also common in tourism research (Beeton 2005) and are eminently applicable to situations where the researcher has little control over events and requires an understanding of context (Yin 2009).

The centrality of context in case study research complements ideas of context dependency integral to complex systems and resilience thinking. In case studies, context is vital and multiple sources of evidence are employed (Fuller et al. 2005) including documentation, archival records, participant observation, interviews, direct observation and physical artefacts. This research investigated two case studies centred on Kruger National Park, South Africa and Purnululu National Park, Australia.

2.3.1 Case study rationale

The research purposely sought case studies featuring iconic protected areas with high tourism visitation or potential. In addition, the nearby presence of an historically disadvantaged community was required. A number of additional selection criteria helped to direct site selection (Table 2.4).

<table>
<thead>
<tr>
<th>Selection criteria for protected areas</th>
<th>Selection criteria for local community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iconic tourism status</td>
<td>Little general thoroughfare/visitation by tourists</td>
</tr>
<tr>
<td>High tourism potential/existing visitation levels</td>
<td>Acceptance of research by community authorities</td>
</tr>
<tr>
<td>Historically disadvantaged communities located nearby</td>
<td>Characteristic of socio-economic &amp; cultural conditions of the wider population located nearby/adjacent to protected area</td>
</tr>
<tr>
<td>Policies promoting the inclusion of local communities, benefit accrual</td>
<td>Observed community involvement in protected area/tourism</td>
</tr>
<tr>
<td>Park management structures supportive of research</td>
<td>Research logistics (accessibility, safety, costs)</td>
</tr>
</tbody>
</table>

Three central criteria underlie Table 2.4: iconic tourism status of the protected area; the presence of historically disadvantaged communities located nearby; and the limited nature of tourist visits to those communities. Iconic tourism status was thought to result in greater potential for benefit by local communities as well as enhanced negative
outcomes. Kruger National Park (Kruger) represents one iconic protected area with demonstrated tourism potential, as does the iconic World Heritage site of Purnululu National Park (Purnululu). Both face complex issues regarding Park–people relations and the delivery of benefits to local communities, although contextual differences exist. Despite the iconic status of both Parks, there are few empirical studies investigating relationships with local communities.

Historically disadvantaged communities located adjacent to Kruger and Purnululu were purposively targeted, being Cork and Belfast villages (Kruger case study) and Warmun Aboriginal Community (Purnululu case study). This shared history provides an element of commonality (Mabunda 2004) to the case studies, although this does not discount their very different political and economic histories that influence equity outcomes and relationships between parks and local communities. The communities are considered disadvantaged, implying the existence of unfavourable circumstances or conditions in terms of infrastructure, location, economics and socio-politically. This classification of disadvantage includes ‘asset status’, being access to and control over financial, natural, socio-political and human assets. Thus, the communities may be characterised simultaneously by limited money/formal credit; poor social networks; little political voice/power of influence; poor formal education and health; small cultivatable land; limited entry to rental market; and very little physical assets (Sen 2003).

The research communities have been historically subject to marginalisation originating from European colonisation, resulting in inequitable political control or social exclusion (Mehretu et al. 2000). Despite significant socio-political change in more recent times, marginalisation and disadvantage continue to affect the study communities. This continuing disadvantage links to another selection criterion, being limited general tourist thoroughfare through the communities. Typically, the tourism literature focuses on communities with some degree of involvement or association with tourism. This casts these research communities as atypical subjects of investigation, as tourist traffic is limited and tourists are generally unlikely to stop and visit. In South Africa, this is linked to pervasive stereotypes characterising black communities as dangerous. Warmun is legally mandated as ‘closed’ to outsiders and technically, permits are required by law for visitors to enter (State of Western Australia 1972).

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9 This affects infrastructure and service provision, as well as economic opportunities.
The resultant socio-political isolation of the study communities was hypothesised as having a significant impact on interactions and benefits received from protected area tourism. The unusual viewpoint afforded by atypical communities is a novel and interesting approach to investigating the relationship between protected area tourism and local communities. It was expected that interactions between community members and tourists would be restricted and positive outcomes, i.e. benefits accruing to communities, lessened consequently.

Selection of the research communities of Cork and Belfast in the Kruger study was based on their location near one of the Park’s busiest entrance gates. The selection of community was simplified in the Purnululu study, as the Park is very isolated and Warmun is by far the closest community to the Park geographically. The presence of native title claims over the Purnululu area by some Warmun residents (see Chapter 4) was also a contributing factor in this choice of community.

The two case studies are not intended to be comparative nor generalisable to all communities adjacent to protected areas. Rather, the intent was to build theory through the application of a novel conceptual framework to two different sites, in order to advance the fields of protected area and tourism research as well as resilience assessment. This approach fits with ideas of literal replication, where a rich theoretical framework is developed from two case studies where similarities in results are expected (Yin 2009).

### 2.3.2 Data collection and analysis

Ethnographic methods emphasising informal, interpersonal contact between the researcher and respondents guided data collection. Given the distinct conversational basis of the social world (Silverman 2000) and the cultural realities of the study communities, informal interviews were chosen as the desired strategy of interaction. The conceptual framework largely guided the development of interview ideas and questions, as well as providing the basis for personal observations and document review. Interview questions sought insights into perceived benefits, participation barriers and factors influencing how local communities engage with Park tourism (Appendix 4). Approval from the Murdoch University Human Research Ethics

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10 Notwithstanding Warreranginy (Frog Hollow), an Indigenous outstation associated with Warmun which was also included in this research.
Committee was gained prior to fieldwork. As part of this approval, a simplified version of preliminary research findings was returned to respondents (personally in the Kruger study and through mail in the Purnululu study) (Appendix 5); who were given the opportunity to make changes or add further information. A final research report was prepared and discussed with Park managers in both case studies.

Purposive sampling techniques, which deliberately select respondents based on perceived usefulness to the research (Babbie 2007; Blaikie 2000), guided the initial selection of community respondents. This process aimed to gather a diversity of perspectives on interactions and impacts as opposed to being representative of any population. Two groups of respondents were sought, in an attempt to avoid the overt or implicit marginalisation or elevation of certain groups and individuals (Kayat 2002) within the research. Berkes (2007) and later Plummer and Fennell (2009) similarly propose clarification of system participants and power relations in their assessment frameworks for adaptive co-management.

One group of respondents included people theorised as most knowledgeable about the interactions among their Park, tourism and community. Within communities, these people included those occupying formal community representative roles, those involved or associated with the protected area or those with an occupational or entrepreneurial involvement in local tourism. This group also included respondents from outside the local communities, e.g. Park staff, government officials and tourism operators, who were chosen based on specific knowledge of the Parks, tourism or local community. Tourists themselves were not included owing to the transient nature of tourist visitation, which was assumed to limit their knowledge of local community. The views of tour operators therefore were used to understand the wider tourism system.

The second group targeted community members theorised as having little or no involvement in the Parks or tourism, or those lacking access to resources by which to gain benefits, for instance financial capital, knowledge or leadership position. Examples from the Kruger study include unemployed persons, single mothers and the elderly. In Purnululu, this second group of respondents was not applicable as Indigenous culture prohibits people from discussing areas to which they do not have family ties. Therefore, all community respondents in the Purnululu study held formal representative roles or had cultural ties arising from birth or family to the area, and so could freely take part in
the research. Further, involvement in the Park/tourism and access to resources by which to gain benefits was limited even among these Indigenous respondents, as discussed in following Chapters.

Following initial purposive sampling, the technique of snowballing was used. Snowballing involves asking respondents to suggest additional people who may be of interest to the research, allowing the researcher to ascertain system interconnections that are not apparent or understood by them. Snowballing is useful when members of a population are difficult to locate (Babbie 2007; Blaikie 2000) or where trust is required to initiate contact (Atkinson & Flint 2001). It generates a network of respondents, all of whom view each other as important players for the issue in question (Twining-Ward & Butler 2002).

Two local interpreters were employed in the Kruger study owing to lack of familiarity with the Shangaan language and other local dialects. This also allowed respondents to choose their preferred language of interaction. Interpreters were trained in the correct methods for translating responses, the importance of not leading respondents and of accurate, verbatim translations. Village indunas\footnote{Local term for headmen.} assisted in selecting suitable interpreters. An interpreter was not required for the Purnululu study as respondents chose to converse in English.

An initial, month-long field visit to both sites took place in 2007. Data collection itself occurred in 2008 over several stages, following ethnographic practices where the researcher lived in/observed the study areas and communities for a period of time (Palmer 2001). The iterative nature of data collection permitted repeat interactions with the same set of research respondents over a sustained period (Babbie 2007; Ritchie 2005). Repeat interactions are thought to allow for the respondents to become less self-conscious of researcher presence and so increase the internal validity of data (Frey 1994) as well as allowing for participant reflection, which may produce further insights (Westwood et al. 2006). In cross-cultural situations, repeat interactions also help to build trust and openness, as well as demonstrate researcher commitment (Huntington et al. 2006).
Interactions with respondents were voice recorded wherever possible and verbatim transcripts were completed. Care was taken to ensure respondents understood that the research was purely for academic purposes and that the researcher was not affiliated with Park or tourism authorities in any way. Informal interviews were supplemented by participant observation, which highlights the importance of simply ‘hanging around’ and developing rapport with people, so that experiences of social reality can be shared with the researcher (Crotty 1998; Herbert 2000; McNeill & Chapman 2005). Field notes and observations were recorded nightly to enrich understanding of context. Data collected in the field were supplemented by document review, for example Park, tourism and government reports and other appropriate literature. This provided an essential means of including information from beyond the local scale and formed an integral part of framework application.

Data collection occurred over a period of four months in the Kruger and three months in the Purnululu study. During data collection, several days elapsed between initial and repeat contact with each respondent. This delay between contacts meant that existing data was transcribed and partially analysed between meetings. This iterative approach allowed the use of theoretical sampling techniques (Blaikie 2000).

In theoretical sampling, respondents continue to be spoken to until no new major themes emerge from the data; or when a particular subject has been saturated with information. Consequently, sampling decisions are not fixed entities. The number of interviews conducted therefore varied for each case study (Table 2.5).

<table>
<thead>
<tr>
<th>Respondent group</th>
<th>No. interviewed</th>
<th>Kruger</th>
<th>Purnululu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community members*</td>
<td>62</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Park staff/ managers</td>
<td>19</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Tour operators</td>
<td>6</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Government/NGO officials</td>
<td>5</td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

* includes both Indigenous and non-Indigenous respondents, although the former dominated

For the Kruger case study, 92 interviews took place. Indigenous cultural restrictions relating to speaking about country (c.f. Chapter 4.4) and the Purnululu’s smaller scale of

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12 Based upon interpreter translation of respondent replies, where applicable.
tourism operations restricted respondent numbers. The Kruger case study is drawn on more heavily throughout the thesis, owing to the greater number and accessibility of respondents, as well as greater time spent in the field. These factors helped to produce a richer data set in which patterns and implicit understandings emerged more clearly.

Theoretical sampling was conducted in conjunction with data analysis and in accordance with grounded theory (Blaikie 2000; Hardy 2005). Grounded theory is an inductive methodological approach that seeks to generate theory from constant comparison and analysis of themes and patterns in data (Babbie 2007; Hardy 2005; Reason & Bradbury 2006). As a method of analysis, grounded theory allowed local issues of unease or importance to emerge, for instance employment or the continuation of traditional practices. In-depth insights into stakeholder perceptions are possible.

Grounded theory links inextricably to the process of data coding. ‘Code’ refers to the presence of a common theme, or conceptual category, by which a researcher sorts information (Charmaz 2005; Weitzman 2000). Coding in this research was assisted by use of NVivo, a qualitative data analysis software programme. A code-based theory building programme, NVivo helps to organise and synthesise transcripts of conversations into a reduced number of (researcher designated) coded clusters (Weitzman 2000). The conceptual framework and its focus on interactions, drivers and key issues informed these coded clusters. This systematic coding process was repeated multiple times to refine and condense categories for ease of data analysis. Data analysis and presentation is based upon these codes, which represent specific drivers and issues/interactions of concern or interest within the case studies.

The iterative nature of coding helped to refine insights arising from the study, with emergent codes informed by frequently mentioned or emphasised concepts. Initial coding, for example, focussed on basic themes emerging from the data such as ‘access to water’ or ‘transmission of cultural knowledge’. The next iteration of analysis was guided by theoretical coding (Connell & Lowe 1997) and based upon the conceptual framework (Figure 2.1) and resilience thinking. Using theoretical coding, concepts became more refined, allowing a full description of key emergent concepts to be developed over time. For example, codes used to organise ideas arising from the data included ‘use of natural resources’ and ‘perceptions of separation from nature’, both of which emerged as key issues in the third phase of research (Figure 2.1). Data analysis
sought to provide a full and rich description of concepts emerging from the interviews, with interview excerpts used to illustrate these concepts throughout the thesis. Excerpts were chosen as representative of widely expressed themes. No editing for grammar was performed for interviews in English, to accurately convey the words of respondents themselves. Where a translator mediated interviews, excerpts were edited to account for issues in syntax caused by translation between languages.

2.4 Validity and reliability

Reliability, the repeatability of research in other similar situations, and validity, whether the idea of reality matches to the actual reality, are central to research. However, traditional measures of validity, including the use of multiple methods or triangulation, are increasingly criticised as reflecting positivist thinking (Neuman 2006) and implying that ‘reality’ exists. Validity is mostly questioned in relation to whose idea of validity is privileged and imposed on the research (Humberstone 2004). The version of reality depicted here is acknowledged as only one of many possibilities. Therefore, traditional validity constructs were considered ill suited.

Emerging ideas regarding crystallisation are increasingly preferred as a means of enhancing the validity of qualitative research (Blaikie 2000; Janesick 2000; Richardson 1994; Wegner 2008). As expounded by Richardson (1994) and Richardson and Adams St. Pierre (2005), the idea of crystallisation recognises that social reality is highly dynamic. Akin to the metaphor of a crystal, reality ‘grows’ and changes spatio-temporally, such that what is ‘seen’ depends on your viewpoint. No one correct interpretation of truth or social data exists; there are an “infinite variety of shapes, substances... and angles of approach” (Richardson 1994 p522).

From a researcher’s perspective, crystallisation means that an individual’s worldview, experience and potential subjectivity combine to foster a multitude of angles and approaches by which to analyse the collected data. Analysing qualitative data cannot be completely objective as different people may interpret data differently. Crystallisation, by acknowledging the wealth of different approaches to viewing the social world, melds with concepts of complex systems, system dynamism and interactions underpinning this thesis, as it does with constructivist views of multiple realities.
The idea of crystallisation was employed through conscious recognition of researcher subjectivity and the existence of multiple contrasting views arising from the research data. This process was assisted by the iterative nature of data collection and periods of reflection on the data. Within this recognition of multiple perspectives and inherent subjectivity, central themes arose from the data. These themes contributed to overall understandings and contextualisation of interactions between protected area tourism and local communities.

2.5 Summary

This Chapter has explored the conceptual and practical methodology underpinning this thesis. The conceptual framework guiding this research offers a novel, interdisciplinary approach to investigating interactions between protected area tourism and local communities. Based on established guidelines for the assessment of resilience, the framework attempts to progress the application of systems and resilience thinking to protected area tourism. It does this by adopting central tenets of these perspectives, including a focus on interactions, change and underlying drivers, as framing elements by which to investigate the social components of protected area tourism. The framework differs from more traditional, linear approaches to investigating protected area tourism through its ability to explicitly recognise and work with change, complexity and uncertainty. Four phases of research were followed, being system definition; historical change and drivers; current system state; and change and thresholds, with the latter resulting in the development of indicators that can be employed by Park managers to eventually derive thresholds.

The conceptual framework was applied to two case studies using a qualitative, ethnographic methodology. The case studies, based on the Kruger and Purnululu National Parks, were chosen for the iconic status of the Parks and the presence of a geographically adjacent, historically disadvantaged community that experienced a limited amount of tourist thoroughfare. Data collection and analysis was inductive, with a large element of overlap that allowed a richer, more nuanced description of the case studies. The thesis now moves into a description of the case studies, beginning with the first case study based in South Africa’s iconic Kruger National Park. Chapter 3 explores the three main components of interest to this research, Kruger itself, tourism and local communities, as well as interactions between the system components over time.
CHAPTER 3 KRUGER NATIONAL PARK

This Chapter provides an overview of the first PATS case study, based on South Africa’s Kruger National Park (Kruger). Information contained within this Chapter relates to phases one, two and three of the research framework (Figure 3.1), providing background to system components, past change, drivers and an indication of the current state. To begin, the Chapter gives a brief introduction of South African history and the role of apartheid in structuring relations between conservation and black communities. Changes to the context of protected area management following the end of apartheid are outlined, emphasising a shift in governance towards greater inclusivity of local communities.

These changes are explored in relation to Kruger, paying particular attention to links between the Park and surrounding black communities. Each of the three system components are introduced, including a brief profile of Kruger’s role as a tourism drawcard, the current context of Park tourism and socio-economic conditions of surrounding black communities. This exploration highlights a number of variables influencing the ability of local communities to engage or interact with Park tourism.

Figure 3.1: Outline of the research framework and aspects covered in Chapter 3

13 This outline is necessarily limited in scope and depth given the enormous breadth of these concerns. Readers are referred to other, more comprehensive sources for a more detailed exploration of South Africa’s history.
The Chapter ends with a model of historic change based on the adaptive cycle. The model synthesises information from throughout the Chapter to provide an overview of past interactions and key drivers.

3.1 Colonisation and development in South Africa

The first permanent European presence in South Africa was in 1652 (Davenport & Saunders 2000; Terreblanche 2002). Political power shifted between Dutch and British control in the ensuing centuries, until in 1910, the Union of South Africa formed. Uniting previously disparate British colonies and Boer (Dutch) Republics, the first government of the Union advanced white supremacist ideas (Davenport & Saunders 2000; Terreblanche 2002). White superiority ideas remained in force in 1948, when the Afrikaner National Party came to power and introduced the formal system of apartheid (literally, ‘separate development’). Under apartheid, the marginalisation, segregation and oppression of black Africans was legally formalised (Khan 2002; Terreblanche 2002). Apartheid had an immense influence on South Africa’s social structure; some relevant aspects of which are briefly explored below. For in-depth discussion of apartheid and its ramifications, refer to Worden (2000) or Louw (2004), among many others.

Legal restrictions on black South Africans were numerous. In 1913, the Natives Land Act was passed. This Act, in combination with the Natives Trust and Land Act (1936) and Bantu Authorities Act (1951) resulted in the development of overcrowded communal areas. Legally, these designated areas known as bantustans were the only place where black South Africans were permitted to reside. Comprising only 13% of the total area of South Africa, bantustans were territories and institutions in which ethnic identity for black people was intended to be constructed in line with apartheid ideology (Cock & Fig 2002; Ramutsindela & Simon 1999). Typically, bantustans were unproductive agricultural regions primarily populated through forced removals from other areas (Magome & Murombedzi 2003).

Resettled into bantustans, a raft of other legislation fostered the ongoing political and social marginalisation of black South Africans. Examples include the Group Areas Act (1950), Bantu Authorities Act (1951), Reservation of Separate Amenities Act (1953) and Bantu Education Act (1953). Together, these and other apartheid laws delivered an
in inferior education and restricted both freedom of movement (Khan 2002) and voting rights of black people (Government of South Africa 1951).\textsuperscript{14}

Apartheid officially ended on 27 April 1994. Significant legislative change followed, aimed at improving the quality of life for previously disadvantaged citizens. Democracy saw efforts to redistribute political influence and social structures, with the aim of ensuring equality of rights and proportional political representation for non-white South Africans (Davenport & Saunders 2000; Government of South Africa 1996). Prominent legislative changes included the revised Constitution and black economic empowerment (BEE) initiatives (Government of South Africa 1996, 2003a), as well as the formal abolition of bantustans.

Despite policy reform, the ability of black South Africans to direct their future does not appear to have improved, or if so, only marginally (Guyot 2005). The legacies of apartheid linger, influencing local interactions through maintaining an inequitable status quo and the concentration of power in the hands of relatively few.\textsuperscript{15} Systems thinkers suggest these ongoing legacies indicate that new feedbacks based on revised national policies are not yet in place (Cousins & Pollard 2008; Pollard \textit{et al.} 2008). That is, apartheid continues to influence current-day interactions and outcomes despite the introduction of democracy and significant legislative and policy changes.

Continuing high population densities are one indication of apartheid’s legacy (Pollard \textit{et al.} 2008; Shackleton 2005), reflecting the consequences of forced resettlement policies and their persistence despite the end of apartheid practices. This legacy is tangibly illustrated by Els (2002), who estimates that approximately 48\% of South Africa’s rural black population still live in former bantustan areas. Many of these ex-bantustan areas are in close proximity to the nation’s protected areas. The following section investigates these relationships.

More generally, South Africa itself is in a prolonged state of transition (Burns & Barrie 2005; Cousins & Pollard 2008) characterised by rapid socio-political and economic change (Carruthers 2007). However, widespread change remains hindered by the

\textsuperscript{14} Apartheid laws and racially discriminatory practices also affected other non-white South Africans.

\textsuperscript{15} Noting that black South Africans are increasingly gaining economic power. This emerging black middle class are called ‘black diamonds’ and are responsible for driving economic growth. While increasing in number, black diamonds still only represent approximately 15\% of South Africa’s total black population. The majority of black South Africans continue to live in poverty (Duffett \textit{et al.} 2009).
remnants of apartheid (Cousins & Pollard 2008). Issues include continuing demonstrations against poor service delivery and overwhelming poverty as well as population concerns involving massive unemployment and widespread incidence of HIV/AIDS (Carruthers 2007). Supporting Guyot (2005), Cousins and Pollard (2008) argue that lack of political will and harmony among new, post-apartheid institutional structures presents a significant barrier to achieving change.

3.2 The evolution of park–people relations

Relations between parks and nearby black communities have a chequered history in South Africa. Initially, following established colonial trends, local people were routinely separated and restricted from using natural resources within protected areas. Such privileges were reserved for elite white settlers (Adams 2003a; Murombedzi 2003). These historically divisive practices have fostered a legacy of ongoing conflict over land and natural resources (Fabricius et al. 2001), which has had a detrimental effect on how parks and local communities view each other.

How conservation managers in South Africa view local communities has shifted significantly over the last two decades following the advent of democracy. Recent legislative changes of significance include the National Environmental Management: Protected Areas Act (2003b) and National Environmental Management: Biodiversity Act (2004) (hereafter referred to as the Protected Areas Act and Biodiversity Act). Ever more, protected areas are recognised as being for the benefit of people (Carruthers 2007) and their management increasingly prioritises socio-political concerns including social justice and economic development (Dahlberg 2005; Wynberg 2002). South African National Parks (SANParks), the manager of much of South Africa’s conservation estate (Carruthers 2007; SANParks 2008c), are attempting to increase the legitimacy of State protected areas through providing benefits to rural neighbours (Ashley & Jones 2001), who are typically black and historically disadvantaged. Providing economic and non-economic livelihood benefits to local communities, or compensation for costs borne, has been termed the ‘park neighbour principle’ and represents a common approach to gaining support for conservation in Africa (Adams & Infield 2003). However this approach has had mixed success.

Developing relationships between protected areas and historically disadvantaged neighbouring communities is not an easy task. New conflicts continue to emerge, for
instance the management of community expectations regarding jobs and other economic benefits, land/ resource tenure agreements (Fabricius et al. 2001) and access to natural resources. Community participation is another challenging area. While South Africa has created legislation highly supportive of conservation–stakeholder partnerships\textsuperscript{16} (Holmes-Watts & Watts 2008; Venter et al. 2008), in practice, community participation is lacking. Reasons for this include the fact many conservation officials do not understand participatory processes and are not experienced in involving local people (Dahlberg & Burlando 2009; Holmes-Watts & Watts 2008). Research in other areas of South Africa highlights significant gaps between the rhetoric and reality of achieving ‘community involvement’ and ‘conservation with development’, with many park staff and community members unsure of how to actualise this rhetoric (Dahlberg & Burlando 2009). A further reason underlying the poor record of community participation is that communities may be largely unaware of the correct administrative and bureaucratic procedures to follow in order to tangibly benefit from protected areas (Holmes-Watts & Watts 2008), if these even exist.

Expectations of tangible benefits are often financial in nature and increasingly, South Africa's protected areas are viewed as “cash cows for economic development” (Carruthers 2007 p297). Reduced government funding and consequent requirements for financial self-sufficiency (Eagles 2004; Magome & Murombedzi 2003) has led SANParks to embrace tourism as a primary means of achieving economic sustainability (SANParks 2008c). This decision appears sound, with SANParks recording a surplus of R53.59 million (~US$7 million)\textsuperscript{17} in the 2008/9 financial year (SANParks 2009a).

3.2.1 Park tourism in South Africa

The appeal and potential of nature tourism in South Africa is great, underpinned by diverse scenery and a range of charismatic wildlife (Cornelissen 2005; Ramchander 2007; Schoemann 2002). These strengths underlie tourism’s ability to provide a means of economic sustainability and development. Tourism contributed 8.5% of national Gross Domestic Product (GDP) in 2008, equivalent to R162.9 billion (South Africa Tourism 2008) (~US$22.28 billion). Nature tourism made a significant contribution within this share of GDP.


\textsuperscript{17} All monetary figures and currency conversions throughout the thesis were correct as at 1 June 2010.
To illustrate, 4.3 million people visited a SANParks protected area in 2008/9, contributing R664.14 million in revenue (SANParks 2009a) (~US$86.7 million). This compares to tourist arrivals to protected areas in Botswana (the only nearby country for which reliable, current statistics were available), which in 2007 recorded 284,501 arrivals (Botswana Department of Tourism 2009). The majority of visitors to SANParks estate are domestic tourists (75%), followed by international arrivals (24.4%) and residents from surrounding African countries (0.6%) (Urban-Econ 2008a).

Tourism’s significance to the economy is recognised nationally, including by the Department of Environmental Affairs and Tourism (DEAT), the government agency responsible for SANParks (DEAT 2009). In particular, tourism is believed to have significant potential to create employment and help alleviate poverty (Binns & Nel 2002; DEAT 2009; Mahony & Van Zyl 2002). Nature tourism and national parks have a demonstrable impact in this respect. To illustrate, in 2005/6, SANParks provided 3171 formal jobs (Urban-Econ 2008a); by 2008/9, this figure increased to 3367. Additionally, further indirect jobs are generated through extended public works programmes such as Working for Water, Wetlands or Fire (3389 jobs), infrastructure development programmes (which awarded 70% of all contracts to black-owned construction companies) (1260 jobs) (2008/9 data, SANParks 2009a) and through concessionaires located in national parks (1235 jobs) (2005/6 data, Urban-Econ 2008a).

Kruger National Park (Kruger), arguably South Africa’s most iconic protected area, illustrates the economic development role played by national parks and tourism. Although part of the SANParks estate, Kruger functions as a semi-autonomous business unit (Mabunda 2004). Several factors underlie this, including Kruger’s attraction and iconic status; tourist arrivals; employee numbers; and revenue generation, which currently accounts for approximately half of total SANParks revenue (Eber, pers. comm., 2010).

Kruger’s strength as a tourist attraction positions it as a key means of stimulating further development in the local area (Ehlanzeni District Municipality 2003; SANParks 2008b). This assumed role is based on Kruger being a highly popular tourist destination, with

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18 Of this total direct workforce, 72.2% are black South Africans. White South Africans now comprise some 9.4% of total SANParks staff, coloured South Africans 17.9% and Indian South Africans 0.5% (2008/9 data, SANParks 2009a).
high potential for Park tourism to benefit surrounding communities. Local perceptions of this potential, and tourism’s impact on their lives, are explored in subsequent chapters.

3.3 Kruger National Park

Kruger is located in the lowveld\(^{19}\) of north-eastern South Africa, spanning the provinces of Mpumalanga and Limpopo. Mozambique forms the Park’s eastern and Zimbabwe the northern border (SANParks 2008b) (Figure 3.2). The following overview of Kruger is restricted to history of Park development and aspects of Park management of direct relevance to this thesis.\(^{20}\)

![Figure 3.2: Location of Kruger National Park, South Africa (Courtesy SANParks)](image)

Kruger covers an area slightly larger than two million hectares. The Park covers a distance of 350km north-south and has an average width of 60km (Mills \textit{et al.} 2003; SANParks 2008b; Venter \textit{et al.} 2003),\(^{21}\) approximately the size of Israel or Wales. Kruger’s western border is of interest to this research as it provides an interface with high-density ex-bantustan areas containing some two million people, most of whom are

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\(^{19}\) Lowveld refers to the relatively flat, low-lying, semi-arid savanna region in South Africa’s north-east (Shackleton 2005 p138).

\(^{20}\) Readers are directed to other definitive sources, such as The Kruger Experience (du Toit \textit{et al.} 2003), for an overview of Kruger’s management, ecology and history.

\(^{21}\) This represents the core area of Kruger; if lands included in the transfrontier ‘Greater Kruger National Park’ are incorporated, these figures increase.
black and impoverished (Pollard et al. 2003; Urban-Econ 2008b; Zeppel 2006). This large population density adjoining the Park presents a key challenge to management and conservation (Timko & Satterfield 2008). The western border also contains private and provincial game reserves.

### 3.3.1 History of Park development

In the late nineteenth century, the lowveld area was sparsely inhabited, with permanent settlement inhibited by the presence of sleeping sickness. In 1896, a rinderpest epidemic hit, decimating domestic and wild animal stocks. The epidemic also eradicated the vector of sleeping sickness, tsetse fly infestations, removing the threat of disease and opening up the lowveld for permanent settlement (Adams 2003a; Carruthers 1995; Pollard et al. 2003).

The colonial administration, concerned by diminishing animal stocks attributable to both the rinderpest epidemic and unrestricted hunting by commercial and subsistence hunters, led to the proclamation in 1898 of the Sabi Game Reserve (Sabi) (Adams 2003a; Carruthers 1995), the precursor to Kruger. Once formally proclaimed, the first removal of black Africans from villages within Sabi began (Pienaar 1990; Pollard et al. 2003). Evictions of local people continued under the reign of James Stevenson-Hamilton, appointed Sabi’s warden in 1902. Stevenson-Hamilton’s actions earned him the nickname Skukuza, a Tsonga-Shangaan name commonly translated as “he who sweeps clean” (Fabricius et al. 2001 p832). Perceived links between conservation and forced removals are widespread throughout South Africa (Khan 2002; McDonald 2002), enshrined in the name ‘Skukuza’ (Carruthers 1995; Fabricius et al. 2001).

In 1903, the boundaries of Sabi were increased and the neighbouring Singwitsi Game Reserve (Singwitsi) was proclaimed (Figure 3.3). The gap between Sabi and Singwitsi was protected by proclamation in 1914 (Carruthers 1995), forming the basis of present-day Kruger. Kruger was formalised in 1926 via the National Parks Act, through the amalgamation and subsequent renaming of the Sabi and Singwitsi reserves.

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22 An infectious viral disease of cattle, buffalo and some wildlife species, also known as ‘cattle plague’.
23 Alternative definitions exist, for example ‘he who scrapes clean’ (Carruthers 1995).
24 The political implications of bestowing the name ‘Kruger’ (after Paul Kruger, president of the Transvaal Republic 1883-1900) on the newly proclaimed national park is argued as synonymous with a white South Africa (Adams 2003a; Carruthers 1995), reinforcing links between conservation and forced removals of black South Africans.
In 1948, apartheid was formally introduced, legally entrenching a range of existing racially divisive policies and ideas (Pollard et al. 2008). Throughout this period until the recent past, racially discriminatory policies dominated South Africa’s socio-political landscape and South African conservation was embedded within national apartheid doctrines. Kruger, South Africa’s first and flagship national park, followed and enforced divisive apartheid policies (Carruthers 1995; Cock & Fig 2002; Masuku Van Damme & Meskell 2009). Consequently, apartheid had a fundamental influence on the management of Kruger and its relationship to surrounding communities.

In particular, apartheid strongly influenced the manner in which conservation authorities perceived local (black) communities surrounding protected areas (Holmes-Watts & Watts 2008; Wynberg 2002). Black South Africans were subject to nationally sanctioned and locally enforced racial discrimination and segregation, and their access to national parks was limited. For instance, until 1980 Kruger restricted black visitors to
tent accommodation at a single bush camp (Cock & Fig 2002). Further, Kruger was entirely fenced off from surrounding communities by 1976, existing as an ‘ecological island’ (Frietag-Ronaldson & Foxcroft 2003) (Plate 3.1). Fencing was driven by disease control concerns (Bengis et al. 2003) as well as a protectionist segregation policy (Carruthers 1995), with fencing also delineating political boundaries between South Africa and neighbouring Mozambique and Zimbabwe (Frietag-Ronaldson & Foxcroft 2003).

Fencing can reinforce perceptions of separation through being both a physical barrier to local entry as well a psychological barrier that symbolically communicates intent to restrict access (Fortmann 1995 in Ribot & Peluso 2003). Apartheid was thus complicit in fostering the physical and psychological separation of black South Africans from the natural environment. Consequently, many black South Africans felt, and indeed feel, no sense of ownership for national parks (Carruthers 1995; Khan 2002; Murombedzi 2003). Fencing, as well as forced removals, led to a relationship of suspicion or hatred between local communities and SANParks (Reid 2001) although other factors also contribute, such as damage-causing animals.

Plate 3.1: Fencing separating Kruger from Belfast village (J. Strickland-Munro)

25 Kruger was declared open to all race groups in 1989 (SANParks 2008c). Manyeleti, a game reserve dedicated for black people adjoining Kruger, was established during the 1960’s and managed by the Gazankulu homeland government (Mahony & Van Zyl 2001).

26 Noting that racially discriminatory practices that existed since the inception of conservation in South Africa also contributed.
The end of apartheid resulted in significant changes for conservation practice in South Africa (Cock & Fig 2002; Holmes-Watts & Watts 2008; Venter et al. 2008), transformations that have proved pivotal for the ability of local communities to realise benefits from conservation. Employment equity is one area of marked change. Pre-apartheid, only white South Africans held senior management positions in SANParks. Currently, black South Africans represent almost three quarters of the entire SANParks workforce and are now a majority in management positions (SANParks 2009a). Kruger received its first black director in 1998 and today, black South Africans represent 95% of the formal Park workforce (SANParks 2010).

Land claims arising from dispossessed communities are another element of change in South Africa’s new conservation landscape (Cock & Fig 2002). To date, several land claims have been settled, including the highly publicised Makuleke claim in Kruger’s north (Magome & Murombedzi 2003; Steenkamp & Grossman 2001). In 2008, the South African Cabinet exempted Kruger from further restitution of land title as it was ‘not in the public interest’. Reasons included Kruger’s economic contribution to Mpumalanga and Limpopo provinces as well as the national SANParks revenue. The Park’s iconic national and global status, need for biodiversity conservation and impracticality of numerous co-management arrangements were further factors behind the decision. Consequently, land claims are to be addressed through alternative solutions bringing ‘meaningful benefits’ as well as through compensatory measures, rather than through land title (SANParks 2009a).

A third change driven by South Africa’s post-apartheid socio-political transformation concerns a greater recognition by SANParks of park–people relations and the need to “foster partnerships in a spirit of equity redress” (SANParks 2008b p34). In this respect, SANParks are keenly aware of the need to provide benefits to park neighbours, be they economic (e.g., business tenders or art and craft market opportunities), livelihood based (for instance sustainable use of natural resources) or in terms of making parks more accessible for local communities (SANParks 2008b, d; Urban-Econ 2008b).

Increasingly, conservation managers are recognising the value of community engagement and of building relationships with local communities as key methods of enabling benefit sharing and increasing legitimacy. As far back as 1987, studies were reporting that Kruger’s long term survival was “entirely interlinked with the upliftment
of local rural communities” (Fourie 1987a, b, in Fourie 1991 p159). In particular, SANParks cites three main factors underlying the need to build relationships with local communities: the fact they bear costs associated with living next to protected areas; directly impact on park ecosystems and operations; and expect to benefit from protected areas (Urban-Econ 2008b).

### 3.3.2 Community engagement and benefit sharing

The end of apartheid and subsequent legislation enshrining equality, for instance the revised *Constitution of the Republic of South Africa* (1996), required SANParks to address historical discrimination and to make national parks relevant to all South Africans, especially those disadvantaged under apartheid. Consequently, SANParks mission was altered to reflect three central concerns: 1) conservation management; 2) establishing mutually beneficial partnerships with community; and 3) providing public benefits through sustainable tourism. Both SANParks (Mabunda 2004) and Kruger’s management vision changed to enshrine increased benefit sharing, including public participation (SANParks 2008b; Urban-Econ 2008b).

To enhance benefit sharing in surrounding communities, SANParks in 1995 established a dedicated park outreach division called Social Ecology. In 2003, the unit gained full Directorate status and was renamed People and Conservation (Masuku Van Damme & Meskell 2009; SANParks 2000; Steenkamp 2005). In 2008, the Directorate was dissolved and incorporated with Conservation Services (Figure 3.4).

![Organisational structure of Departments with Kruger National Park](Figure 3.4: Organisational structure of Departments with Kruger National Park (Courtesy SANParks))
People and Conservation’s role is to ‘promote a conservation ethic and create benefits for local communities’ affected by Kruger’s existence. Key areas of responsibility are local economic empowerment; environmental education; cultural heritage management; and community facilitation (http://www.sanparks.org/parks/kruger/people/). Demonstrable success has been achieved in key areas of responsibility including environmental education, cultural heritage management and economic empowerment, with outputs often exceeding annual targets (SANParks 2009a).

However, research suggests that People and Conservation often faces difficulties stemming from opposition to its work and ideas of local community involvement among many SANParks staff (Anthony 2006). This resistance to Kruger’s involvement in community outreach has been a feature ever since its inception. Cock and Fig (1999 p34), for example, reference a lack of political will resulting in the “serious marginalisation of social ecologists” by SANParks and the undermining of their credibility and ability to achieve change. Steenkamp and Grossman (2001 p3) concur, suggesting that Kruger’s Social Ecology program was “not always understood or enthusiastically embraced” by Park personnel and it essentially remains peripheral to the core business of SANParks. This resistance led to the near collapse of Social Ecology in 2002, and precipitated its reorganisation into the People and Conservation Department in 2003 (Swemmer, pers. comm., 2010).

A more recent exploration by Masuku Van Damme and Meskell (2009 p77) suggests Social Ecology’s introduction “shook the foundations of SANParks and met with resistance from senior managers”. They recount similar concerns that SANParks was shifting from its core business towards becoming a development agency, proposing several reasons why the idea of community engagement was resisted. One reason (explored further below) concerned SANParks’ historic strength in positivistic natural science research, which led to tensions regarding the validity and appropriateness of social science research. A second reason involved perceptions of the ease of undertaking community engagement, which undermined the complexity of communities and their relationship to parks (Masuku Van Damme & Meskell 2009). While only representing one perspective, these comments all indicate a contested role for People and Conservation within SANParks.
Despite this seeming internal contestation over community engagement, SANParks recognise local communities as a key constituency group (Urban-Econ 2008b). Formal engagement between Kruger and local communities occurs through community and park forums, which originated in 1996 as a means to develop dialogue between Kruger and local communities (Cock & Fig 1999; Koch 1997). A range of Park-related issues affecting communities are discussed at the forums, including problem animals, resource use, employment and other economic opportunities (Cock & Fig 1999). While participation in the forums gives members the opportunity to influence decision making and management, the forums are not decision making bodies (SANParks 2007b). Kruger has seven community forums (Figure 3.5), which together represent 187 villages and two larger towns within a 20 km radius of the Park’s western border.

Figure 3.5: Community forums along the western border of Kruger National Park (Courtesy SANParks)
The forums roughly correspond to Municipality boundaries but not always; a forum may cross two Municipalities (e.g. Hlanganani forum) or one Municipality may have two forums (e.g. Bushbuckridge Municipality) (Figure 3.5). The study area falls under the Ntirhiswano Community Forum. Established in 1998, the Ntirhiswano forum represents 22 villages located in the south east of Bushbuckridge Local Municipality. The Forum has experienced many functional problems that have hindered achievement of its mandates, including non-attendance at scheduled meetings and withdrawals from the Forum, until only three members remained. At the time of research, it was not operational (Mabasa, pers. comm., 2008) (see also Chapter 6.3).

Membership of community forums are open to surrounding communities, community development trusts, communal property associations, land claimants and local municipalities and businesses (SANParks 2008b). Tourism operators and representatives from provincial or national tourism organisations (e.g., Southern African Tourism Services Association) are at times invited to attend although anecdotal evidence suggests that they seldom do. Kruger’s own Tourism Department generally does not attend meetings either (Swemmer, pers. comm., 2010). This suggests that both Park management and People and Conservation consider tourism a separate concern from that of local community relations.27

This inference is supported by Mabunda (2004 p75) who describes tourism operations in Kruger as narrow in function, separated from its conservation milieu and not reflective of the “symbiotic relationship… between conservation and tourism in a protected area management context”. Zhou (2009 p225) concurs, describing tourism in Kruger28 as following “principles and patterns that are heavily skewed towards business reductionist, deterministic and liner [sic] in respect of service delivery”, to the neglect of environmental concerns. Fragmentation among different departments, Zhou concludes, causes difficulties co-ordinating management actions. Outside of Kruger in the adjoining Sabi Sand catchment, Sherwill et al. (2007) discuss a similar division among tourism and other sectors. Tourism there, they conclude, has strong intra-sectoral links that facilitate communication between local, sub-national and national operations, yet lacks cross-sectoral linkages to bridge the divide to other sectors, for example natural resource management or local communities. This disconnect between

27 Noting that tour operators are engaged with at a higher level, during stakeholder engagement processes associated with the development of Kruger’s management plan.
28 Internally run and controlled operations, not external operators running tours etc within Kruger.
conservation and tourism is cited as a key factor limiting the ability of local communities to engage in nature based tourism operations in southern Africa (Scholes & Biggs 2004).

This apparent separation of tourism (and conservation, as discussed previously) from the need to develop relationships with local communities is somewhat at odds with existing Park management and research philosophy. This philosophy follows a growing trend of viewing systems as complex, unstable, open, and with random reactions (Mills et al. 2003; Venter et al. 2008). It explicitly recognises the need to symbolically extend Park boundaries and view its management as linked with that of surrounding environments. Although an attempt was made to develop an adaptive management framework for tourism in Kruger, this was unsuccessful (Eber, pers. comm., 2010). Perhaps, difficulties in developing this framework may be related to Kruger’s acknowledged dearth of social research (Masuku Van Damme & Meskell 2009) or research focused on social-ecological interactions. However more recent events at Kruger may result in the development of a sustainable tourism research and implementation framework in the near future.

3.3.3 Ecological research and strategic adaptive management

Kruger has a strong history of ecological research (Biggs 2004) which contributed to the development of a much-lauded approach to ecological Park management (Braack 2000). Called ‘strategic adaptive management’ (SAM) (Rogers & Biggs 1999), the approach is based upon understandings of Kruger as a complex system (Venter et al. 2008). SAM is designed to improve understanding of complex ecosystems and broader social needs (Venter et al. 2008) as well as to recognise and account for inherent uncertainty. These provisions reflect awareness by managers in Kruger of the need to build resilience in Park management. As a process, SAM contains a number of parallels with a resilience analysis. For instance, a key step in the management process is the identification of ‘agents of change’, factors that determine changes in ecosystem structure and function (analogous to resilience ‘drivers’).

Identification and monitoring of indicators of these agents of change allows the development of Thresholds of Potential Concern (TPCs). TPCs define the conditions of spatial and temporal heterogeneity for which Kruger is managed (resilience similarly discusses the identification of thresholds). Rather than being a single point at which
change suddenly occurs, Kruger’s TPCs are formulated to permit a system or variable to fluctuate between a specified upper and lower limit (Biggs 2004; Biggs & Rogers 2003; Mills et al. 2003). That is, they specify the boundaries of desired system (SANParks 2008b) as defined by management. By allowing for a range of movement with upper and lower limits, TPCs recognise the difficulties of defining a single point at which a threshold is crossed (Grant, pers. comm., 2010). The approach explicitly allows for change and uncertainty and as the limits of a TPC are hypotheses based on best available knowledge, they are subject to challenge and modification.

The process of defining a TPC is difficult and complex. This complexity is illustrated by the fact only 21 TPCs were generated in the first seven years of usage within the Park management framework (Biggs & Rogers 2003), all in relation to ecological concerns. For example, fire TPCs are set to encapsulate a range of fires intensities, as these are believed to help maintain biodiversity. More specifically, if any of the three fire intensities (low, medium or high) constitute more than 50% or less than 20% of the area burnt per year, the TPC will be exceeded. Over a five year period, one intensity class should not dominate for more than two years. Further examples include TPCs for alien plant incursions, river sedimentation and species of conservation concern (SANParks 2008a, b).

The continuing use of SAM to expand research and monitoring into social and economic spheres (Venter et al. 2008) will ensure a more integrated and holistic approach to management, in keeping with the resilience framework presented here. The need for expansion of SAM’s complex systems approach to Park management into social and economic spheres is emphasised by previous research indicating a need for study of the socio-economic impacts of Park tourism on local communities (e.g. Diggines 1998; Mabunda 2004). This need is supported by Kruger’s recent management plan, which emphasises the urgency of developing social thresholds relating to impacts on neighbouring communities (SANParks 2008a). This study addresses these identified research needs by exploring impacts and local community perceptions of Kruger and Park tourism. Information gained from this research, particularly indicators for monitoring interactions between Kruger, tourism and local communities (Chapter 7), presents an initial step towards the development of socio-cultural TPCs.
3.4 Tourism in Kruger National Park

Kruger is a premier tourist destination and icon (Cornelissen 2005; Eagles 2004; SANParks 2008c), with a visitation history stretching back before the Park’s establishment. The following section provides an overview of Kruger’s current tourism context. Kruger’s Tourism Management Plan (2007-2011) (SANParks 2008c) and associated appendices provided key sources of information for this review.

Kruger first received tourists in 1923. Arrivals increased dramatically within the first two years of formal Park existence, jumping from 3 cars in 1927 to 180 cars in 1928 (SANParks 2008c). Tourist numbers grew steadily over time yet despite striking increases in tourist arrivals, tourism development occurred in a random and unsystematic manner. This is illustrated by the fact an official reservation system for tourist accommodation was only introduced in 1957, 30 years after the official start of Park tourism (Brynard 1962 in Mabunda 2004).

Kruger currently receives approximately 1.3 million visitors per annum (SANParks 2009a; Urban-Econ 2008b), signifying its attractiveness as a tourist destination. To illustrate, the next most popular SANParks national park after Kruger, Tsitsikamma, received 155,762 visitors in 2008/9 — a highly significant difference (SANParks 2009a). Arrival demographics for Kruger are generally comparable with overall SANParks visitation, although the Park receives slightly more domestic tourists (~83.7%). International tourists comprise 15.7% and visitors from surrounding African countries a mere 0.6% of total arrivals (SANParks 2009c).

This magnitude of arrivals positions Kruger as a “de facto hub of economic, especially tourism, development” in the local region (SANParks 2008b p24). Kruger is portrayed as underpinning regional tourism industries through its capacity to attract tourists to the lowveld area, allowing the development of associated tourism operations based on the iconic ‘Kruger’ brand. For instance, Saayman and Saayman (2006) discuss Kruger’s highly significant yet non-quantifiable role as a development node. Graphically termed the ‘carcass model’ (Saayman 2002, in Saayman & Saayman 2006), Kruger acts as a carcass attracting surrounding operations, such as private game reserves and the many ‘Kruger Park’ branded businesses in local towns, e.g. ‘Kruger Park butchery’ or ‘Kruger Park bottle store’, to ‘feed on opportunities’. The potential of tourism or more

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29 Table Mountain National Park is SANParks most-visited park, receiving over 2.2 million arrivals in 2008/9 (SANParks 2009a).
specifically tourist arrivals to provide opportunities for local community involvement and benefit positions it as a fast variable in the Kruger study. To better contextualise Kruger’s role in surrounding economic development, the following sections review the Park’s current tourism environment in terms of Park access and infrastructure; tourism activities; and employment.

3.4.1 Access and infrastructure

Both air and road links provide access to Kruger. Three airports provide access to the southern, eastern and northern sections of the Park and once within Park boundaries, Kruger largely caters for self-drive visitors. Nine official entry gates are located along Park boundaries (Figure 3.6); additionally, Kruger provides two entry points into Mozambique which see a very limited number of tourists (SANParks 2008c).

The southern areas of the Park are highly accessible for key domestic markets in Mpumalanga and neighbouring Gauteng province. Visitors from these two provinces dominate domestic arrivals (SANParks 2009c) because of geographical proximity and for Gauteng visitors, generally higher financial status (Saayman & Slabbert 2004; SANParks 2008c). Prime game viewing opportunities make the southern areas more popular than northern regions (SANParks 2007a), which are also more difficult to access because of relative remoteness from main tourist centres (SANParks 2008c).
Tourist numbers have grown exponentially over the past 30 years (Figure 3.7), largely fuelled by increases in day visitors. Foreign tourists also contributed, with a 340% increase in arrivals since the introduction of democracy in 1994. Kruger predicts a continuing trend of increasing tourist arrivals in coming years (SANParks 2007a, 2008c).
One identified consequence of continued growth in tourist numbers is pressure on the main arrival gates in Kruger’s southern regions (SANParks 2008c). Currently, gate quotas are set at 500 people, per gate, per day; although this quota is already exceeded for some gates during peak periods (SANParks 2007a). Suggested measures to address predicted increases include raising the number of overnight rather than day visitors and ‘park and ride’ concepts (SANParks 2008b, c), where tourists join a larger tour. The latter concept is of particular relevance as it potentially offers local communities a means of benefitting from Park tourism through the provision of transport or guiding services.

People and Conservation are currently investigating the potential of the ‘park and ride’ concept (Mmethi, pers. comm., 2008). Such actions by Kruger to predict and mitigate arrival pressures indicate an attempt to avoid tourism becoming a threat, rather than a benefit, to biodiversity. This may reflect recognition by Park managers that trends towards overcrowding can result in destruction of the natural environment on which tourism is built and ultimately depends (Drumm 2008). Attempts to mitigate overcrowding may also relate to forecast stress on Park infrastructure and visitor experience.

In terms of infrastructure, Kruger offers a range of accommodation catering for camping through to luxury. Accommodation is located in 26 camps of varying size including 13 main camps, 5 bush camps, 2 bush lodges, 2 overnight hides and 4 satellite camps (Figure 3.6 depicts the location of the main rest camps). This SANParks-managed accommodation provides 4195 beds, in addition to 495 caravan and camping sites (SANParks 2007a, 2008b). Each main camp offers at least one restaurant (Plate 3.2) and usually a retail outlet, the operation of which are contracted out to external businesses. Most camps also offer picnic sites and day visitor facilities maintained by SANParks. Luxury accommodation is offered by seven private tourism concessions located within Kruger, who provide a further 416 beds, and 4 private nature reserves adjoining the Park, who offer 400 beds. These luxury accommodation options are greatly dependent on international arrivals (SANParks 2008b).

### 3.4.2 Tourism activities

While recent figures were not available, guided tourism activities provide the third greatest source of Park revenue, following accommodation and conservation fees (both
of which derive from tourism) (SANParks 2008c). Within Kruger, guided activities include guided game drives, bush walks, 4x4 and overnight trails, astronomy tours, wilderness and mountain bike trails (SANParks 2007a, 2008c). Visitors can also take game drives independently. Private (non-SANParks) open safari vehicle tours have operated since 1995. As at October 2008, there were 47 private companies operating in Kruger, comprising 183 cars (SANParks 2008b).

Of these 47 private operators, four white-owned companies dominate the market share: Thompsons, Untamed, Mfafa and Bundu.30 Two of these companies, Untamed and Mfafa, are local companies with bases outside of Kruger’s Numbi gate (Untamed) and in the town of White River (Mfafa) (~46 km from Kruger). Thompsons also maintain a local franchise base in Hazyview (~41 km from Kruger), but are part of a regional company offering tours throughout southern Africa. Bundu Safaris are based in Durban, some 700 km from Kruger. According to Spenceley et al. (2008), 50% of tour operators working in Kruger are locally owned; with the rest either under national or international ownership. Ownership is predominately white, as discussed below.

Each safari operator conducting business within Kruger must annually sign a ‘*Service Level Agreement for Safari Vehicles*’ (SANParks undated-b), essentially defining the rules under which each operator can function. A R5000 (~US$653) per vehicle administration fee31 is attached to the Agreement. A 25% discount is applied if the operator is BEE32-compliant, i.e. employs a required number of black people or sources from black owned/operated companies (SANParks 2008b).

To assist in transforming the tourism industry and increasing black representation, the Tourism BEE Charter was introduced in 2005. The Charter was intended to encourage the empowerment and involvement of black people in tourism in seven key areas: ownership, strategic representation, employment equity, skills development, preferential procurement, enterprise development and social development (DEAT 2005). However, tourism in South Africa remains characterised by inequities in opportunities, remaining largely white owned and characterised by “residual legacies of inequality” (DEAT 2005 p6 in Nieman et al. 2008 p294). Black entrepreneurs in particular face barriers including

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30 Based on information received from Kruger staff; exact figures on the percentage of company business conducted in Kruger and number of clients etc were not available or operators declined to provide this information.

31 Subject to annual review by SANParks without recourse from operators.

32 Black Economic Empowerment.
lack of funding and marketing opportunities, as well as perceptions regarding 
HIV/AIDS and poor safety and security (Monakhisi 2008; Nieman et al. 2008). These 
barriers are reflected in the limited involvement of local communities in private tourism 
operations, and in tourism in general (SANParks 2008c).

In Kruger, tourism partnerships with local black enterprises have not yet materialised to 
a great extent and only three companies were black owned as at 2006 (SANParks 
2008c).33 Research in the Panorama tourist region adjoining Kruger concludes that the 
meaningful involvement of local communities in tourism is almost non-existent, aside 
from the supply of unskilled labour provided by local communities. Only one black 
family and one black community were ‘meaningfully involved’, on the basis that they 
owned tourism businesses (Monakhisi 2008). A dominance of white ownership also 
applies to tourism operations working in Kruger (Spenceley et al. 2008), likely due to 
financial and skill deficits which constrain greater black tourism entrepreneurship 
(Nieman et al. 2008).

3.4.3 Employment

In 2008, Kruger had 1883 permanent employees (Urban-Econ 2008b), 95% of whom 
are from previously disadvantaged backgrounds (Parr et al. 2009).34 In addition, Kruger 
provides employment opportunities through economic empowerment initiatives such as 
car washes and curio stalls as well as public works programs such as Working for Water 
(SANParks 2008b). Figures for employment generated by tour operators active within 
Kruger were unavailable.

3.5 Local communities surrounding Kruger National Park

The interface between Kruger and surrounding local communities is extensive, 
stretching the length of the western and southern Park boundaries.35 This interface 
provides a useful setting for investigating Park-people relations and interactions among 
social (local communities, Park staff and tourism) and ecological (the physical Park 
environment) domains. The western border of Kruger, which largely consists of densely

33 Details of these companies were unavailable to the researcher.
34 Citizens of South Africa who did not hold voting rights, or whose voting rights were restricted immediately 
 prior to the 1994 elections on the basis of racial classification (Government of South Africa 1996).
35 The interface between Kruger’s northern and eastern boundaries and adjoining communities, being 
 international boundaries, is beyond the scope of this research.
populated ex-bantustan areas (Pollard et al. 2003), is focused on here through two case study communities.

In South Africa, ex-bantustan areas have been described as having eroded resilience, signifying a diminished capacity to withstand or recover from shocks in the social or physical environment (Giannecchini et al. 2007). Socio-economic conditions contribute to this vulnerability, causing significant demand for and conflict over natural resources (Figure 3.8) (Percival & Homer-Dixon 1998). A complex array of interacting factors are involved, including the pervasive realities of HIV/AIDS which is the leading cause of death in the region (Shackleton et al. 2008).

Figure 3.8: Factors contributing to socio-economic conditions and environmental scarcity in ex-bantustan areas (adapted from Percival & Homer-Dixon 1998)

Unemployment (Botha 1998; Makamu 2005) and poverty (Mafunzwaini & Hugo 2005; Mahony & Van Zyl 2002; Schoemann 2002) also contribute, with just under half of all households receiving no annual income (Municipal Demarcation Board 2006). Financial poverty, population density and lack of/poor education are central factors contributing to socio-economic conditions in ex-bantustans and emphasised in Figure 3.8. These factors are proposed as key slow variables affecting the ability of local communities to engage with, and benefit from, Park tourism.

Percival and Homer-Dixon (1998) discuss socio-economic conditions in ex-bantustans as fostering ‘narrow survival strategies’ as people and groups focus on their own immediate concerns. Giannecchini et al. (2007) highlight a number of comparable factors, including declining permanent employment, limited money and reduced food security as fostering environmental degradation and scarcity of natural resources, as
seen in the study area. They suggest this degradation of the natural resource base has a negative effect on ecological resilience and natural capital (Giannecchini et al. 2007). In other words, the socio-economic conditions in ex-bantustans are believed to result in the overuse or degradation of natural resources to the detriment of residents’ long-term ability to cope with change and regenerate.36

In systems terms, the largely degraded nature of the physical environment in ex-bantustans, which arises from overpopulation and attendant pressure on natural resources (Blignaut & Moolman 2006; Percival & Homer-Dixon 1998; Pollard et al. 2008), is a decisive factor in the current system state. In turn, degradation and overpopulation are consequences of apartheid policies (Figure 3.8) (Cousins & Pollard 2008; Pollard et al. 2008), namely forced resettlement. Forced resettlement congregated people in bantustans, concentrating demands for natural resources. Population pressures continue to represent a source of vulnerability (Kofinas & Chapin 2009) for Kruger, as the slowly-changing nature of population density implies that its entrained consequences, such as demand for natural resources and environmental degradation, will continue to characterise the wider Kruger landscape for many years to come.

3.5.1 The study communities

This research concerns the villages of Cork and Belfast, located on Kruger’s south-west border (Figure 3.9). Although there are many villages on the Park’s western border, Cork and Belfast were chosen in consultation with People and Conservation staff for two main reasons. These were: i) location adjacent to Kruger and ii) representativeness of living conditions in the communal lands along the Park’s western border, allowing for some measure of generalisability to the wider Park area.

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36 Although the natural resource base is increasingly vulnerable and environmental degradation widespread, Pollard et al. (2008) found no evidence of an ecological threshold being crossed in the wider study area.
However, data relating specifically to Cork and Belfast are scarce. Therefore, information relating to the wider Bushbuckridge Local Municipality was used to help describe the characteristics of these two villages. This use of higher scale information is supported by previous research indicating a commonality of socio-economic conditions within communities across the Bushbuckridge area (Gianneckchini et al. 2007).

The economic and environmental legacies of apartheid linger in Bushbuckridge (Blignaut & Moolman 2006; Pollard et al. 2008). One way in which these legacies manifest is through the limited existence of infrastructure (DWAF 2008). Most communities along Kruger’s western border are underdeveloped and lack adequate access to clinics, water, schools, roads and other basic infrastructure (Botha 1998). While water provision, sanitation, electricity supply and road infrastructure have improved since democracy, standards remain inferior relative to other areas in the country. Water supplies are available in most parts of Bushbuckridge although private connections are rare (Municipal Demarcation Board 2006; Shackleton 2005) and supply often irregular (Shackleton 2005). Electricity is often unaffordable and many households rely on wood as their primary energy source (Dovie et al. 2004; du Toit 2002; Shackleton 2005).
Entrenched poverty is a second manifestation of apartheid’s legacies (Blignaut & Moolman 2006). Sartorius et al. (2009 p26) support the idea of ‘poverty legacies’, linking poverty in Bushbuckridge’s Agincourt Health and Socio-Demographic Surveillance Site\(^{37}\) with the “the pervasive long term effect of historical legacies”. The specific historical legacies to which they refer involves “disadvantaged initial asset status”, a lack of high cost items such as stoves and fridges. The restrictions imposed by apartheid on the accumulation of resources accounts for this lack of assets, and as Sartorius et al. (2009) found, continues to influence local poverty.

Poverty is perhaps more readily understood in terms of limited financial capital (DWAF 2008); proposed here as a slow variable. Often, this is attributed to the fact the economic base of the Bushbuckridge region is limited. Unemployment is often over 90% and some 84% of the population is classified by the Municipality as ‘indigent’, earning less than R1300 per household per month (US$169) (DWAF 2008). Consequently, Bushbuckridge has an historic and ongoing reliance on wage remittance (Kirkland et al. 2007; Pollard et al. 2008; Sartorius et al. 2009). This is where a family member employed elsewhere sends money home to support extended family members. Familial dependency rates (where a number of family members depend on a single source of income) are high (Municipal Demarcation Board 2006), although exact figures are elusive. Food security is a critical issue and there is heavy reliance upon natural resources (du Toit 2002).

Limited human capital (DWAF 2008)\(^{38}\) is a third consequence of apartheid (Francis 2002). This legacy implies a lack of (Western) skills or education, and is proposed as a controlling slow variable influencing local dynamics, as well as surrounding areas and higher scales. It also has health dimensions, reflecting the devastating prominence of HIV/AIDS in the region (Ehlanzeni District Municipality 2006), which often kills those in the prime of life. According to Saayman and Saayman (2006), Mpumalanga has the fourth lowest ‘human development index’ of all nine South African provinces; lower even than the national average. This index includes measurements of levels of income, education, HIV/AIDS and health care facilities. For instance in Bushbuckridge, education levels are generally low. Data indicates almost 50% of inhabitants have no

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\(^{37}\) The Agincourt field site contains 22 villages, including Belfast village (Agincourt 2008), but not Cork.

\(^{38}\) DWAF’s study generalises to the entire Bushbuckridge Local Municipality based upon information from four villages, including Belfast.
formal schooling and only 6% have received some form of higher education (Municipal Demarcation Board 2006).

Pollard *et al.* (2008) discuss education levels in South Africa as a slow variable exerting control over local interactions. They argue poor education has resulted in a largely under-skilled (black) population with low levels of literacy (see also Nyathi 2006 and PIRLS 2006, in Pollard *et al.* 2008). In resilience terms, poor education has implications for the ability of individuals and communities to self-motivate, organise and respond to changes. This implication lead the authors to suggest the local social system was being “weak at learning and therefore slow at responding and embracing change” (Pollard *et al.* 2008 p34/35). Together, these three identified legacies of apartheid, entrained in the influential slow variables of lack of money and poor skills and education, are predicted as fostering significant demand for benefits from park tourism.

**Cork and Belfast**

Both Cork (DWAF 2003) and Belfast (DWAF 2008) are classified as dense rural villages.\(^{39}\) Cork (Plate 3.3) is larger and has a higher population (estimated as approximately 9509 in 2001) (DWAF 2003), although the number of households in the village was unknown to the headman. Belfast (Plate 3.4) is much smaller in population and area than Cork. According to 2007 data, the village population was 5979 people comprising 1046 households (Agincourt 2008).

\(^{39}\) Indicating a farm/traditional area characterised by low levels of economic activity and infrastructure, although containing a high number of people per given area (Statistics South Africa 2007).
The two villages have similar infrastructure, cultural traditions and background, livelihood opportunities and racial structure. The vast majority (85%) of inhabitants identify as Xitsonga (Shangaan), followed by those speaking SiSwati, which is the language of indigenous Swazi people (Statistics South Africa 2005). Further, both villages are located along the main highway entering the Park: thus, they are the closest villages to the Park’s Paul Kruger Gate exposed to regular tourist passage. This geographical position was theorised as enabling locals to gain benefits from Park tourism while also exposing them to potentially negative impacts.

For the majority of ex-bantustan communities, Tribal Authorities are the nearest source of government authority. Tribal Authorities, which in the Bushbuckridge area were established in 1961-1963, are charged with the governance of different ethnic groups. They hold a range of administrative duties including the collection of livestock fees and residential taxes; judicial duties and the maintenance of law and order; conflict resolution; and the running of tribal courts (du Toit 2002). Chiefs rule these Tribal Authorities, acting as guardians for a given area expected to preserve the integrity of his people with respect to cultural matters. Cork and Belfast, at the time of research, were under the jurisdiction of the Hoxane Tribal Authority, headed by Chief Nkuna.

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40 This majority includes immigrants from neighbouring Mozambique, many of who also identify as Shangaan/ are culturally affiliated with the South African host population. However, exact figures for the number of Mozambique-origin Shangaan residents were not available.

41 Tribal courts deal with lesser offences such as the illegal felling of trees. More serious offences and crimes e.g. poaching or arson, are dealt with by magisterial courts (du Toit 2002).

42 Chiefs are almost invariably male (van Jaarsveld 2000, in Rademan 2004).
Tribal Authorities usually consist of a number of community authorities, typically one per village, ruled by headmen (a patriarchal hereditary position, passed down from father to son) reporting directly to the Tribal Authority chief (van Jaarsveld 2000, in Rademan 2004). Responsibilities of a headman comprise routine village administration including natural resource use, culture, land allocation and customary law. The control of communal resources underpins a chief’s power status and material/symbolic position in society (du Toit 2002).43

At the time of research, Mr Victor N’Cube and Mr Samson Zeetha represented Cork and Belfast villages respectively as headmen (locally called indunas). While knowledgeable about their respective villages, the indunas also provided good insights into local interactions with Kruger and tourism, for two reasons. First, since the cessation of the Ntirhiswano forum, the indunas are primary points of contact for People and Conservation staff in dealing with the villages. Second, both indunas were previously employed (in unskilled positions) by Kruger.

3.6 Historic change in the Kruger PATS

So far, the three key components of the Kruger PATS; Kruger National Park, Park tourism and the local communities of Cork and Belfast, have been considered. This last part of the Chapter attempts to interpret historic change and interactions among these three components, using the model of the adaptive cycle. The purpose of the following model of historic change was to provide further insights into key interactions and drivers of change for the Kruger study. Modelling historic change through the adaptive cycle also helped to provide an indication of system stability or likelihood of change, which proved useful in developing indicators for monitoring (Chapter 7). This information may also prove useful in the eventual development of thresholds.

The model of system change developed was informed by an historical profile, which the researcher derived from the literature. Research respondents also provided insights into more recent events. As with all historical analyses, the following is highly subjective and inductively-derived. However, the assumptions underpinning this model of change are based in the literature, theories of social-ecological transformation and adaptive

43 Interestingly, the respect and authority granted to traditional authorities appears to be declining in the post-apartheid era (Twine et al. 2003), in part attributable to governance concerns including cronyism, corruption and negligence (Sanginga et al. 2007). Tensions are also evident between the powers and authority of traditional institutions versus modern democratic ones (Child & Dalal-Clayton 2004; Twine et al. 2003).
cycles, as well as in accordance with information presented throughout the Chapter. Table 3.1 depicts this attempt to interpret historic change from a resilience perspective, focusing on interactions among Kruger, Park tourism and local communities. The involvement and benefit of local community was of particular interest.

The timescale of analysis begins with the proclamation of the Sabi Game Reserve in 1898, the precursor to present-day Kruger. This timescale was considered to provide sufficient overview of key events and socio-political changes of interest to interactions among the Parks, tourism and local communities. In particular, it helped to identify broad shifts in the status and treatment of local communities within the larger context, as well as locally. It also proved useful in offering insights into underlying drivers of system change.

<table>
<thead>
<tr>
<th>Time period cycle phase</th>
<th>Duration (years)</th>
<th>Characteristic events at the focal scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1898-1909 Reorganisation</td>
<td>11</td>
<td><strong>Early beginnings</strong> (New ideas emerge) Proclamation of Sabi &amp; Singwitsi Game Reserves. First removal of black Africans from those reserves</td>
</tr>
<tr>
<td>1910-1947 Reorganisation &amp; Exploration</td>
<td>37</td>
<td><strong>Genesis of a new nation</strong> (Ideas are consolidated) ‘Kruger’ proclaimed. First tourist arrivals, beginning of infrastructure development Forced removals of local black residents continues</td>
</tr>
<tr>
<td>1948-1988 Conservation</td>
<td>40</td>
<td><strong>Apartheid era</strong> (Existing conditions are entrenched) Tourism continues to develop &amp; grow within Kruger (black access restricted) Park fenced in entirety, becomes an ecological ‘island’ Cyclones hit Kruger, rivers flood</td>
</tr>
<tr>
<td>1989-1994 Release (Ω)</td>
<td>5</td>
<td><strong>The advent of democracy</strong> (New conditions emerge) Kruger declared open to all race groups Increased international tourism; worst drought on record</td>
</tr>
<tr>
<td>1995-2004 Reorganisation</td>
<td>9</td>
<td><strong>The rise of Park-people relations</strong> (New ideas emerge) Park-neighbour relations emphasised. People &amp; Conservation role established, contested. Community forums established Floods, fire cause damage to environment &amp; infrastructure Kruger establishes a tourism department. Process of tourism commercialisation, private concessions established</td>
</tr>
<tr>
<td>2005-2008 Reorganisation continues</td>
<td>10</td>
<td><strong>Cynicism begins</strong> (More new ideas emerge) People &amp; Conservation role continues to be contested; existing programmes continued, new initiatives emerge Management plan re-written to incorporate broader stakeholder views Tourism continues to grow; of concern to managers: potential thresholds re: overcrowding</td>
</tr>
</tbody>
</table>
Each phase of system development (Table 3.1) has been assigned a name intended to convey the main ‘idea’ of that time period with respect to Park–people relations. Over the period from 1898 to 1994, the Kruger PATS is theorised to have completed one full adaptive cycle and entered a second cycle, currently remaining in the reorganisation phase and characterised by diverse opportunities to foster interactions among the Park, tourism and local communities. This reorganisation phase is also characterised by contestations over the role of Kruger in social development, as well as changing governance arrangements for the use of natural resources. The hypothesised position of the Kruger system within an extended reorganisation phase concurs with Cousins and Pollard (2008), who argue South Africa itself is in a prolonged state of transition. However, this position offers many opportunities to in order to facilitate greater access to benefits for local communities, through ever-expanding tourism opportunities.

3.7 Summary

This Chapter has introduced the first PATS case study, based on South Africa’s iconic Kruger National Park, Park tourism and the local communities of Cork and Belfast. A brief review of the literature demonstrates widespread socio-political change following the end of apartheid. These changes influenced the attitudes and paradigms guiding the management of protected areas in South Africa, as well as the role and importance accrued to local communities. Key system components were described, including Kruger itself and the Park’s iconic status and role as a tourism drawcard for the region, as were relevant aspects of governance. The communal areas immediately adjacent to Kruger were introduced, highlighting the socio-economic inequities that continue to characterise these regions, including the research villages of Cork and Belfast. This background to system components, together with modelling of historic change based on the adaptive cycle, offered insights into underlying drivers of system change.

These hypothesised drivers include a number of slow and one fast variable. Park tourism, and more specifically tourist arrivals, is a fast variable influencing the system. Tourist arrivals offer local communities opportunities to benefit from and engage with Park tourism and are an area over which Kruger has some level of control. Influential slow variables largely result from the ongoing legacies of apartheid and are driven from

44 ‘Genesis of a new nation’, ‘Apartheid era’ and ‘The advent of democracy’ roughly correspond to key phases of system change as determined by Pollard et al. (2008) for the Sand River catchment, which partly overlaps the area of research interest in this study.
a national scale. These include financial poverty/lack of money, high population densities and poor Western education and skills. These slow variables appear to be significant limitations to the ability of local communities to engage with Park tourism. The role of these slow variables, and that of Park tourism, is explored in subsequent chapters. First however, the second PATS case study, based on Australia’s Purnululu National Park, is introduced.
CHAPTER 4 PURNULULU NATIONAL PARK

This chapter introduces the second PATS case study, based on Purnululu National Park (Purnululu) in the East Kimberley region of Australia. As per the Chapter 3, information in this Chapter corresponds to phases one, two and three of the research framework (Figure 4.1). System components, governance, past change, drivers and some indication of the current state are explored. Wider context is given through an overview of European settlement in the East Kimberley, and the influence of this on the position of Indigenous people in the Australian landscape. Key developments leading to greater Indigenous involvement with the protected areas and their management are outlined, such as the national recognition of native title and introduction of joint management.

These developments are explored in the context of Purnululu, an iconic Park receiving ever-greater tourist visitation, and Warmun Aboriginal community, the local community of interest to this research. Throughout the Chapter, variables that influence the ability of Warmun community to engage with Park tourism are highlighted. The Chapter concludes with an exploration of historic change and interactions among these three central system components, using the model of the adaptive cycle.
4.1 Colonisation and development in the East Kimberley

Europeans first settled on Australia’s east coast in 1788. The state of Western Australia, occupying the western third of the country, was founded in 1829. The remote East Kimberley region in the northern part of Western Australia (Figure 4.2), the focus of this research, was not settled by Europeans until the 1880’s, some hundred years after the first settlement of Australia (Palmer & Williams 1990).

![Figure 4.2: Location of Western Australia and the East Kimberley region relative to the Australian continent. The study area is indicated by the blue circle.](image)

This time difference in European settlement, as well as the political and geographical isolation of the region, necessitates a more local investigation of events rather than a national overview. This local focus provides a more accurate context for findings presented in subsequent Chapters. The following section briefly outlines key legislation and policies influencing Indigenous people in Australia before exploring the East Kimberley region in more detail.

In colonial Australia, Indigenous people were seen as an inferior race. A range of national and State legislation enshrined this view and advanced assimilation policies (Altman 2006; Rowley 1972; Woenne-Green et al. 1994). These policies promoted the integration of Indigenous people into mainstream society and sought to let the

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45 This thesis uses the term ‘Indigenous’ to refer to the original inhabitants of the Australian continent. ‘Aboriginal’ is used where appropriate to reflect original names or wording in source documents.
Indigenous race ‘die out’ (Commonwealth of Australia 1997). In Western Australia, protectionist and repressive legislation (Woenne-Green et al. 1994) including the Natives Administration Act (1905) (WA) and Natives (Citizenship Rights) Act (1944) (WA) formalised white control over Indigenous people and denied them Australian citizenship.

Legislation supporting racial discrimination continued for many decades, both nationally and in Western Australia (Altman 2006; Woenne-Green et al. 1994). Broadly speaking, colonisation fostered unequal social relations between Indigenous people and settlers, an inequality tangibly evident in the East Kimberley region of Western Australia. Although politically isolated from the West Australian government (Smith 2007) located some 3000 km away in the State capital of Perth, the dictates of this remote centre of authority influenced local relations between settlers and Indigenous people.

Pastoralists were the first European settlers to arrive in the East Kimberley, in the 1880’s (Clement 1989). Settler numbers grew following the establishment of the port town of Wyndham, which serviced the cattle industry (Palmer & Williams 1990), as well as owing to a brief yet productive gold rush at Halls Creek (Palmer & Williams 1990; Ross 1990). Prior to these arrivals, the East Kimberley was sparsely inhabited by Indigenous groups practising a mobile hunter-gatherer lifestyle. The arrival of settlers and introduction of pastoralism had a significant impact on Indigenous groups (Craig 1989; Ross 1990). Interactions between pastoralists and Indigenous people were generally hostile up until the early 20th century. Massacres, cattle spearing and retaliations were common (Horton 1994; Palmer & Williams 1990; Ross & Bray 1989), with conflict often arising from Indigenous ‘trespassing’ onto pastoral lands.

During the first half of the 20th century, pastoralists and Indigenous populations came to form a close association, with pastoralists relying on Indigenous people for (cheap) labour (Jebb 2002; Ross 1990; Smith 2007; Woenne-Green et al. 1994). Indigenous

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46 Part of these assimilation strategies involved the removal of Indigenous children from their parents, known as the ‘Stolen Generation’. It is estimated that up to one-third of all Indigenous children were forcibly removed from their parents during the period 1910-1970 (Ardill 2009).

47 This Act provided an opportunity for Indigenous people who had ‘adopted manners and habits of civilised life’ to apply for citizenship, exempting them from the provisions of the Natives Administration Act. In a move with parallels to South African apartheid ideology, white supremacist notions inherent in the Act required Indigenous people to renounce their Aboriginality (Woenne-Green et al. 1994). Citizenship was eventually granted to Aboriginal people in Western Australia in 1948.
people saw pastoral work as an opportunity to maintain some connection with traditional lands and fulfil cultural obligations, such as ceremonial events carried out on ‘country’. This interdependency has led some to describe the East Kimberley pastoral era as a ‘stable period’ for Indigenous people where, despite adversity, they were able to adjust to the new pastoral regime (Craig 1989; Ross 1990).

The 1960’s saw the end of this period of relative stability. One significant change occurred in 1962, when Indigenous people were accorded both Commonwealth and State voting rights (Metzer & Engerman 2004). A second major change occurred in 1968, when the Federal Government introduced a mandate stipulating equal wages in the pastoral industry, a major employer of Indigenous people in the East Kimberley (Jebb 2002). This requirement vastly increased labour costs (Smith 2004) and compromised the economic viability of the pastoral industry. An industry-wide restructuring followed, resulting in mass redundancies and evictions from cattle stations which in turn led to an influx of Indigenous people into regional towns (Palmer & Williams 1990; Ross 1990; Smith 2004). These included Wyndham, Kununurra and Halls Creek, as well as Turkey Creek, the only rural land available for camping.

Welfare schemes were introduced to cope with the sudden restructure (Jebb 2002; Smith 2004; Taylor 2003), which left many people with no source of income. From a systems perspective, the introduction of welfare signals a change of feedbacks influencing Indigenous livelihoods in the region. Feedbacks are signals between system components that regulate system behaviour (Meadows 2009). In this instance, Indigenous livelihoods shifted from being based on pastoral employment, as determined by station financial viability (Abel et al. 2006), to a state in which livelihood security became centred on government welfare payments (Taylor 2003, 2008b). To quote Martin (2001 p10), “metaphorically, welfare has become the new form of tucker”.

Dependence on welfare since the end of pastoral employment has been high in the East Kimberley (Altman 1987a; Altman 1987b; Doohan 2008) and is proving a legacy hard to alter. Recent data indicates an increased dependence on welfare in the region, rising from 35% in 1981 to 74% in 2001 (Taylor 2003). Norberg and Cumming (2008)

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48 This date is often incorrectly cited as 1967. Rather, 1967 was when the Constitution was amended to reflect the granting of voting rights and Aboriginal citizenship rights.

49 The movement of people from pastoral stations to towns was also occurring before the introduction of award wages.
suggest that measures intended to control local uncertainty in living conditions, for instance welfare payments as discussed here, can make people less resilient. Dependence is a classic example of a system trap. It arises when an intervention, for instance government welfare schemes, undermines the ability of a system to maintain itself and respond to change, fostering a “destructive reinforcing feedback loop” (Meadows 2009 p133). In this research, the destructive nature of welfare dependence manifests in the relationship of Indigenous people to government structures and the market economy. Over time, Indigenous people in the East Kimberley appear to have become more dependent on welfare payments (Taylor 2003) and less able to maintain a desired state, i.e. pursue alternative sources of income and employment.

The self-perpetuating nature of dependence on welfare is recognised in the Australian literature, albeit not in systems language (e.g. Martin 2001; Pearson 2006). Rather, authors discuss poverty traps (Altman 2007), “increasing dependence on social welfare” (Fuller & Cummings 2003 p2) and “…trapped in the welfare safety net. Welfare dependency for these people is not a temporary halfway house. It has become a permanent address” (Pearson 1999, p31 in Martin 2001 p10). The pervasive nature of welfare dependence in the East Kimberley positions it as an influential slow variable. This hypothesis is explored further in later sections.

While Indigenous employment rates for the East Kimberley have as a whole increased over time; from approximately 39% of adults in 1981 to approximately 54% in 2006, these gains are attributed to the expansion of the Community Development Employment Projects (CDEP) (Taylor 2003, 2008b). CDEP was introduced nationally in 1977, although not present in the East Kimberley until the 1980’s. Intended as an alternative to welfare, CDEP participants are paid to carry out local community projects in an effort to create employment while also supporting community development projects (Altman & Jordan 2009). While CDEP has played a key role in providing for Indigenous employment in the East Kimberley (Taylor 2003), it is set to cease in many areas by July 2011 in favour of non-subsidised employment (Altman & Jordan 2009). Further, debate exists over the status of CDEP: is it ‘real’ employment, or is it welfare and thus should not contribute to employment figures?

The introduction of CDEP coincided with a change in national Indigenous policies after previous policies failed to produce desired outcomes. Self-determination, which
recognised the right of Indigenous people to make decisions regarding their own lives, became the new national policy in the 1970’s (Smith 2004; Woenne-Green et al. 1994). This era also heralded the emergence of Indigenous land rights as a political issue (Bauman & Smyth 2007; Sutherland & Muir 2001). The land rights movement was underpinned by the introduction of the *Aboriginal Land Rights (Northern Territory) Act* (1976) (Cth), which formed the legal basis for the recognition of Indigenous land rights across Australia (Baker et al. 2001; Sutherland & Muir 2001). This landmark development was followed by another, the 1992 overturning of ‘terra nullius’ doctrines on which Australia’s colonisation was based, and the recognition of Indigenous native title following the Mabo case (Altman 2009b; Hall 2000b; Young 1999).

Despite changing socio-economic and land rights policies intended to address Indigenous disadvantage, a plethora of research indicates ongoing socio-economic disparity between Indigenous and non-Indigenous Australians (Altman & Jordan 2008; Fuller & Cummings 2003). Although Australia is one of the world’s richest countries, many Indigenous people live in poverty, albeit relative rather than absolute. Disadvantage is particularly evident in relation to access to power, information and technology, employment, education and health care facilities (Altman & Jordan 2008; Altman et al. 2004; Wearing & Huyskens 2001).

Often, Indigenous people living in remote areas, such as the East Kimberley, display third world characteristics. These include very low levels of formal employment, low household incomes and education levels, poor housing infrastructure and overcrowded living conditions, high fertility and low life expectancy. For instance, 2006 census data for the East Kimberley (the most recently-available and reliable statistical dataset) indicates that, of an estimated total Indigenous population of ~5276, only 85% of the regional school age population is enrolled in years 1-10 (Taylor 2008b). On average, only 10 individuals pursue schooling through until year 12 and only 132 adults have

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50 Latin for ‘empty land’. A prevailing view of European settlers that believed Indigenous people had no legal status as prior occupants of the Australian landscape (Chase 1990).

51 In Australia, welfare income mean that unemployed Aboriginal people receive a regular income, small by comparison to Australian wages but high in comparison with world income standards. Thus, Aboriginal poverty is considered relative rather than absolute (Altman 2007), reflecting differences in income between Indigenous and non-Indigenous population groups rather than level of real income.

52 Patterns of mobility among Aboriginal people make accurate counts of populations difficult, as many regularly people move across the landscape (Taylor 2003). Further, 1202 people involved in the census did not specify Indigenous status (Taylor 2008b).
post-secondary qualifications (Taylor 2003, 2001 data). CDEP income provided support for 33% of adults, while 18% were employed in the mainstream labour market. Further, approximately 36% of the population is aged under 15 years and the life expectancies are 16-20 years lower than for non-Indigenous Australians (Taylor 2008b).

There has been some improvement in key indicators of Indigenous socio-economic development over the last 30 years (Altman et al. 2004). However progress has been slow, impeded by the legacies of ‘national Indigenous underdevelopment’ (Altman 2004). These legacies are the result of decades of under-investment in Indigenous housing/infrastructure, health, education and employment services (Altman 2007). They manifest in terms of poor human and financial resources, unemployment and social dysfunction, which currently characterise many Indigenous communities across Australia. Poor (Western) education in particular presents a key barrier to further Indigenous development (Fuller & Cummings 2003; Hunt 2008) and employment (Taylor 2009). To illustrate this skills deficit, ‘rubbish collection’ is the single largest area of employment for Indigenous people in the East Kimberley (Taylor 2008b). These legacies of Indigenous underdevelopment entrained in poor (Western) education are proposed as a slow variable influencing how Indigenous people interact with protected areas and tourism.

Current Federal approaches to Indigenous development centre on ‘closing the gap’ between non-Indigenous and Indigenous Australians. ‘Closing the gap’ aims to address key areas of Indigenous disadvantage including infant mortality rates, employment, education and life expectancy (Altman 2009a), all of which are systemic problems. Although “too new to critically evaluate”, Altman (2009a p7) expresses reservations over the policy approach, citing the undervaluing of Indigenous diversity and difference. This criticism resonates with systems approaches which emphasise the need for diversity in maintaining options for resilience (Chapin et al. 2009; Folke et al. 2009; Holling et al. 2002a).

4.2 The evolution of park–people relations

Protected areas form the basis of conservation in Australia (Hall 2000a). Following established colonial practices, managers of protected areas were typically complicit in restricting or removing completely the rights of Indigenous people to use resources, access cultural sites and live on traditional country (Altman & Larsen 2006; Brown
Despite conflicting views, protected areas in Australia have always existed as cultural landscapes, the product of inter-generational relationships between Indigenous people and the environment (Brown 2009; Muller 2003; Worboys et al. 2005). The intrinsic connection between Indigenous people and protected areas gained widespread although inconsistent impetus during the 1970’s, when Indigenous land rights gained prominence in Australia (Sutherland & Muir 2001). The 1992 Mabo/native title case provided a further boost (Bauman & Smyth 2007; Worboys et al. 2005). An integral part of this recognition was acknowledgement of the continuing association of Indigenous people with landscapes (Lennon 2005), embodied by relationships to ‘country’ (Walsh & Mitchell 2002).

Cultural connections to ‘country’ symbolise the relationship between Indigenous people and the physical landscape, with interconnections between country, spirit and culture being indivisible in Indigenous systems of culture and law. ‘Country’ provides a basis for Indigenous identity (Doohan 2008) and represents connections to kin, place, spirit and land (Bird Rose 2004; Kinnane 2005; Sutherland & Muir 2001). Thus, the physical landscape embodies spiritual and cultural values.

The prominence of Indigenous land rights and native title (Altman & Larsen 2006; Lane & Corbett 2005) reflects growing mainstream recognition of Indigenous aspirations to regain access to and control over traditional lands. The proportion of conservation estate under Indigenous ownership or management has expanded greatly in the last 15 years (Altman et al. 2009; Altman & Whitehead 2003). More than 20% of the Australian land mass is now under Indigenous tenure (Altman et al. 2007). Indigenous Protected Areas (IPAs) are one means by which Indigenous people are involved in the conservation estate. First introduced in 1998, their appeal lies in the ability to link resource and cultural management within the one protected area, drawing on Indigenous traditional knowledge. IPAs are wholly owned by Indigenous landowners (Lennon 2005), who voluntarily nominate to manage the land for conservation purposes in return for government planning and assistance. Once established, landowners can choose the level
of government involvement and visitor access (if any), as well as the extent of
development desired. To date 39 IPAs have been established, covering 23.5 million
hectares or over 23% of Australia’s national reserve system (Commonwealth of
Australia 2010). This growth in Indigenous owned land and/or involvement in the
conservation estate has been heralded as one of the most significant developments in
Australian conservation history (Altman et al. 2009). In addition to the role of IPAs,
much of this growth has resulted from successful native title claims.

4.2.1 Native title

Native title is the recognition in Australian law of individual, group or communal rights
and interests possessed under traditional laws and customs of Aboriginal and Torres
Strait Islander peoples (NNTT 2000; Sutherland & Muir 2001; Worboys et al. 2005).
Native title was first established in 1992 following the High Court’s decision on the
Mabo case, which recognised that the Meriam people of the Torres Strait hold native
title over part of their traditional lands. The landmark decision paved the way for the
recognition and protection of native title across Australia and led to the establishment of
the Native Title Act (1993) (Cth). To assert native title, claimants need to establish
(NNTT 2000):

i) Historical (pre-European settlement) rights in relation to the land, according to
Indigenous law and custom;

ii) That the Indigenous law and custom under which those rights were exercised have
continued to be acknowledged and observed up until the present day in a ‘substantially
uninterrupted’ way; and

iii) The rights and interests are recognised by common law in Australia.

The native title process has a number of limitations. First, native title requires a
claimant prove the maintenance of connections to land through descent and occupation.
This requirement is criticised as excluding people who, through circumstantial events
such as colonisation, have not been able to maintain connection with culture and land
(Lane & Waitt 2001; Langton et al. 2005). These connections and opportunities to
maintain them were often forcibly restricted or removed (Baker et al. 2001; Young
1999). The widespread dispossession of so many Indigenous people following

53 Islands to the north of Australia, between the tip of Queensland and Papua New Guinea.
colonisation leads to confusion over who has rights to ‘speak for country’ (Lane 2002; Smyth 2001).

Second, native title is determined on a case-by-case basis and is subject to extinguishment by the government. Consequently, it has been claimed as offering very weak protection for the rights of Indigenous Australians (Sutherland & Muir 2001). Third, native title offers only certain rights to country and does not involve the transferral of land title. Typically, ‘non-exclusive’ rights are conferred, which do not give rights to control use of or access to an area, or to prohibit future developments. However, native title does mean that Indigenous rights and interests must be taken into account (NNTT 2000) in planning and management.

4.2.2 Joint management

Joint management represents a means of accounting for Indigenous rights and interests with respect to protected areas. Often referred to as co-management in the international literature (Bauman & Smyth 2007), joint management refers to the interaction of various parties within a management body holding decision-making authority, responsibility and accountability (Borrini-Feyerabend et al. 2004; Worboys et al. 2005). Typically, government conservation agencies and Indigenous groups constitute these parties.

Australia has played a lead role in joint management (Langton et al. 2005; Worboys et al. 2005), perhaps linked to the perceived need to address historic marginalisation and discrimination against Indigenous people (Brockington et al. 2008a). The first jointly managed protected area in Australia was Garig Gunak Barlu (Gurig) National Park, with joint management formalised in 1981 (Wearing & Huyskens 2001; Worboys et al. 2005). Other jointly managed protected areas include Uluru-Kata Tjuta, Kakadu and Nitmiluk and Purnululu National Parks. Western Australia also has a number of joint management arrangements, including two recently established with Indigenous groups in the Kimberley region. One of these is in the East Kimberley, providing for joint

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54 Title to land is granted under a separate process of Indigenous land rights claims. For further information on native title and land rights refer to the Australian National Native Title website www.nntt.gov.au.
55 The World Commission on Protected Areas has highlighted the importance of Australia ensuring the involvement of Indigenous people in management of protected areas (Inglis et al. 2005). Nationally, the Commonwealth Environmental Protection and Biodiversity Conservation Act (EPBCA) (1999) and Conservation Regulations (2000) formalise Indigenous interests and rights concerning conservation (Sutherland & Muir 2001).
management of six conservation areas totalling 160,000 hectares with the Miriuwung Gajerrong people (Haberkern 2009). The second, in the West Kimberley, involves the Yawuru people with joint management arrangements included as part of the largest, most significant native title agreement in Australia to date (www.nntt.gov.au).

Joint management is a complex undertaking. It can empower marginalised or disadvantaged groups (Brockington et al. 2008a) by encouraging their involvement in decision making. However, it should not be assumed that Indigenous people will necessarily value conservation above commercial and community concerns; or that Indigenous desires will match Western conservation ideals (Muller 2003).

Conversely, it can extend state control (Brockington et al. 2008a). For example, Nayak and Berkes (2008) discuss a decline in learning, experimentation and institutional innovation of existing community-based forest management following the introduction of formal joint management in Orissa, India. Participation in decision-making declined, common rights were eroded and existing and more diversified relationships were abandoned in favour of a closer relationship with the government forestry department.

Joint management is ‘defined by contradiction’ (Haynes 2010) and although touted as cross-cultural, remains a fundamentally Western cultural construct. To varying extents, it embodies cultural hegemony and construction of Indigenous culture and management as ‘other’ (Wearing & Huyskens 2001). Indeed, disparity between Indigenous and Western worldviews regarding management approaches (Carey 2009; Huntington et al. 2006) retain the potential to cause significant mismatch (Cumming et al. 2006). This mismatch can negatively affect the ability of Indigenous and non-Indigenous stakeholders to work together and learn collectively.

Joint management also faces other complications. These include conflict over land tenure; inequitable power relations between parties; lack of political commitment to fair partnerships; and different understandings of what ‘management’ entails (Muller 2003; Suchet 2001; Wearing & Huyskens 2001). Despite these barriers, the involvement of Indigenous people in the management of protected areas, especially through joint or co-management boards, provides an opportunity for entry into, or control over, the tourism industry (Zeppel 1999, in Baker et al. 2001).
4.2.3 Park tourism in Australia

Australia offers a wealth of tourism opportunities for visitors. Tourism continues to be a growth industry for Australia, despite recent drops in both domestic and international arrivals related to the economic downturn. In terms of national GDP, tourism contributed 3.6% or AUS$40.6 billion (~US$34.7 billion) in 2007/8. In Western Australia, the only State to record growth in international arrivals during the recent economic downturn (ABS 2009), tourism contributed approximately $7.31 billion (~US $6.26 billion) to gross state product\(^6\) in 2007/8 and supported 82,530 direct and indirect jobs (Tourism WA 2008).

Australia’s protected areas are a significant tourist attraction (Hall 2000a; Jenkins & Wearing 2003; Worboys \textit{et al.} 2005) for many international (Reinius & Fredman 2007) as well as domestic visitors. Data indicates that 80 million people visited the nations’ protected areas in 2004 (Tourism and Transport Forum 2004, in Larson & Herr 2008), although precise figures are hindered by a lack of coordinated data collection in many areas of the country (Larson & Herr 2008). In Western Australia, where reliable figures are available, there were 14.18 million visits to a State protected area in 2008/9 (DEC VISTAT 2009).\(^7\) Of these visits, 299,431 were in the Kimberley region (Figure 4.3).

![Figure 4.3: Visits to protected areas in the Kimberley and East Kimberley regions for the period 1994-2009 (DEC VISTAT 2009)](image)

\(^6\) Tourism’s contribution to Gross State Product is measured as the output of tourism products by industries, less the value of the inputs used in producing these tourism products (Tourism WA 2008).

\(^7\) Includes national parks, state forests and other reserves, e.g. regional parks (DEC VISTAT 2009).
Trends in the Kimberley show a continuing increase in visitor numbers. These increases are attributable to strong interstate arrivals (Tourism WA 2009b) as well as perhaps the perceived ‘safety’ of Australia as a tourism destination (TTF/Enhance Management 2005) following a series of global shocks including September 11, SARS, swine flu and a host of recent terror attacks. Arrivals to protected areas in the East Kimberley account for 39.8% of total regional figures, with the remainder of tourists visiting the West Kimberley.

The increasing trend of visitor arrivals to the region suggests that tourism, or more specifically tourist arrivals, is potentially a key fast variable influencing interactions in terms of economic contribution and opportunities for employment. This potential of tourist arrivals to foster change and opportunities for Indigenous people is explored through a focus on Purnululu National Park (Purnululu). Purnululu is an iconic tourist attraction within the East Kimberley region (CALM 1995) and provides a good case study to investigate the interactions among protected areas, tourism and local communities. The following section provides an overview of Purnululu, including history of Park development, management procedures and tourism operations. Prior to this exploration, the management agency responsible for protected areas in Western Australia, including Purnululu, is introduced, setting the context for following discussions.

Purnululu is managed by the Department of Environment and Conservation (DEC), 58 the West Australian conservation agency holding management responsibility for protected areas. DEC’s mandate is established in the Conservation and Land Management Act (1984) (WA) and the Department sits within the portfolio of the Minister for Environment (Figure 4.4). To help achieve its mandate, as at 30 June 2009 DEC employed 2177 people State-wide, including 67 Indigenous people, a figure which DEC aims to increase annually according to specified targets (DEC 2008).

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58 Formerly known as the Department of Conservation and Land Management (CALM).
Under this authority and that conferred by the *CALM Act*, DEC manages 10.19% of the total land mass\(^{59}\) of Western Australia (DEC 2009) on behalf of the Conservation Commission, a statutory body established in 2000, also by the *CALM Act*. The Conservation Commission works closely with, but independently from DEC, with the latter preparing management plans on behalf of the Commission. The Commission is then responsible for the monitoring and auditing of those management plans, in addition to its policy advisory role regarding conservation (Conservation Commission 2009).

### 4.3 Purnululu National Park

Purnululu is located in the Shire of Halls Creek in Western Australia’s East Kimberley region (Figure 4.4). The name ‘*Purnululu*’ derives from the local Kija language, translating as ‘sandstone’.\(^{60}\) Relatively isolated, the Park is approximately 250 km south of the main regional centre of Kununurra, 50 km south east of Warmun (the nearest service centre) and 109 km from Halls Creek.\(^{61}\)

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\(^{59}\) DEC also has responsibility for marine protected areas in Western Australia and manages these on behalf of the Marine Parks and Reserves Authority.

\(^{60}\) Alternate spellings of this and other Aboriginal language groups exist although a single stylisation for each applies throughout this thesis. In Djaru language, the Park is referred to as *billingjal*, which means ‘sand falling away’ (White 2001). Purnululu is also commonly referred to as the Bungle Bungles, thought to have originated from the corruption of an Aboriginal name for the area, or from a misspelling of the common bundle bundle grass (DEC 2007a).

\(^{61}\) These distances are to the Park turn-off rather than the Park itself; the Park is a further 52km on a four-wheel drive track.
Figure 4.5: Location of Purnululu National Park in relation to the Australian continent and East Kimberley region (Courtesy DEC)
Purnululu is one of the most extensive examples of sandstone tower karst formations in the world (Wray 1997, in UNEP 2002). For many, the Park is characterised by its iconic beehive domes (Plate 4.1, 4.2) which display distinctive orange and black banding. Darker banding arises from the presence of cyanobacteria in more permeable, wetter rock layers. Alternating with these darker layers are less permeable sections containing iron and manganese, which impart an orange colour (DEC 2007a).
Purnululu covers an area of 208,723 ha (DEC 2009). Sparsely inhabited pastoral stations surround the Park, as well as other DEC estate including the Purnululu and Ord River Regeneration Conservation Reserves (Conservation Commission 2008). The Park is jointly managed with the Purnululu Conservation Reserve, which covers 110,602 ha (DEC 2009).

Indigenous people have an ongoing association with the Purnululu area (Palmer & Williams 1990; UNEP 2002). Radiocarbon dating of artefacts indicates Indigenous occupation of the area for at least 20,000 years (CALM 1995) and as at December 2009, there were 117 officially registered Indigenous heritage sites (DIA 2009). Indigenous involvement is a core component of Purnululu’s management (DEC 2008). This takes place through employment, joint management (discussed below) and living leases. In a West Australian first, Purnululu’s, management plan made provision for Indigenous traditional owners, those people “recognised as being traditionally associated with land within the Park” (CALM 1995 pii), to live in Purnululu and maintain customs and practices. The living leases permit the establishment of communities inside Purnululu, to better enable local Indigenous communities to act on economic development opportunities available through Park tourism. Despite this provision, formal living leases were not granted until 2002 (CALM, undated). The protracted nature of lease deliberations, a novel undertaking for all parties, was a key factor behind this delayed implementation.

4.3.1 History of Park development

The area first received widespread recognition, beyond that of a select few locals and Indigenous people, in 1982 following media coverage (CALM 1995; Ross 1990). After this, tourism interest in the area intensified, leading to concerns regarding potential impacts from uncontrolled visitation. Consequently, a recommendation was made that the area be classified as a national park (Bungle Bungle Working Group 1984; Woenne-Green et al. 1994) and in April 1986, two reserves were created. One of these,
Purnululu National Park, was reserved for the purposes of a national park. The second was reserved for the purposes of conservation (CALM 1995) rather than a national park, owing to the presence of mining exploration licences. Both reserves were gazetted in March 1987 (CALM 1995). This conservation reserve is to be incorporated into the Park once the exploration leases expire in 2015.

As a relatively new Park, Purnululu does not have an extensive history of tourism development, and tourism infrastructure is minimal. In part, this reflects management intent to protect the unique nature of the ‘Purnululu experience’ (DEH 2005) from pressures associated with too many visitors. Kurrajong, the first public campsite within the newly gazetted Park, was established in 1987. Walardi, a second public campsite, was built in 1990 following continued increases in tourist arrivals (CALM 1995). Three commercial tour operators regularly visited the area before its gazettal as a national park; since then, the number of commercial tour operators has increased although currently only two have a permanent base in Purnululu. These are introduced below.

In 2003, Purnululu was listed as a World Heritage site. The Park is inscribed under natural criteria \(i\) and \(iii\); being ‘outstanding universal geological value’ and ‘superlative natural phenomenon/beauty and aesthetic importance’ (UNEP 2002). Purnululu was also nominated for cultural significance. To date, the Park has not been inscribed under this category due to concerns over the position of living lease occupancy and the involvement of Indigenous people in Park management (IUCN 2003).\(^{64}\)

Further accolades were bestowed in 2004, when Purnululu was listed as a West Australian Heritage Icon. This recognises Purnululu’s significance to the people and place of Western Australia (www.ntwa.com.au/icons.html). In 2007, the Park was added to the National Heritage list, signifying its recognition as of outstanding heritage significance to Australia (http://www.environment.gov.au/heritage/places/index.html).

### 4.3.2 Community engagement and benefit sharing

As indicated, DEC recognises the need to ensure employment opportunities and to engage local Indigenous people in conservation management (DEC 2008). Such

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\(^{64}\) Concerns centre on the fact that Purnululu’s living leases are not permanently occupied (IUCN 2003). However, a lack of lease infrastructure and economic base within Purnululu (Brown, pers. comm., 2007) as well as the highly mobile nature of Indigenous society (Taylor 2003) mean that this is unlikely to happen in the near future. Concerns regarding Indigenous involvement in Park management stem from uncertainties relating to the then-proposed Park Council, its representativeness and intended modes of operation (IUCN 2003).
engagement aids in the sharing of benefits arising from parks and tourism as well as recognising pragmatic and ethical understandings linking Indigenous people to the landscape. In Purnululu, Indigenous involvement is formalised through a joint management approach, with day to day management responsibility remaining with DEC (CALM 1995).

Purnululu’s adoption of joint management is lauded given it occurred in the absence of supporting State legislation (Woenne-Green et al. 1994) and established native title, indicating a proactive approach to management and engagement. To date, no joint management legislation exists in Western Australia, although DEC released a Consultation Paper, *Indigenous Ownership and Joint Management of Conservation Lands in Western Australia* (CALM 2003). The Consultation Paper discussed amending the *CALM Act* (1984) (WA) to allow the formal establishment of joint management through the granting of inalienable freehold title to Indigenous groups, as occurs in Australia’s Kakadu and Uluru-Kata Tjuta National Parks. A review of public submissions to CALM’s 2003 *Consultation Paper* concluded that while a strong case exists, the proposal for joint management had not been adequately thought through or properly explained in several key areas. These include the lack of detail regarding provision of funding to and operation of joint management boards and potential for conflict of interest arising from the State’s role as both a social advocate for Indigenous people as well as being manager of the conservation estate (Porter & Meyers 2008). The *Consultation Paper* was more recently built upon by the *Indigenous Conservation Title Bill* (Government of Western Australia 2007); although this *Bill* did not pass into law.

In Purnululu, joint management arrangements as originally envisaged have not eventuated owing to complex issues surrounding disputed traditional ownership of the Purnululu area (Conservation Commission 2008). ‘Community engagement’ has been, and continues to be, a highly contested arena. The complex and highly political nature of disputed traditional ownership has many potential ramifications for Indigenous involvement in the Purnululu area. For this reason, contested traditional ownership and some background to the native title process in Purnululu is explored below.
Native title and Purnululu

Two Indigenous groups, the Kija and the Djaru, claim traditional ownership over the Purnululu area.\(^{65}\) The Kija people, under the auspices of the Purnululu Aboriginal Corporation, have a registered\(^{66}\) native title claim that includes the Park, the Purnululu Conservation Reserve and parts of surrounding pastoral stations and covers 4,523km\(^2\) (NNTT online). The registered status of the Kija claim signifies their assertions of traditional ownership have been acknowledged (but not yet established) by the Commonwealth National Native Title Tribunal. This recognition is based on the meeting of a number of requirements, including establishing a factual basis of association with the area and the ongoing existence of traditional laws and customs linking claimants to the area.

Djaru people do not currently hold a registered native title claim to the area (Conservation Commission 2008). Previous applications, which overlap to some extent with the registered Kija claim, were formally dismissed for failing to meet registration tests to establish traditional ownership (NNTT 2007).

Unresolved traditional ownership and native title greatly complicates Indigenous involvement in Purnululu and Park management. Despite this uncertainty, there is a need to clearly establish who or what a ‘traditional owner’ is for the purposes of this research. ‘Traditional owner’ is taken to mean the people or groups who are common law holders of native title for the area of land and waters in Purnululu, recognising that native title remains contested and as yet, not formally determined.

The Purnululu Park Council

Only Kija people hold a registered native title claim over the Purnululu area;\(^{67}\) for this reason, they are formally included in Park management via membership of the Purnululu Park Council (Commonwealth of Australia 2002). The Park Council is a

\(^{65}\) In traditional law and custom one area may have had a number of Indigenous groups sharing rights and interests. Further, differing accounts of traditional ownership exist (see for example Levitus 2007; Scott-Virtue undated; White 2001).

\(^{66}\) A registered native title claim gives claimant groups the right to negotiate regarding the claim area.

\(^{67}\) However, not all Kija native title claimants are members of the Purnululu Aboriginal Corporation. Therefore, current joint management arrangements do not accurately represent native title claimants. DEC must consult with other Kija claimants through the Kimberley Land Council. To compound this complexity, at the time of research the Kimberley Land Council represented Kija claims to the Purnululu area only and was unsupportive of DEC liaison with Djaru traditional owners (Conservation Commission 2008).
forum intended to provide traditional custodians (a term not defined further) with “meaningful management input” (CALM 1995 p53). Endorsed in 1993, the Park Council did not become operational until 2002 and the inaugural meeting occurred in 2003 (Conservation Commission 2008). The tension between Kija and Djaru groups over traditional ownership was a major factor contributing to this delay (Conservation Commission 2008).

Although only Kija representatives sit on the Park Council, DEC is required to also consult with Djaru claimants. This requirement stems from the Environmental Protection and Biodiversity Act (1999) (Cth), Commonwealth legislation guiding the management of World Heritage areas (Conservation Commission 2008). This required consultation occurs in an informal manner through meetings between Park staff and Djaru traditional owners (Brown, pers. comm., 2008).

The Park Council has eight official members, drawn from DEC and the Purnululu Aboriginal Corporation. Often, representatives from the Kimberley Land Council, a native title representative body for the Kimberley region (www.klc.org.au) who support and represent Kija claims to native title, also attend meetings but they do not hold an official role. Although concerned with matters of Indigenous interest in and involvement with Purnululu — which would intuitively include tourism — tour operators are not members of the Park Council. This omission of tour operators as well as local government authorities, Park neighbours and scientific interests from the decision making body guiding Park management stems from the Park Council’s historical intent to “resolve issues of concern relating specifically to Aboriginal people” (CALM 1995 p13). This lack of stakeholder diversity in decision making is to be rectified in the near future with the proposed formation of a broader Purnululu World Heritage Advisory Committee (Conservation Commission 2008).

4.4 Tourism in Purnululu National Park

Purnululu is a major tourist drawcard in the East Kimberley (CALM 1995) and increasingly promoted as an icon (DEH 2005). Striking natural beauty and Indigenous culture are central attractions, along with World Heritage listing. Research suggests listing confers significant status and brand identity (Reinius & Fredman 2007), highlighting a site as unique and raising its global tourism profile (Lane & Waitt 2001). While Buckley (2004) was not able to establish links between World Heritage listing and
increased arrivals to Australian sites, he did note that many World Heritage parks received an increased number of visitors following designation. However a recent review suggests that Purnululu did not receive any discernable rise in visitor numbers following inscription (DEWHA 2008).

In Purnululu’s first year as a gazetted national park, 2,350 visitors were recorded (CALM 1995). Arrivals have increased steadily over time, with recent data indicating 26,080 visitors for the 2008/9 financial year (Figure 4.7). Tourist arrivals are derived from traffic counter and entrance/ camping fees (DEC VISTAT 2009) and do not include people taking scenic flights over the Park.

![Figure 4.7: Visitor numbers to Purnululu for the period 1995-2009 (road–based arrivals only) (DEC VISTAT 2009)](image)

Although precise figures are not available, findings suggest most Park visitors arrive from other Australian states, followed by West Australian visitors. Overseas arrivals comprise a third visitor grouping (DEC VISTAT 2009). Currently, visitors not on a commercial tour are not required to pre-book a visit to Purnululu, often leading to congestion in public campgrounds. Park managers are considering introducing a central visitor booking system in order to address Park crowding issues (Grosse, pers. comm., 2007).

Purnululu is the second most visited national park in the East Kimberley region, based upon road entrance, suggesting the Park and visitor arrivals hold great potential to contribute to regional economic development. Recent data indicates visitation to

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68 Fly-over tours do not land in the Park and so do not pay entrance fees.
69 Mirima National Park receives the greatest number of visitors (67,000 visitors in 2008/9), accounting for 56% of all visits to East Kimberley protected areas (DEC VISTAT 2009). Its popularity likely reflects Park proximity to the regional centre of Kununurra.
Purnululu contributes $2.6 million to regional businesses, after costs are deducted, and $1.7 million in annual direct and indirect household income (US$2.2 and $1.45 million, respectively). An estimated 56 direct and indirect jobs are produced through this visitation (DEWHA 2008).

4.4.1 Access and infrastructure

Purnululu is accessible by both road and air links. Air access is via light aircraft or helicopter as part of a commercial fly/drive tours offered by tour companies. Road access is provided by the unsealed, 52 km Spring Creek Track (CALM 1995). It can take up to three hours to travel along the track. Navigation requires a high clearance four-wheel drive, which acts to restrict both visitor numbers and vehicle impacts within the Park (Grosse, pers. comm., 2007).

Despite these difficulties, Purnululu has experienced continued growth in visitor arrivals. Many tourists consider the challenging nature of Park access as part of the overall experience of Purnululu and retaining the Track’s rough nature is strongly favoured by most stakeholders (DEC 2009; DEH 2005). Growing pressure to improve or even seal Spring Creek Track is seen as a threat to existing tourism and Park values, which are based on a sense of remoteness (DEH 2005). However, the requirement for a suitable vehicle contributes to perceptions of exclusion from the Park (Lane & Waitt 2007).

Exclusion also arises from weather conditions which make the tourism ‘window of opportunity’ highly seasonal (Lane & Waitt 2007). The Park is only open to tourists between April and December. During the wet season (~ November to March) and in cases of unseasonal rain, Spring Creek Track and the Park itself are closed (CALM 1995). This seasonality may reduce the wider developmental potential of tourism (Sharpley 2009) through limiting revenue accrual by DEC and tour operators, as well as the potential benefits accruing to traditional owners.

Tourism infrastructure in the Park is minimal. Most tourist facilities are located on the western side of the Bungle Bungle massif, with campsites and major points of interest connected by a single unsealed track. Purnululu has a ranger/ visitor centre, two public campsites (Kurrajong and Walardi), an airstrip/ helipad (CALM 1995; Hoatson et al. 1997) and three commercial (private) campsites (see below). Public campsites do not
offer a defined number of beds and offer basic facilities only — pit toilets and non-potable water (DEC 2007a). The basic level of service provision in public campsites, which host the majority of tourists, is utilised by DEC as an important visitor management tool (DEH 2005).

4.4.2 Tourism activities

Purnululu offers both ground-based and flight activities. Ground-based options including hiking, camping, photography and nature observation (DEC 2007a), with seven walking trails ranging in duration from 30 minutes to a 30 km multi-day trip (UNEP 2002) (for trail location, see Figure 4.5). Commercial scenic flights are popular, especially helicopter flights over the massif which began in 2001. These flights provide the second greatest amount of revenue to the Park (Figure 4.8), following that derived from the general public from entrance and camping fees. Scenic flights leave from within the Park itself as well as from bases at Warmun, Kununurra and Halls Creek.

![Figure 4.8: Tourism-related revenue for the period 1999-2008 (CALM undated)](image)

Visitors can take part in these activities either individually or as part of an organised tour. At the time of research, 104 commercial tour operators were licensed to visit the Park (Conservation Commission 2008). Only two companies hold licences to operate permanent, private camps within the Park: East Kimberley Tours (EKT) and Kimberley Wilderness Adventures (KWA).
EKT is a Kununurra-based operation with a history of association with Purnululu that pre-dates gazettal as a national park. KWA represents a joint arrangement between a Victorian-based national tour company and the Wunan Foundation, an Indigenous socio-economic development organisation. Each company operates a private camp in the Bellburn campsite, with a 60-bed capacity, plus staff (DEC 2009). KWA operates another private camp at Walardi campsite, catering for 20 guests (Magris, pers. comm., 2009). Additionally, expressions of interest were recently sought for the development of low-impact visitor accommodation at Kurrajong campsite as part of Tourism WA’s Naturebank process (DEC 2009; Tourism WA 2009a). A further private development is proposed for an Indigenous living lease located outside of formal national park boundaries, in the surrounding conservation reserve. This proposed development remains subject to final approval (DEC 2009).

The private camps, as well as helicopter operations, operate under restricted E class licences allocated under the CALM Act (1984) (WA) when there are a limited number of operators or activities offered owing to environmental, management or safety reasons (DEC 2007b). DEC allocates E class licences for an initial five year term. In Purnululu these are extendable based upon the meeting of, or demonstrated attempts to meet nine best practice indicators (DEC 2009). These include ensuring the accrual of tourism benefits to local community and specifically to traditional owners. Traditional owners are to be partnered with or included in all aspects of facilities and tour operations; and operators must commit as well as to a level of Indigenous ownership and employment (DEC 2009; Maunsell Australia 2003).

### 4.4.3 Employment

Purnululu’s core staff comprises one senior Park ranger and another field-based ranger who operate on alternating 10-day shifts. In addition, two non-DEC personnel run the visitor centre and seasonal, voluntary campground hosts facilitate operation of the two public campsites. Core staffing levels at Purnululu are of concern, especially in light of the Park’s World Heritage status (Brereton et al. 2007; IUCN 2003). The Commonwealth’s original World Heritage nomination outlined the anticipated need for

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70 The Wunan Foundation is based in Kununurra. In the region, ‘wunan’ refers to a widespread, traditional trading network of exchange that links people, spiritual, economic and ritual traditions and partly underpins Indigenous governance (Doohan 2008).

71 Naturebank involves the release of investor-ready land for low impact visitor accommodation within DEC protected areas (DEC 2009; Tourism WA 2009a).
extra staff following inscription (Environment Australia 2002); however, this has not occurred. This core staff is supported by the regional DEC office at Kununurra, which has 35 staff. The East Kimberley office also hosts Purnululu’s World Heritage Area Officer, who coordinates the administrative, consultative, planning and reporting processes necessary to meet the Park’s obligations as a World Heritage area.

Employment presents a key means of achieving greater Indigenous involvement in the Park. However to date, involvement has largely been limited to irregular CDEP employment. In 1988, six Indigenous people were involved in a ranger training program, of which only two completed. Currently, potential Indigenous staff are consulted on upcoming contract employment and road works within Purnululu and, where funds permit, involved seasonally in Park maintenance (Brown, pers. comm., 2009). At the time of field research, one Djaru and one Kija person were employed in Park maintenance under CDEP. This CDEP employment no longer existed in early 2010; however, two assistant Indigenous ranger positions were in place, offering permanent, non-CDEP employment during Purnululu’s tourism season (~March-November) (Moncrieff, pers. comm., 2010).

Both EKT and KWA are required by licence conditions to partner with, offer employment opportunities for and otherwise provide for the accrual of benefits to local Indigenous people. Despite attempts to fulfil these stipulations, tour operators report difficulties in sourcing and retaining local Indigenous employees. Rather, most employees are non-Indigenous and typically from outside the region. In total, EKT employs 12 people; two of these have been non-local Indigenous people (Wainwright, pers. comm., 2010). KWA employs 14 people and has previously employed a Djaru trainee from Halls Creek (Magris, pers. comm., 2010).

4.5 Local communities surrounding Purnululu National Park

The closest sizeable settlement to Purnululu is Warmun Aboriginal community, 50 km north west\(^{72}\) of the Park. Because of this geographical proximity, Warmun is potentially exposed to benefits and negative impacts from Purnululu and Park tourism.\(^{73}\)

\(^{72}\) Direct distance.

\(^{73}\) Warmun occupies a unique position in that formally, it is a ‘closed’ community under the Aboriginal Affairs Planning Authority Act (1972) (WA). General public thoroughfare is prohibited unless a visitation permit is obtained, although increasingly a verbal permit suffices. This is likely to have an influence on the accrual of benefits and costs from the Park and tourism.
Additionally, Indigenous people living at Warmun have a long history of interaction with Purnululu and many people with rights and interests in the Park area reside there. This includes members of the Kija native title claimant group and members of the Purnululu Park Council. These factors made Warmun an ideal choice for investigation of interactions with, and benefits from, Park tourism.

Within Warmun, cultural restrictions limited the number of participants who could participate in the research. According to Indigenous customary law, people who are not traditional owners have no clear authority to speak for country (Baker et al. 2001; Doohan 2008). People without the requisite authority and connections to the country of the Purnululu area were reluctant to discuss it. These cultural restrictions meant that Indigenous respondents involved in the research were purposively targeted on the basis of their cultural connections to Purnululu.

To expand the number of respondents with cultural authority to participate in the research, people residing at Warreranginy outstation (popularly known as Frog Hollow) were included. This extended geographical approach was considered to satisfy both cultural restrictions and research interests in the interactions among Purnululu, tourism and local Indigenous communities. Frog Hollow, located 30 km south of Warmun, is one of eight outstations associated with the larger hub of Warmun. Frog Hollow’s physical proximity to Purnululu, and the fact many people traditionally associated with Purnululu reside there (Doohan 2008) were further factors supporting the use of an extended geographical approach.74

Although Djaru people also hold rights and interests to the Purnululu area, they were not included in the research. This is because the research was interested in exploring the impacts of Park tourism on a geographically bounded local community. This interest resulted in a focus on Warmun and by default, Kija traditional owners residing there. This focus on Warmun and Kija residents does not imply a judgement on the validity of either Kija or Djaru claims of traditional ownership, nor does it imply that Djaru people should be excluded from deriving benefits.

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74 The mobility of many Indigenous people (Taylor 2003) further means that many residents move regularly between Frog Hollow and Warmun, as well as across the wider landscape.
4.5.1 Warmun Aboriginal Community

Warmun (also referred to as Turkey Creek, along which it is situated) is located approximately half way between the larger towns of Halls Creek and Wyndham in the Shire of Halls Creek (Figure 4.9). The usual population of Warmun is around 300 persons (ABS 2006). Turkey Creek was an important staging point in the early days of Indigenous relationships with the pastoral industry and dominant society. A place that Indigenous people would come to in the wet season, Warmun later provided an area to establish semi-permanent camps following the eviction of Indigenous people from nearby pastoral stations (Altman 1987a; Palmer & Williams 1990; Ross 1990). The community is now home to predominantly Kija speaking Indigenous people with some non-Indigenous people living there as part of managerial, administrative or professional service sectors for the community, for instance teachers and nurses.

![Figure 4.9: Location of Warmun relative to the East Kimberley and Purnululu National Park](image)

Warmun Community Council, a non-profit representative body comprising 20 elected community members supported by Council staff, governs the community. The Council, established to administer and manage the affairs of the community, meets monthly to make policy and other decisions regarding day-to-day affairs as determined by Council by-laws. Given Warmun’s remoteness, the Council acts as a local government provider
of ‘a wide range of municipal, essential, social and commercial services’ (Warmun Community 2007 p4).

In terms of physical infrastructure, Warmun has a community health centre, community offices, art gallery, sports grounds, mechanical workshop, telecentre, police station, community hall and local school providing education up to year 10. However, the 2001 national census indicates that 22% of adults in Warmun have never attended school, reflecting a wider trend in the East Kimberley of poor literacy and numeracy levels (Taylor 2003). This low level of Western education is likely to influence how Indigenous people in Warmun can interact with Purnululu and Park tourism; reinforcing earlier suppositions of it being an underlying slow variable. More recent infrastructural improvements include bore water supply, a community water-borne sewage system, swimming pool and organised rubbish disposal. Telephone (mostly public payphone), television and internet access are available (ABS 2006).

Warmun’s social infrastructure is harder to quantify. One strong element concerns Kija cultural and spiritual connections to country, enshrined in Kija law referred to as the ‘Dreaming’ or Ngarrangkani. This system of law is located in the past as well as the present and guides people in how to live their life as well as underpinning governance, social, and ecological responsibility and moral order. The land forms an important part of Indigenous connections to country. Indigenous people maintain a relationship to the land through transmitting cultural knowledge via practices such as dancing, songs and stories, paintings and traditional ceremonies (Doohan 2008; Palmer & Williams 1990; Pelusey & Pelusey 2006). These strong cultural traditions and links to the landscape constitute a “rich Aboriginal cultural capital” (Doohan 2008 p64), recognised here as an slow variable influencing how Indigenous people interact with Park tourism.

Other aspects of Warmun’s social environment are less beneficial. Many Indigenous communities continue to experience issues relating to substance abuse, especially alcohol, domestic violence, sexual abuse and welfare dependency (Mercer 2005). Indigenous communities also display a distinct trend towards other lifestyle diseases such as diabetes, circulatory and respiratory problems (Gracey & Spargo 1989; Taylor 2003). Warmun, like many other Indigenous communities, has had fluctuating experiences of optimal and difficult times. More recently, in 2006, it was classified as one of 18 ‘crisis communities’ in the State of Western Australia. Crisis communities are
characterised by weak community governance and planning capabilities; youthful populations combined with the breakdown of traditional practices for the transfer of knowledge; high levels of need for human and physical services, especially education; overcrowded and inadequate housing; dependence on government welfare in the absence of opportunities and capacities for greater economic participation; and poor environmental health infrastructure (FACSIA 2007).

In Warmun, approximately 36% of the population is below 14 years of age and only 7.5% of people are older than 65 years. In 2001, 56% of people in employment took part in government CDEP activities (ABS 2001), supporting claims of continuing dependence on welfare payments in the area since the end of pastoralism (Altman 1987a; Doohan 2008). These statistics accord with the wider East Kimberley region (Taylor 2003, 2008b) and reinforce earlier hypotheses positioning a lack of money/welfare dependence as a slow variable.

Dependence on welfare payments for income is strongly related to Warmun’s geographical isolation, which limits the availability of market opportunities and chances to participate in the mainstream economy. Warmun is classed as ‘very remote’, implying ‘locational disadvantage with very little accessibility of goods, services and opportunities for social interaction’ (ABS online). This geographical isolation limits economic prospects although positive opportunities to engage with Park tourism exist.

In terms of economic prospects, Warmun community owns and operates the Turkey Creek roadhouse, which provides tourism income through tourist patronage of accommodation, meals and petrol. Other income derives from non-tourist patronage, for instance road workers and government personnel. Initially privately owned, Warmun Community became part owners of the roadhouse in 1987. By 1992, community ownership had risen to a 40% stake (Altman & Finlayson 1992) and today the roadhouse is wholly community owned and operated. The roadhouse has only recently begun to show a profit since its purchase (Clare, pers. comm., 2008).

Helicopter flights over Purnululu that depart from the roadhouse provide a further source of tourist income, with the community receiving an annual lease fee from the
helicopter company.\textsuperscript{75} Income also comes from Warmun Art Gallery, which in 2008 won ‘Aboriginal Business of the Year’ in the East Kimberley Aboriginal Achievement Awards (Warmun Art undated). Currently, 55 community residents produce art at the centre. Despite these economic prospects, CDEP employment constitutes the greatest source of available income, involving 144 people (~20%) from the community and surrounding outstations in 2007 (Warmun Community 2007).

4.6 Historic change in the Purnululu PATS

This Chapter introduced and explored the three central components of the Purnululu PATS; Purnululu National Park, Park tourism and Warmun Aboriginal Community. This final section attempts to interpret historic change and interactions among these three components, using the adaptive cycle. As in Chapter 3, this modelling sought to provide further insights into key interactions and drivers of change for the Purnululu system. It also helped to provide an indication of likelihood of change for the system, which was helpful in the development of indicators in subsequent sections (Chapter 7). This modelling also offers information that may be used in the eventual development of thresholds.

Modelling was informed by the literature, which was used to develop an historical profile of key events, disturbances and stakeholders, with more recent events also informed by respondent insights. Table 4.1 depicts an account of historic change and interactions among the Purnululu area, tourism and Indigenous people, using a resilience perspective and focusing on social interactions. As an historical analysis, it is both subjective and inductively derived. Its assumptions are based in the literature, theories of social-ecological transformation and adaptive cycles, as well as in accordance with information presented throughout the Chapter.

\textsuperscript{75} Currently these lease fees stand at approximately AUS$15,000 (US$12,800) per year.
Table 4.1: Historic change in the Purnululu PATS modelled according to the adaptive cycle

<table>
<thead>
<tr>
<th>Time period</th>
<th>Adaptive cycle phase</th>
<th>Duration (years)</th>
<th>Characteristic events at the focal scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880s-1935</td>
<td>Release (Ω) &amp; Reorganisation (α)</td>
<td>55</td>
<td>European settlement (New ideas emerge) European presence established; pastoralism begins. Main population centres established (Wyndham, Halls Creek, Turkey Creek)</td>
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<tr>
<td>1936-1960</td>
<td>Exploitation (r) &amp; Conservation (K)</td>
<td>24</td>
<td>A paternalistic approach (Ideas consolidated; existing conditions entrenched) Restrictive legislation passed concerning Indigenous people. Assimilation policies continue; unequal societal relations reinforced. Citizenship awarded 1948</td>
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<tr>
<td>1982-1991</td>
<td></td>
<td>9</td>
<td>Park development (New ideas emerge; consolidate) Purnululu National Park established. Tourism developments begin, arrivals steadily increase Kija Native title claim is registered; Purnululu joint management talks are initiated Warmun community gain part ownership of Turkey Creek roadhouse; Warmun CDEP introduced</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1992-2001</td>
<td>Reorganisation (α) &amp; Exploitation (r)</td>
<td>9</td>
<td>A new way forward (Ideas consolidated) First Park management plan, Purnululu Park Council endorsed. Kija-Djaru conflicts over traditional ownership; joint management talks stall Warmun Community gain full ownership of Turkey Creek Roadhouse</td>
</tr>
<tr>
<td></td>
<td>OR Maladaptive spiral/poverty trap?!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002-2008</td>
<td>Reorganisation (α)</td>
<td>8</td>
<td>Stasis &amp; a change of direction (Ideas consolidated) Indigenous living leases established. Park Council established, falters by 2007. New Purnululu World Heritage Advisory Committee to be introduced Native title remains contested. Park World Heritage listed for natural values Tourism developments sought, Indigenous rangers employed. Fire damage results in Park closure for 2.5 months</td>
</tr>
</tbody>
</table>

The timescale of analysis begins with the arrivals of Europeans to the East Kimberley area. This approximately 100-year period allows for an overview of key events and socio-political changes of interest to interactions among the Purnululu area, tourism and Indigenous people. It corresponds to that used in the Kruger case study, and proved similarly useful in identifying broad shifts in the status and treatment of Indigenous
people both within the larger context as well as locally, as well as insights into underlying system drivers influencing local outcomes.

Over the period from 1880 to 1994, the Purnululu case study is theorised to have completed one full adaptive cycle and entered a second cycle (Table 4.1). It is unclear whether the system remains in a persistent state of reorganisation and exploitation, or whether it has entered into a maladaptive state known as a ‘poverty trap’ (Carpenter & Brock 2008; Folke et al. 2009). Although not possible to prove conclusively, the latter option, perhaps better conceptualised as a maladaptive spiral, is favoured. The hypothesised presence of a maladaptive spiral is linked to an apparent lack of capacity among Indigenous people in the region, as well as locally, to participate in opportunities as they become available. Before exploring this idea of a poverty trap further, an important caveat needs stating. Namely, that linking opportunities for employment and involvement in Park tourism with a desire among Indigenous people to act upon them represents a major assumption. The literature increasingly questions this assumption, highlighting the strength of non-pecuniary cultural priorities (Holcombe 2009; Scambary 2009). This alternative perspective is explored in later sections.

Poverty traps are characterised by situations where people are impoverished by circumstances beyond their control (Carpenter & Brock 2008), i.e. originating at higher scales. In this instance, circumstances leading to the impoverishment of Indigenous people stem from State and national policies. The existence of diminished Indigenous human and financial capital (Altman 2009a; Altman 2004; Fuller & Cummings 2003) following historic, legislated disadvantage supports this idea. If the theory of a poverty trap were to apply to the Purnululu system, local interactions would be characterised by the emergence of new ideas and sources of capital that are not acted upon or harnessed to achieve change (Carpenter & Brock 2008). These characteristics, and the theory of poverty traps, appear to hold some explanatory power for the current state of the Purnululu system, as well as its more recent past. In accordance with resilience thinking, it is possible to characterise the wider region and Purnululu PATS more specifically as being in a maladaptive spiral since the 1960s and end of the pastoral era.

4.7 Summary

This Chapter introduced the second PATS case study, based on Australia’s iconic Purnululu National Park. Key system components and interactions were described,
providing an overview of the Park itself, Park tourism and the local Indigenous community of Warmun. This introduction, together with historic modelling based on the adaptive cycle, offered insights into past and present governance arrangements and interactions. A picture of historic Indigenous disadvantage was depicted, the legacies of which continue to characterise current conditions. While Indigenous history has often been one of exclusion, significant changes have occurred over recent decades, particularly within the conservation sector. These include the acknowledgement of Indigenous native title and the introduction of joint management arrangements, both of which are key elements of governance influencing the Purnululu system.

The Chapter highlighted a number of drivers of system change, refined to several slow and one fast variable influencing interactions among Indigenous people, Purnululu and Park tourism. As in the Kruger study, tourism arrivals are a fast variable offering opportunities for Indigenous people to interact with and benefit from Purnululu and Park tourism. Key slow variables, identified as a dependence on welfare income and poor (Western) education levels, largely relate to the legacies of historic Indigenous disadvantage. These are similar although not identical to those identified in the Kruger PATS, where lack of money is also a slow variable but no comparable government welfare schemes exist. A further slow variable identified in the Chapter is the presence of Indigenous spiritual/cultural links to the landscape. This slow variable offers great potential for Indigenous people to interact with and benefit from Park tourism.

However, both tourism and Purnululu itself are relatively new introductions to the area. Although significant potential to generate benefits exists, the involvement of Indigenous people is still at a nascent stage and greatly influenced by the legacies of historic disadvantage. How these legacies influence the relatively new association between Park managers, tourism and Indigenous people is explored in following Chapters. Chapter 5 begins this exploration, providing an account of how local communities in both case studies interact with the physical Park environments.
CHAPTER 5 INTERACTIONS AMONG LOCAL COMMUNITIES AND THE NATURAL ENVIRONMENT OF THE PARKS

The previous two Chapters described the Kruger and Purnululu case studies. This Chapter uses the results from field interviews and participant observation to explore how local communities interact with the natural environments of the Parks. The Chapter describes aspects of the natural Park environment that local communities appreciate or are concerned about, offering insights into how social and ecological realms interact in the PATS. Information presented here relates mostly to the third phase of the conceptual framework (Figure 5.1), current system state, although these are explored in relation to past system change and drivers (Figure 5.1, Phase 2). Interview excerpts are used to illustrate key concepts arising from the data. Greater emphasis is placed on the Kruger case study.

Findings indicate a number of ways in which local communities interact with the natural environment of the Parks. Four key issues emerged to encapsulate these interactions. Table 5.1 summarises these, and indicates their relationship to key drivers of change. Both the Kruger and Purnululu case studies are characterised by a widespread appreciation of the intrinsic values of from natural environments. These intrinsic values appear to be a product of, as well as contribute to, underlying cultural norms and values linked to an appreciation of nature (Table 5.1).
In the Kruger study, relationships with the natural environment are highly contested and involve surprising and conflicting elements. While Park-run environmental education emerged as a clear benefit for local communities, the use of natural resources and the impacts of damage-causing animals present key tensions (Table 5.1). How these issues manifest in the case studies is influenced by key drivers including a lack of money, poor (Western) education and cultural norms, as well as by tourist arrivals. These influences are explored throughout the Chapter.

### 5.1 Reflections on the research process

Fieldwork relied on ethnographic methods, where the researcher spent nine months in the field meeting local people and observing life in the communities. These processes were repeated within the Parks to observe the extent and manner of interactions between tourists and locals. This approach was necessitated by the researcher’s ‘outsider’ status. Thus, some reflections on the research process and how it influenced data collection and analysis are appropriate.

Prior to fieldwork, extensive review of the literature was undertaken. Literature included documents relating to the Parks and/or local communities and the wider ‘people and parks’ literature. This review allowed the researcher to gain an understanding of local contexts and historical relationships between Park managers and local communities, as well as to better contextualise local motivations and responses with findings from other areas. Further, it helped develop researcher ‘sensitivity’ to the realities facing local communities living adjacent to protected areas and their experiences with tourism. In concert, the social-ecological systems literature was reviewed to help guide potential areas of interest and questioning.
In the field, the researcher’s position as a young, white and non-local female both helped and hindered. In the Purnululu study, this status was a disadvantaged as knowledge in Indigenous culture is often gender-specific and not shared freely. Thus many elements of traditional law and culture, and their influence on local interactions with the Park, lay beyond the ability of the researcher to understand. Such an understanding is something that would take many years to gain and even then, non-Indigenous people may never fully grasp the cultural intricacies of Indigenous life. One clear example of the researcher’s inability to bridge cultural divides followed the death of a community member and a protracted period of ‘sorry business’\textsuperscript{76} that halted interactions with community members for several weeks.

At the same time, community members typically displayed great warmth towards the researcher. Perhaps this was because the researcher stayed at the local Roadhouse during community fieldwork and was a frequent sight within the community, either at Council offices, the art centre, Roadhouse or sitting in someone’s yard. Further, in the previous year the researcher had met some respondents at a Purnululu Park Council meeting and undertaken interviews for an unrelated project. Thus, the researcher’s face was known around the community.

In the Kruger study, locals were highly welcoming. Initial trepidation arising from the negative reputations of black communities in South Africa rapidly proved unfounded. Three factors seemed to help develop with locals in the Kruger study. One, in each village, the researcher and assistant (also white, but male) were accompanied by a local interpreter. The interpreter helped to fully explain the research to respondents and other interested community members, allaying any misconceptions of affiliation with SANParks or Kruger. Further, their presence allowed interviews to take place in local languages, which contributed to gaining a greater depth of information from respondents. Two, as in the Purnululu study, the researcher maintained a highly visible presence in the communities and spent much time walking between locations, increasing opportunities to observe daily life and chat with residents. Three, the researcher made an effort to attend community events and functions held inside Kruger and purchased goods and services such as food, drinks and petrol within the community.

\textsuperscript{76} A cultural period of mourning (McCoy 2008).
In both case studies, the researcher dressed appropriately to match local attire. This seemed to earn respect in the community, at least in the Kruger study where researcher dress was remarked upon as respectful and appropriate by female respondents. Further, the highly visible presence of the researcher in both studies allowed observation of community life and interactions with the Parks. This helped to progress the reflexive nature of ethnographic approaches by stimulating and providing further insights into local interactions.

Beyond these brief insights into fieldwork, another struggle took place in the research. This involved tensions in reconciling the localised, constructivist ethnographic approach with positivist deductive systems thinking and the broader resilience literature. Tensions between these opposing epistemological positions are not new and continue to hinder interdisciplinary communication (Miller et al. 2010).

Over the course of the research, this tension was dealt with by using the resilience thinking conceptual framework to design the research approach and derive lines of questioning. This theoretical underpinning was then fleshed through ethnographic approaches to fieldwork, resulting in emergent, qualitative data that were then reinterpreted using social-ecological systems and resilience thinking.

As discussed, initial attempts to integrate inductive field data with the original conceptual framework (Strickland-Munro et al. 2010) proved difficult. For instance, resilience perspectives tend to advocate the existence of an objective, observable reality in which socio-political aspects including social agency, differentiation and equity in the distribution of costs and benefits are often overlooked (Miller et al. 2010). Ethnographic approaches on the other hand are constructivist, and recognise the existence of multiple constructed realities and the co-creation of understanding (Denzin & Lincoln 2000). It became clear early in the research that ecologically-based systems perspectives, while offering a good framework for exploring interactions across multiple scales, needed to be complemented by qualitative approaches, such as ethnography, to better account for and provide a richer description of the socio-political aspects of human systems (Cochrane 2010). These tensions between the resilience thinking conceptual framework and ethnographic approach to data collection led to a reworking of the framework to better represent the social realities of the PATS.
The reworked framework (Figure 2.1) placed greater emphasis on socio-political aspects of the case studies and helped merge deductive and inductive approaches into a coherent, synthesised reporting of this research. In the reworked framework, analytical categories and concepts emerging from field data were refined through questions arising (Denzin & Lincoln 2000) from the conceptual framework, for example interest in drivers and key issues.

5.2 Nature conservation and intrinsic values

*That Park, the National Park, I think its existence is a bargain to ourselves*

[community member]

The role of the Parks in protecting ‘nature’, including animals, vegetation and natural landscapes, from external influences and degradation emerged as a key benefit in both case studies (Table 5.1). In the Kruger study, community respondents reported personal benefits accruing from opportunities to view natural landscapes and vegetation as well as the protection of iconic wildlife species such as lion or elephants. This differed from the Purnululu study, where community respondents instead highlighted the Park’s spiritual significance: *I love it… it means that much to me and half of my family grew up there and every time go out [Purnululu] see stuff like spirit, they still there, in the Park.*

These responses and values placed upon the natural environment correspond to the literature on intrinsic or innate reasons. Intrinsic values reflect moral concern for, or appreciation of an area for its own sake, independent of human benefit (Lockwood 2006; Winter 2007) such as economic return. These intrinsic values are further defined here as including aesthetics, bequest and spiritual/cultural values.

Appreciation of intrinsic value was especially evident among locals from Cork and Belfast: *we need our animals, we need our biodiversity of plants and fauna and flora, we need water we need everything in [Kruger]... make sure these things are sustained, it is very important that we keep them forever... Life is not life without those animals, there is no life without the plants, you know we need each other [community member].* In these villages, the demands of daily survival are pronounced for many. Local appreciation of intrinsic values is thus interesting, given Nepalese research indicating that households struggling to meet livelihood needs were less likely to identify conservation and development benefits (Spiteri & Nepal 2008). Indeed, the
identification of intrinsic benefits by locals in this research contrasts with assumptions that local communities typically do not recognise the underlying ecosystem services provided by protected areas (e.g. Coad et al. 2008; The Resilience Alliance 2007b). Previous Kruger research provides some support for this seeming contradiction, reporting appreciation of ecosystem services including soil protection, ‘cleaning air’ and ‘sustaining environments’ among 19.5% of community members (Anthony 2006).

Intrinsic benefits flowing from nature conservation appeared to generate positive attitudes towards the Parks. Similarly, ‘conservation benefits’ including improved climate, ‘joy in greeness’ and the protection of species, forests and natural resources had the strongest association with positive attitudes in Myanmar, where an appreciation of such increased the probability that a person liked the given protected area 28-fold (Allendorf et al. 2006). Bauer (2003) likewise reports opportunities to observe species and enjoy nature as underlying positive local attitudes towards Cameroon’s Waza National Park. Gadd (2005), Njiru (2007), Spiteri and Nepal (2008) and Mehta and Heinen (2001) also report personal benefits derived from wildlife conservation. The following sections outline how existence, aesthetic, bequest and spiritual/cultural values manifested in the case studies. Factors potentially contributing to their presence among community members, including underlying drivers, are also explored.

5.2.1 Existence value

Respondents from Cork and Belfast evidenced pleasure at knowing that Kruger contained plants and animals and protected these from outside pressures such as over-utilisation of natural resources. This appreciation was contextualised through comparisons with the environment outside of Kruger:

Nature not here if [Kruger] is not... at Belfast have no nature, if you want to look at nature, go to [Kruger] [community member].

The existence of [Kruger] itself I think people are benefitting because when they go there, they will see what they haven’t seen outside [community member].

Local benefits thus derive from the ability to experience a different environment, often simply through looking in from the outside: because [Belfast is] near the Kruger, when I feel like a seeing animals I just go by the fence and see the animals [community member].
These comments indicate appreciation of ‘existence value’, those relating to human benefits derived from knowing places exist and are protected (Harmon 2004; Putney 2003), independent of actual or potential use (Raymond et al. 2009). Although intangible, existence value represents an important element of local appreciation of natural environments. One study that attempts to economically quantify existence values associated with *fynbos* vegetation in South Africa’s Western Cape estimates its value to be US$84 million per year (Turpie 2003).

Recognition of existence value among community members does not appear to be common in park-people research in Africa. One study that does report such values who identified non-material motives underlying positive attitudes among 16% of respondents from Cameroon. Non-material benefits were exemplified by responses such as “[Waza National] Park is a reflection of nature, which is unknown to many” (Bauer 2003 p177). Similar to the Kruger study, this excerpt reflects an appreciation of nature conserved within parks, implying that such environments/the species they contain are unfamiliar to many locals. Existence values were not a central feature of the Purnululu study, perhaps because locals remain deeply and fundamentally connected to the natural environment and were more likely to express this connection in a spiritual sense.

### 5.2.2 Aesthetic value

A second aspect of intrinsic value particularly evident in the Kruger study was aesthetic values, which reflect an appreciation of nature’s beauty (Harmon 2004; Putney 2003). Community members cited conservation of wildlife and natural landscapes as reasons why they liked Kruger:

- *Kruger Park is doing a great job saving the animals there and saving the nature. They are doing a great job by doing that* [community member].
- *I like the Park very much. Because when I was there... I recognised something about the place. The place is beautiful and it has nature* [community member].

The widespread appreciation of aesthetic values, particularly species protection, appears incongruous given the legacy of separation arising from years of restrictions on black visitation to Kruger (Carruthers 1995). This restriction of access was hypothesised to foster resentment and negative attitudes towards Kruger and nature conservation, with the Park and nature synonymous with a lifestyle and reality unattainable for locals. This view held currency among some Park staff: *locals have never been showed around*
[Kruger], shown a leopard; once you’ve seen a leopard, your whole thought process changes, because you’ve been there, you’ve experienced it, you’ve felt it. You know what the overseas tourist is paying for to go into [Kruger]... before you had that experience, you’re not going to understand that. However, findings from Cork and Belfast do not support this assumption. These unexpected results highlight the complexity of local relationships to ‘nature’. Previous Kruger studies uphold the apparent contradiction, highlighting appreciation of aesthetic values including natural beauty and species conservation among locals. Rademan (2004), for example, reports 60.7% of respondents in the village of Makoko considered Kruger’s aesthetic beauty and tranquillity as advantages of living close to the Park.

Three possible explanations exist for this seeming contradiction between expected negative attitudes and apparent local appreciation of Kruger and nature conservation. One is that interest in nature and recognition of existence values is not predicated on physical visitation to parks. Turpie (2003), for instance, investigating the social values of biodiversity in South Africa, found that personal experience or visits to parks were not correlated with relatively high levels of interest in nature among respondents. Knowledge appeared a more decisive factor, although the mechanisms of causality were unclear. The apparent complexity of these findings highlight the “highly dynamic nature of existence value” (Turpie 2003 p214).

A second explanation is that appreciation of nature is part of local Tsonga/Shangaan culture. This possibility is supported by Anthony (2006 p125), who reports local perceptions including “it is our culture to love nature”. His research describes Tsonga appreciation of nature as having both consumptive and non-consumptive values, which include socio-cultural, spiritual and aesthetic appreciation for the environment. This breadth of values indicates nature is ‘highly valued’ by locals (Anthony 2006).

Culture provides the systems of meaning through which people interpret the world around them (Geertz 1973, in Pretty et al. 2008). Human actions towards nature are fundamentally governed by these culturally-based worldviews and beliefs, making

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77 The identifier ‘Tsonga’ is often used in concert or interchangeably with the term ‘Shangaan’ although in this research local people predominantly identified as Shangaan.

78 Anthony (2006) discusses links between respect for nature and culture with regard to Tsonga people in an area some 200km north of Cork and Belfast. Local people identifying with other ethnic origins (mostly Swazi) also expressed a deep-seated appreciation of nature, suggesting that this cultural norm may not be restricted to Shangaan respondents alone.
culture “perhaps the greatest variable in the biodiversity equation” (Pretty et al. 2008 p7). Human interactions and behaviours towards the natural world are further influenced by normative rule systems (Ostrom 1990). Combining these two elements provides an understanding of ‘cultural norms’; the explicit or implicit patterns, rules, customs or beliefs of a group of people passed down through generations.

This suggests that the values attached to nature and aesthetics by locals may reflect a cultural norm based on the appreciation of natural environments. Previous Kruger research reports many Tsonga respondents felt a personal responsibility to protect *ntumbuluko* (Anthony 2006), a concept akin to the English idea of nature (Els 2002b, in Anthony 2006). *Ntumbuluko* is defined as “Tsonga cultural and social norms, customs, traditions and institutions that constitute the basis for existence, self-understanding and identity in Tsonga society” (Chitlango & Balcomb 2004 p183, in Anthony 2006 p225). This definition suggests that *Ntumbuluko* may continue to influence the Tsonga worldview.

Following this rationale, results indicating local appreciation of nature imply that Shangaan cultural norms valuing non-consumptive/intrinsic aspects of nature continue to influence local perceptions of Kruger (Table 5.1). These cultural norms appear influential despite apartheid’s role in manipulating local relationships to nature and fostering the physical and psychological separation of black people from protected areas. Lagendijk and Gusset (2008) support the role of cultural values in shaping local Shangaan views of nature. Their study of Manyeleli Game Reserve, some 40km north of this study, linked positive attitudes towards predators such as lion to ‘cultural tolerance’ stemming from predators integral role in natural heritage. Cultural tolerance was a more likely rationale for positive attitudes than involvement in conservation education or financial benefit from wildlife tourism, as education participation rates were low and few people were employed in ecotourism.

Cultural values influence the way people perceive nature. They can assign nature and protected areas a significance unattainable through standard management practices that emphasise biodiversity, landscapes and economics. While acknowledged, their role in fostering local support for conservation is often overlooked in practice (Infield 2001). Very limited information exists from southern Africa on the use and value of cultural and spiritual services by local communities (Shackleton et al. 2008). However some
studies provide support for the role of cultural values. In Mozambique, traditional cultural practices are cited as potentially explaining positive local attitudes towards the Maputo Elephant Reserve (De Boer & Baquete 1998). Similarly, Faasen (2006 p140) argues that locals near South Africa’s Tsitsikamma National Park have “always seen themselves as conservationists” and park managers should foster the further development of this cultural identity, based on locals being Park stewards. Further afield in India’s Sariska Tiger Reserve, Sekhar (2003 p342) partially attributes local support for conservation (68% of respondents) to the fact “nature forms a part of [local] religion and culture. This prompts [locals] to support conservation”. The interface between nature and society is argued as based on local culture and religion, which foster support for nature among local people (Udaya Sekhar 2000, in Sekhar 2003).

Potentially, Shangaan cultural norms based on a respect for nature may represent a key slow variable. The fundamental character of these norms and their embedding in local culture means they influence how locals perceive and interact with Kruger’s natural environment. In resilience terms, they provide a source of collective memory and wisdom to draw upon (Holling et al. 2002b). That is, collective knowledge held in social memory and acquired through accumulated observations and understandings of the natural world guides human actions towards nature (Pretty et al. 2008).

Little data exists regarding the influence of cultural norms on local attitudes towards Kruger. Yet despite their deep ambiguity, cultural norms and values often influence local community perceptions of protected areas (Stoll-Kleemann 2001) and they are commonly identified as drivers influencing social-ecological systems (Nelson et al. 2006; Walker et al. 2009). Their role as drivers may reflect understandings that culture conditions a person’s worldview, perceptions of importance and appropriate actions (Nelson et al. 2006). Building on these apparent existing cultural norms therefore potentially represents an opportunity for Kruger to develop relationships with local communities. This is especially so given that nature and culture are indivisible under ntumbukulo for many Tsonga (Anthony 2006). Interestingly, despite these links, Anthony suggests that attempts to engage local communities may be better served by emphasising utilitarian use values, as he found these were prioritised over aesthetic values such as protecting animals.
A third explanation is that the generally degraded environment surrounding Kruger creates a distinct dichotomy between Kruger’s natural environment and that of the ex-bantustans (Blignaut & Moolman 2006). This dichotomy, irrespective of or in addition to cultural norms, fosters local appreciation of the Park as a repository of nature not found outside. However, this seeming relationship between environmental degradation and local appreciation of Kruger belies its true complexity. In reality, many factors including population density, lack of money, local skills and education (Percival & Homer-Dixon 1998; Pollard et al. 2008) influence environmental degradation in ex-bantustans and local appreciation of the Park environment.

5.2.3 Bequest value

Bequest values were a third aspect of intrinsic value expressed by community members in Cork and Belfast. This related to intergenerational enjoyment and protecting nature so that future generations could also see animals and nature ‘as it used to be’. Residents emphasised the importance of protecting Kruger’s environment and animals so as to provide an ongoing conservation legacy (Lagendijk & Gusset 2008; Mabunda 2004):

Generation after generation, our children will get there to see the nature
[community member].

[Kruger] needs to exist so that all generations must enjoy its existence
[community member].

Non-utilitarian satisfaction derived from conserving natural environments for future generations are generally termed bequest values (Lee & Han 2002; Raymond et al. 2009). Slabbert et al. (2009) also found appreciation of Kruger’s bequest value, reporting that 57% of respondents from nearby towns considered the statement ‘Kruger is for the benefit of children’ as important or very important. Similarly, Bauer (2003 p177) reports community recognition of bequest values in Cameroon, noting responses such as “the children that we bear will also discover many animals”. Dickman (2008) provides another example, this time from Tanzania, reporting local desire for children to benefit through being able to see and learn about wild animals.

Interestingly, Australian research comparing values held by visitors to national parks with the general public found ‘passive users’, people who appeared to “hold natural areas at a distance”, were more likely to value natural areas for their bequest values. These passive users did not express a strong desire to use natural areas for their own
leisure (Winter 2007 p610). These findings accord with Turpie (2003) in suggesting that physical use or visits to natural areas are not a pre-condition for recognising nature’s intrinsic values. Evidence in this research indicating a widespread appreciation of intrinsic values among locals, despite a generally poor frequency of visits to the Parks, supports this suggestion. This is despite frequency of visitation being commonly cited as a factor underpinning the perception of benefit derivation (Andereck & McGehee 2008).

5.2.4 Spiritual/cultural values

Spiritual/cultural values were a fourth aspect of intrinsic value expressed in the research. This particular aspect was a defining feature of the Purnululu study. There, community respondents also emphasised the need to conserve natural environments for future generations, but this was specifically linked to the transmission of cultural knowledge. The transmission of cultural knowledge to younger generations was a central perspective for Indigenous respondents (Doohan 2008; Walsh & Mitchell 2002):

*Traditional country... culturally it gives people their identity, their family’s identity, the connections, the stories, the beliefs... country is very important... helps to define you as a person and to an extent your lifestyle and our values [community member].

*Got to think about the future, for the kids. For the [next] generation and generation, so they can know that Purnululu for the future [community member].*

Respect for land and traditional practices include an array of intrinsic values significant to Indigenous respondents which appear related to spiritual, cultural and identity values. Harmon (2004) describes these respectively as respect for the sacredness of nature; those attributed to natural, cultural, and mixed sites by different social groups, traditions, beliefs, or value systems; and those linking people to their landscape through myth, legend, or history. These values overlap, reflecting the complex and all-encompassing relationship that Indigenous people have to country (Plumwood 2003) and the intrinsic link between culture and the physical landscape (Staiff 2008).

The strength of intrinsic Indigenous spiritual/cultural connections to the landscape was not surprising given that it was hypothesised as a key slow variable influencing Indigenous involvement with Purnululu (Table 5.1). Recognising and valuing these fundamental connections between Indigenous people and Purnululu represents an
important challenge and aspiration for Park managers. DEC is currently addressing this through the development of a cultural planning framework, developed in consultation with local Indigenous groups.\footnote{Kija, Djaru and Malngin. Malngin people also have traditional connections to the Purnululu area but have not submitted a claim of native title.} The framework aims to gather information on Indigenous desires regarding the management of country on conservation lands.

In the Purnululu study, the continuing significance of imparting cultural knowledge indicates the existence of rich Indigenous cultural capital (Doohan 2008). This cultural capital broadly encompasses belief systems, connections to country, local knowledge and traditional customs and practices. It is built and maintained by ongoing connections to country: \textit{I like the country. Walk the country, teach children [community member]} and can empower people via the maintenance of a certain forms of identity and patterns of interaction (Bebbington 1999). Sonn and Fisher (1998) make a similar proposal, suggesting the strength and resilience of Australian Indigenous people as underpinned by the spiritual and cultural significance of ceremonial sites and traditions.

Cultural capital is also a source of creativity and innovation (Macbeth \textit{et al.} 2004), providing a knowledge base for drawing on in times of challenge (as per Holling \textit{et al.} 2002b; Pretty \textit{et al.} 2008 above). For instance, connections to country and the sharing of traditional knowledge with younger generations, e.g. women’s trips to the Purnululu area, enhance social and cultural memory, which are sources of resilience (Abel \textit{et al.} 2006; Kofinas & Chapin 2009). Agrawal (2009) categorises the transmission of traditional knowledge as ‘communal pooling’, a form of adaptation where the sharing of information results in collective assets. For Purnululu, these collective assets may manifest as the maintenance of knowledge and understanding required to perpetuate ‘caring for country’ among younger generations.

Strong feedbacks between nature and culture in Indigenous society (Bird Rose 2004; Plumwood 2003; Pretty \textit{et al.} 2008) position Indigenous values regarding nature as a cultural norm. Pretty \textit{et al.} (2008) argue that ecological knowledge, if culturally ingrained, can foster the development of socially-embedded norms and institutions. This relationship between nature, culture and behaviour is a defining characteristic of Indigenous worldview in Australia. Langton (2003) discusses this as an ancestral cultural legacy that provides a powerful sense of belonging based on knowledge.
systems linking people to their local environment. This link between ancestors, Purnululu and personal benefit was described by one Indigenous respondent as *Purnululu [is] good to walk around, spirit places, sacred places [community member]*. This culturally-inscribed link between Indigenous people and the landscape is proposed as a highly influential slow variable within the Purnululu case study.

### 5.2.5 Intrinsic values and stewardship

From a Park management perspective, the potential significance of intrinsic values held by local communities lies in the fact they can foster feelings of belonging or ownership. Intangible benefits can often prove more influential than tangible benefits in promoting community support or protection of an area (Mitchell *et al.* 2005; Scanlon & Kull 2009). Further, the less tangible values of nature conservation provide a strong basis for conservation and ecosystem stewardship (Chapin 2009; Kofinas & Chapin 2009).

The term ‘stewardship’ is often ill-defined in the literature and no standard definition exists for natural resource management (Eccles 2009). Definitions tend to implicitly relate to natural resource managers or owners, rather than broader community perspectives (Eccles 2009; Worrell & Appleby 2000). For example, Brown and Mitchell (2006) broadly define stewardship as the roles played by people in management of natural areas and cultural heritage both currently and in the future. They also discuss a more specific definition related to an environmental ethic, being “efforts to create, nurture and enable responsibility among landowners resource users to manage and protect land and its natural and cultural heritage” (Brown & Mitchell 1999, in Brown & Mitchell 2006 p90). Worrell and Appleby (2000 p269) propose a synthesised definition of stewardship as “the responsible use (including conservation) of natural resources in a way that takes full and balanced account of the interests of society, future generations, and other species, as well as of private needs, and accepts significant answerability to society”. It implies ideas of looking after nature ‘in trust’ for others and recognition of intrinsic value (Worrell & Appleby 2000). These latter aspects of looking after nature ‘in trust’ for others are adopted here as essential characteristics of local stewardship towards the Parks.

Local stewardship was apparent in both case studies although it manifested differently. In the Purnululu study, stewardship focused on cultural relationships to land and was typically expressed in terms of a custodian role related to maintaining connections to
country.\textsuperscript{80} One respondent explained this role as \textit{teaching young people to work together, look after Dreamtime}\textsuperscript{81} and the Park. \textit{This place woman not allowed to go, this place men not allowed to go [community member]}. The social and cultural role of protected areas maintain and strengthen cultural identity (Coad et al. 2008) and often underpin religious beliefs, traditional knowledge and social institutions (Timmer & Juma 2005). It follows that enduring Indigenous connections to Purnululu provide a solid basis for local stewardship over the landscape.

However, this stewardship transcends the temporal, spatial and organisational scales of the Park itself. As one non-Indigenous community member said: \textit{I don’t think [Kija people] think [Purnululu] is their Park [but] I certainly get the feeling that it is part of their country.} This highlights the presence of scale mismatch, a common characteristic of social-ecological systems. This mismatch relates to administrative and cultural boundaries: Purnululu National Park exists as a spatially defined entity, whereas Indigenous affiliation with the Purnululu area does not end with the cadastral Park boundary. This mismatch is evident in the fact the Kija Native title claim extends far beyond the boundaries of Purnululu itself (Figure 4.6).

Accounting for stewardship in the Kruger study requires further investigation. Despite suggestions to the contrary (e.g. Anthony 2006), a distinct spiritual attachment to land was not evident. Community respondents did however display a clear appreciation of intrinsic benefits associated with Kruger, which provided an important connection between locals and the Park and appeared to translate into a sense of stewardship over Kruger and its resources. An interesting component of this local stewardship involved often-fervent support for tourists visiting Kruger.

Locals expressed pleasure at tourist arrivals to Kruger, \textit{sans} mention of economic caveats:

\textit{We love [tourists] they are welcome to Kruger [community member].}

\textit{I will be happy if the tourists keep coming to Kruger Park and experiencing that place [community member].}

\textsuperscript{80} Several senior Aboriginal respondents also mentioned this role as including cultural obligations to protect tourists visiting Purnululu from danger (in a spiritual rather than physical sense).

\textsuperscript{81} Aboriginal mythology concerning the creation of the world which established laws and networks of relationships between the physical, human and spiritual worlds.
This support for tourists is surprising given the history of local exclusion from Kruger as well as (forthcoming) findings indicating perceived separation from the Park and tourism. Economic benefit from Park tourism provides one rationalisation. Another possibility is perhaps these responses were predicated on what respondents believed to be an ‘appropriate’ answer. Possibly, community members expressed support for tourists because they felt this was a desired response, rather than reflecting their true feelings. This possibility is supported by the highly limited nature of interactions between locals and tourists. Both of these potential explanations are explored in Chapter 6.

Local pride, an interesting emergent property in the Kruger study, provides another potential explanation for this apparent paradox. Locals often expressed great pleasure in being associated with or located nearby Kruger: you are a tourist; you have to go to Skukuza\(^\text{82}\) because Skukuza is the place to be... go there and support our South African people [community member]. Park staff cited Kruger’s iconic status (Cornelissen 2005) a factor contributing to local pride: there’s this pride about Kruger as a national icon, and a lot of the people share that.

Parks are often ascribed with a national symbolism (Eagles 2007; Inglis 2008; Neumann 2000) and considered part of national identity (Frost & Hall 2009). This is certainly true for Kruger (Mabunda 2004; Magome & Murombedzi 2003). Local pride, therefore, presents a fundamental building block for loyalty to Kruger and a central means of improving Park–people relations. This pride can potentially be considered as an element of South African cultural norms and values centred on a respect for nature (and thus, an extension of Shangaan cultural norms of the same ilk) (Table 5.1).

In both case studies, a shared appreciation of nature provides Park managers with a key platform to engage local communities, who often illustrated their appreciation of the Parks with reference to cultural or national identity. In turn, cultural identity and relationships to the surrounding environment are emergent properties of social-ecological systems that are essential to build resilience and sustainability (Davidson-Hunt & Berkes 2003). Thus Park managers, by choosing to focus on enhancing the less tangible intrinsic values of the Parks, may potentially harness a means to improve

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\(^\text{82}\) Community members often referred to Kruger as ‘Skukuza’. It was unclear whether this was because Skukuza is the closest camp to Cork and Belfast, or because of Kruger’s historical association with forced removals.
relationships with locals. Such engagement presents an opportunity to increase ‘boundary permeability’, a term denoting the figurative and metaphorical breaking down of barriers between the Parks and local communities (see also Hoole & Berkes 2009 for discussion of recoupling social-ecological systems).

The strength of local identification with nature’s intrinsic values challenges common approaches to the management of relationships with local communities, which typically focus on addressing conflicts. These findings suggest an approach focused on building positive facets of local relationships to nature, i.e. the perceived intrinsic and non-monetary benefits of the parks, presents a viable alternative approach to build relationships and local stewardship (Allendorf et al. 2006; Bauer 2003; Gadd 2005). This approach accords with resilience thinking, which emphasises minimising negative and fostering positive interactions influencing resilience (Walker et al. 2002).

5.3 Environmental education

In the past there was no communication, no interaction... [Kruger] have changed [their mindset] a lot, their Social Ecology and environmental education and all of that, which I think will go a long way in addressing some of the needs of the community [NGO official]

In the Kruger study, environmental education emerged as a significant connection linking locals to Kruger (Table 5.1). A similar connection did not emerge in the Purnululu study as environmental education is not provided there. Environmental education is considered an important function of protected areas (Lockwood 2006) despite its subtle, intangible value (Harmon 2004). It helps to enlighten about humanity’s relationships with nature, fostering respect and understanding (Putney 2003). Education itself can take many forms including formal guided tours, fixed media such as signs or programmes aimed as school groups (Harmon 2004).

In Kruger, environmental education programmes intended to instil an ‘environmental ethic’ have run since 1999. These include visits to surrounding communities (targeting

83 In contrast, Anthony (2006) recommends a utilitarian approach as more likely to result in acceptance for Tsonga people. Research by Shackleton et al. (2008) provides support, suggesting that cultural/spiritual values are often compromised by the demands of poverty, which force people to use culturally important species or sites for sustenance or sale. Notwithstanding these studies, the strength of intrinsic values expressed in this research suggests they represent an important area of management interest in Kruger.
adults) as well as programmes targeting school children. This discussion focuses on the latter, which received far greater mention than did programmes targeting adults. School groups are brought into Kruger and given presentations by People and Conservation staff on Kruger’s environment, local history, culture and tourism. Children learn about biodiversity and how to sustain it and to identify and describe plants and animals (www.sanparks.org/people/education). In 2008/9, over 70,000 students participated in Park environmental education (SANParks 2009a). For many locals, this participation afforded the opportunity to visit and experience Kruger which otherwise may not have been possible (Table 5.1).

Opportunities to enjoy nature encourage an appreciation of natural areas, which can result in environmental advocacy (Ross & Wall 1999; Vaske & Kobrin 2001). Findings in this research suggest participation in environmental education has been influential in shaping the development of positive local attitudes towards the Park: participating in [environmental education] make me change my way of thinking about animals. Lots of things changed about me actually... I didn’t know there was a black and white rhino, but coming [to Kruger] made me change that. I used to look at an animal and all I could see was meat. If you can get that impala, that will be very very nice meal for tonight. But since coming here, I just saw the animals as very beautiful creatures that God created and that we have to do anything that is in our power to take good care of them [community member].

The apparent influence of environmental education on local perceptions is significant given theoretical and empirical arguments that values, the things considered important by people, are central in shaping behaviour (Nelson et al. 2006). Environmental education helps to instil values promoting an appreciation of natural environments and may in time lead to more pro-environmental behaviour. In the Kruger study, results indicate that environmental education fostered a conservation ethic among community members in two key ways.

One way is through the building of human resources – the skills, knowledge and education required for locals to become engaged with or employed in Park tourism. Environmental education teaches local children about the environment, skills that may one day stand them in good stead to gain employment in Kruger. Although future employment is not a Park objective in delivering environmental education, community members emphasised benefits that involvement in such programmes may produce:
Most [local] people are employed [in Kruger], and they still are going to be employed [in the future] because they are training our kids there [community member].

Kruger Park sometimes they call our school to go and learn about how can you become in future, they guide people about their careers [community member].

Results indicated a clear appreciation of intangible benefits, namely the knowledge opportunities available to school children by virtue of participation in environmental education: Kruger Park sometimes take our school children for some different information in the Park for free, that’s good [community member]. This appreciation may reflect the lack of information resources such as computers and libraries in local secondary schools. This lack may have prompted respondents\textsuperscript{84} to recognise learning opportunities as a benefit: you might not benefit monetarily, but you benefit through getting the knowledge that you want [community member], including those without school-age children and from outside the local community. This finding contrasts with other studies which indicate a more restricted appreciation of environmental education, typically limited to school teachers and students (Hoole & Berkes 2009).

Environmental education’s perceived contribution is significant given that poor (Western) education and skills is proposed as a key slow variable influencing the ability of locals to become involved with or benefit from Park tourism (Table 5.1). Yet, Indian research by Krishna (2006) tempers local optimism regarding enhanced learning opportunities, observing that education had only a slight effect on local employment, as demand for job opportunities outstripped supply. Highly educated locals remained unable to find employment, despite improvements to skills and knowledge. These findings are clearly applicable to Kruger. Population densities in areas surrounding the Park are likely to limit the effect of available employment, even for those who gain greater learning opportunities through participation in environmental education. Improving education is only a partial solution, not a stand-alone answer to employment needs (Krishna 2006). This awareness supports systems perspectives that emphasise multiple causal factors as determining local dynamics. Thus while environmental education does offer a significant benefit to local communities, by itself it is not enough to produce or maintain positive relationships indefinitely.

\textsuperscript{84} Including school students themselves.
A second way that environmental education fostered a conservation ethic is through building social connections between Park staff and locals. This link between environmental education and enhanced Park–people relations supports Anthony (2006), who describes it as improving relations between locals and Kruger staff. Njiru (2007) report similar findings from Botswana’s Mokolodi Nature Reserve, indicating community benefits derived from opportunities to learn about wildlife and be enlightened about conservation. Interestingly, Hoole and Berkes (2009 p313) propose environmental education as a means of ‘reconnecting’ local communities with authorities in Namibia’s Etosha National Park. They suggest it can also reconnect local communities with the natural environment and so foster “collaboration and cooperation in conserving biodiversity”.

For locals in Cork and Belfast, environmental education appears a vital tactic to demonstrate Park awareness and commitment to local people and it was cited as evidence of Kruger ‘working together’ with villages:

_They work together. No problem they work together, cause People and Conservation go outside the Park to preach that environmental education... to make [locals] aware. So things coming alright, it is not like before._

_There’s understanding [Park staff]._

_I think so. Because student go there to learn, to learn [community member]._

Environmental education thus presents another opportunity for increasing boundary permeability and enhancing connections between Kruger and local communities.

For many respondents, the fact Kruger was seen to be working with local communities represented a distinct shift in Park management. Certainly, Kruger’s adoption of environmental education suggests a willingness to work with locals in the changed context following the end of apartheid: _historically the Park was a little island and it was certainly viewed by many communities as a place of no access and a place of no benefit [Park staff]._ Park staff were intrigued by underlying reasons for providing environmental education: _why are we running environmental education? Do we want to benefit communities, or do we want them to understand our work better, so they support us? Who wins? Who wins? We do [Park staff]._

Research elsewhere notes the success of environmental education in enhancing relations with communities. Results indicate a widespread appreciation of Park environmental
education, although the findings were not derived from villages within ex-bantustan areas but from larger towns surrounding Kruger (Slabbert et al. 2009). These results accord with other South African research indicating benefits derived from environmental education. King (2007) for example found 44% of respondents viewed environmental education as a benefit in the Mahushe Shongwe Game Reserve. Faasen (2006) reports 19% of respondents perceived benefits from environmental education in Tsitsikamma National Park. Interestingly, this view was restricted to those whose were not the main source of household income, perhaps because those employed valued financial benefits more. In contrast, this research found people who were ‘breadwinners’ in their household were also appreciative of the benefits afforded by environmental education.

The significance of benefits associated with environmental education lies in its potential ability to reduce perceived separation from nature. Activities associated with environmental education, for instance school trips to national parks, are believed to cultivate a sense of inclusion and empathy towards nature (Schultz 2000). Therefore education can play a role in fostering stewardship (Tsaur et al. 2006) and environmental consciousness and behaviour (Eccles 2009; MEA 2005). This is especially so for younger people (Crofts 2008). Respondents recognised the relationship between education and stewardship: although [environmental education] may be in small scale, it’s making a dent, making an effect in [local school children’s] lives, because in the past, black people were not allowed to get in there, but now... [Kruger is] trying to close the gap which existed by the previous regime [community member].

Whether environmental education will instil a stewardship or conservation ethic among local communities remains to be seen. It appears a distinct possibility given the voluble support afforded to it in this research: I think the learners who are growing up now will see Kruger differently from how we, the older generation, are viewing the Park. Because in the past, the older people saw [Kruger] as ‘their’ [Kruger’s] Park. Now the children are seeing the Park as belonging to themselves. So I think it’s helping, they’re trying to reach out as much as is possible [community member]. At the very least, environmental education represents a means of developing positive relationships between Kruger and local communities. The “highly rated need” for environmental education was recognised at least two decades ago, with local communities seen as a “willing and eager audience” (Fourie 1991 p164). Environmental education thus
represents a key facet of local interactions that can be nurtured to enhance Park-people relations.

Here, a brief diversion is taken to introduce two related stewardship programmes mentioned during fieldwork. The Honorary Ranger and Steenboks programmes also aim to promote a conservation ethic among locals, by providing opportunities to act as Park ambassadors. The (adult) Honorary Ranger programme began in 1964, although official appointments did not occur until 1987. It offers volunteers opportunities to become involved in Park activities. Rangers undertake a number of training courses to qualify for membership; after this, other specialised courses may be undertaken including field interpretation, hospitality management or earth science. The Rangers support specific projects in Kruger and liaise with tourists (www.sanparks.org/groups/hr). Although figures were not available for Kruger, for SANParks in general, historically disadvantaged individuals (which include local community members) account for almost 17% of the total ~500-strong Honorary Ranger workforce. SANParks aims to increase this number by 10% annually (SANParks 2009a).

A second programme is the recently-launched ‘Steenboks’ programme, which aims to inculcate stewardship of the Park among school children (Nhlapo, pers. comm., 2008) and tackle litter issues as part of the ongoing ‘Keep Kruger Clean’ campaign (www.sanparks.org/parks/kruger/news/2008/keep_kruger_clean.php). High school principals nominate local children as Park ambassadors and disseminators of information to their peers, with involvement offering a pathway for local children into the Junior Honorary Ranger programme (SANParks 2009a).

5.4 Use of natural resources by local communities

*People see Kruger as a resource centre, when they can tap in for anything that they want* [Park staff]

A third interaction between local communities and Kruger’s natural environment centred on the use of natural resource such as fuel wood, medicinal plants and thatching grass (Table 5.1). The use of natural resources emerged as significant in the Kruger study alone, perhaps because of the greater presence of subsistence lifestyles and close proximity of locals to the Park. In Purnululu, natural resource use by Indigenous people
is permitted so long as they do not become unduly depleted and incompatible activities (e.g. hunting) is not carried out near tourist areas (CALM 1995).

Protected areas act as a repository of natural resources (Folke et al. 2009) which often are scarce in other area (Figueroa & Aronson 2006; Novelli & Scarth 2007). This is true in the Kruger study, where marked resource disparity characterises the natural environment inside Kruger and that existing outside of Park boundaries.85 This disparity positions surrounding ex-bantustan areas as natural resource-poor in comparison to Kruger, which contains natural resources that have been depleted in nearby communal areas.

Restrictions on the use of natural resources were a central point of conflict in the Kruger study. Community members criticised prohibition of natural resource use as evidence that Kruger was not operating in the spirit of ‘xa mina i xa wena’:86

I can’t take something from the Kruger... I want it but [Park staff] will say ‘no, you are not allowed’. That is why I say it is not true that xa mina i xa wena, it is not mine it’s yours [community member].

[Kruger] is theirs not ours, because when I need something there I not get it [community member].

These perceptions indicate that restrictions on natural resource use negatively influence how locals view Kruger. More specifically, restrictions contribute to the perceived separation of locals from the Park, as natural resources are not shared with local communities. The use of natural resources therefore represents a key area in which revised policy could potentially enhance local perceptions of Kruger.

Other research indicates the conflict engendered by prohibition of natural resource use, linking restrictions with poor local perceptions of protected areas (e.g. Cihar & Stankova 2006; Igoe 2006; McLean & Stræde 2003; Paudel 2006; Schwartz 2006; Spiteri & Nepal 2008). Arjunan et al. (2006) for instance, found locals who used natural resources within India’s Kalakad-Mundanthurai Tiger Reserve were opposed to

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85 Studies in the Sand River catchment in South Africa’s Bushbuckridge region found communal grazing lands often contained greater species richness relative to adjacent protected areas (Kruger itself was not included in the study) (Shackleton 2000). However, the relative abundance of species available to locals is of greater concern here than species richness.

86 A Shangaan term for ‘it’s mine, it’s yours’. Adopted by Kruger in 1998 as part of centenary celebrations; intended to help build positive relationships with Park neighbours. A sign with the slogan continues to greet visitors arriving at the Park’s Paul Kruger entrance gate (see Appendix 4).
conservation. Positive attitudes towards conservation instead reflected a lack of interest in using protected area resources. This explanation does not appear applicable in the Kruger study. Similarly, Mendez-Contreras et al. (2008) conclude conflict over natural resources, particularly the perceived ‘unjustified restriction’ of use, was complicit in damaging park/people relations in Mexico. In a South African example, Faasen (2006) reports 13% of respondents viewed restrictions on resource use as a disadvantage. While this figure represented only a small proportion of local residents, Faasen argues that many of those who resent resource restrictions were involved in poaching and thus their unhappiness should not be ignored by park authorities.

5.4.1 Demand for natural resources

Approximately one third of community respondents in this study expressed or recognised demand for Kruger’s natural resources, including wood, medicinal plants and water. Poaching of animals was also mentioned although mostly as a matter of concern rather than desired use. Typically, locals justified their use of Park resources on the basis of local poverty and the subsequent difficulty of affording basic necessities (Njiru 2007; Paudel 2006): *you need to strive to live, you need water... fire, it’s so difficult* [community member]. This justification supports assertions that the preservationist approach to conservation often conflicts with the demands of a subsistence lifestyle (Schelhas & Pfeffer 2005).

**Fuel wood**

The extraction of wood from Kruger, mostly for fuel purposes, was a prominent example of local use of Park resources (Anthony 2006; Hendry 2002; Rademan 2004): *some wood, yes; basically we are stealing the wood* [community member]. Locals collect wood from within the Park, as well as from surrounding areas, as they cannot afford alternatives. This is a livelihood activity in many marginalised South African communities, providing for both immediate personal needs (e.g. cooking, light) as well as cash income through sale (Dovie et al. 2004; Gianneccchini et al. 2007). The centrality of fuel wood to livelihoods reflects a lack of financial resources, evidenced by widespread poverty and an economic inability to pay for electricity as an alternative power source (Kirkland et al. 2007). Data indicates a strong link between use of fuel wood and poverty at macro scales, with increasing GDP correlated with access to electricity (Shackleton et al. 2008). It also potentially reflects the legacies of poor
infrastructure resulting from apartheid policies; for example, Belfast only received electricity in 1996 (Ndlovu, pers. comm. 2008).

Although increasingly scarce outside of Park boundaries, locals continue to rely upon fuel wood. This implies a limited capacity to adapt and pursue alternative livelihoods in response to increasing environmental scarcity (Giannecchini et al. 2007). McClanahan et al. (2008) support this, asserting that communities who lack options or capacity to adapt are poorly equipped to cope with even short-term restrictions on resource use imposed by protected areas. Reynolds et al. (2010) propose a similar hypothesis in discussions of subsistence communities and wood extraction in Ethiopia. In this case, the limited capacity to adapt is related to insufficient financial resources (Table 5.1). Communities may be simply unwilling or unable to comply with resource restrictions, as apparent in the Kruger study.

**Medicinal plants**

Medicinal plants were a second demand on Park resources. Again, differences in plant availability were believed to underwrite this demand: *medicinal plants is a big [issue], because there’s hardly anything left outside... there’s a huge industry in medicinal plants [Park staff].* The majority of community responses regarding medicinal plants came from traditional healers: *my only problem is that I’m not allowed to harvest something that I can use to help people [community member].* Traditional healers did not specify species they used for traditional medicine, although these can perhaps be extrapolated from Botha et al.’s (2001) inventory of species traded in the Mpumalanga region. Previous Kruger research also highlights local demand for medicinal plants; again, these typically arose from traditional healers (e.g. Anthony 2006; Botha 1998; Hendry 2002). SANParks is aware of this demand, and considers it a means of achieving closer collaboration with local communities and their greater participation in park matters (Masuku Van Damme & Meskell 2009).

Interestingly, respondents often referenced an ‘industry’ in medicinal plants, suggesting this particular issue transcends the local scale and is influenced by cross-scale market forces (local, national and international demands for medicinal plants) (Pollard et al. 2008). The complexity of the industry is highlighted by Botha et al. (2004), who depict a ‘medicinal plant trading catchment’ adjacent to Kruger. This trading catchment is a web of supply and demand involving gatherers, vendors, wholesalers and distant
markets in other parts of South Africa, Mozambique and Swaziland. Approximately 17% of medicinal plants sold by traders were sourced ‘locally’, within 50 km radius of the markets. This could clearly include harvesting from inside Kruger. The remainder of medicinal plants were from within the wider Mpumalanga and Limpopo provinces (47%), imported from Mozambique and Swaziland (33%) or KwaZulu-Natal (3%) (Botha et al. 2004).

Locally, poverty and rising populations are factors recognised as contributing to demand for medicinal plants. Both of these are proposed as slow variables influencing how local communities and Kruger interact (Table 5.1). A lack of alternative medical care and the affordability of western medicine (Botha 1998) are further factors. This latter point is interesting given it is often cheaper to consult a Western health professional than a traditional healer (Marshall 1998). There is also increasing evidence of a strong link between HIV/AIDS and the increasing use of traditional medicines (Maunda et al. 2005, in Shackleton et al. 2008). While it can have a negative ecological impact, the use of traditional medicine supports the maintenance of local cultural traditions. It also strengthens local knowledge and cultural identity, components of aggregate ‘cultural capital’ (Botha et al. 2004; Coad et al. 2008). That is, the use of traditional medicine fortifies intangible cultural values associated with Kruger that are held by locals (Table 5.1).

However, to date Park managers have largely restricted the use of medicinal plants, leading some locals to feel that Kruger’s policies are a barrier to maintaining cultural traditions. This supports assertions that many costs associated with restriction of access, including social, cultural and health impacts, are inherently hard to quantify (Coad et al. 2008). Obviously, this perceived barrier to maintaining cultural traditions fosters resentment among some locals. Moves to address inequities in resource access are underway across multiple scales in South Africa. Key national policies, for example the Constitution (1996) and Protected Areas Act (2003), emphasise social justice and the need to address inequities arising from past restrictions on natural resource use. In Kruger, Park managers acknowledge the importance of traditional practices and natural resources to locals, and have introduced policies permitting limited resource harvesting, although concerns remain regarding sustainable yield (Swemmer, pers. comm., 2008).
Kruger currently allows some regulated harvesting of medicinal plants (pepper bark and wild ginger) by traditional healers and has recently introduced trials of thatching grass and mopane worms (SANParks 2009a). People and Conservation staff are also involved in establishing a native plant nursery (Modzhuta, pers. comm., 2008); a scheme whose potential was first recognised several decades ago (Fourie 1991). Such resource harvesting trials represent a further mechanism for increasing the permeability of real and imagined boundaries between local communities and Kruger through their potential to build social networks and trust. Positive relationships may also arise from the role of resource harvesting in partly meeting livelihood requirements, thus helping locals to address the constraints imposed by widespread poverty (Table 5.1). At the same time, concerns regarding sustainable harvesting highlight the need to carefully manage the programmes and to address community expectations thereof.

Reconciling the often-conflicting demands imposed by poverty, access to resources and biodiversity protection is a complex undertaking (Crane 2008). Kruger staff emphasised the difficulties of introducing a less restricted approach to local use of natural resources: it’s a big challenge and its one that we’ve kind of got by the horns at the moment, we’re wrestling with it, there’s a lot of guys that feel very anti, the old school division, and there’s other guys that just say go for it [Park staff]. This comment reiterates earlier discussions of a struggle within Kruger over shifts to the new, more inclusive era of conservation.

Resource harvesting trials indicate that national policies promoting social justice and equity are beginning to have some effect at local scales. The Protected Areas Act (2003b) for instance is a prime example of a policy positioned to influence Park-people interactions. However the time required for these revised policies to achieve demonstrable change means that their effects on interactions and relationships between locals and Kruger are too new to be analysed. Pollard et al. (2008) make a similar conclusion regarding revised water policies in the Kruger area, arguing the policies are too new to have yet translated in practice.

Poaching of game

A third aspect of local use of Park resources was the poaching of game (Slabbert et al. 2009). Here, ‘poaching’ refers to small scale local consumption, rather than larger scale, organised attempts to kill valuable species for profit. It was not clear how widespread
poaching was, nor who was involved. This was not explored for fear of alienating respondents as well as recognition that a true account was unlikely to be forthcoming. Generally however, respondents showed disdain for poaching. Initially, this may seem a socially-desirable response given by respondents to appear ‘pro-Kruger’. Yet this appears doubtful, as respondents linked their disapproval to the need to protect jobs inside the Park:

*I don’t want people poaching the animals because there is the people working [in Kruger] so when I see him [poacher] my heart it’s a little bit not getting right cause he minimise our money [community member].

Those who want to [poach]... they forget we work here and if there’s no animals, there’s no people who can work in Kruger National Park [community member].

These quotes again suggest local stewardship over Park resources and highlight powerful economic and livelihood interests influencing positive attitudes towards Kruger (see Chapter 6). Bequest values, also linked to stewardship, were another factor behind community opposition to poaching: if they let us poach then we will kill everything, my daughter will grow up and not know what an elephant looks like. So basically it is good because [Kruger] are preserving nature. If they let us hunt, shortly there will be nothing here [community member].

Although motivated mainly by economic concerns and to a degree, bequest values, opposition to poaching indicates a respect for Park rules: I am committed to [Kruger], do the right thing. An animal, a precious animal, it’s also mine [community member]. To some extent, this apparent respect for Kruger’s rules (and by extension, its conservation mandate) may potentially reflect the influence of cultural norms respecting nature, as discussed previously (Table 5.1). Pretty et al. (2008) assert that strong cultural norms help to maintain the diversity or productivity of a social-ecological system without the need to resort to legal sanctions or enforcement, because cultural norms lead people to act in the common good. That is, respect for nature among locals may influence attitudes towards poaching. However, whether this seeming respect for Park rules reflected a genuine appreciation for conservation or arose out of fear was not always clear, suggesting a deficit of trust between locals and Kruger: we are not going to destroy the nature, because sometimes we fear that [Kruger] might arrest us, but if it wasn’t like that, sometimes we going to destroy the nature inside Kruger [community member].
As with the use of fuel wood, many community respondents justified poaching in terms of the demands of livelihoods and poverty. Interestingly, such views were also prevalent among Park staff:

_I understand [poaching], it’s because maybe they are hungry, maybe they don’t have jobs, they need to provide for the family and stuff like that. Poverty, maybe, might be the reason for them doing that [Park staff]. You want me to stop poaching in the Park, well, give me something else. Which is only fair. I mean I’ve got four kids, if I was living outside [Kruger] without a job, I’d be in here every day. Every day, no question about it [Park staff]._

These quotes illustrate how slow variables including population density and lack of money can overwhelm local norms and values related to conservation and the need to care for Kruger’s plants and animals. Livelihood security is a key concern for locals, making the receipt of food or income benefits a compelling reason to continue poaching. Such structural constraints restrict the impact that stewardship perceptions may have on pro-environmental behaviours (Nelson et al. 2006; Shackleton et al. 2008).

Widespread or indiscriminate use of collective resources can signify a lack of shared norms (Sherwill et al. 2007) and potentially indicate a failure of local trust and social relationships (Bingeman et al. 2004; Vermaak 2009). Alternatively, moral justifications of poaching indicate local flexibility and willingness of both community members and Park staff to bend rules to suit local socio-economic contexts. However such justifications strengthen perverse or negative learning, when actions are reinforced by the benefits derived (Bingeman et al. 2004), for example fuel wood or meat for consumption. The implications of this perverse learning are serious in light of research linking population density with increased demand and depletion of natural resource stocks (Baral & Heinen 2007; MEA 2005; Timmer & Juma 2005): _if [Kruger] was not there, I think a lot of [plants and animals] we get in the Park would not be existing anymore because of the population explosion [Park staff]._ Research links this chain of events stemming from population density to an eventual loss of capacity to self-organise and provide ecosystem services (González et al. 2008).
5.5 Damage-causing animals

_I feel not interested in the Park because of their animals. I had 43 cattle before, but now I don’t have even one. Because of the lions_  [community member]

Damage-causing animals (DCAs) were a fourth interaction between locals and the Kruger’s natural environment (Table 5.1), cited by more than four-fifths of respondents. DCAs are animals that move beyond the Park boundary and impact negatively on local livelihoods and welfare. In Kruger, the main DCA species mentioned were lion, elephant, buffalo, hyena, baboons and monkeys. The close proximity of Cork and Belfast to the Park, a benefit in terms of travelling to work and selling curios to passing tourists, is a disadvantage with respect to the damage caused by animals from Kruger. The impact of DCAs was clearly demonstrated during fieldwork, when villagers pointed out elephant skins lying in bushland near Belfast (Plate 5.1). The elephants had been shot by Park rangers in order to stop them causing damage in the village, while several others had been herded back into Kruger by helicopter.

![Plate 5.1: Elephant skin in bushland near to Belfast (J. Strickland-Munro)](image)

Complex, poorly understood and often sidelined in favour of other issues, DCAs are one of the fundamental challenges facing protected areas today (Madden 2004). Their costs include increased workload, reduced physical and psychological wellbeing, diminished food security and financial hardship. Ogra (2008) explored the ramifications of crop damage caused by animals emerging from India’s Rajaji National Park. Locals reported

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87 Geographical distance and lack of threatening animals precluded a similar issue in the Purnululu study.
that damage necessitates the removal and replanting of crops, repair of fences and barriers (with materials often removed from protected areas) and the implementation of deterrent measures, such as night-guarding of crops. The destruction of crops also has an immediate financial and physical impact, as families lose income from potential sales and are deprived of a food source. All of these imposed costs have a negative influence on community perceptions of protected areas.

5.5.1 Effect on livelihoods and how local communities view Kruger

DCAs had a decisive influence on how local communities viewed Kruger. Park staff recognised DCAs as a critical stumbling block to achieving more positive relationships with surrounding communities:

The DCA I’m telling you is a very big problem. And it is still souring the relationship between the Park and the community. This is the one problem I think we are still really failing to address [Park staff].

I think the problem is DCA. If we remove DCA, definitely, definitely, 120% relationship with the community [Park staff].

Villagers reinforced these views, often citing DCAs as the main reason for disliking Kruger: because of the elephants and the hippos, and the lions. That what I don’t like about the Park [community member]. This dislike contradicts earlier findings suggesting a widespread appreciation of Kruger’s animals among community members, including lions and elephants, the two species most cited as causing damage. A further element of complexity is thus added to the puzzle: local people greatly appreciate intrinsic values associated with animals, yet link those same animals to damage to livelihoods and negative attitudes.

Links between DCAs and negative attitudes towards Kruger echo other studies connecting DCAs and their impact on local livelihoods with diminished local support for protected areas (e.g. Gadd 2005; McLean & Stræde 2003). Previous research indicates that DCAs are the second most common complaint locals have regarding Kruger, after the lack of job creation. An examination of local attitudes within Kruger’s Hlanganani forum found villagers who had experienced DCA damage were less likely to form positive views of, or to believe that they would ever benefit economically from, the Park (Anthony 2006). In this study, DCAs impacted on local livelihoods in three
ways: crop damage, attacks on humans and livestock predation. The influence of these on how locals perceive the Park is explored below.

**Crop damage**

Crop damage was mentioned by over one fifth of respondents, including Park staff: *it’s a problem because [animals] are doing nasty things here they are eating vegetables mangoes so there is a problem about that [community member].* During fieldwork, baboons and vervet monkeys were observed raiding crops and respondents often mentioned damage wrought by elephants the previous night. This damage appeared related to negative attitudes towards the animals and Kruger.

Other empirical research correlates crop damage with negative attitudes towards protected areas. In Mozambique’s Maputo Elephant Reserve, De Boer and Baquete (1998) found people experiencing crop damage had less positive attitudes than those who had not. Attitudes were also influenced by the type and diversity of species responsible for the damage, as well as their origin. Spiteri and Nepal (2008) provide another example, this time from Nepal. In their study, cropping was the primary livelihood activity for 90% of respondents, 64.7% of whom reported raiding as a significant cost necessitating defensive measures such as night guarding of crops and scaring of wildlife. Crop losses and benefit perceptions were significantly related, with perceived benefits less among people experiencing crop damage. Further, they found that livelihoods influenced perceptions, with those involved in domestic chores and agriculture being 4.8 times more likely to report high crop damage than those in other occupations (Spiteri & Nepal 2008). This appears logical as these occupations would be expected to increase awareness of or interactions with wildlife.

However this latter point contrasts with the Kruger study where despite clear negative impacts, many farmers whose crops were affected by DCAs did not immediately mention them as a concern. Probing was required in almost all cases to elicit any response regarding DCAs. Rather, they displayed a distinct appreciation for the Park and nature, an apparently contradictory finding highlighting local stewardship over Kruger and its resources. One farmer described his response following elephant damage as: *my heart is hot, but after [the elephant leaves], it cool, I forget... I don’t want Kruger to shoot that animal. I say no and cool my heart [community member].* While initially angry, feelings change once the heat of the moment passes. This example
clearly emphasises the tensions between emotional connections towards Kruger and negative impacts arising from damage to local livelihoods.

Similar tensions were expressed by people in a range of occupations. One possible explanation for this tempering of negative attitudes towards DCAs may be because villagers often receive meat from animals killed (by Park staff) outside of Kruger’s boundaries: *elephants and the other animals, they are not a problem because we get meat from them when [Kruger] kills them* [community member]. Thus, a DCA event can lead to significant gains for the community, while negative impacts are generally localised to a single person or family. The underlying influence of Shangaan cultural norms valuing nature, as discussed above, provides another potential explanation for this apparent stewardship towards DCAs (Table 5.1): *most people in this area of Cork, they like Skukuza and any animal and the bush, they are liking Skukuza very much* [community member].

Indeed, some farmers apportioned greater blame for crop damage to domestic cattle, although this claim could not be substantiated. Interestingly, these claims align with Naughton-Treves and Treves (2005), who appraised the impact of crop damage in Uganda’s Kibale National Park. They discovered domestic stock, mostly goats, were responsible for almost two-thirds of reported crop damage, with wild animals accounting for a third. However, locals remained negatively disposed towards wildlife, perceiving them as government property over which they had little control (Naughton-Treves & Treves 2005). Another report from Namibia highlights the often-unmentioned contribution of livestock to crop damage, suggesting it causes a ‘high total cost to farmers’ estimated as US$1,289 per year (Sutton et al. 2008).88

Despite local appreciation and support for wildlife including DCAs, negative impacts were raised. Links between DCAs, crop damage and financial expense place strain on already impoverished villagers: *the animals give us a problem, because we are not free, we must buy maize. But if we can grow maize; we will stop buying it and spending money* [community member]. Often, locals rely heavily on subsistence agriculture, struggling with the demands of everyday living, a lack of money and inability to generate enough harvest (Novelli & Scarth 2007).

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88 Based on willingness to pay estimates for the elimination of all livestock attacks on local crops.
Crop damage is implicated in exacerbating livelihood vulnerability (Naughton-Treves 1997) through decreases in local food supply and associated financial loss. For example, Weladji and Tchamba (2003) evaluated the impact of crop damage on local livelihoods in Cameroon. They determined that staple food crops were most affected, resulting in an average 31% loss of income for locals. Financial loss occurs as, by damaging crops on which locals depend for both sustenance and income, locals must instead buy the supplies. Thus both natural and financial resources are affected. Gillingham and Lee (2003) similarly report disproportionate damage to staple crops in Tanzania. However they differ in their evaluation of financial loss, arguing the majority of crop damage events had a limited impact in terms of direct economic loss. This argument was based on the fact crop damage resulted from small to medium bodied animals, for example monkeys and birds, rather than large mammals such as elephants, which can inflict a greater damage per visit.

**Threat to human life**

The second manner in which DCAs affect local livelihoods was through threat to human life (Coad et al. 2008). Almost one third of responses about DCAs concerned attacks on humans. Several separate incidents of animals attacking, maiming and killing locals were relayed during fieldwork, including the recent death of a pregnant mother in Cork by an escapee buffalo. Such attacks have an emotive and tangible negative impact:

> Of course when animals grab some of the people, then it becomes not a good thing [Park staff].

> Lion and buffalo, they just come through and... attack people, so that people they are becoming afraid, terrified [community member].

Attacks on humans damage trust between locals and the Park: [attacks] are... the kinds of moments where you think ‘oh the Park is not a good place to be’ [Park staff], again fostering negative attitudes towards Kruger.

Park staff raised the issue of ‘perception versus reality’, suggesting that the impact of DCAs was often blown out of proportion: *DCAs, it’s not maybe such a big issue in absolute terms but it is big in perceptual terms* [Park staff]. Perceptions play a decisive role in DCA events (Madden 2004) and often differ from the realities of wildlife conflict (e.g. Siex & Struhsaker 1999). Perhaps, the propensity of community members to overstate wildlife conflicts is a means of passive resistance against park authorities and an attempt to balance out inherent power inequities (Gillingham & Lee 2003).
Over-reporting of DCA incidents therefore becomes one of few viable methods by which locals can express dissatisfaction. The perception of risk (Madden 2004) and lack of control over the issue (Naughton-Treves 1997; Paudel 2006) also contribute.

Despite the less common nature of attacks on humans versus damage to crops, community perceptions of the dangers are typically high. In Nepal’s Royal Chitwan National Park, McLean and Stræde (2003) report that despite crop raiding being the prevailing concern for locals, many respondents were ‘very afraid’ of wild elephants and 7% reported being attacked by an animal in the previous year. Undoubtedly, concerns over attacks on humans arise due to the potentially serious consequences of such events. Dunham et al. (2010) illustrates these consequences, reporting the death of 265 Mozambicans over a 27 month period from 2006 to 2008, mostly from crocodiles (two-thirds of deaths) as well as lion, elephant and hippopotamus. As in this study poverty is discussed as a factor increasing human-wildlife interaction, leading locals to risk attack by fishing waterways where crocodiles and hippopotami live in order to provide food for their families or for sale (Dunham et al. 2010).

**Livestock predation**

Predation of livestock, mostly cattle, was a third way DCAs impacted on locals in Cork and Belfast. Livestock predation comprised a third of discussions regarding DCAs:

*The problem has been emanating from [Kruger] for many years and I have much sympathy with [villagers]. Their biggest concern is what is officially called DCAs – mostly lions, harvesting cattle [Park staff].

One guy near Punda Maria, within a week, about 27, 28 of his cattle were killed. So obviously even if you love the Park, you love nature, not to that extent where you are losing 28 cattle. So that’s an impact from the Park [Park staff].*

The prominence of responses about loss of livestock in the Kruger study supports other research highlighting local discontent with loss of livestock (e.g. Botha 1998; Coad et al. 2008; Makamu 2005). This includes previous Kruger research citing livestock loss to predators as the greatest disadvantage of proximity to the Park (Rademan 2004). Anthony (2006) likewise reports DCA damage as significantly and positively correlated with proximity to Kruger, as well as numbers of livestock.

The predominance of responses about loss of livestock may reflect their status in Africa. Livestock holds complex social and cultural functions (Bruyere et al. 2009; Haag &
Hajdu 2005) and makes numerous contributions to local livelihoods. For example, livestock provides income through direct sale, is a source of investment/savings and food and can also be used to help plough fields (Cousins 1996). Livestock predation therefore has complex flow-on effects beyond that of the tangible and negative impacts on human, social and financial resources:

People they are depending on those livestock’s for educating their kids, running their families, a source of income to them [Park staff].

African tradition has it that in the rural areas, your wealth is measured by the head of cattle that you own. So it’s a tremendous loss to these people, in many ways, not just financial income, in their standing, for other reasons as well [Park staff].

The economic impact of livestock loss to DCAs often leads to local demands for compensation (Anthony 2006; Makamu 2005): if people’s livestock continue to be killed by animals, [Kruger] have to [compensate]. They have to do that [Park staff]. Weladji and Tchamba (2003) quantify economic loss arising from livestock depredation to average 18% of potential livestock income in one Cameroon study. In the Manyeleti Game Reserve, which is contiguous with Kruger, individual losses from the death of livestock were estimated as US$544, a heavy burden for poverty-stricken locals (Lagendijk & Gusset 2008). Economic loss was not quantified in this study; nor is it an easy task to undertake given livestock’s multiple tangible and intangible values: the biggest thing we have been faced with… is how do you determine the value of what they have lost [Park staff].

5.5.2 A wicked problem: Managing DCAs

The management of DCAs is complex. Multiple jurisdictions, stakeholders and perspectives are involved, all of which contribute to the ‘wicked’ nature of the issue. ‘Wicked’ or ‘messy’ situations are characteristic of complex systems (Allen & Gould 1986) and protected areas (McCool 2009): [DCAs are] an inter-government mess, actually… both the perceptions and the realities are all mixed up and there’s no workable solution. I mean even if it’s a wicked problem, you’ve just got to kind of move forward with it somehow [Park staff].

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89 Time periods for this economic loss were not qualified.
Four major stakeholders are involved: local communities, Kruger, Mpumalanga Tourism and Parks Agency (MTPA) and the Department of Agriculture.\textsuperscript{90} The Department of Agriculture currently has ownership and maintenance responsibility for the physical Park fence,\textsuperscript{91} harking back to the fence’s origins as a disease-control barrier. Kruger has legal ownership of wildlife within Park boundaries. However once an animal crosses the Park fence, legal ownership shifts to the provincial government organisation MTPA. The animal’s subsequent re-capture and fate is at the sole discretion of MTPA, unless it is a species of concern to the Department of Agriculture or Park authorities.\textsuperscript{92} If requested by the MTPA, Kruger staff will assist on a case-by-case basis. Legal repercussions are a possibility for staff operating without MTPA approval: \textit{from a legal perspective, [Kruger] rangers cannot operate outside in communities... cannot catch, cannot kill [DCAs] without permit [Park staff].}

At no stage do community members gain ownership or control over wildlife resources which impact on their livelihoods. Rather, their ability to defend themselves and their property, or adapt to a patently undesirable situation,\textsuperscript{93} is constrained by government ownership of wildlife (see for example Jana 2007; Musumali \textit{et al.} 2007; Paudel 2006). Higher scale legislation such as hunting bans (Naughton-Treves 1997) prohibits and penalises attempts by community members to address problem animals (Infield & Namara 2001): \textit{[villagers] are not allowed to defend their property or their commercial interests from [DCAs] [tour operator].} Further, most were unaware of the complex management arrangements for DCAs. Consequently Kruger, the perceived owner of wildlife, typically receives full blame for DCA incidents whether justified or not: \textit{[villagers] tend to blame us, which maybe isn’t entirely fair [Park staff].}

Management is complicated by such jurisdictional conflicts (Young 2010). The coordination of actions that require a landscape-scale response, such as DCAs, are inhibited by divisions between various departments and agencies (Kothari 2008). In the Kruger study, the complexity of DCA management causes considerable uncertainty

\textsuperscript{90} While MTPA is the responsible organisation for the study area and for the entire province of Mpumalanga; the Limpopo Tourism and Parks Agency (LTPA) holds legal responsibility for animals outside of the Park boundary in the neighbouring province of Limpopo.

\textsuperscript{91} Moves are underway to transfer ownership and responsibility to Kruger.

\textsuperscript{92} E.g. elephant ivory, carriers of diseases transmissible to domestic livestock and other diseased/poisonous carcasses.

\textsuperscript{93} Noting also adverse local practices such as erroneous corraling procedures and theft/ destruction of the Park fence, which contribute to DCA events (Anthony 2006). Local capacity to adapt to DCA events was also linked with changes (loss) in local knowledge related to living in close proximity to a protected area, indicating a loss of social or cultural memory among locals.
regarding appropriate procedures to follow. In particular, staff expressed frustration regarding the fact no official DCA policy existed outlining procedures for Kruger employees:

There is no clear guidelines, no policies [Park staff].

Nobody really knows what the process is to follow... everyone understands differently what the process is, and that’s quite tricky [Park staff].

Site-specific policy and procedures are critical in ensuring successful mitigation of human-wildlife conflict (Madden 2004). The current lack of a clearly defined operational framework is problematic for Kruger in attempting to address DCA incidents (SANParks 2009a). However, unclear operating protocols are a concern shared by all government stakeholder groups, not just Kruger. The current situation of multi-party responsibility seems inefficient, leaving each responsible authority to act largely unilaterally in response to DCA incidents. What is needed is an integrated approach to the management of DCAs.

To date, the introduction of an integrated approach has been impeded by tensions between Kruger and other government stakeholders. These tensions have fostered a situation which Kruger staff described as characterised by a lack of commitment to resolving DCA governance:

[DCAs are] not easy to solve, but gee, I don’t think people have been trying very hard; it’s just like a side-issue [Park staff].

At least SANParks goes to the meetings, the local conservation authorities that are actually responsible on paper when our animals cross... they even avoid the meetings, or they don’t even have staff enough to go to the meetings. The whole thing doesn’t have any credibility [Park staff].

The lack of collaborative governance between government stakeholders can be modelled as a simple feedback. In this feedback, lack of collaboration fosters less trust and perhaps, suspicion of other parties. This suspicion/lack of trust then leads to competition between stakeholders, exacerbating the lack of collaboration.

Poor communication between Kruger and other government authorities contributes. One MTPA respondent acknowledged communication delays as problematic: the quicker you can react on a problem, that builds trust... Which makes it a little bit of a problem here, because we don’t manage [Kruger]. So when [DCAs] do get out, by the time we
often hear about it, it has done a lot of damage [government official]. Poor communication limits the exchange of information between authorities and precludes a timely response to DCA events (Madden 2004), which exacerbates conflict and lack of trust among authorities and local communities. Anthony (2006) agrees, discussing multiple examples of poor communication affecting reporting and response to DCA events, including within government departments as well as between government departments and local communities, Kruger staff and Tribal Authorities.

Respondent perceptions indicate the apparent intractability of the DCA issue, which seems to suggest the existence of spatial mismatch. Galaz et al. (2008) explain spatial mismatch as a disparity between administrative and resource distribution boundaries. This explanation clearly applies to the fragmented nature of DCA responsibilities, where three authorities hold differing responsibilities for a resource (DCAs) that can freely cross boundaries of responsibility.

The division of rights and responsibilities with respect to DCAs amounts to an overall position of limitation or disempowerment, with each stakeholder inadvertently constrained by another. For instance, Kruger is constrained by their lack of legal ownership once an animal crosses the Park border, as well as by the fact fence ownership and maintenance currently rests with the Department of Agriculture. MTPA is constrained in that often, there is a significant time lag between an animal leaving Kruger and their notification. This lack of integration inhibits collective action and so impedes the capacity to adapt (Eakin & Lemos 2009) and to shape an appropriate response to DCAs. Without involving other stakeholders, individual authorities are unlikely to be able to produce an appropriate response to an issue that clearly crosses multiple jurisdictions and scales of decision-making.

The negative effects of DCAs on local communities and their livelihoods have a detrimental effect on local attitudes and contribute to local alienation from Kruger. The prominence of DCA concerns reinforces the locally-held view that wildlife and conservation takes priority over community welfare and livelihood considerations (e.g. Makamu 2005; Musumali et al. 2007): first we complained about the lions that killed our cattle. We complained but [Kruger] did not react until we killed one [community member]. McGregor (2005 p365) similarly links perceived inaction by Zimbabwean authorities against crocodiles threatening livelihoods and life with a deepening of local
attitudes that “wildlife is more important than us”. This perception bolstered local animosity towards management authorities as well as companies, individuals and tourists who benefit from seeing local wildlife (McGregor 2005).

Clearly, DCAs represent a pivotal issue at the interface of social and ecological realms in the Kruger study. Their increasing political prominence following South Africa’s transition to democracy has prompted changes to national policy intended to address the current complexity of governance. In particular, the Protected Areas Act (2003b) and Biodiversity Act (2004) tackle legal responsibilities and provides a positive step towards breaking the political deadlock over DCAs:

The legislation now has changed, which means we are actually obliged to do something about it. And the good news is, [SANParks] have actually made the decision that we will actually do something about it [Park staff].

The new Act, Acts, actually put the responsibility fairly and squarely on our shoulders, SANParks [Park staff].

So far, national guidelines for the management of DCAs are not in place, despite the Department of Environmental Affairs and Tourism aiming for their approval by 2009/2010 and implementation from 2011 (DEAT 2009). In Kruger, similar guidelines are still under development: we are working hard to get Government to look at it. A draft has been developed, ‘Norms and Standards on DCAs’ [Park staff]. Once finalised, these guidelines will provide a standardised operational procedure for dealing with DCAs and will go a long way in demonstrating Park commitment to resolving DCA issues with local communities. Both of these policy developments indicate an attempt to influence the management of DCAs and their impact on local communities. However, their practical impact is not yet evident, given time lags between the implementation of a new policy and tangible ‘on ground’ recognition of its effects. Thus, the effect of revised policies presents an important area for future monitoring and research.

5.6 Summary

This Chapter explored interactions between local communities and the natural Park environments, revealing a complex and contested relationship between social and ecological realms. One key insight emerging from the data was that local communities are distinctly appreciative of a range of intrinsic socio-cultural values afforded by the Parks (Table 5.1). This intrinsic appreciation appears to provide a solid foundation for
local feelings of stewardship over the Parks and their resources, although the context of stewardship differs significantly between the two case studies. These intrinsic values appear to be a product of, as well as contribute to, underlying cultural norms and values linked to an appreciation of nature. In Kruger, the Park’s iconic status also seemed to play a role, enhancing local pride in living close to Kruger.

In the Kruger study, Park-run environmental education, the use of natural resources by locals and the impacts of damage-causing animals emerged as other key issues (Table 5.1). How these issues influence local involvement and benefit from Kruger is partly predicated on their relationship to key drivers. For instance, the clear benefits derived from environmental education were explicitly linked to its role in helping to build local skills and knowledge. Similarly, widespread poverty motivated local use of Kruger’s natural resources although cultural norms and values assumed a clear role in the case of medicinal plants, where their extraction was linked to the maintenance of traditional customs and practices.

Damage causing animals were a fourth issue in the Kruger study (Table 5.1). This issue is complicated by often-conflicting views that result in an apparent tension between appreciation for Kruger’s animals and anger over the damage caused by them to local livelihoods. Unclear and at times uncooperative management arrangements also contribute. Chapter 6 continues the exploration of key issues characterising the Kruger and Purnululu case studies, reporting on how these local communities interact with Park tourism.
Chapter 5 explored interactions between local communities and the natural environment of the Parks, portraying great appreciation tempered in the Kruger study by restrictions on resource use and damage caused by Park animals. This Chapter describes how local communities interact with Park tourism and the opportunities offered by it, building upon and enriching the previous Chapter’s description of the case studies. Findings discussed in this Chapter mostly relate to Phase 3 of the conceptual framework (Figure 6.1). They provide an account of key interactions between local communities and Park tourism and governance based on field interviews and participant observation, with representative quotes used to illustrate concepts. How these issues relate to system drivers (Figure 6.1, Phase 2) is also explored.

**Phase 1. System definition**
- System components
- Scale

**Phase 2. Past system change**
- Drivers & disturbances
- Historical profile
- Adaptive cycle

**Phase 3. Current system state**
- Key issues
- Governance

**Phase 4. Change & thresholds**
- Future scenarios
- Indicators
- Thresholds

**Figure 6.1:** Outline of the research framework and aspects covered in Chapter 6

A number of locally significant interactions between locals and Park tourism were evident from the data, with greater emphasis again placed on the Kruger case study. Issues included the ability of locals to visit the Parks, employment and local involvement in Park governance (Table 6.1). These issues were contested and influenced by a range of drivers that affect the ability of local communities to engage with Park tourism.
The ability and opportunity for locals to visit the Parks was an issue for both case studies (Table 6.1), largely related to the widespread poverty and welfare dependence that characterise the communities. Employment was another decisive issue for both case studies, with opportunities driven by tourist arrivals. However the ability of locals to gain employment was influenced by a range of structural factors including poor education/skills and money to start businesses. The involvement of locals in Park governance was a third issue for the case studies, and greatly influenced in the Purnululu study by cultural differences between Indigenous and non-Indigenous parties. The interplay between these key issues and drivers is further explored throughout the Chapter.

6.1 Locals visiting the Parks

I do like [to go to Purnululu], but how am I going to get there?

[community member]

Visits by local people, including the physical and financial ability to visit the respective Parks, was a central concern for community respondents. Visits by locals are believed necessary to foster local support for a given protected area, with visitation typically associated with the development of a general conservation ethic (Eagles 2007). This development is based on assumed relationships between visitation and environmental awareness and support (Bushell & McCool 2007; Bushell et al. 2007). Similarly, tourism studies suggest frequency of visits to a tourism area as one of the largest predictors of personal benefits derived from tourism (Andereck & McGehee 2008).

In this research, visits to the Parks by community members were variable. In the Kruger study, locals from Cork and Belfast rarely visited for pleasure (4 of the total 62 community members interviewed). Most repeat visits were attributed to past or current Park employment (20 people) or outreach programmes (16 people). In Warmun, all

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<th>Issue</th>
<th>Driver</th>
<th>Lack of money</th>
<th>Poor (Western) education &amp; skills</th>
<th>Cultural norms &amp; values</th>
<th>Tourist arrivals</th>
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<tr>
<td>Ability to visit the Parks</td>
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<td>Employment</td>
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<td>Involvement in Park governance</td>
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X: relationship exists
community respondents had visited Purnululu although this was sporadic, with weeks or months between successive trips. This itself was unexpected, given assumptions that locals would visit more frequently due to ‘on country’ trips for Law or women’s business, for fishing and hunting, or maybe for native title meetings. Perhaps the fact most locals had not visited the Park in the last six months reflects the timing of research soon after the wet season, when heavy rains restrict access to Purnululu. Another explanation is that maybe locals had visited the wider Purnululu area, rather than the Park as defined by cadastral lines. Indigenous respondents may thus have been on country, yet not within the confines of the Park itself. The existence of this possibility underscores differences in how Indigenous and non-Indigenous people view the Purnululu area.

Two main factors appeared to influence whether and how local people visited their Park. These were transport difficulties and entrance fees. The influence of each of these is explored below.

6.1.1 Transport

Transport difficulties influenced visitation as the vast majority of locals do not own a suitable vehicle to visit the Parks. Transport difficulties were more prevalent for Purnululu, likely owing to the lack of public transport to the Park. Transport did not figure centrally in the Kruger study, in contrast to other South African research discussing transport as a barrier to locals visiting nearby national parks (e.g. Faasen 2006; Simelane et al. 2006). Perhaps this reflects the fact a network of public minibuses provides access into the Park, although usually these are patronised by Park employees only and are not involved in touring services.

Typically, community respondents from Warmun expressed a desire to visit Purnululu together with mention of lack of transport to do so:

We got no motor car to go see Bungle Bungles [community member].

[Purnululu is] inaccessible for people in Warmun. They don’t – can’t afford – big four-wheel drives and to wreck their car to go in there. It might be great for the baby boomer with his expensive car, but it’s no good for

94 For three community respondents (two non-Kija and one non-Indigenous person), this involved a helicopter flight over Purnululu rather than a physical visit.
95 An enclosed vehicle is required for Kruger; Purnululu necessitates a high-clearance four wheel drive.
your local trying to bash his Ford in there, he can’t afford to wreck his tyres or whatever [community member].

The ramifications of transport limitations are such that the ability of locals to visit Purnululu is restricted, as also reported by Brown (2009) regarding Indigenous visits to Australia’s Yuraygir National Park. More generally, Walsh and Mitchell (2002) discuss the high value placed upon vehicles by Indigenous people yet difficulties in obtaining them owing to costs. Transport difficulties are perhaps attributable to the prevalence of CDEP income in Warmun (Warmun Community 2007): *overwhelmingly the only employment we can offer here is CDEP* [community member]. CDEP delivers a limited income to recipients, rapidly consumed by the high costs of goods, services and transport (Clare, pers. comm. 2008). Thus, the prominence of CDEP (as well as other welfare payments) in Warmun implies a general lack of financial resources. This slow variable effectively precludes car ownership for many locals (Table 6.1). In lieu of funds to purchase and maintain appropriate vehicles, locals wishing to visit Purnululu must arrange to share transport with another. Transport difficulties also partly reflect a lack of requisite skills, as many locals do not hold valid driving licences (Clare, pers. comm. 2008) and so risk legal repercussions in driving to Purnululu.

Regardless of underlying cause, transport difficulties result in the isolation of the Warmun community from Purnululu: *there’s just no real connection to the Park, physically it’s separate, it’s like an island* [community member]. Consequently, some community members see Purnululu as more of a playground for rich tourists than a place for locals. Interestingly, the requirement for a four wheel drive vehicle has also been found to contribute to tourist perceptions of exclusion, leading some tourists to characterise Purnululu as “only for the rich” (Lane & Waitt 2007 p113). For many tourists however the difficulty of gaining entry to Purnululu is part of its appeal.

### 6.1.2 Park entrance fees

In the Kruger study, Park entrance fees were a decisive influence on visits to the Park by community members. Entrance fees were not significant in the Purnululu study because Indigenous people with living leases in Purnululu enter free of charge, along

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96 The amount paid depends on wages paid by individual CDEP providers; at the time of research the average wage was approximately AUS$990 (~ US$847) for a 60-hour fortnight. Census data provides a much lower estimate, indicating an average fortnightly income of AUS$380 (US$325).
with their extended families. Entrance fees therefore do not influence the ability of local (Indigenous) people to visit Purnululu. This long-standing management policy reflects understanding that requirements to pay entry and camping fees poses an affront to Indigenous people accessing country (Brown 2009).

In Kruger, locals must pay an entrance fee. This requirement was linked to the fact although the vast majority of community respondents (56 people out of a total 60 villagers interviewed) had visited Kruger at least once, only four people actually visited for pleasure, and paid for their entry. The remainder entered Kruger for free, either for work, as part of environmental education or during free events. This disparity in free versus paid visits suggests that financial constraints were complicit in limiting visits by locals (Table 6.1).

As part of attempts to improve Park-people relations, Park managers have introduced a ‘half price entry permit’ where locals within a 20 km distance of Kruger pay a reduced entry fee. The permit is intended to encourage local black people to visit Kruger as well as confer the perception that management regards local residents as neighbours. As put by one People and Conservation senior staff member: you can have a person in Jo’burg who is also a citizen of South Africa, but he is not affected by [Kruger’s] activities in terms of damage causing animals. He has little to worry about our impact. But [people] staying close by, every day is seeing open vehicles and buses coming to Kruger, the assumption is that the Park is making a hell of [a lot of] money, though [that] is not true. So we say ‘you don’t have money, you also want to come to the Park, have a half price entry permit’... that to me is also a better way of saying them being neighbours [Park staff]. At the time of research, the permit entitled locals to pay a reduced entry fee of 17.5 rand (US$2.30), half that of other South African citizens.

Tiered entrance structures, where entrance fees are differentiated based on place of residence, are now commonplace in southern Africa (Scholes & Biggs 2004). However, community respondents were generally unaware they were entitled to a reduced entry fee.

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97 This figure may be an under-representation of actual visitation, as some respondents may have been reluctant to divulge entrance into Kruger for illegal purposes, e.g. poaching. However, the figure is believed to be a fairly accurate as many respondents volunteered information relating to their entrance into Kruger to illegally collect resources.

98 This distance correlates to community forums, c.f. Figure 3.4.

99 This fee has since risen to R40/day for South African citizens. International visitors pay a greater fee again; R160 per day (US$18.30).
fee, and repeatedly suggested the need for price concessions: *they should make us pay less, not the exact fee because we are locals... if [tourists] are paying 35 rand; we should pay more like 15 or 16 rand, not the exact fee. Because it is expensive and most of us, we are not working* [community member].

A lack of awareness of the tiered entry structure implies poor communication between Park managers and locals. Consequently, efforts to build local stewardship and foster links between local communities and Kruger are undermined, as locals do not visit the Park. As Hahn *et al.* (2008) emphasise, the ability of a social-ecological system to adapt depends on social networks, whose strength is determined by the ability to exchange information. Investments in weak bridging links (Hahn *et al.* 2008; Olsson *et al.* 2006) through a strengthening of social networks between staff and locals may improve communication, as well as enhancing the overall system resilience.

While poor communication potentially limits local visits to Kruger, financial constraints prevent many locals from visiting, regardless of price concessions:

*I don’t have enough money to get the passport to take my family to Kruger and myself* [community member].

*I’ve never been inside [Kruger]. I’ve got no money to go in the gate* [community member].

Local communities in the Kruger area are typified by high unemployment (DWAF 2008). A lack of money to pay for entrance fees thus appears a logical constraint to local ability to visit Kruger.

Discontent over entrance fees and the subsequent inability to visit the Park was cited as evidence of *xa mina i xa wena* existing as rhetoric only, implying Kruger was not really ‘working with’ local communities to improve Park-people relations. When questioned as to whether or not they felt as if Kruger was ‘their’ Park, indicative community responses included:

*It’s not true. Because I cannot freely get visit the Kruger Park. I must pay, why [am I] not allowed to go free if *xa mina i xa wena* [community member].

Maybe if I would be going around or visiting the Park I would know *xa mina i xa wena* [community member].*
High entrance fees can preclude those with lower incomes from visiting a protected area (Bushell & McCool 2007). Previous African research indicates low visitation by locals to nearby protected areas, including Anthony (2006; 2007) who reports 72.9% of locals surveyed from Kruger’s Hlanganani forum area had never visited the Park. This figure contrasts with Rademan (2004), who found 75% of locals adjoining a southern area of Kruger had visited the Park. Anthony’s (2006; 2007) findings are also low in comparison to other sub-Saharan research, which typically indicates a greater visitation rate among locals (e.g. Faasen 2006; Gillingham 1998; Mkanda & Munthali 1994; Picard 2003). Much previous research does not discuss reasons underlying low visitation by nearby residents to protected areas; perhaps because it was peripheral to research interests. In studies that did investigate reasons for poor visitation, cost of entry figured prominently. For example, Faasen (2006) found cost of entry restricted visitation for 36% of respondents to South Africa’s Tsitsikamma National Park and Simelane et al. (2006) identified financial limitations as a barrier for 25.8% of locals in their comparison of five South African national parks.

**Links between financial constraints and perceived separation**

The role of financial constraints in precluding the ability of locals to visit Kruger was reinforced by links between the affordability of Park entrance and perceptions of belonging. One community member summarised this as *some who can afford to visit the Park, they feel like they own the Park, yes [community member]*. Wealth significantly influenced local perceptions of benefit in Nepal’s Annapurna Conservation area, with wealthy respondents being twice as likely to report high levels of benefit than poor respondents (Spiteri & Nepal 2008). These findings suggest that people with greater financial resources enjoy a more positive relationship with protected areas. In contrast, those who cannot afford to visit Kruger expressed a clear sense of separation from the Park and tourism, intimating a lesser appreciation of benefits. The following quote is indicative of community sentiment: *Kruger Park is so far from me; maybe I will die before I go to Kruger Park. I do not have the money [community member]*, indicating that despite geographic proximity, a wide distance separates locals from Kruger.

The perceived separation of community members from Park tourism was emphasised by local identification of Park visitation as a privilege of white tourists who can afford it (Burns & Barrie 2005):
The things in [Kruger] are very expensive; they’re not meant for local people [community member].

Some come with the big money only to see a lion; we Africans cannot do that. That’s why you see we are working there [community member].

Other research reports perceptions among community members that park tourism is a privilege for rich, typically white, foreigners (e.g. Mkanda & Munthali 1994; Novelli & Scarth 2007; Simelane et al. 2006). This suggests community members often view their role as restricted to serving tourist needs, rather than being involved, or indeed holding the right to, enjoy Kruger as other people do. Kepe (2009) supports this implied dichotomy between locals and tourists, arguing that protected areas in South Africa are commonly perceived as the domain of whites or foreigners. Local black communities are seen as dependent on those tourists for poverty alleviation through the provision of employment, sharing of tourism revenues and sale of curios and cultural services.

Identified differences between tourists and locals included disparities in knowledge and understanding of the Park. Locals equated the right and privilege to learn from Kruger as a tourist benefit:

[Tourists] coming from overseas come to Kruger Park. Me staying here in Mpumalanga [I] don’t know the Kruger Park [community member].

I am not the tourist I am just sitting here I know nothing about Kruger Park [community member].

Reasons behind this strong ‘them and us’ view may lie in the fact tourism in South Africa has historically been a white domain that largely excluded and alienated black people (Briedenhann & Wickens 2007; Ramchander 2007). This trend continues to the present, with the majority of visitors to South Africa’s protected areas remaining white (South Africa Info 2005, in Kepe 2009). Garland (2008) argues feelings of alienation are inherent in African conservation, reflecting industry preoccupation with foreigner desires and resources. This alienation arises from “structural inequalities that characterize the position of African people within the global symbolic and political economies of African wildlife conservation” (Garland 2008p 52). That is, African conservation displays a dichotomy grounded in a history of racial inequality between

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100 Black visitation has increased over the last decade, although this increase has not been statistically significant.
foreigners and locals, resulting in the alienation of locals from conservation (Garland 2008).

The separation of locals from Park tourism was evident in beliefs emphasising tourists, not locals, as central to Kruger’s purpose and existence: *the main purpose of Kruger as a whole is to conserve the nature for the tourist to come and experience that conservation* [community member]. Rademan (2004) reports a similar finding from villagers on Kruger’s southern boundary, where 81% of respondents believed Kruger to be a destination for wealthy tourists. Interestingly, this belief was stronger among people who had visited Kruger than those who had not (Rademan 2004), suggesting that visits to Kruger did not influence perceptions of the Park as a place for rich tourists. Anthony (2007 p241) supports this inference, concluding “mere visitation to [Kruger] by its neighbours does not significantly improve attitudes towards the Park”. Employment proved a more decisive influence on positive attitudes, as explored below, likely because of the financial gains involved.

Perhaps because of links between financial constraints, entry fees and poor visitation by locals, community members were distinctly appreciative of events held inside Kruger which they can attend free of charge. Anderson (2006) and Faasen (2006) report similar appreciation in other South African research. Usually, these events are held to mark a national day of importance, for example South African Heritage Day or Kruger’s 110th birthday. Respondents from all groups remarked on the significance of such events in increasing the ability of locals to visit Kruger and in improving Park-people relations: *when there is a celebration, they call the people of Cork to go [to Kruger], even if they are not working there, they go and celebrate with them* [community member]. Interestingly, Faasen (2006) notes only three local community members considered free access to South Africa’s Tsitsikamma National Park a ‘very important’ benefit. In contrast, residents of Cork and Belfast were widely appreciative of opportunities for free entrance to Kruger.

Free entrance to high-profile events represents an attempt by Park managers to develop social networks with local communities, with the intent of enhancing trust and Park-people relations. In other words, an example of initiatives that help increase ‘boundary permeability’ and build connections between the Park and locals. This approach appears
successful, with locals typically citing free events as examples of ‘*xa mina i xa wena*’,
of Kruger working together with communities:

*There is something good the Park is doing for the communities, they get to*
*come inside the Park for free* [community member].

*If there is some function, [Kruger] do invite us just because we are neighbour*
of Kruger National Park. *So we benefit a lot of that* [community member].

### 6.2 Employment in Park tourism

*We are benefiting something because they are giving jobs at the Kruger*
*[community member].*

Employment is one of tourism’s main development advantages (Goodwin 2002) and
provides an economic link between local communities and the Parks. These links,
including the purchase of local goods and services by tourists, park tourism employees
and the parks themselves, impact significantly on community perceptions of a protected
area (Eagles & McCool 2002). Community members were employed in the Parks in two
main ways, the first being through roles in Park management or tourism operations. The
second means of employment involved the derivation of income from businesses or
activities based upon the Parks, for example the production of artwork in the Purnululu
study. In the Kruger study, income was derived from roadside stalls selling goods to
passing tourists and involvement in Government-run poverty alleviation programmes.

Employment in Park tourism operations was extremely limited in Purnululu, with only
two Indigenous people employed by DEC as assistant rangers/general hands at the time
of research.\(^{101}\) One of these was ‘local’\(^ {102}\) as defined in the context of this research;
the other was a Djaru person based in Halls Creek. No local Indigenous people were
employed by tourism operators, despite this being a licence condition (see Chapter
4.4.3). Respondents attributed this to a lack of motivation, skills and financial resources
necessary to sustain employment in the Park (DEH 2005) (explored below).

In Kruger, nine community respondents were employed in Park tourism operations in
positions including community outreach, tour guiding and frontline operations (e.g. gate

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\(^{101}\) Since then, two 0.8 full time jobs have been created for Indigenous ranger assistants. These are
permanent positions not subject to CDEP funding.

\(^{102}\) From Warmun or an associated outstation.
security, housekeeping, tourist check-in). Such employment was a highly appreciated benefit, even among people not currently working there. Perhaps this reflects the great need for employment for many people in South Africa’s former bantustans (Francis 2002):

*If there is no job the people cannot survive you know. The Kruger National Park it helps the people [community member]. [Kruger] generate jobs for people, most of them are working here you can see, even me, because of Kruger National Park. Without Kruger National Park where should I be now? Maybe I should be [in] a gangster paradise or something [Park staff].*

In both studies, employment in businesses and activities associated with the Parks was more prominent than employment in core Park tourism operations. In the Kruger study, eleven community respondents gained an income from businesses associated with Park tourism. A number of community respondents mentioned employment in Government-run poverty alleviation programmes such as Working for Water or Wetlands. These programmes address environmental concerns such as alien vegetation and restoration of water flows while simultaneously attempting to address poverty, employment equity and skills development ([www.epwp.gov.za](http://www.epwp.gov.za)).

Traditional dancing was another means of employment, offering locals the chance to display local culture to tourists while generating income. However the majority of employment outside of central Park and tourism operations involved the production and sale of goods at roadside stalls. The existence of curio, produce and firewood stalls along entrance roads is a common feature of protected areas in remote or marginalised areas. This is a consequence of the general inability of locals to access tourists once they are within park boundaries (Goodwin 2002; Goodwin & Roe 2001).

Kruger also offers community members opportunities to supply crafts for sale at a formal, Park-sponsored curio stall located inside the Paul Kruger entrance gate.\(^\text{103}\) Both the Park-sponsored and roadside stalls were viewed as a benefit to local communities:

*The curio shop at the gates... we try and assist communities, in this way tourists and the Park can impact positively on communities [Park staff].*

\(^\text{103}\) Park-sponsored curio stalls offer built infrastructure to display goods and only sells locally produced curios. In contrast, roadside stalls lack facilities/weather protection and typically stock a much greater proportion of imported than locally produced curios.
Without Kruger Park, [sellers] won’t have that kind of a market at the gate; those are benefits [community member].

Other research indicates that locals perceive tourist patronage of curio stalls as an important benefit of park tourism (e.g. Sekhar 2003; Stronza & Gordillo 2008). For instance, locals from Makoko village close to Kruger’s Numbi gate cited tourist patronage of local stalls as a major benefit of the Park (Rademan 2004) and indicated a level of dependence on tourism (Spenceley & Goodwin 2007).

Benefits derived from curio sales are tempered by the fact locals expressed a sense of dependence on tourists for economic gain: Kruger must keep going on and help us as I am making a living because of the Kruger Park and because of the tourists passing here [community member]. Interviews with community members clearly linked Kruger and tourism with the ability to earn an income (Table 6.1):

The area we are here, there’s no mines, no factory. [Kruger] is the factory near us you see, that’s why we are grateful for that [community member].

If there was no conservation, then there would be no tourists coming here and if there were no tourists, the people outside from the communities, would not be benefitting anything from the Park [community member].

This dependence was recognised by non-community respondents also: all those little curio stalls on the sides of the roads... the fact is if tourists weren’t driving up and down the road, those curio sellers wouldn’t be there [tour operator]. This perceived dependence on tourism for income is risky, given tourism’s demonstrated volatility and susceptibility to external influences (Neto 2003) such as disease outbreaks and economic downturns. Dependence is likely associated with the prevalence of informal employment predicated on Park tourism (e.g. curio and produce stalls). The lesser availability of alternative sources of income such as government welfare in South Africa may also provide some explanation for perceived dependence.

In Warmun, one community respondent was employed at the Turkey Creek Roadhouse, which receives tourist trade: [tourists] stay at our Roadhouse, some income [is] generated for our community there... to the extent that we provide accommodation and meals and so forth for tourists, there is some benefit [community member]. Four community respondents produced artwork for sale (Plate 6.1). In Australia, the Indigenous art industry continues to grow and achieve international recognition (Altman
offering those involved the potential to make significant economic gains (Mercer 2005).

Plate 6.1: Artwork depicting Purnululu’s beehive domes104 (J. Strickland-Munro)

Warmun is home to a major art movement (Yerbury 2003) and several internationally-renowned artists (McCulloch 2008) whose profile helps to generate publicity for Purnululu and the wider region. Fifty-five community members are currently involved in painting. Art sales can provide a substantial income for welfare-dependent community members: every Tuesday [we get] money from paintings, at least $100 [community member]. The tangible benefit derived from receiving an income in a community where other avenues of employment are limited is evident: we get money when we painting [community member]. Although at times sporadic, the sale of art from Warmun can produce income well into the tens of thousands. The Warmun Art Gallery produces an annual income in excess of AUS$1 million (~US$855,000) (Brereton et al. 2007).105

Involvement in artwork production also potentially affords several non-pecuniary benefits (Table 6.1). First, by offering experiences in interacting with tourists, it may build skills and knowledge required to enhance the ability of locals to engage with Park tourism. Second, tourist interest in local culture can support their revitalisation or preservation and contribute to outsider recognition of local culture and traditional knowledge, potentially improving the confidence of local communities (Scheyvens 1999). Tourist appreciation and demand for cultural artefacts can also strengthen local traditions and practices, contributing to cultural capital (Tao & Wall 2009) and

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104 Purnululu. Natural ochre and pigment on canvas, 90x30cm. Researcher’s painting purchased from the Warmun Art Gallery.
105 Much artwork produced in Warmun is sold directly to art galleries on the east coast of Australia and to overseas; these sales often produce very significant incomes for community members. For all sales, the gallery retains 40% (after tax) and 60% goes directly to the artist.
strengthening involvement in the customary economy (discussed in Chapter 6.2.1). Caution is warranted however, as while tourist interest can help keep culture alive, performances or productions for tourism may lead to the commodification of culture (Trau & Bushell 2008) and the modification of cultural traditions to suit tourist demand.

The role of art in fostering ‘cultural communication’ (Ateljevic & Doorne 2003) between locals and tourists is another way that artwork production may reinforce Indigenous cultural capital. However, Warmun respondents described interactions between tourists and themselves as limited in both frequency and extent:

The community is quite separated from [tourists] apart from the Art Gallery [community member].

[Tourists] just go to the art centre, [I] don’t talk to them; they just drive through and out [community member].

These limited interactions restrict tourism’s ability to promote cultural exchange. The apparent disconnect was summarised by one community member as: the community are pretty much disengaged from the tourism sector. Perhaps, this disconnect was partly underlain by community perceptions of tourist disinterest in Indigenous culture:

They not interested in Aboriginal people. They like taking stories of somebody else, just come for a look then go on [community member].

Tourists... just want to see places, gallery, buy work, off they go [community member].

Limited interactions between locals and tourists in the Purnululu study also led to perceptions of inequity regarding benefits: I think that any benefit is minimal… because there is a lack of interaction between the Park and Warmun [community member]. Limited opportunities for locals and tourists to interact diminishes the ability to benefit, which depends on access to resources (in this context, tourists) (Ribot & Peluso 2003) through the. Some respondents felt ‘rich’ tourists were passing through Warmun but not delivering economic benefits, for example through cash purchases, to the community: there’s a lot of money passing through Warmun but I feel there’s not a lot of money spent in Warmun [Park staff].

While data quantifying the economic impact of tourism on Warmun were not available, these perceptions do not explicitly acknowledge tourist patronage of two local
businesses, the Turkey Creek Roadhouse and Warmun Art Gallery. It may be that locals feel economic returns from these two businesses are small relative to money spent elsewhere. Alternatively, it might reflect the fact that income from art sales is not spread among the wider community but rather is retained by the Art Gallery and artist. Further, it does not acknowledge benefits accrued via tourist patronage of scenic helicopter flights departing from the Roadhouse, the owner of which pays an annual lease fee of AUS$15,000 (US$13,500) per year to rent the land. This fee provides further revenue for the community (Clare, pers. comm., 2008).

Tremblay (2008) describes an analogous disconnect in Australia’s Uluru-Kata Tjuta National Park. Uluru is a major tourist icon and principal economic driver for the region, Tremblay however argues that a ‘significant economic blockage’ exists between Park and tourism revenue and the socio-economic welfare of local Indigenous communities (see also Reid et al. 2004). This claim is illustrated through reference to sub-standard Indigenous living conditions and lack of job creation (Tremblay 2008). This explanation does not appear to account for the annual rent payments to the Central Land Council, a representative body for traditional owners of the area, which provide significant income. These payments currently stand at approximately AUS$150,000 (US$121,000) per year in addition to 25% of Park revenue (Parks Australia 2009), and are used in ways decided by the Uluru-Kata Tjuta Aboriginal Land Trust. In total, traditional owners received AUS$1.837 million (US$1.49 million) in rent and revenue payments in 2008/9 (Director of National Parks 2009b).

A similar although much smaller set up exists in Purnululu, through the existence of a central ‘kitty’ for use of the Purnululu Park Council in tourism-related ventures within the Park. Kimberley Wilderness Adventures, one of Purnululu’s safari camp operators, fund this money and contribute AUS $5.00 (US$4.30) per tourist. These funds represent a valuable source of collateral for the Park Council to initiate involvement in Park tourism although to date a use for the money has not been decided and the funds continue to grow.

A similar disconnect between locals and tourists characterised the Kruger study: I seen tourists, but I don’t speak to them because they just go into Kruger National Park [community member]. For many protected areas, stalls at park entrances often provide the only link between tourists and local informal economies (Goodwin 2002; Goodwin &
Roe 2001). This is true of Kruger, where roadside sales represented the extent of local interaction with tourists outside of the Park: *if [tourists] stop here, they stop at the little markets which are here to buy... but otherwise we don’t communicate with them outside [community member].*

Typically, only a small proportion of tourists stop at such stalls, limiting opportunities for direct interactions and financial exchange between locals and tourists (Bruyere et al. 2009; Dahlberg 2005). As a result, sales are variable: *it is no surprise to me when two or three days no tourist stopping here [community member] and usually on a small scale: it’s not enough, because often they are just buying one item then they go, doesn’t really generate a lot of money [Park staff].* The limited opportunities for financial benefit offered through small and irregular cash injections, especially when income is not distributed evenly, have been linked community disempowerment. This ‘disempowerment’ signifies a lack of control over tourism development and how costs and benefits are shared among the community (Scheyvens 1999).

A further element of inequity in the Kruger study concerned views that the financial benefits made possible through Park tourism were limited to a subset of local community members:

*It is good for those employed there not for us all [community member].*

*I think the one [who] are getting job from Kruger National Park, they are the one getting benefits. Because if you are not working at Kruger, what benefit can you can get... You only get benefits when you work [community member].*

Thus, while lauded as a means of enhancing local economic development, tourism may not actually be delivering such outcomes in practice in the case studies. From a systems perspective, it may potentially indicate that links between Park tourism and the (aggregate) financial resources of local communities are not yet significant at a wider scale. Instead, findings indicate benefits are felt at the micro scale of individual households and their direct dependents, as found in other studies (e.g. Dahlberg & Burlando 2009; Simpson 2009).

These inequities dispute the often common view of protected areas as ‘money spinners’ generating widespread financial benefits for local communities (Brockington et al. 2008a; Goodwin & Roe 2001; Njiru 2007). Indeed, direct economic benefits are often
less significant than anticipated. For example, Saayman and Saayman (2006) found the
direct contribution of visitor expenditure in Kruger to amount to a mere 0.34% of the
total Mpumalanga economy. Tourism only made a significant economic contribution if
Kruger’s role in promoting surrounding tourism development was also included. This
role, termed the ‘carcass model’, describes a pattern where businesses cash in on
Kruger’s fame and existing tourist appeal (Saayman 2002, in Saayman & Saayman
2006). If this ‘carcass’ role is included, Kruger’s contribution to the Mpumalanga
economy increases to 5.97% (Viviers et al. 2003, in Saayman & Saayman 2006).
Further, as indicated above, even if economic benefits are generated, their distribution
among local communities is typically highly uneven. Economic benefits are frequently
restricted to those employed and their immediate families (e.g. Scherl & Edwards 2007;
Simpson 2008), meaning that protected areas often make a negligible contribution to
local development (Wilkie et al. 2006).

6.2.1 Factors influencing local perceptions of employment

While locals had limited interactions with tourists, this did not preclude the generation
of benefits (nor positive attitudes). Indeed, earnings derived from tourist patronage can
have a powerful impact. Often the limited income derived from tourist purchases at
roadside stalls can provide for livelihood needs (Goodwin & Roe 2001); and art sales in
Warmun often provide substantial income. Dahlberg (2005) observes that while
apparently quite small, income derived from the sale or production of art and crafts in
South Africa can often represent one of the few secure sources of revenue or comprise a
major part of cash income. Bruyere (2009) agrees, reporting that community members
in Kenya’s Samburu region commonly mentioned income derived from tourist sales
before more significant sources of economic benefit, e.g. annual payments given to
communities to spend on local development priorities like education or health. Income
received from Kruger-sponsored curio stalls, “while comparatively low… can
sometimes mean physical survival in the extremely impoverished communities which
surround the park” (Cock & Fig 2002 p145/6).

Perhaps, these observations recognise that small scale tourism operations like curio
stalls create a higher ‘multiplier effect’. This refers to the additional spending (e.g.
indirect, induced) that occurs in local economies after an initial expenditure (Lacher &
Nepal 2010). The higher the multiplier effect, the greater the benefits produced for
locals (Goodwin & Roe 2001; Telfer 2002). Small scale tourism operations create a
higher multiplier effect largely because most are run by locals, meaning there is little leakage to other areas and the majority of income stays in the community.

Generally, local engagement with Park tourism through roadside stalls or art production represents a form of adaptation centred on the diversification of income sources. This diversification spreads risk (Tao & Wall 2009) and enhances resilience, through the improved ability to adapt to changing socio-economic and environmental conditions (Giannecchini et al. 2007; Webb & Curtis 2002). By diversifying income sources, locals are able to partly circumvent the constraints imposed by a lack of money, a slow variable that generally appears to constrain local involvement in Park tourism. Perhaps this accounts for the fact in both studies, employment in Park tourism appeared linked with positive attitudes towards the Parks and their resources. For locals in the Kruger study, financial benefits relating to employment in Park tourism appeared central. This potential motivator underlying local attitudes is explored below.

**Financial concerns**

Employment in Park tourism provides a significant economic benefit for locals in Cork and Belfast. Most likely, its significance relates to pervasive local unemployment, which often exceeds 90% (DWAF 2008), as well as the prevalence of poverty among local communities (Municipal Demarcation Board 2006). Both of these factors make income a greatly appreciated benefit of Park tourism (Table 6.1). Previous research supports these findings. Anthony (2006; 2007), for example, found economic benefits derived from employment had the most influence on local attitudes towards Kruger. He likewise concludes this is because of high unemployment, meaning that Park jobs, even temporary ones, can significantly impact local livelihoods, making jobs within Kruger “highly valuable” (Anthony 2007 p241). Hendry (2002) agrees, finding employment, even of a family member, constituted the greatest benefit for 31% of respondents in another Kruger-related study.

Economic benefits are often correlated with positive feelings towards tourists and tourism (Brunt & Courtney 1999; Easterling 2005; Ryan & Cooper 2004). Direct economic dependence on tourism has been proposed as the single most important factor affecting perceptions of tourism (Mason & Cheyne 2000). Theories of social exchange,

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106 Often, this diversification may represent the only source of income besides government welfare grants or ‘income’ derived through wage sharing/family support practices.
which associate benefit derivation with positive perceptions, explain this seeming relationship between receipt of benefits and positive attitudes (e.g. Andereck et al. 2005; Gursoy & Rutherford 2004; Teye et al. 2002).

Social exchange theory suggests that tangible gains received from involvement with Park tourism may be a prominent factor in determining local attitudes:

*Kruger Park is good because I’m getting money from the tourists who go there. Should Kruger not be there, I’m sure I would not be here [community member].*

*Those who have some businesses in the Park, those who are working in the Park; they regard the Park as their home. Their village. Their industry [community member].*

These insights emphasising financial motives complement earlier findings highlighting cultural norms and values as underlying positive attitudes towards Kruger and its resources (Chapter 5.2). They also reinforce the importance of understanding local contexts, in this case poverty and unemployment, when designing initiatives to develop relationships between parks and local communities.

Links between benefits and positive attitudes were evident in reference to the demands of wage sharing and familial support. In Cork and Belfast, income from an employed person supports any number of extended family members: *one person working at Kruger, at home has a wife, mother, father, children at school... that home benefits. The one person feeds six to eight people at home; Kruger National Park feeds that home [community member].* Wage sharing was also linked more specifically to improvements in lifestyle and education:

*I have gone to school because the Park have employed my father, understand [community member].*

*The little money you receive along the road, you’re going to build your house... putting tiles and everything. So, that’s a change. [People] are getting money and doing something. Not so much, but I will say, it helps because most of them, they are taking their children to school, they can buy uniforms, something to eat. So there’s a change [community member].*

Sebele (2010) similarly reports the sharing of wages from employment at a rhinoceros conservation project in Botswana. Income was used to support family members, raise
living standards and contribute to the payment of school fees, all of which were identified in this study.

Wage sharing has a number of implications for the Kruger study. One, it indicates the presence and strength of social networks in the local communities (Patterson et al. 2004; Pollard et al. 2008), at least among extended families. These family networks enable those who do not personally derive an income from Park tourism to also gain some tangible benefits, partly overcoming limitations associated with unemployment and lack of money. This dissemination of employment benefits fosters positive attitudes towards Kruger.

Two, the receipt of an income from tourism potentially reduces pressure on natural resources (Patterson et al. 2004; Tao & Wall 2009), as people can use income to buy goods instead. Respondents in the Kruger study recognised the ameliorating effect of employment on local use of natural resources. The following quote captures this perceived link: *if you create businesses, for example a car wash, then you’re creating more jobs and there’s less reliance on livelihoods in terms of natural resources* [Park staff]. Other Southern African research links employment with reduced demand for natural resources, suggesting a potentially high cost on biodiversity if local people are retrenched (Faasen 2006; Njiru 2007). Together, these two implications support research linking wage sharing with improved local resilience, through the spreading of risk and alleviation of livelihood vulnerability, especially food insecurity (Adger et al. 2002; Liu et al. 2007).

A third implication is that employment and the derivation of income represents a critical component of, and means to enhance, Park-people relations. The benefits derived from employment, via wage sharing, are perceived by locals as having a stabilising influence on livelihood security (see also Sebele 2010). Employment and associated financial benefits are therefore related to positive local attitudes towards Kruger, in apparent support for social exchange theory.

However, social exchange theory has a mixed response in the literature with some studies supporting its hypothesis between benefits and positive attitudes and others not

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107 Currently, four Park-sponsored car washes operate inside Kruger rest camps. Kruger develops the necessary infrastructure and all profits are retained by local community members who staff the operations.
J.K. Strickland-Munro

Local communities & Park tourism

(Andereck & McGehee 2008; Andereck et al. 2005). One major complication is that costs and benefits are borne differentially by community residents (Easterling 2005), as evident in both case studies; therefore, what motivates positive attitudes among those not receiving benefits? The resilience-based framework guiding this research is believed to offer a better approach for exploring the long-term dynamics of social relationships (Nkhata et al. 2008), as it allows an understanding of change over time and the drivers influencing outcomes.

For example, lack of money emerged as a central constraint to local involvement (e.g. Lacher & Nepal 2010; Spenceley & Goodwin 2007) in Park tourism. The availability of money typically limits the capacity for locals to invest in tourism developments (Scherl & Edwards 2007): it’s only those who’ve got money, big moneys, who can just grab the opportunity [to start a business] [community member]. Nieman et al. (2008) identifies lack of funding and marketing opportunities as central barriers facing small and medium tourism entrepreneurs in South Africa’s Gauteng and Mpumalanga provinces (see also Monakhisi 2008). Mbaiwa (2005a; 2005b) likewise notes lack of financial capital needed to invest in businesses as a key challenge to local participation in Botswana’s Okavango Delta. He links this deficit to the subsequent inability of local communities to accrue benefits from tourism beyond low level employment. In part, this lack of local ownership contributes to the “general failure of tourism to contribute to poverty alleviation” (Mbaiwa 2005b p157).

Previous Chapters have illustrated the poverty characterising both case studies and highlighted a lack of money as a slow variable hindering the ability of locals to become involved with Park tourism (Table 6.1). This proposed relationship derives from understandings that economic inequality fosters differential access and entitlements to environmental resources (Adger et al. 2002), represented here by Park tourism. A general lack of money, underlain by pervasive economic poverty, potentially suggests locals have lesser opportunities to ‘access’ and benefit from Park tourism. To quote one (non-Indigenous) respondent: very much so... do you think [Indigenous] people in Warmun are] marginalised or disadvantaged, unbelievably so. They’re below the poverty line. And this is with Government sanction. So that’s disadvantage at its worst... yes, they are disadvantaged [community member]. Previous research has similarly linked the marginalisation and cycles of poverty characterising many
Indigenous communities in Australia with an inability to engage with opportunities presented by tourism (Trau & Bushell 2008).

The legacies of past discrimination can complicate the involvement of local people with tourism. For example, Horn and Tahi (2009) suggest colonial disadvantage continues to influence Maori engagement with New Zealand’s tourism industry in terms of marginalisation from mainstream economic development. In Honduras, Nygren and Matt-Hirvonen (2009) cite intrinsic links between structural conditions of poverty and limited opportunities for peasant households to earn a proper living.

Despite the apparently pervasive effect of historic legacies on local ability to engage with Park tourism, there are ways in which locals can become involved. Park managers themselves can play an important role in improving the permeability of Park boundaries and reducing barriers facing local people. For example in the Kruger study, current Park efforts to procure local goods for stands inside the Park as well as training schemes for curio producers evidence a clear commitment to enhancing benefits for local people. This is not to suggest an increase in the number of existing curio stands either in or outside of Kruger is desirable – in fact, this could potentially have a detrimental effect on individual sales and livelihoods. Nevertheless, a number of possibilities exist to enhance the economic benefits derived from involvement in Park tourism. Similar opportunities are available within Purnululu, albeit on a smaller scale. These largely centre on employment in Park operations, by tour companies or through the setting up of new businesses. However community members appeared less interested in becoming involved with such economic initiatives. Possible reasons for this are explored below.

**Indigenous culture**

In Purnululu, Indigenous respondents displayed an appreciation of employment opportunities that was not primarily conflated with financial gain. Rather, Indigenous respondents expressed a sense of cultural obligation associated with potential employment (Brereton et al. 2007; Venn 2007) in Park tourism (Table 6.1):

> Ranger ways, can get out to Purnululu and be on country [community member].
>
> Opportunities for jobs, training, see for themselves what they can do there in the country [community member].

Employment was discussed as opportunities to work as a ranger in Purnululu, assisting with everyday Park management actions including infrastructure maintenance,
revegetation and weed/animal control. These explanations reveal the centrality of ‘caring for country’ to Indigenous life (Bird Rose 2004; Pursche 2004). The prominence of cultural aspects perhaps reflects the fact employment in Purnululu provides Indigenous respondents with a means of fulfilling cultural responsibilities, which are pre-eminent in Indigenous society (Langton 2003). For instance, being employed in Purnululu as assistant rangers may make it easier for Indigenous people to visit and learn about country, as they are already located within the Park.

While tempting to equate strong cultural links to the Purnululu area with a desire to become involved in Park tourism, research indicates that cultural norms and beliefs can influence perceptions of potential material benefits (Scambary 2009; Scanlon & Kull 2009). Community members may prioritise socio-cultural and spiritual aspects of being on country, while remaining alienated from Park tourism as a potential resource (Jones 1995, 1999 in Scanlon & Kull 2009 provides a Namibian analogy): *visitors coming into this area are very hungry for cultural knowledge... although there is a demand for it, there is no supply* [community member].

These insights concur with the ‘hybrid’ nature of many Indigenous economies (Altman & Jordan 2008; Altman 2001). Alternately called traditional, non-market or informal, the hybrid economy recognises the limited relevance of Australia’s mainstream market economy for many remote Indigenous communities (Altman *et al.* 2006). Indigenous economies instead comprise a mix of market (e.g. formal employment), state (e.g. welfare, CDEP) and customary activities (Altman *et al.* 2006; Altman 2001). This hybrid economy represents a ‘post-colonial adaptation’ of livelihood diversification, intended to minimise risk (Altman 2007) and imperative for survival in many rural Indigenous communities (Trau & Bushell 2008).

Customary activities associated with country, like fishing, hunting/gathering and land management practices (Altman *et al.* 2006; Young 1991), form a substantial part of the hybrid economy (Altman & Jordan 2008; Altman 2007). While typically non-financial, some elements of the customary economy, for example arts and crafts, have proven highly profitable (Altman *et al.* 2006), as evident in sales from Warmun Art Gallery. For people in Warmun, art is a way of talking about and mapping ‘country’ (Pursche

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108 Indigenous respondents did express interest in running a Park-based art centre, multi-purpose Park-entrance facility and in developing tourism facilities on living leases. The latter is currently the focus of Naturebank tender processes (c.f. Chapter 4.4.2).
2004). Demand for Indigenous art provides opportunities for locals to engage with the market economy (Altman 2004) while simultaneously carrying out law and culture work (Cameron 2003; Pelusey & Pelusey 2006). Further, customary activities are associated with improvements in the social, psychological and physical health of Indigenous people (Burgess et al. 2005, in Venn 2007). In the words of one Warmun resident, *when you go back on country make you feel open inside* [community member].

One possibility allowing locals to maintain customary activities and connections to country could involve the setting up of a dedicated space within Purnululu for local Indigenous people to come and paint, on country. Such an arrangement would likely benefit relationships between local Indigenous people and Park managers through building social links and connections that may help to enhance ‘boundary permeability’. Tourists may also benefit from seeing Indigenous people painting within Purnululu, thus partly meeting the strong demand for cultural experiences and interactions with Indigenous people that exists among tourists (DEH 2005).

DEC’s employment of two Indigenous ranger assistants is one example of an initiative that does currently occur. Indigenous ranger positions allow locals to maintain customary activities and connections to country. However, some senior Indigenous respondents felt this pathway to employment was threatened by cultural disconnect from country, which is of great concern for people in Warmun (Pursche 2004): *don't think got anybody [working in Purnululu]. We try but no. No young people know that country, that's the thing. Got to be a [traditional owner], know the country, what this, that, secret places... [young people] got to know too, otherwise they just like a tourist, know nothing* [community member]. This possibility underlying limited Indigenous employment in Purnululu illustrates the complexity of involvement in Park tourism, rather than simply being a matter of supply and demand. While elders often attend the local school in Warmun to teach children about law and culture, the fact the transmission of cultural knowledge poses an ongoing concern suggests that perhaps other responses are also necessary.

One approach common in other jointly managed parks in Australia is to introduce Junior Ranger programmes that target local schools (Bauman & Smyth 2007; Director of National Parks 2009b). These provide opportunities for children to get out on country and learn how to care for it, as well as demonstrating pathways to future employment.
However the limitations imposed by staffing and significantly less operating budget at Purnululu in contrast to these other parks is a major constraint.

The disjunct between Indigenous and non-Indigenous cultural mores may present a further complication to Indigenous employment in Park tourism (Brereton *et al.* 2007; Fuller & Cummings 2003; Higgins-Desbiolles *et al.* 2010). Many tour operators are quick to dismiss Indigenous people as either not capable or interested in being involved (Brereton *et al.* 2007). However, Australian research highlights concepts of time and preferences for interpersonal contact as factors influencing Indigenous involvement in tourism ventures (Dyer *et al.* 2003). Confidence, reliability and racism were found to preclude Indigenous involvement in tourism in Queensland (Nielson *et al.* 2008). ‘Shame’ associated with lack of English language skills can present another complication (Trau & Bushell 2008). These insights underscore the need to develop culturally appropriate tourism opportunities (Roughley & Williams 2007), as well as for cultural diversity to be accommodated into corporate frameworks (Scambary 2009).

A final element of complexity arising from the data concerning Indigenous involvement in Park tourism was motivation to become involved in Park tourism. Interestingly, this perception arose more among community members themselves than from other respondent groups:

*The whole issue is, you’ve got to want to get up and do it, that’s all I say… it’s there for the opening, like jobs at the visitor centre, but, you know, you’ve got to have the people that are interested, that’s what it all boils down to. Got to have an interest in whatever the job is [community member]. You’ve got to have the interest. It’s not worth putting your hand up and saying, ‘yeah, I’ll do it’ and then weeks later you’re out of here [community member].*

Motivation is critical for Indigenous people to be able to utilise opportunities presented by protected areas to care for their country, reinforce its associated cultural and natural values, and to further community and individual development (Bauman & Smyth 2007). This seeming lack of motivation may be one reason behind the poor uptake of opportunities at Purnululu’s three permanent safari camps, which offer employment as part of licence conditions. Operators reported difficulties in achieving consistency of Indigenous employment, with trainees typically lasting only one season before departing.
Several factors are believed to underlie the apparent lack of motivation among local Indigenous people. One possible explanation concerns a lack of skills and knowledge needed for employment in tourism. Tourism remains a foreign activity for many Indigenous people (Brockington et al. 2008a) and in Australia, Indigenous involvement is relatively recent (Dyer et al. 2003). Perhaps, this partly relates to the limitations on Indigenous entrepreneurship imposed by poor education (Fuller & Cummings 2003) and a lack of business skills and experience (Trau & Bushell 2008; Venn 2007). Respondents recognised the dearth of skills required for involvement in Park tourism:

*If you surveyed [Warmun]... factored in all the skills you need to operate, less than two or three of those positions can be filled by Indigenous persons [community member].

It takes a fair bit of experience, knowledge and intent to be able to be self-motivated... perhaps there aren’t those people in Warmun [community member].*

In turn, these limitations reflect the historic legacies of Indigenous underdevelopment (e.g. Altman 2007; Taylor 2003). Altman (2009b) suggests these legacies compromise the capacity of Indigenous people to benefit from major resource developments, even when they want to engage (see also Taylor 2009). For instance, in Uluru and Kakadu National Parks most Indigenous jobs are limited to lower levels of employment, with promotion impeded by poor literacy and numeracy (Bauman & Smyth 2007; Smyth 2001). Indigenous employees largely lack the skills necessary to gain senior management positions, despite fifteen years of joint management and numerous training programmes (Reid et al. 2004). However while exact figures are elusive, an increasing number of Indigenous businesses provide services to the Parks (Director of National Parks 2009a).

A second possible explanation for perceived lack of motivation concerns the presence of alternative sources of income. Warmun has a widespread reliance on welfare income. Respondents drew parallels between this income and a lack of Indigenous involvement (Higgins-Desbiolles et al. 2010; Muloin et al. 2001; Trau & Bushell 2008) in Park tourism: *there’s not a lot of independent or self employed people out of Warmun, it’s very much a welfare-dependent community [community member].* Such welfare dependency has been linked to a reduced desire or necessity to find employment (Hunt 2008; Pearson 2006).
Economic subsidisation, as occurs in Warmun through government welfare payments, creates cycles of dependency that reinforce perverse learning (Kofinas & Chapin 2009). That is, welfare payments assist in meeting immediate livelihood needs and so may reduce motivation to find employment (Pearson 2006). For this reason, welfare payments have been termed ‘sit down money’ (Trau & Bushell 2008) and discussed as fostering ‘paternalistic dependency’ (Altman 2007). Economic subsidisation is also believed to reduce local capacity to adapt (e.g. Abel et al. 2006; Bunce et al. 2009; Nelson et al. 2007) by limiting the need to formulate local responses to local issues. Walsh and Mitchell (2002) support this notion, explaining that for many Indigenous people, the choice between continuing welfare payments and following a pathway that requires a person to work, learn, take risks and trust others is often a simple one. To apply a resilience analogy, the apparent lack of community agency perhaps reflects a ‘social basin of attraction’ linked to welfare payments, which resists change.

An apparent lack of motivation does not necessarily reflect a shortage of skills or the presence of alternative income sources in Warmun. A third perspective is that involvement or not in Park tourism is an explicit cultural choice. Holcombe (2009) highlights how investments in capacity building and mobilising Indigenous agency in Western Australia’s Pilbara region did not always lead to greater employment. Instead, many Indigenous people chose community or family pursuits over mining employment, illustrating a disjunct between Western and Indigenous views of ‘opportunity’. Scambary (2009) concurs, citing disjunct between mainstream economic development initiatives that emphasise jobs and Indigenous cultural prerogatives that often emphasise livelihood objectives over financial returns.

In another illustration, this time reflecting on development in the Kimberley region of Western Australia, Sharpe (2004) suggests that Indigenous traditions and cultural norms may in fact prevent or inhibit Western style commercial development. The apparent lack of motivation among Indigenous respondents may therefore reflect personal judgements regarding the desirability and suitability of available opportunities (Higgins-Desbiolles et al. 2010; Holcombe 2009; Scambary 2009). Indeed, Indigenous respondents often emphasised preferences for minimal interactions with tourists: *they just want to sell the paintings* [community member].
This third aspect of motivation challenges the implicit power balance that often characterises Indigenous people as ‘helpless’ or ‘powerless’ as a result of past and continuing circumstances. While these factors undoubtedly play a substantial role, as illustrated throughout this thesis, they are not the entire answer. Often, Indigenous people can, and do, make explicit culturally-based choices regarding what form of engagement with the mainstream, monetary economy they wish to have. They are exercising agency in determining their own future (Scambary 2009). The highlighting of cultural choice as an explanation for lack of motivation to engage with Park tourism conflicts with dominant Western ideologies which cast Indigenous people who are not interested in working as ‘lazy’. However, this cultural choice limits the ability of Indigenous people to benefit from opportunities in terms of education, health and political development (Sharpe 2004).

6.2.2 Desire for greater employment opportunities

While employment in Park tourism was highly appreciated by locals in both Kruger and Purnululu, it is not a panacea and several drawbacks exist. In particular, job availability is far less than desired in most cases, limiting opportunities to spread economic benefits: *grow the tourism cake, let everybody have a meaningful slice* [community member]. This limitation in the availability and distribution of benefits can foster differential access and entitlements as well as heightening the susceptibility of those most vulnerable (Adger *et al.* 2002; Kofinas & Chapin 2009). Unmet expectations regarding jobs can further affect trust relations and alienate locals, with negative implications for local attitudes towards from Park tourism.

Demand for greater employment opportunities was strongest in Kruger, perhaps reflecting the realities of high population densities and pervasive unemployment. For local people living around Kruger, the potential benefits of jobs in Park tourism are mediated by overwhelming demand for jobs and the pragmatic reality that finite jobs are available. At the time of research, Kruger employed 1883 permanent and 233 temporary workers (Urban-Econ 2008b). Consequently, employment benefits, although highly valued, are tempered by population pressures:

*Because of the poverty, the impact that we are supposed to make is not as it should be* [Park staff].
The population around the border of Kruger is huge, that’s why whatever answer you can bring to problems, they don’t make an impact that people can see because of the sheer size of the people out there [government official].

Interestingly, many locals did not recognise the constraints on employment imposed by population pressures. There was a common expectation among locals for Kruger to provide more employment opportunities: there’s a lot of misconceptions, there’s a lot of people who think that the Park is there just to give them employment [Park staff]. This disparity between local expectations and job availability highlights the need for park managers to clarify their role in, and constraints to, economic empowerment and job creation in local communities (Faasen 2006). Makamu (2005) agrees, discussing an ‘over-expectation of benefits’ from a community bordering Kruger. The management of community expectations thus presents an important issue in the Kruger study: the perception is that there’s huge amounts of jobs and wealth inside here that people outside can get access to [Park staff]. This finding further suggests that community members possibly did not recognise the significant contribution already made to providing jobs in the area in comparison to other employers (Njiru 2007).

While Kruger clearly cannot meet the existing demand for jobs, Timko and Satterfield (2008) report that the Park provides ‘dissatisfactory’ employment opportunities. This ‘dissatisfactory’ rating conveys that the Park was providing between 26-51% of optimum conditions, i.e. livelihood opportunities for local communities. Interestingly, these views originated from People and Conservation staff themselves, as well as the chairpersons of three community forums. Data from this research that suggest dissatisfaction with employment opportunities concur with these earlier findings. Perhaps the commonality of dissatisfaction among different stakeholder groups reflects recognition of the vast economic disparities that characterise the South African landscape.

Mismatch also existed between local and tour operator perceptions of the opportunities available in Kruger’s open safari vehicle industry:

It’s very interesting to hear the different point of view. Like some old chief said ‘we want to enter the lucrative open vehicle market’ and I burst out laughing... they just see vehicles all the time and think it’s money. It’s not money; it’s a way of life [tour operator].
The perception is that the open vehicles have cornered a sector of the market and they are now not prepared to share it with local communities. The reality however is, how do you share something that is so small [tour operator].

For many operators, the limited returns made from business precluded them taking on a partner: you can’t afford to take on a partner, black or white [tour operator], despite the presence of legal incentives and/or obligations to do so.

Further, those local people working in Kruger were employed in lesser skilled and paid positions (Spenceley et al. 2008):

People working in the Park, they are not working as professionals; we don’t have a lot of them. Only labourers and some semi-professional people are working there [community member].

I don’t even think [Kruger’s] drawing enough people out of [local communities], unless it’s the bottom rank, cleaners, gardeners, that sort of thing [tour operator].

A related concern was the lack of business management skills and entrepreneurial knowledge among community members. Respondents from all groups, including community members, discussed this as precluding local entry into tourism-related businesses: the big challenge... is you can provide the training, you can provide the resources to start the business, but the problem is the guys don’t know how to run a business. That’s where I think our challenge lies at the moment, is to be able to empower people to run their own business [Park staff]. Ayotte (2009) concurs, citing the absence of adequate education, training and awareness opportunities among previously neglected groups in South African society as one of the greatest challenges to tourism development in South Africa’s Eastern Cape. She links this dearth of human capital to previous discriminatory practices under apartheid which restricted education and training for black people.

However, a general lack of requisite skills does not mean they are absent altogether in local communities. Some community respondents highlighted a desire to move beyond simple employment, and dependence on Kruger for a monthly income, towards an increase in locally-owned businesses and a greater freedom of choice for locals. This desire to ‘go further’ was expressed as: for the young age, I don’t think we can be satisfied with just getting a job... it’s not good enough for me to just get a job and...
getting a pay check end of the month, it’s not good enough for us. We are the generation that needs to do business [community member].

The reality is that most community members lack necessary skills to engage with tourism (Table 6.1), reflecting tourism’s requirements for a skill base typically irreconcilable with that held by local people who often live subsistence or farming lifestyles (He et al. 2008). In the Numbi community adjoining Kruger, Spenceley and Goodwin (2007) report 36% of community members perceive a lack of skills and education as a barrier to involvement in tourism. Similarly, Sebele (2010) concludes the potential benefits received from community-based tourism ventures in Botswana’s Khama Rhino Sanctuary are limited by a lack of managerial, marketing and entrepreneurial skills (see also Lacher & Nepal 2010 for discussion in northern Thailand). Such concerns are also relevant to this study.

Perceived inequities in employment, whether they be gender, race or location-based, have the tendency to rankle within organisations as well as impact unfavourably on local community perceptions. SANParks staff recognised the presence of such views among community members surrounding Kruger. One staff member described community perceptions as: *why do you keep bringing people from University in Cape Town, with a couple of years experience, to run my Park when I’ve been here for 40 years?* [Park staff]. In Kruger, existing recruitment policies acknowledge these concerns, prioritising internal promotion before positions are filled externally and increasingly focusing on training for lesser-skilled staff members. Both of these approaches help address these employment concerns, although the benefits of the latter are unlikely to be felt for some years. Further, an important proviso exists here – there will never be ‘enough’ jobs for community members in Kruger, so making sure community expectations about employment are realistic is important too.

Misconceptions regarding job opportunities may lead to conflict and local alienation from Park tourism as locals feel they are missing out on perceived employment benefits: *I don’t think that it my Park because there is nothing that they do for me* [community member]. These views may contrast or co-exist with earlier views of appreciation and respect for Park tourism. Dahlberg and Burlando (2009) report the presence of ‘expected but unrealised opportunities’ regarding jobs in tourism as fostering negative attitudes towards conservation in a nearby area of South Africa. Further, mismatch
suggests that employment benefits are not widespread among people from Cork and Belfast. This in turn implies that tourism, the primary source of employment opportunities in the area, is having a lesser effect on local financial resources and livelihood security than expected.

However, the creation of more jobs is not necessarily related to lasting improvements in financial resources, nor does it constitute a principal pathway out of poverty (Krishna 2006) given the mitigating effect of demand on any new position created. Rather, studies suggest livelihood diversification as key to escaping poverty (Krishna 2006; Sen 2003), perhaps because it is believed to help build resilience, as discussed previously. However, some research contests the effect of diversification on human welfare. For example, Bryceson (2002) found livelihood diversification had tenuous links to improved welfare in a review of sub-Saharan African studies. The majority of people remained focused on meeting immediate survival needs and continued to face risks associated with the pursuit of new, diversified forms of income generation. King (2007) similarly found that despite livelihood diversification, most people within a rural, black South African community continued to depend on environmental resources. This suggests that diversification did not result in a significant alteration to lifestyles. Perhaps this is because diversification potentially indicates precariousness, rather than creativity (Cleaver 2005, in Nygren & Myatt-Hirvonen 2009) and resilience.

A range of research highlights disparities between local expectations and actual employment opportunities in protected areas (e.g. Dahlberg & Burlando 2009; Kaltenborn et al. 2008; Picard 2003). Typically, locals perceive job opportunities as ‘too small’ (King 2007) or ‘dissatisfactory’ (Cihar & Stankova 2006), resulting in employment becoming a focus of local discontent. Previous Kruger research reports similar findings, with many community members feeling they were not benefitting from Kruger’s employment opportunities (Makamu 2005) or citing greater job creation as a primary development need (Anthony 2006, 2007; Rademan 2004). Likewise, similar perceptions regarding desire for greater job opportunities emerged concerning Purnululu, despite a much lower level of tourism than that present in Kruger.

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109 These studies do not delve into resilience concepts and so should not be construed as challenging earlier assertions that livelihood diversification enhances resilience (further, human welfare and resilience are not necessarily conflated).
6.3 The involvement of local communities in Park governance

We don’t see much of Kruger outside, [staff] don’t come a lot to the community and meet with the community structures and give us the information. So they need to come out to the communities and give the information [community member].

Governance, which provides the social context in which collective action occurs and institutions for social coordination operate (Dietz et al. 2003), was a third element of interaction between local communities and Park tourism (Table 6.1). Governance concerns interactions among structures, processes, rules and traditions that determine how people make decisions, share power, exercise responsibility and ensure stakeholder input into management (Borrini-Feyerabend et al. 2004; Fabricius & Collins 2007; Lebel et al. 2006). Both governance and the institutions through which it is enacted are important in determining the adaptability of social-ecological systems (Anderies et al. 2004; Walker et al. 2006a) and their ability to cope with change. In this research, governance may be thought of as a process used to guide relationships between Park authorities (SANParks, DEC) and their constituencies as together they express needs, exercise rights and social obligations, and mediate differences (Nkhata & Breen 2010).

According to many authors, the future of protected areas and their biodiversity conservation mandate depends partly on the support and acceptance of surrounding communities (e.g. Borrini-Feyerabend et al. 2004; Chape et al. 2008). Participatory processes help to increase local input and awareness of issues; offering opportunities for the sharing of ideas, perspectives and expectations; fostering cooperation and local ownership; and potentially reducing conflict (Walsh & Mitchell 2002; WTO 2004). Discontented communities can undermine conservation through deliberate contravention of park regulations, degrading natural environments and through the creation of political instability, which typically disrupts tourism. This potential was recognised in the Kruger study: local people could close this Park tomorrow if they wanted to, they could block the roads; they could stop tourists coming in. They could bankrupt this Park in one week [Park staff]. Thus, it is important for protected areas to gain the support of locals to avoid such a situation.

Providing opportunities to communicate with management authorities has been identified as a critical determinant of local community attitudes (Shadie & Epps 2008).
Perhaps this is because community involvement appears to foster enhanced trust, leadership and organisation, contributing to a strengthening of social networks and relationships (Stronza & Gordillo 2008) which may then link parks and people. Current approaches to governance are thus ever-more inclusive, reflecting new paradigms guiding the management of protected areas that emphasise community input and involvement.

In both case studies, Park managers sought, to varying extents, to involve local communities in Park governance: *national parks... belong to the people and they have a right to have a say in how their investment is looked after [Park staff]*. Formal involvement occurs through meetings in which community members meet with Park staff to discuss issues of concern; a general background to these governance structures is located in Chapters 3 and 4. The remainder of this Chapter discusses the operation of these governance structures in greater detail. In contrast to previous sections, this exploration draws more heavily on the Purnululu study, where the researcher was able to attend a Park Council meeting. This opportunity was not possible for Kruger.

The following discussion only considers a formal, Western notion of ‘governance’ involving participatory meetings carried out according to a defined administrative structure. Other equally important aspects of governance may be occurring ‘behind the scenes’ of this formal approach. This is especially so in the Australian context, where parallel systems of governance exist (Hunt & Smith 2007) and the majority of Indigenous decisions occur outside of formal Western structures of governance. These culturally-defined elements of governance lay beyond the scope of the research and are not reported on here. However, their investigation constitutes an important area for further research.

### 6.3.1 Purnululu Park Council, Purnululu National Park

In Purnululu, formal community involvement in governance occurs through the Purnululu Park Council, a Ministerial Committee reporting directly to the Western Australian Minister for the Environment. The purpose of the Park Council is described by the Park management plan as “a forum for the development of policy in relation to Aboriginal interests in Purnululu” (CALM 1995 p13). The *Deed of Agreement* between the Minister and the Purnululu Aboriginal Corporation outlines three main functions of the Park Council (CALM 2002):
1) Preparing and advising upon proposals relating to Park management for the Minister’s consideration;

2) Participation (not further specified in policy documentation) in the implementation of the management plan as approved, including the development of policy on matters of Indigenous interest in relation to Purnululu; and

3) Providing advice to the Minister in all matters relating to Indigenous involvement in Purnululu, including (but not restricted to) Indigenous living areas; community development; areas of significance to traditional custodians; ranger training programmes; involvement in day to day operational management; the selection and induction of staff within Purnululu, including the Park manager; fire management; Indigenous employment and enterprises; the promotion of cross-cultural knowledge and understanding among Park staff and visitors; capital works including the location of buildings, camp sites, roads and other improvements; leases and licences; and mining tenements and petroleum permits.

The Park Council includes four nominated representatives from the Purnululu Aboriginal Corporation and three DEC representatives.\(^\text{110}\) This membership, gives the Park Council a majority Indigenous representation in line with standard practice as seen in Uluru-Kata Tjuta, Kakadu, Nitmiluk and other jointly managed parks in Australia (Director of National Parks 2009b). Local DEC staff, Department of Indigenous Affairs and Kimberley Land Council representatives attend meetings on an invitation basis. The Park Council was to meet four times a year and “endeavour to arrive at determinations in relation to matters of Aboriginal interest in the park” through achieving consensus\(^\text{111}\), with determinations not being passed if one member dissents. Should this occur, the matter is referred to the Minister of Environment who then holds final decision making power (CALM 2002 p10). In effect, the Minister may overturn Park Council determinations. However this power has not been exercised over the life of the Park Council (Conservation Commission 2008).

The requirement for consensus was problematic for the Park Council, which was depicted by respondents as a place where interactions were contested. This fraught relationship was clearly expressed by both Park staff and Indigenous respondents:

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\(^{110}\) The Deed of Agreement had provisions for a Department of Indigenous Affairs representative although this position does not appear to have been taken up.

\(^{111}\) The decision to reach agreements via consensus rather than majority rule was adopted in acknowledgement that this accords with Aboriginal cultural practices (Environment Australia 2002).
Warmun and Purnululu... has got every kind of Aboriginal issue that you could imagine wrapped up into one little package... warring groups and a dysfunctional Park Council and a well-intentioned Government that’s struggling with how to do it better, remoteness, just about anything you want to ask... there’s a whole lot of reasons why things can fail [Park staff].

The Park Council has recently been disbanded (DEC 2009) following difficulties achieving consensus and meeting quorums. In total, 13 meetings were held between 2003 and 2008. A further complication arose in that not all members of the Purnululu native title claim (c.f. Chapter 4.3.2) are members of the Purnululu Aboriginal Corporation, from which Park Council representatives are drawn. This difference in membership of the two groups meant that DEC had to run all Park Council decisions past the Kimberley Land Council, who act as representatives for the native title group. Thus, the Park Council had limited power to make decisions (Moncrieff, pers. comm., 2010) as decisions made by them were then subject to a further ‘layer of approval’ by members of the native title claimant group. The Purnululu study clearly does not meet one ‘critical success factor’ necessary for effective joint management, being a coherent and effective representative Indigenous party that addresses short term local issues while also maintaining a ‘big picture’ approach (Bauman & Smyth 2007). Trau and Bushell (2008) likewise note the putting aside of personal conflicts as a key ingredient allowing community members to benefit from an Indigenous-owned tourism enterprise in Australia’s Northern Territory.

Instead, Park managers intend to introduce a new restructured forum, the ‘Purnululu World Heritage Advisory Committee’. This forum will engage a wider range of people with interests in the Park, rather than just Traditional Owners: it’s going to have to take on more of a white man’s meeting setup to get any outcomes [Park staff]. Both Kija and Djaru groups are to have equal representation on the new Committee. A range of other stakeholder groups will also have representation, including tourism concerns, local government, scientific experts and other Park neighbours (Conservation Commission 2008) such as pastoralists. The proposal has been submitted to the Minister for consideration and to date, Djaru representatives have approved the Committee while Kija representatives have not, although no objections were raised by Park Council members when the idea was first proposed (Moncrieff, pers. comm., 2010). Further
details on the proposed Committee are not yet available; and it is not explored further here. Rather, attention returns to an exploration of views regarding the Park Council.

While the following discussion reveals a number of respondent criticisms of the Park Council, these should not overshadow the positive achievements and relationships developed between DEC and Indigenous people via the Park Council. To date, the Council has deliberated and approved management actions including capital works, commercial licensing, visitor information research projects, flight paths and operational conditions attached to Park helicopter operators (Conservation Commission 2008). Further, involvement in the Park Council had an associated benefit of bringing Indigenous people and members of their family onto country for the duration of meetings held in the Park (Walsh & Mitchell 2002).

Often, non-Indigenous people view on country trips as ‘skylarking’ or ‘for fun’, views which devalue their great significance to Indigenous people. On country trips provide an opportunity to establish social relationships between Indigenous and non-Indigenous people. They can help to foster trust and cooperation between Indigenous and non-Indigenous groups as well as reveal the extent of Indigenous knowledge. The significance of on country trips has led to calls for their formal recognition as an essential component of participatory land use planning (Walsh & Mitchell 2002).

Finally, although Indigenous respondents expressed some measure of dissatisfaction with the Park Council, this should not be conflated with a concurrent lack of interest in involvement with the Park. Indigenous respondents were highly interested in the Park and its management, as evident in subsequent sections and in the following quotes from community members:

[The Park Council doesn’t] know what World Heritage can do... I’d like to see some documents, exactly what [World Heritage] can fund or what services they can provide to us, so that when we go to the Park Council we know what we can do [community member].

Long as way for children to get jobs, run [the] Park [community member].

Discontent expressed regarding the Park Council may be more of a reflection on the incompatibility of the Council’s formal, Western approach to governance with local approaches.
Difficulties posed by unresolved traditional ownership

A central element of conflict for the Park Council involves the determination of exactly who is a traditional owner (Conservation Commission 2008) with rights to speak for country: we’re always treading a fine line [between Kija and Djaru] [Park staff]. Determining traditional ownership is a highly complex matter, the resolution of which lies beyond the jurisdiction of Park staff in the realm of Federal native title. Purnululu’s management plan makes no judgement on traditional ownership, noting “the question of appropriate Aboriginal representation remains unresolved” (CALM 1995 p35). The Plan does specify however that both Kija and Djaru would be represented on the Park Council until traditional ownership was settled.

At the time of research, only Kija representatives were included on the Park Council owing to the acrimonious relationship between Kija and Djaru groups. This sole Kija representation conflicts with Federal requirements for World Heritage properties listed under the Environment Protection and Biodiversity Conservation Act (1999). The Act specifies that management of a World Heritage site should account for people with particular interest in or who may be affected its management. For Purnululu, such people clearly include the Djaru. Thus, Park governance is complicated on several levels. First, by pre-existing tensions between Djaru and Kija groups. Second, the fact Park Council membership is not reflective of the Kija native title claimant group. Third, conflicting requirements for consultation with Indigenous people imposed by the State (Kija only) and Federal governments (requires both Kija and Djaru involvement). These factors complicating Indigenous involvement in Park governance impede “significant progress in joint management being achieved” (Conservation Commission 2008 p8). As said by one staff member: Purnululu is a particular example of where the resolution of native title issues would have a big impact on not only our management of the Park but also the relationship of the Park to the people that live in the area [Park staff].

Purnululu’s unresolved native title sets it apart from other long established jointly managed Australian parks, such as Kakadu and Uluru-Kata Tjuta, where similar issues regarding traditional ownership are absent because Indigenous groups have already been granted title to their land. The impediment posed by unresolved native title is further illustrated by recent affirmative developments in the East Kimberley region following native title determinations. Under the 2006 Ord Final Agreement, the Miriuwung
Gajerrong people signed on to manage six new and four existing conservation reserves through joint management type agreements. The new reserves are held under freehold title by the Miriuwung-Gajerrong Trustees Pty Ltd while existing reserves remain vested in the Conservation Commission (Haberkern 2009).

Despite these demonstrated achievements in joint management in other areas of the State, local Park staff suggested that the Park Council was hampered to some degree by a lack of political support. This apparent political indifference was expressed as: *I think the higher echelons of government just see this as a political pawn; they don’t treat joint management within Purnululu, at this point, seriously... I think it’s a bit ineffective and a bit tokenism [Park staff].* In contrast, discussions with members of the Conservation Commission and senior DEC staff in Perth indicate support for the idea of joint management and hope that it may succeed. They also discussed growing frustration within DEC over time relating to the apparent limited functionality of the Park Council. The complications imposed by contested native title were seen as a key reason underlying the current state of affairs, as was the changing landscape of joint management arrangements in the State.

Western Australia’s progress in formalising a legal framework for joint management has been limited, despite a history stretching back to the 1970’s. While CALM’s *Consultation Paper* (2003) supported joint management, the *Paper* has not been further developed nor publically debated following submissions (Bauman & Smyth 2007; Environment NGOs 2009). The 2007 *Indigenous Conservation Title Bill* attempted to rectify this, proposing a model for joint management involving the return of land title to Indigenous people coupled with a 99 year leaseback to DEC. Successive change of State governments however has seen the *Bill* disappear from the political arena. Instead, proposed amendments to the *CALM Act* (1984) are to be introduced to Parliament before the end of 2010 which, if passed, will provide a legislative basis for joint management on DEC estate. While the implementation of legal measures remains an important component of joint management, they are not the only answer. Underlying social structures also play a decisive role (Haynes 2010) in how parties interact in a joint management arrangement.
Cross-cultural communication

Infrequent or absent Park Council meetings limit opportunities for Park staff and Indigenous people to formally interact and exchange information. What interaction does occur is limited to that achievable by Park rangers in the course of their duties. This deficit was noted by some community members, who felt Park managers were not accounting for Indigenous cultural input: the Park – what this mob – the [DEC] guys, they not visiting the Aboriginal people, they just go ahead, they like to be you know on their own, they not listening to Aboriginal people [community member].

Here, it is important to also highlight expectations of the role of DEC in communicating with community members and their capacity to engage with locals. Understaffing at Purnululu (Brereton et al. 2007; IUCN 2003) is one important caveat limiting the ability of Park staff to interact with local community members either in Warmun or on country in the Park. Perhaps this significant limitation was not fully appreciated by locals. However, Purnululu’s senior ranger has been highly influential in establishing positive relationships with local Indigenous people. Indigenous respondents referred to this positive relationship: [he] is good; when I go to Bungles I tell him... he comes up, sometime, talk talk... [the] mob they get on well with him [community member].

In the Kimberley region, Indigenous experiences with joint management have been ones of marginalisation, anger and frustration (Yu 2000), perhaps because joint management in Australia remains an overwhelmingly Western cultural construct. Wearing and Huyskens (2001 p182) describe it as based on “eurocentric approaches to park management that exclude the rights and perspectives of Indigenous Australians”. Lane and Corbett (2005) discuss the marginalisation of Indigenous people in community-based environmental management in Australia (see also Muller 2003), noting that rights of Indigenous persons in governance are commonly resisted. Supporting these views is DeKoninck (2005), who reflects upon the increasing ascendancy of State over Indigenous views in successive management plans for Australia’s Garig Gunak Barlu National Park. Similarly, Adams (2008) argues many Indigenous people see joint management as a means of teaching them to be ‘whitefella’ park managers, with Indigenous interests and views subsumed by the dominant culture of conservation. Even in Australia’s much-vaunted Kakadu National Park, joint management has been
described as ‘defined by contradiction’ and rarely resulting in the actual satisfaction of either Indigenous or non-Indigenous parties (Haynes 2010).

This perceived marginalisation possibly reflects the often less powerful position of Indigenous people with regard to formal park management than conservation authorities. The ability of local people to engage with governments is often questionable (Berkes 2009; Clark et al. 2008) with differences in negotiation and organisational ability resulting in the dominance of ‘stronger’ parties (Sherwill et al. 2007). Plummer and Fennell (2009 p151) discuss power as “the root cause of conflict between local people and governments”, with the latter typically in possession of both legislative and management authority over protected areas (Balint 2006; Plummer & Fennell 2009). That is, disparities between the ability of government versus local communities to influence the management and practice of protected areas can cause conflict. For instance, disparities arise through differences in knowledge, expertise, money and training necessary to manage a protected area. Co-management processes have been described as “scenes of perpetual conflict” (Brockington et al. 2008a p107) reflecting disparity in capacity between experienced park officials and long marginalised communities who lack experience in institutional environments (Brockington et al. 2008a; 2008b).

Respondents expressed concern that when formal meetings did occur, problems existed in reconciling the two cultures within the formal Park Council structure. This highlights the decisive influence that culture can have on co-management processes (Plummer 2009; Walsh & Mitchell 2002). Indigenous respondents expressed irritation that they felt themselves to be making cultural accommodations, whereas Park staff did not return the courtesy. This was expressed as: *we’re working together, but [DEC] need to learn more things from our side. Understand one another. We understand their side, but they got to understand our side as well, you know [community member].* The fact Indigenous respondents perceived an imbalance suggest that communication within the Park Council was difficult. This was reinforced by discussions with DEC staff.

In particular, perceived imbalances in effort imply problems with cross-cultural communication (that between Indigenous and non-Indigenous people)\(^\text{112}\) were involved

\(^{112}\) DEC is seeking to address deficits in cross-cultural communication, to some extent, via the development of a cultural planning framework for Purnululu.
in the Park Council’s downfall (Table 6.1). The need for models for two-way communication has been noted as necessary to assist interactions between Indigenous and non-Indigenous people in the East Kimberley region (Pursche 2004), as elsewhere. Walsh and Mitchell (2002) highlight the often-common assumption that Indigenous people fully understand English, not to mention the typically high end, jargon-laden terms used in management planning processes. This common lack of fluency or understanding of English poses a significant barrier to the involvement of local communities in governance processes. Simultaneously, knowledge and understanding of Indigenous languages among non-Indigenous people is almost non-existent (Walsh & Mitchell 2002). Language barriers are thus not a one-sided issue.

Indigenous and non-Indigenous people often have great difficulty in understanding one another’s worldview and approaches to governance, fostering conflict (Adams 2008; IUCN 1997; Langton et al. 2005). Disjunct between worldviews are common in joint management and remain problematic even in Australia’s flagship jointly managed national parks, Uluru-Kata Tjuta and Kakadu (Reid et al. 2004). In these parks, tensions between the views of traditional owners and Park managers are evident, for example attitudes towards feral animals and the use of fire (Porter & Meyers 2008). Co-management in Australia’s Great Barrier Reef provides a further illustration. There, Nursey-Bray and Rist (2009 p125) report Western science and the World Heritage construct, which focus on biodiversity, management zones and tourist experience, have a “discursive dominance” over Indigenous interests and aspirations for management. These Indigenous interests focused on cultural issues including site protection and the maintenance of traditional practices. Interestingly, Parr et al. (2009), comparing management effectiveness between Kruger and Kakadu, express concerns that the presence of conflicting park management objectives, e.g. both biodiversity and cultural management, can potentially reduce the efficacy of biodiversity conservation efforts.

The often gender-segregated or restricted availability of Indigenous systems of knowledge poses one potential complication that may have impeded communication (Adams 2008; Walsh & Mitchell 2002) on the Park Council. For example, Indigenous members may have been unwilling to share cultural information regarding Law, or particular men’s or women’s business, in the presence of non-Indigenous people or those of the opposite gender. Alternatively, this withholding of information may have been a deliberate assertion of ‘power’ and rights held as owners of cultural information.
While understandable given political complications or perhaps, past negative experiences, ‘gate keeping’ of information can disadvantage Indigenous people. Disadvantage arises by denying Indigenous people the chance to learn about and understand external threats, as well as to develop mechanisms to deal with them (Walsh & Mitchell 2002). Such thinking accords with resilience perspectives, which emphasise the need to maintain a diversity of options and flow of information between parties (e.g. Hahn et al. 2008).

Communication may also have been impeded by a lack of skills and experience in dealing with government policy among Indigenous people (Wearing & Huyskens 2001). Specifically, Park staff felt a lack of formal Western meeting and negotiation skills posed a barrier to the full participation of Indigenous people in the Park Council (Table 6.1) : I honestly think the Park Council could function better... maybe that is a reflection on where [Indigenous people] are at in terms of working with government departments and policy... maybe they just lack the professional ability to deal with some of the issues [Park staff]. The reverse also applies, with non-Indigenous staff lacking skills necessary to operate in the Indigenous domain (Higgins-Desbiolles et al. 2010; Horn & Tahi 2009). This mutual deficit is of concern, as divergent views regarding decision making can prohibit groups from working together (Kofinas 2009).

Similar concerns were evident in Uluru-Kata Tjuta, Kakadu and Booderee National Parks, jointly managed under Federal jurisdiction. There, cross-cultural training courses were implemented for both Indigenous and non-Indigenous staff and Board members, as well as for local Indigenous communities. These include training run by Traditional owners for Park staff, as well as literacy, numeracy and certificate-level studies undertaken by Indigenous staff (Director of National Parks 2009b). The Park Council’s Deed of Agreement states that the Council has jurisdiction over cross-cultural training for both Park staff and visitors. However this aspect of responsibility did not eventuate. This is apparently because of other priorities taking precedence for the Park Council, as well as perhaps a lack of suitable courses or trainers in the local area (Moncrieff, pers. comm., 2010). The ongoing and unresolved tensions over traditional ownership and cultural authority to speak for country also likely contributed.

Further, Purnululu operates with a much lesser budget and staff capacity than do these Federally managed parks, which is likely to have a significant influence on the ability of
Park managers to develop and support such training opportunities. For example, Purnululu in 2008/9 had a budget of AUS$435,000 (US$372,000) (Moncrieff, pers. comm., 2010) and a full time staff of two Park rangers, two part-time CDEP assistants, two visitor centre staff and two voluntary campground hosts. This contrasts with Kakadu’s annual budget of approximately AUS$13.5 million ($US11.5 million) and complement of 72 staff, 32% of whom are Indigenous (Parr et al. 2009).

While this exploration has highlighted a mutual skills deficit, it is important to recognise co-management as a process rather than endpoint (Berkes 2009; Plummer & FitzGibbon 2004). Relationships between parties change over time. Often, the time required to develop productive relationships and break down barriers to working together can take up to a decade (Eamer 2006). Therefore the limited time (six years) given for the Park Council to ‘bear fruit’ may have precluded the opportunity for such productive relationships to develop. The Park Council Chair recognised the capacity for growth in relationships and outcomes: *this is only the first five years [of Park Council operation], so this second five years might be a bit different [community member]*.

The existence of a mutual skills deficit also illustrates the role of “barriers embedded in broader social relationships” (Berkes 2009 p1693). For Park staff, it likely represents a broader lack of understanding of Indigenous culture among non-Indigenous Australians. For Indigenous people seeking to become more involved in Park governance, these barriers are entrained in the slow variables of poor (Western) skills/education and capacity to engage with government structures. These slow variables, as previously established, represent the legacies of institutionalised Indigenous disadvantage in Australia (Altman 2004).

### 6.3.2 Ntirhiswano Community Forum, Kruger National Park

In the Kruger case study, local involvement in Park governance is formally mediated through the Ntirhiswano Community Forum. The main aim of the Forum is to “develop and manage an integrated community based conservation and development program” (SANParks undated-a p1). Associated objectives include the establishment and maintenance of sound and mutually beneficial relationships between the community and Kruger; to act as a communication structure to enable parties to discuss and resolve problem issues, mutual interests; to promote conservation values and the sustainable use of natural resources; increase public appreciation and awareness of biodiversity’s value.
and importance; facilitate sustainable development projects; act as a formal structure to ensure compensation following loss to DCAs; and promote and coordinate sustainable ecotourism projects within communities (SANParks undated-a). Interestingly, despite this broad range of objectives, respondents largely indicated the Forum was a place to discuss problem issues and resolve disputes, mostly relating to DCAs.

The Forum’s Executive Committee, comprising three elected representatives each from the Jongilanga and Hoxane Tribal Authorities, as well as a Kruger Social Ecologist, are to meet once a month or more if necessary. The frequency of general meetings with all Forum members is not specified. However, Ntirhiswano Forum has not met since 2007: *it end up falling apart and there were no meetings at all [community member]* and had effectively been suspended following the withdrawal of elected representatives and non-attendance at meetings.

This suspension was of concern to Park staff and the three community respondents who were once members of the Forum. Responses indicated the Forum’s absence jeopardised local relationships: *[Kruger] should make sure they re-instate the Forum in order to stabilise relationships with the community [community member]*. Reasons behind the Forum’s cessation were unclear and their examination was hindered by the inability to observe forum dynamics during fieldwork; thus, caution must be taken in analysis. Possibly, it may reflect perceptions that problems and issues have been resolved; although this appears highly unlikely given preceding discussions depicting contested relationships with Kruger.

A more likely explanation is evident in responses highlighting the lack of meetings held by the Forum. Responses from ex-Forum members suggest that once formed, meetings were infrequent or missing altogether:

*It seems as if there is no meeting, [Kruger] only forms those Forums but thereafter no meetings take place [community member].*

*That’s when the Forum fell apart, since we were elected [we’ve] never had a meeting and end up not knowing what is it that we are doing [community member].*

Whether this reflects on capacity issues relating to People and Conservation, including lack of staff and necessary operating equipment (Anthony 2006): *[Kruger needs to] get People and Conservation the manpower to do what they’re supposed to be doing [Park*
staff], or a loss of interest in attending the Forums by members, is unclear. Park staff provided an alternative perspective, suggesting that the elected term of previous Forum members had expired and they were awaiting the nomination of new members before the Forum could re-start. They also acknowledged the resulting imbalance in access to information: it’s [Kruger’s] job to communicate with [local communities]... [but Kruger] is not releasing information to those people [Park staff].

However generally, the wider community did not appear aware of or influenced by the non-operation of the Ntirhiswano Forum and it was rarely mentioned during discussions. One explanation for this apparent lack of awareness of the Forum is the fact membership was restricted to two representatives from each of the Forum’s twenty two constituent villages (SANParks undated-a). With a combined population conservatively estimated at 15,000 people, the majority of community members in Cork and Belfast were thus never involved in the Forum: it’s only those few select individuals that are part of those Forums... the ordinary people on the ground they don’t have that platform whereby they can go and complain or raise their voice, their concerns [Park staff]. This restricted membership of Forums, necessary given the reality that not all community members can participate, means that most community members were likely unaware of the Forum’s existence and so remained unaware that it no longer operates.

A second potential explanation for the apparent lack of concern centres on different understandings of governance and ‘participation’. These differences may possibly constrain local feelings of ownership, meaning that locals are not negatively influenced by restricted opportunities to participate (Li 2006). This explanation appears unlikely as it contradicts earlier findings indicating local pride and stewardship over Kruger. Rather, other possible explanations include apathy, more pressing concerns (Tosun 2000) such as daily survival, a focus on more tangible, economic benefits from Park tourism such as jobs, or perceived separation from Park tourism.

A third potential explanation for the apparent lack of community concern over involvement in governance lies in inequitable power relations which continue to characterise the South African landscape (Crane 2008). An entrenched culture of paternalism prevalent in South Africa also contributes (Du Toit 1996, in Crane 2008). Although this claim is not explored in detail, it infers that colonial traditions of black suppression and control by higher authorities may have fostered dependency among
black communities. Some non-community respondents expressed this perspective: *in most cases [community members] see that you are from the Government and say ‘why don’t you do something, you can see that we are suffering’ [government official].* Research from nearby Zambia provides further support, arguing communities with a history of disempowerment often develop a ‘dependency syndrome’ (Child & Dalal-Clayton 2004). Consequently, they are content to allow official or government agencies to solve their problems and guide their future (see also Botha 1998; Lepp 2008b).

6.4 Summary

This Chapter has described key interactions between local communities and Park tourism, finding the relationship to be complex and contested. Despite the clear potential for tourist arrivals to generate opportunities for locals, largely, it appears they are not extensively involved with Park tourism in either Kruger or Purnululu. The Chapter instead depicts a greatly appreciated but limited accrual of benefits by local communities. This limited benefit accrual seems linked to the influence of key drivers influencing how locals become involved with and benefit from Park tourism.

One key issue concerned the ability and opportunity for locals to visit the Parks. While highly appreciative of Park-sponsored opportunities to do so, the ability of locals to visit was limited by a range of underlying structural factors, predominantly transport and lack of money to pay entrance fees. These constraints are clearly related to the widespread poverty and welfare dependence that characterise the communities (Table 6.1). A key conceptual finding emerging from the data was the presence of perceptions of separation, where locals expressed opinions that the Parks were places for rich, white tourists, rather than being ‘accessible’, both physically and psychologically, for local people. This insight is of great significance in helping to understand the complexity of interactions between local communities and Park tourism.

Employment provided another critical element of interaction with Park tourism. The perceived benefits of jobs in Park tourism were high, be they financial as in the Kruger study, or less tangible benefits relating to ‘caring for country’, as in Purnululu. Employment in central Park and tourism operations such as security and housekeeping was a clear benefit that helped to create indirect beneficiaries through wage sharing. Employment in businesses associated with Park tourism also highly significant. Indigenous art production, for instance, provided an often substantial income to
community members. While a lesser income was received from roadside stalls in the Kruger study, this income also proved highly significant. The ability of locals to gain employment was influenced by a range of structural factors including poor education/skills and money to start businesses (Table 6.1). In the Purnululu PATS, motivation was identified as a further factor influencing employment. This provides a potential explanation for the limited amount of Indigenous employment in Purnululu. Further, it challenges the dominance of Western-centric, monetary market economies and its relevance to Indigenous people in seeking to engage within Park tourism. A third element explored was the involvement of locals in Park governance through formal participatory mechanisms. This issue was particularly problematic in the Purnululu case study, where cultural differences between Indigenous and non-Indigenous parties add an extra layer of complexity (Table 6.1).

As before, an understanding of these interactions between local communities and Park tourism, as well as variables influencing them, helps to define a ‘desired state’ for the relationship. Chapter 7 builds upon the insights developed in this and previous Chapters to propose indicators to monitor the interactions between local communities and Park tourism. These indicators focus on key issues identified by stakeholders as well as identified slow drivers (Table 5.1, 6.1) and seek to monitor the capacity of locals to become involved and benefit from Park tourism.
CHAPTER 7 MONITORING INTERACTIONS AMONG PARKS, TOURISM AND LOCAL COMMUNITIES

Previous Chapters described interactions among local communities, the natural environments of the Parks and Park tourism. These Chapters covered the first three phases of the conceptual framework, outlining key interactions, drivers and governance concerns. This Chapter reports on the fourth phase of the framework (Figure 7.1), monitoring system change. Two elements of this final phase are addressed: the development of future scenarios and indicators for Park managers to monitor community involvement and benefit from Park tourism. These scenarios and indicators were developed to gain a better understanding of the interactions between Park tourism and local communities and how they may change over time.

![Figure 7.1: Outline of the research framework and aspects covered in Chapter 7](image)

While the more detailed investigation and development of system thresholds as described in Chapter 2.2.4 is not pursued here, information in this Chapter provides an important interim step towards the development of socio-cultural thresholds. However, this remains an area more appropriate for Park managers to pursue in consultation with local communities.
7.1 Adaptive management

Traditional command and control management is not equipped to deal with complex social-ecological systems that learn and evolve (Armitage et al. 2008). These complex systems instead require an adaptive approach (Baggio 2008). Adaptive management is a widely recognised method of dealing with inherently complex and uncertain social-ecological systems (Biggs & Rogers 2003; Miller & Twining-Ward 2005; Murray & Marmorek 2003; Plummer & Fennell 2009).

Adaptive management is a systematic process of ‘learning by doing’ (Fortmann et al. 2001; Gunderson 2000; Murray & Marmorek 2003) involving a continuous cycle of experimentation, monitoring and review (Holling 1978; Walters 1986) (Figure 7.2). It seeks to enhance understandings about the behaviour and structure of social-ecological systems, in order to improve management (Lee 1999).

![Figure 7.2: Process of adaptive management (redrawn from Nyberg 1999)](image)

An initial context is established including management objectives, hypotheses and uncertainties (Biggs & Rogers 2003; Lee 1999; Murray & Marmorek 2003). This is followed by experimental design, the formulation of management actions to test hypotheses and achieve objectives. Indicators to monitor success of those actions are then developed (Murray & Marmorek 2003), with management actions then implemented and monitored according to agreed indicators (Figure 7.2) (Biggs & Rogers 2003; Murray & Marmorek 2003; 2004). Monitoring results are then evaluated to determine the most effective management actions and to evaluate hypotheses.
The final step in the process is review or adaptation of existing management to incorporate new findings. This final component, which prompts management changes based on experience, best distinguishes adaptive management from traditional environmental management (Murray & Marmorek 2003; 2004). While some indicator-based frameworks such as Limits of Acceptable Change incorporate monitoring, these approaches are argued as not fully accordant with a truly adaptive management approach (Farrell & Twining-Ward 2004; Miller & Twining-Ward 2005).

While LAC and a systems approach have a number of synergies, including an acceptance of dynamism and change, LAC is criticised for its site-level focus, which can overlook the influence of factors originating at other scales. LAC is not suited to understanding or determining spatial patterns of change or trade-offs between uses and values necessary in integrated management (Morse et al. 2009). This need for multi-scale analysis and trade-offs between uses and values extend to monitoring efforts, making LAC unsuitable for developing indicators for PATS interactions.

### 7.1.1 The role of monitoring

Monitoring is a central component of adaptive management and of building of system’s resilience. Monitoring is thus an essential component of the conceptual framework (Figure 2.1, Phase 4) and is elemental to any investigation of protected area tourism. If monitoring does not occur, “critical thresholds may be reached or passed before managers become aware of the need to change” (Miller & Twining-Ward 2005 p23).

Monitoring also helps evaluate whether actions and policies are effective in achieving desired outcomes. For protected areas, this is important for several reasons including building public support; ensuring accountability and transparency of authorities; assisting resource allocation; and identifying factors influencing management (Hockings et al. 2006; Jacobson et al. 2008; WTO 2004).

While monitoring and evaluation are an important element of the management of protected areas, the evaluation of management effectiveness in Australia remains in its infancy (Jacobson et al. 2008). Buckley et al. (2008) found a weak link between stated management priorities and actual monitoring programmes in their review of 73 Australian protected areas. This weak link indicates poor achievement in the evaluation of management performance, which may result from a shortage of or competition for
funding with other management priorities. Contestations over the purpose, responsibility and capacity of Park staff to undertake monitoring may also contribute (Buckley et al. 2008).

This study, and that of Jacobsen et al. (2008), highlight difficulties in obtaining monitoring data to support informed protected area management (Buckley et al. 2008). These difficulties suggest that monitoring impacts on surrounding local communities may prove highly challenging. This is especially so given that community impacts are often not a stated management priority for protected areas.

Similar studies reviewing monitoring in South African protected areas were not available. Kruger has an excellent record in ecological management and evaluation (Timko & Innes 2009). However, the Park has a weaker history in monitoring socio-cultural aspects. The investigation of external pressures and incursions that threaten the Park (including local communities) remains a clear gap in existing monitoring programmes (Timko & Satterfield 2008; Timko & Innes 2009).

The remainder of this Chapter explores the use of indicators in monitoring and evaluation of protected areas and tourism. To begin, a general overview of indicators is given along with a brief discussion of how the Parks currently monitor impacts on local communities. An initial set of indicators for the case studies are proposed. These reflect key interactions and processes emerging from the data, as well as critical slow variables. Designed for use by Park managers to monitor interactions between local communities and protected area tourism, the indicators also focus on the capacity of local communities to become involved with and benefit from Park tourism.

### 7.1.2 The use of indicators in monitoring protected areas and tourism

Indicators are signals that measure a phenomenon of interest (WTO 2004). While they have a long history of use in protected area and tourism management, new perspectives increasingly inform their development. These perspectives, such as social-ecological systems and resilience thinking, highlight a number of limitations in the development of indicators including an inability to account for uncertainty and change, focus on current system conditions, and poor recognition of wider context and interactions between resources and stakeholders (Farrell & Twining-Ward 2005; Miller & Twining-Ward
2005; Sirakaya et al. 2001). The field of ‘sustainability indicators’ has arisen in response to some of these limitations.

Sustainability indicators differ from traditional indicators by attempting to capture complexity and interactions between resources and stakeholders through greater recognition of socio-political, environmental and economic interdependencies (Choi & Sirakaya 2006; Viljoen 2007). In doing so, they build upon existing indicator-based frameworks such as the Tourism Optimisation Management Model, which considers the wider context yet still falls short of recognising the full complexity of interactions between tourism and other realms (Twining-Ward 2007; Twining-Ward & Butler 2002). Further, they explicitly attempt to monitor ‘sustainability’, a highly contested and elusive concept.

Sustainability indicators offer a potentially effective way to monitor interactions between Park tourism and local communities in line with a systems thinking approach. In recent years, sustainability has been equated with resilience and the ability to adapt to change over time (Berkes et al. 2003; Gössling et al. 2008; Walker & Salt 2006; Walker et al. 2009). Sustainability is thus related to the ability of an operation, area or system to constantly evolve and meet changing conditions. Both sustainability and resilience, therefore, are constantly moving targets rather than definable endpoints (Berkes et al. 2003; Farrell & Twining-Ward 2005; Hjorth & Bagheri 2006; Walker & Salt 2006). Sustainability indicators should be regarded as flexible and amenable to change as knowledge improves, not fixed targets to achieve (Miller & Twining-Ward 2005; Twining-Ward 2007). This stance aligns with adaptive management, which views indicator development as only an initial part of the management process (Miller & Twining-Ward 2005).

The intent of sustainability indicators to capture complexity, change and interactions between components aligns with the use of ‘surrogates’ in resilience. Resilience is not a directly measurable or observable phenomenon (Carpenter et al. 2005; Cumming et al. 2005). Surrogates, proxies of resilience derived from theory (Bennett et al. 2005), are used instead to measure and infer change. Surrogates differ from traditional indicators through their wider focus on the entire social-ecological system, rather than a single

This lack of defined parameters for achieving ‘sustainability’ has been criticised as an inherent weakness partly accounting for the limited progress towards achieving ‘sustainability’ over recent decades (Gössling et al. 2008).
sub-component (as with sustainability indicators) as well as interest in underlying variables supporting the capacity of a system (Carpenter et al. 2001) to achieve outcomes. Example surrogates include changes in institutions or behaviour, demography and economic structure (Adger 2000).

The process of identifying a sustainability indicator has several generally agreed steps (Reed et al. 2006). One, a statement of clear objectives – what is their purpose? Often the objective is to monitor tourism impacts (Myers 2008) but may also include ensuring relevance to policy, ability to engender action (Roberts & Tribe 2008) or to build community capacity (Schianetz & Kavanagh 2008). In this research, indicators were developed to help understand interactions among Parks, tourism and local communities, and community benefits, to assess movement towards a desired or undesired state (explored in Chapter 7.2.1). The indicators were designed to reflect individual Park policies and objectives regarding relations with local communities, for instance local employment or business opportunities, as well as being within current Park capacity to monitor.

A second step in formulating sustainability indicators involves establishing context through identifying key issues and areas of concern (Reed et al. 2006). Many see stakeholder involvement as vital to ensure indicators achieve context-specificity (e.g. Choi & Sirakaya 2006; Fredline et al. 2006; Reed et al. 2006; Twining-Ward 2007; Twining-Ward & Butler 2002; Vereczi 2007). Indicator type or properties are also determined. For example, are they intended to provide a measurable target, or to indicate progress towards or away from some desired state (Roberts & Tribe 2008)? Here, the focus was on understanding interactions and movement of the PATS relative to a desired state, making the latter type of indicator most appropriate. This kind of ‘directional’ indicator indicates progress towards a desired state or range of values, rather than an absolute target.

Directional indicators are often criticised for their lack of benchmarks or targets (Roberts & Tribe 2008). However, specifying measurable targets can lead to a focus on ‘ticking boxes’ and achieving required numbers rather than focusing on the underlying purpose of the indicator. Assigning an ‘acceptable range’ of upper and lower values, as opposed to a single target, may be a more suitable approach. The use of acceptable ranges that can be altered as knowledge builds accords with adaptive management
(Miller & Twining-Ward 2005) and the need to allow for uncertainty and change in social-ecological systems.

The fourth step involves evaluation of indicators against criteria including reliability, feasibility, relevance and the ability to show trends. Indicators should also be screened for stakeholder resonance (Twining-Ward & Butler 2002). Finally, indicators are monitored so that results and trends can be incorporated back into management to help ensure stated aims and objectives are met. This step resonates with adaptive management and addresses a common failing to ‘close the loop’ and integrate feedback (Jacobson et al. 2008; Twining-Ward & Butler 2002) to progressively improve management practice over time (Timko & Innes 2009; Twining-Ward 2007; WTO 2004).

These steps share many similarities with other indicator-based planning frameworks such as the Limits of Acceptable Change and Tourism Optimisation Management Model. The indicators developed in this research build upon these existing approaches while attempting to address some of their perceived limitations, seeking to improve the use of indicators as a means of monitoring interactions among local communities, Parks and tourism. This is done by basing indicator development within the broad and conceptually strong framework provided by resilience thinking (Zautra et al. 2008) and social-ecological systems perspectives.

Before discussing indicators derived for the two case studies, it is important to explore how monitoring currently occurs. Chapters 5 and 6 identified a number of key interactions among the Parks, tourism and local communities, including the use of natural resources, employment and intrinsic cultural connections to nature. How do Park managers monitor these interactions, if at all?

**How Kruger monitors relationships with surrounding communities**

Management and monitoring within Kruger follows a system of strategic adaptive management (SAM). SAM has proved highly successful in linking higher scale visions and objectives with measurable outcomes at lower levels of implementation (Parr et al. 2009). These measurable outcomes are thresholds of potential concern (TPCs) that define the upper and lower boundaries of the desired state of ecological variables within
the Park. Kruger’s use of TPCs accords with the idea of acceptable ranges and allowing a system to ‘bounce around’ within a desired state (Pollard & Du Toit 2007).

So far, TPCs only exist for ecological concerns (Biggs & Rogers 2003; Pollard & Du Toit 2007), despite efforts to progress into tourism or social spheres (Venter et al. 2008). This may stem from the volume historic ecological data available to Park managers to use in assigning threshold values, data that do not exist for social or tourism spheres. Extending the TPC approach beyond Kruger’s borders is inherently difficult given the complexity of managing for heterogeneity and dynamism when working with external stakeholders (Pollard & Du Toit 2007). The need to do so however is highlighted in Kruger’s management plan, which suggests the Park’s sustainability rests upon “co-operative, collaborative and mutually beneficial relationships with the broader park community” (SANParks 2008b p103).

The People and Conservation Department holds primary responsibility for establishing relationships with surrounding communities. Performance relative to specific objectives was not able to be sourced despite repeated efforts to obtain it. Recent research, however, indicates Kruger achieves ‘satisfactory’ social equity (Timko & Satterfield 2008), including addressing land ownership/tenure, livelihood opportunities and the participation of local communities in Park governance. ‘Satisfactory’ recognises that People and Conservation has achieved between 52-75% of desired social equity outcomes but “room for improvement” remains (Timko & Satterfield 2008 p245).

Additionally, some level of social responsibility applies to registered tour operators. National legislation and voluntary schemes such as the Broad Based Black Economic Empowerment Act (2003a) and Tourism BEE Charter (DEAT 2005) commit operators to employ black staff and enter into partnerships with black-owned businesses. However operators are often hindered by a lack of skills and money among community members to enter into partnerships or employment. A 25% discount to annual Park ‘administration’ fees applies if an operator is BEE-compliant. These data provide the only information on tour operator social responsibility in Kruger.

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114 Unavailable to the researcher.
How Purnululu monitors relationships with surrounding communities

DEC indirectly monitors the impact of Purnululu and tourism on local communities through sustainability criteria applied to safari camp operators. These criteria represent best practice for Western Australia and provide a model for other parks across the State. Operators are audited annually on achievement of the sustainability criteria by an independent person/body. Currently, operators must meet criteria pertaining to natural, built, economic and social environment performance, with each accounting for 25% of overall performance (DEC 2009; Maunsell Australia 2003). ‘Social environment performance’ is of specific interest to this research, requiring operators to look beyond Park boundaries and consider local communities (not defined, but stated to include Indigenous communities). This criterion requires making a “positive contribution to local communities in keeping with sustainability and ecotourism principles” (DEC 2009 p38). Four indicators are especially relevant to this research. Table 7.1 outlines these, together with minimum standards of acceptability, best practice and methods of measurement.
Table 7.1: Indicators of ‘social environment performance’ that encourage safari camp operators to provide benefits to local communities (DEC 2009; Maunsell Australia 2003)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Level of Indigenous employment/ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum standard</td>
<td>Commitment to provision of employment &amp; training opportunities to Indigenous locals</td>
</tr>
<tr>
<td>Best practice</td>
<td>At least partial ownership of operations by local Indigenous groups</td>
</tr>
<tr>
<td></td>
<td>High proportion of staff from local Indigenous groups</td>
</tr>
<tr>
<td></td>
<td>Cooperative relationship between Operators and Park Council</td>
</tr>
<tr>
<td>Measured by</td>
<td>Percentage of employees from local Indigenous groups</td>
</tr>
<tr>
<td></td>
<td>Percentage ownership by local Indigenous groups</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Culturally sensitive behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum standard</td>
<td>Awareness of local culture</td>
</tr>
<tr>
<td></td>
<td>Adherence to sacred site restrictions</td>
</tr>
<tr>
<td></td>
<td>Cultural content in educational material</td>
</tr>
<tr>
<td>Best practice</td>
<td>Active involvement &amp; ownership by Indigenous locals</td>
</tr>
<tr>
<td></td>
<td>Education of visitors regarding local culture</td>
</tr>
<tr>
<td>Measured by</td>
<td>Demonstrated understanding of culturally appropriate behaviour to the satisfaction of the Park Council</td>
</tr>
<tr>
<td></td>
<td>Reputation as shown by references from local groups</td>
</tr>
<tr>
<td></td>
<td>Accreditation with recognised Indigenous accreditation scheme</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Membership of local associations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum standard</td>
<td>Membership of regional tourism organisations &amp; visitor centres or similar</td>
</tr>
<tr>
<td>Best practice</td>
<td>Operation provides benefits to local communities</td>
</tr>
<tr>
<td>Measured by</td>
<td>Proof of membership (e.g. tourism organisations or visitor centres)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Proportion of expenditure from local communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum standard</td>
<td>Commitment to local expenditure whenever possible</td>
</tr>
<tr>
<td>Best practice</td>
<td>On site wholesale distribution of supplies to reduce transportation impacts &amp; provide local business opportunity</td>
</tr>
<tr>
<td>Measured by</td>
<td>Statement of commitment</td>
</tr>
<tr>
<td></td>
<td>Proof of local expenditure</td>
</tr>
<tr>
<td></td>
<td>Support of wholesale outlet</td>
</tr>
</tbody>
</table>

These existing indicators (Table 7.1) were developed using the ‘pressure/state/response’ model. In this model indicators are identified for pressures that may cause impacts (e.g., scale/style of tourism activities); states or conditions that reflect the impact of tourism activities on people or the environment; and responses or actions that can eliminate or mitigate impacts (DEC 2009). The pressure/state/response model has been criticised for not allowing variability in the assessment of ‘state’ (Pollard et al. 2009). However, the presence of methods for monitoring the impacts of Park tourism on local communities is in itself significant.
The requirement for operators to provide a level of Indigenous ownership or employment (Table 7.1) is one indicator particularly relevant to this research. This obliges providing employment and training opportunities for local Indigenous people, although ‘local’ can mean people from the wider area and is not specific to Warmun community. Best practice, which DEC encourages operators to achieve over a few years, requires partial Indigenous ownership of operations and a high proportion of local Indigenous staff (DEC 2009; Maunsell Australia 2003). While data were not available owing to commercial confidentiality, operators indicated significant difficulties in fulfilling employment requirements due to a lack of suitably qualified and interested candidates. However, one of the two currently licensed operators, East Kimberley Tours, is part owned by the Wunan Foundation, an Indigenous development group based in Kununurra (Chapter 4.4.2).

The indicators (Table 7.1) seek to promote best practice in community involvement and benefit from tourism. Measurable targets are not specified, in recognition that there may not be Indigenous people available or interested in working in Park tourism. Operator performance is instead measured by the efforts made by operators to create opportunities (Quartermaine, pers. comm., 2010). Purnululu’s current situation thus resonates with the work of Roberts and Tribe (2008) in that a direction of change or effort towards a desired state of Indigenous involvement is seen as more important than achieving specified targets.

This lack of measurable targets is not unique to Purnululu. Rather, it reflects a widespread criticism of protected areas in Australia. Parr et al. (2009), for example, draw on Kakadu National Park to highlight a general lack of explicit performance indicators or measurable targets. This lack problematises evaluation of management achievements and is criticised as making the assessment of change over time very difficult (Parr et al. 2009).

7.2 Monitoring interactions between Park tourism and local communities

The remainder of the Chapter presents an initial scheme for monitoring interactions between Park tourism and local communities. This has two parts: the development of future scenarios and derivation of case-specific indicators (Figure 7.1, Phase 4). Both were informed by social-ecological systems and resilience perspectives, and offer a means of tracking change over time in the relationship between Parks, tourism and local
communities. Before exploring these future scenarios and case study-specific indicators, the role of scale in influencing these is briefly considered.

7.2.1 The influence of scale of analysis

A local scale was adopted in the research, for several reasons. The study’s ethnographic approach, which identified locally-important issues and interactions, was one reason. These local issues may not have relevance at higher scales (Gössling et al. 2008). The focus on scale issues may also reflect the spatial realities of study respondents. Individuals were often characterised by a focus on immediate surroundings and livelihood needs: *this is just life from morning to sunset* [community member]. Some propose that for communities with a high dependence on natural resources, higher scale concerns (e.g. climate change) may simply be too hypothetical in relation to the immediacy of other livelihood shocks, such as basic access to amenities and insecure land tenure (Reid & Vogel 2006; Thomas & Twyman 2005).

This explanation holds particular relevance for the Kruger study: *you need to strive to live... it’s so difficult* [community member]. It may also apply in the Australian context, as illustrated through reference to the Purnululu Park Council: *the Park Council tends to lose its way a little bit on the bigger picture issues and focus more on the smaller picture issues. Ones that directly concern them, which is understandable* [Park staff]. Environmental management often ranks lower than other priorities facing Indigenous people, such as survival in the face of cumulative impacts of contact, colonisation and dislocation (Lane & Corbett 2005). Further, many Indigenous societies are small scale in their decision making and type of institutions (Langton 2003), leading to the prioritisation of local perspectives. In contrast, conservation often involves higher scale national, regional and international perspectives.

A second reason underlying the local scale of research is that Park managers must be able influence interactions, in order to adjust management actions and policies in response to feedback. Undoubtedly, numerous factors operating at diverse scales influence how Parks, tourism and local communities interact. Not all of these factors can or will be investigated here. Many, including historical conflict and uncertainties in future funding, are beyond the ability of local actors to control (Cundill & Fabricius 2010), including Park managers. Thus factors operating at the local scale, amenable to local influence, were privileged over those at national or international scales which Park
managers have little ability to influence.\textsuperscript{115} This selection of scale explicitly favours the ability of local actors to influence decision making (Cundill & Fabricius 2010). While a local scale focus was judged most appropriate for this research, investigation at other scales may return different conclusions and a different set of indicators. This reflects the reality that indicators are a nested concept (Turnhout \textit{et al.} 2007) and may be employed to represent any level of complexity (Heink & Kowarik 2010; Vereczi 2007; WTO 2004). For example, a national or international scale of analysis would likely identify climate change as an influential variable affecting protected areas.

Globalisation, demography and land use change are other drivers that feature at higher scales. These drivers indisputably influence the dynamics of protected area tourism. Their higher scale of origin however limits the ability of local stakeholders to influence them or policies pertaining to them, precluding their exploration here. For further information on the role of these and other higher scale drivers, refer to Nelson \textit{et al.} (2006) for a general overview, MEA (2005) for discussion in the context of southern Africa and Dwyer \textit{et al.} (2008) in relation to global and Australian tourism.

\textbf{7.2.2 Current system state}

To monitor change over time in the relationship between Parks, tourism and local communities, it is necessary to start with baseline information. Research findings provide this information, indicating interactions among system components to be complex and at times, surprising or counter-intuitive. These interactions manifested in a number of key issues identified by stakeholders as central elements of ‘the system’. Broadly, the key issues can be categorised as connecting Park tourism and local communities, or those contributing to ‘disconnect’ or separation.

Table 7.2 outlines key issues leading to connection and separation in the case studies. These were derived through the conceptual framework and discussed in earlier Chapters (see also Table 5.1 and 6.1). Issues contributing to greater links between the Parks, tourism and local communities are largely related to interactions that increase ‘boundary permeability’. This term has been used previously to denote the figurative and metaphorical breaking down of barriers between the Parks and local communities.

\textsuperscript{115} This reflects an endogenous/ exogenous binary in systems terms (MEA 2005).
Creating opportunities for local employment and facilitating visits to the Parks (Table 7.2), for example, potentially help foster more positive community attitudes.

A number of issues listed in Table 7.2 exhibit similarities to work by Hoole (2008; Hoole & Berkes 2009) regarding the ‘decoupling’ of Herero communities from their traditional environment within Namibia’s Etosha National Park. Hoole (2008) discusses this decoupling as evidence of missing links or feedbacks between social and ecological realms. Further, he proposes that desired benefits raised by local communities represent an ideal means to ‘recouple’ the social-ecological system through strengthening linkages between Etosha and local people. A similar hypothesis is adopted here, with the following indicators premised on monitoring interactions that connect locals to the Parks and tourism, as well as local involvement with and benefit from protected area tourism. This approach is informed by resilience thinking, which encourages management to enhance positive and minimise negative interactions, as well as building local capacity to adapt (Cinner et al. 2009; Walker et al. 2002).

<table>
<thead>
<tr>
<th>Issues connecting Parks, tourism &amp; local communities</th>
<th>Issues fostering ‘disconnect’ &amp; perceived separation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic values held by locals (e.g. existence, aesthetic, bequest, spiritual values)</td>
<td>Historical legacies of discrimination:</td>
</tr>
<tr>
<td>Resource harvesting trials (e.g. thatching grass, traditional medicines)</td>
<td>- forced relocation (whether personally experienced or anecdotal)</td>
</tr>
<tr>
<td>Employment in Park tourism</td>
<td>- ‘fences &amp; fines’ approach</td>
</tr>
<tr>
<td>- training &amp; skills development; community empowerment projects</td>
<td>Restrictions on use of natural resources (e.g. wood, small game, medicinal plants)</td>
</tr>
<tr>
<td>- partnerships in tourism enterprises</td>
<td>Unmet expectations regarding employment</td>
</tr>
<tr>
<td>Free entry to the Parks/ability to visit for pleasure/ caring for country</td>
<td>Difficulties in visiting the Parks</td>
</tr>
<tr>
<td>- access to ancestral gravesites, cultural sites</td>
<td>Wildlife attacks on crops, stock &amp; humans</td>
</tr>
<tr>
<td>Environmental education</td>
<td>Loss/decline of social memory re: traditional practices, environmental knowledge as a result of restricted access (enforced &amp;/or logistical barriers)</td>
</tr>
<tr>
<td>Opportunities to become involved in governance</td>
<td>Discontent over governance</td>
</tr>
</tbody>
</table>

* Not all issues apply to both case studies; e.g., conflicts over wildlife do not apply to the Purnululu study.
These key issues and interactions between local communities and Park tourism (Table 7.2), as well as hypothesised fast and slow variables, provide an indication of the current system state. This current state forms the basis of monitoring system change and for developing indicators to monitor interactions among local communities, the Parks and tourism. One way it does this is through providing a starting point for the development of future scenarios.

### 7.2.3 Hypothesised future scenarios

Future scenarios are a central element of the guiding conceptual framework (Figure 2.1, Phase 4). The researcher, drawing on information from the conceptual framework and discussions with respondents, developed the scenarios. They represent a plausible future that may characterise the case studies, given certain conditions. These conditions are based on an understanding of past and current events (Figure 2.1, Phases 1-3) and how the system may change in the future (Peterson et al. 2003; The Resilience Alliance 2007a).

Each scenario tracks the potential development of issues identified in Chapters 5 and 6 (recaptured in Table 7.2). For example, the case studies are characterised by the presence of intrinsic values held by locals towards the Parks’ natural environments. In the future, these intrinsic values may be enhanced, or lost completely. Future scenarios were also informed by adaptive cycle modelling (Table 3.1, 4.1), which provided insights into past system change, key drivers that may influence future interactions and outcomes as well as the likelihood of change.

The scenarios can help to highlight uncertainties and assumptions guiding management. By drawing attention to different pathways a system may follow (i.e. no change, for the better, worse) and the desirability of these, future scenarios can also help identify potential thresholds (The Resilience Alliance 2007a). Stakeholders can use the scenarios to identify when a certain set of conditions is undesirable, e.g. a loss of intrinsic values, and ‘backward map’ to gain an idea of interventions needed to avoid reaching that state. Conversely, the scenarios can be used to define a desired state and to plan interventions to foster movement towards that state. Future scenarios are explicitly linked to the use of indicators, which are needed to track which development pathway a system is following. The scenarios link past and current system state with the development of
indicators, and can assist in the eventual derivation of thresholds. As such, they are an important component of the conceptual framework and overall research process.

Three future scenarios have been developed to describe possible development pathways (Peterson et al. 2003; The Resilience Alliance 2007a). They hypothesise a future based on assumptions of no change, change for a perceived ‘better’ (everyone benefits) or change for ‘worse’ (breakdown of relationships). These scenarios are outlined in two tables. Table 7.3 hypothesises what the future may look like in relation to key issues identified from the data (Table 7.2). Table 7.4 is based on a similar premise but hypothesises how key fast and slow variables identified throughout the thesis may be characterised in the future. The distinction between these two tables is arbitrary and they overlap somewhat given the close link between drivers and issues. Both are included here to assist stakeholders in future decision making and the possible identification of likely socio-cultural thresholds.

The first hypothesised future scenario, ‘no change’ is one in which current conditions are maintained, but no extra effort is made by Park managers or tourism operators to enhance the accrual of benefits to local communities (Table 7.3, 7.4). Some benefits accrue to local communities through less tangible benefits associated with aesthetic, bequest and spiritual connections to the Parks. Jobs and associated economic receipts provide another benefit, although their distribution is limited among community members.
<table>
<thead>
<tr>
<th>Issue</th>
<th>Scenario 1 ‘No change’</th>
<th>Scenario 2 ‘Everyone benefits’</th>
<th>Scenario 3 ‘Breakdown of relationships’</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intrinsic values held by local communities</strong></td>
<td>Present: appreciation of existence, aesthetic, bequest &amp; spiritual values</td>
<td>Enhanced; active attempts to maintain &amp; build local connections to the Parks</td>
<td>Lost/greatly diminished. Local communities view the Parks for economic gains alone. Loss of social context needed for conservation</td>
</tr>
<tr>
<td><strong>Traditional practices of local communities (e.g. cultural rituals)</strong></td>
<td>Occur, but limited/restricted by difficulties in visiting the Parks &amp; obtaining necessary resources (e.g. medicinal plants)</td>
<td>Strengthened, greater appreciation of their significance by other stakeholders</td>
<td>Loss of traditional practices &amp; social memory, in part linked to a reduced appreciation for them</td>
</tr>
<tr>
<td><strong>Use of natural resources</strong></td>
<td>Unregulated illegal use. Limited official use; some harvesting trials being introduced</td>
<td>Limited/no illegal use. Official use regulated by Park authorities &amp; conducted sustainably</td>
<td>Wanton use of Park resources without thought for future generations</td>
</tr>
<tr>
<td><strong>Employment in Park tourism</strong></td>
<td>Limited. Benefits restricted to a few households &amp; immediate dependents</td>
<td>Further opportunities for local involvement i.e. providing goods &amp; services, value-adding, informal opportunities, cultural tourism. Greater spread of economic benefits, more training opportunities to promote skilling/ advancement through ranks</td>
<td>Loss of many existing/future jobs to non locals</td>
</tr>
<tr>
<td><strong>Visits to Parks by local communities</strong></td>
<td>Largely infrequent; limited by transport &amp; financial restrictions</td>
<td>Facilitated by increased number/advertising of free events, reduced entry fees, affordable transport services for local communities</td>
<td>No entry for locals to the Parks/restricted access only</td>
</tr>
<tr>
<td><strong>Environmental education</strong></td>
<td>Present (in Kruger); greatly appreciated benefit contributing to positive relationships</td>
<td>Ongoing (or introduced) implementation of programmes, enhanced scope, audience &amp; effectiveness in achieving a local conservation ethic/stewardship</td>
<td>Education ineffective in fostering a sense of stewardship among local communities</td>
</tr>
<tr>
<td><strong>Damage-causing animals (DCAs)</strong></td>
<td>Of great concern re effect on local livelihoods. Damage not compensated</td>
<td>Incidents reduced through better integration of efforts among authorities. Local communities compensated for damages</td>
<td>Communities kill DCAs; profits (e.g. meat, sale of horns/ivory) retained by communities. Animals also killed inside the Park</td>
</tr>
<tr>
<td><strong>Involvement in governance</strong></td>
<td>Limited &amp;/or under revision. Presence of inequities in rights &amp; responsibilities of Park managers &amp; local communities. Of limited relevance to local communities</td>
<td>Locals have a greater say in Park/tourism governance; active involvement on committees, forums etc, skills development actively pursued</td>
<td>Locals have no say in Park/tourism governance. Decisions made without thought for/reference to potential impacts on local communities</td>
</tr>
</tbody>
</table>
Table 7.4: How key fast and slow variables may be characterised in the future

<table>
<thead>
<tr>
<th>Property rights</th>
<th>Scenario 1 ‘No change’</th>
<th>Scenario 2 ‘Everyone benefits’</th>
<th>Scenario 3 ‘Breakdown of relationships’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast/slow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>variable</td>
<td>Fast/slow variable</td>
<td>Property rights</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Greater security of tenure/rights for local communities</td>
<td>Loss of security/rights for local communities</td>
</tr>
<tr>
<td>Land degradation</td>
<td>Reduced both inside &amp; outside Parks owing to sustainable harvesting schemes, greater socio-political security, security of tenure/rights</td>
<td>Increased due to e.g. loss of cultural/spiritual respect for nature, no property rights, no say in governance</td>
<td></td>
</tr>
<tr>
<td>Western education/skills</td>
<td>No efforts made by Park managers, tourism operators or local communities themselves to alter current conditions or interactions</td>
<td>Improved via training/skills development, environmental education. Parks/tourism contribute financially to local schools, offer scholarships for further education/training in business management</td>
<td>Two possible outcomes. i) enhanced as a result of income generated through illegal sale of Park resources. ii) lessened as opportunities to learn &amp; work in a tourism or business environment are reduced</td>
</tr>
<tr>
<td>Financial poverty/money</td>
<td>Improvement in financial resources of locals as more opportunities to benefit financially are created. Micro credit schemes</td>
<td>Improvement in financial resources of local communities as resources are utilised for economic gain</td>
<td></td>
</tr>
<tr>
<td>Cultural norms &amp; values</td>
<td>Cultural norms/values relating to respect for &amp; appreciation of nature are enhanced</td>
<td>Cultural norms/values &amp; intrinsic relationships to nature are lost, or severely diminished</td>
<td></td>
</tr>
<tr>
<td>Tourist arrivals</td>
<td>Sustained visitor arrivals at the Parks, with increases as appropriate without exceeding potential thresholds relating to environmental quality &amp; visitor experience</td>
<td>Possible decrease as nature-based tourism qualities are lost through overuse of natural resources/land degradation; possibly also due to perceptions of safety owing to tensions between communities &amp; Park authorities</td>
<td></td>
</tr>
<tr>
<td>Institutions</td>
<td>Greater co-management of resources &amp; opportunities; re-strengthening of traditional controls &amp; knowledge. Characterised by innovation &amp; novelty</td>
<td>Complete breakdown of existing institutions governing access to Parks &amp; resources</td>
<td></td>
</tr>
</tbody>
</table>

Given that research findings indicate a widespread desire for greater involvement and benefits to accrue to local communities from Park tourism, this scenario is likely to be undesirable for respondents. Further, a future characterised by no change appears improbable in the context of ongoing surprise and dynamism in which social-ecological systems operate.
A second future scenario is one in which ‘everyone benefits’ (Table 7.3, 7.4). This scenario is characterised by greater investments in developing existing connections between Park tourism and local communities as well as actions to build stocks of capital/adaptive capacity among local communities. These investments may include actions to foster greater appreciation of intrinsic values, such as increasing opportunities for locals to visit the Parks and be involved in the tourist experience, as well as reducing barriers to this. In the Kruger study for example, this could mean the continuation and strengthening of environmental education programmes to a wider audience; for Purnululu, implementing similar approaches among local communities and schools.

Under this scenario, Park managers and tour operators foster opportunities for local economical benefit. Community members also play an active role in pursuing involvement in Park tourism. All stakeholders are involved in creating a more beneficial state, to the satisfaction of all as jobs are created, connections maintained, negative interactions minimised and legal and moral obligations met. ‘Everyone benefits’ outlines a future in which connections are maintained and the capacity of local communities to become involved and benefit from Park tourism is enhanced. For this reason, the following indicators seek to monitor movement towards this state, emphasising interactions that enhance connectivity between local communities, the Parks and tourism.

A third scenario, ‘breakdown of relationships’ is characterised by predominantly negative attitudes towards the Parks and tourism among local communities (Table 7.3, 7.4). Key outcomes of this scenario include greater hostility and the loss of intrinsic values associated with the Parks. Locals hold a predominantly economic view that emphasises individual financial gains possible from the Parks. This scenario hypothesises the wanton use of Park resources such as plants and animals, as locals no longer feel compelled to conserve the Parks for their children or as a place for transmitting traditional knowledge.

Other research suggests that a reduction in non-pecuniary connections linking local people to protected areas may result in loss of the social context needed for their existence (Parr et al. 2009). That is, if people do not value the Parks, they are unlikely to protect them and may actively degrade them. This potential was clearly recognised in the Kruger study: [locals] could just move in and take over. Who’s going to stop them?
You going to bring in the army? [Park staff]. The potential for loss of intrinsic cultural values has been recognised in the Southern African region, driven by a number of factors. These include: shifts in land use, overharvesting, commodification of resources/spiritual sites, weakening traditional/spiritual leadership (e.g. chiefs, spirit mediums) and erosion of traditional values. Community-based natural resource management initiatives, which may not give due recognition to local knowledge and non-financial benefits, including cultural services, represent a further potential driver leading to loss of intrinsic cultural values (Shackleton et al. 2008). Many of these driving forces have been touched upon in previous discussions of the Kruger case study.

‘Breakdown of relationships’ resonates with potential thresholds based on a loss of socio-cultural identity or heritage (Petrosillo et al. 2006). The scenario also aligns with Figueroa and Aronson’s (2006) exploration of the ‘poorly linked’ state of protected areas with adjacent landscapes. If not attended to, these poor links may lead to the irreversible loss of social-ecological values associated with a protected area. This third scenario is associated with a number of potential adverse thresholds. For example, it hypothesises an increase in land degradation, which is likely to affect the attractiveness of the Parks as nature based tourism destinations. In turn, this may influence tourist arrivals and hence the ability of the Parks to generate revenue and conserve biodiversity. Research findings highlight a widespread appreciation of intrinsic values and benefits associated with the natural environments of the Parks. These findings potentially suggest that this scenario is likely to be undesirable for respondents. However, this perceived undesirability may help stakeholders to identify potential thresholds and actions that can be taken to help avoid reaching them.

### 7.3 Indicators for monitoring interactions for Kruger and Purnululu

Three overarching areas were identified as requiring monitoring: socio-cultural links between local communities and the Parks; opportunities for local benefit from Park tourism; and the presence/perceived quality of local involvement in Park governance. A focus on these three areas captures the range of key issues and interactions involved in fostering connections and minimising ‘disconnect’ or perceived separation (Table 7.2). This focus on connections seeks to re-establish and maintain links between social and ecological realms, in accordance with such calls in the literature (e.g. Figueroa & Aronson 2006; Hoole & Berkes 2009). The indicators draw on hypothesised future scenarios (Table 7.3), which assist in highlighting potentially desirable or undesirable
interactions between local communities and Park tourism. They are also designed to reflect changes or improvements in critical slow variables that influence local outcomes (Table 7.4); for example, several indicators track changes in local skills and education.

Collectively, they are surrogates for tracking changes in the relationship between the Parks, tourism and local communities. As with any indicator set, they are inherently subjective and open to criticism or challenge (Roberts & Tribe 2008) as well as further refinement when the assumptions and understandings on which they are based change (Nkhata et al. 2009; Twining-Ward 2007). Presently however, they are a useful method for monitoring the relationship between the Parks, tourism and local communities and provide an indication of what is considered an ‘acceptable’ impact or interaction from a local community perspective.

Indicators were selected following a screening process, including alignment with Park and research objectives regarding local community involvement and benefit from Park tourism. Each indicator was developed from information gained via the conceptual framework and respondents, ensuring context-specificity and local resonance. Indicators were also screened to ensure reliability, feasibility, relevance and the ability to show trends.

Many of the indicators accord with Plummer and Armitage’s (2007) parameters for examining livelihood outcomes, outlined in their resilience-based framework for evaluating adaptive co-management. Their broad and higher-order parameters “direct attention toward… positive and negative livelihood (socio-economic) impacts associated with adaptive co-management” (Plummer & Armitage 2007 p69). This focus on livelihood impacts associated with specific management interventions is echoed in this research, which follows a similar approach to map the influence of protected areas and tourism on local communities. The following indicators build upon Plummer and Armitage’s (2007) framework to develop detailed measures of livelihood outcomes relevant to the specific contexts of the Kruger and Purnululu case studies.

Drawing on research grounding in systems perspectives and resilience, the indicators also help monitor changes in adaptive capacity. The Purnululu system is believed to be in a persistent reorganisation/exploitation phase, which may possibly represent a maladaptive spiral into a poverty trap (Chapter 4.6). This modelled behaviour suggests
that the system lacks or is constrained in its capacity to adapt. For this reason, investments in community capacity to enhance their ability to become involved in Park tourism are required. Similarly, the Kruger system seems to be in an extended reorganisation phase (Chapter 3.6) characterised by diverse new opportunities that require investments in community capacity if they are to succeed. The indicators are designed to track investments in stocks of capitals or resources held by local communities. ‘Investments’ include policies or interventions to support and build local capacity to adapt and create local opportunities and solutions (Carpenter et al. 2001; Shackleton et al. 2008) in relation to protected area tourism. By tracking these investments and associated changes in adaptive capacity, the indicators reflect the original research focus on social resilience, the ability of local communities to cope with and adapt to change and opportunity provided by protected area tourism.

Significant contextual differences mean the proposed indicators are not equally relevant to each case study. For instance, damage-causing animals and use of natural resources were interactions relevant to the Kruger study only. However in all instances the indicators are derived from the research data and represent areas for which respondents expressed concern or appreciation.

### 7.3.1 Socio-cultural values held by local communities

The first area for which indicators are proposed concerns the intrinsic socio-cultural values held by local communities. The inclusion of cultural indicators here is significant as recognition and monitoring of cultural values has received much less attention than environmental values, particularly in the field of protected area management (Hockings et al. 2006; Pretty et al. 2008) but also tourism (Donohoe in press). This may be because socio-cultural values are often intangible and difficult to define, and culture is continually evolving (Roberts & Tribe 2008). For instance, Kruger has a ‘cultural services’ objective that seeks to promote and facilitate access to intangible benefits associated with the Park, e.g. spiritual and aesthetic experiences. Thus far, no measurable goals exist to monitor this. Instead, documentation notes that the quantification of intangible benefits is challenging (SANParks 2009b). This research provides a basis for further developments in this area.

Socio-cultural values held by local communities included a cultural and spiritual appreciation of natural environments and landscapes, strongly associated with bequest
values or the desire to maintain the Parks and their resources for the benefit of future
generations. These values appear to provide an indication of local perceptions of
stewardship or intrinsic connection to the Parks, believed necessary to ensure the socio-
cultural context required for Park survival into the future. The following socio-cultural
indicators recognise the need to look beyond purely economic or tangible measures of
‗benefit‘, for fear of marginalising intangible benefits such as culture, traditional
knowledge and psychological wellbeing (BRIM 2002; Masuku Van Damme & Meskell
2009; Michaelidou et al. 2002). The importance of traditional practices and knowledge
in buttressing community identity and adaptive capacity has been noted previously, as
has the potential for Park managers to harness intrinsic connections between local
communities and the Parks to enhance relationships and perceptions of benefit accrual
(Chapter 5.2).

The socio-cultural indicators were derived from insights generated in earlier phases of
research regarding key issues and drivers. Most of the indicators monitor benefits
derived from socio-cultural links between locals and the Parks, environmental education
and the use of natural resources (Table 5.1). They also reflect upon the changes in slow
variables including cultural norms and values and poor Western skills/education that
constrain the ability of locals to become involved and benefit from Park tourism (Table
5.1, 6.1).

Table 7.5 outlines indicators to assist Park managers in monitoring socio-cultural links
between local communities and the Parks. Two indicators are proposed, being
opportunities for local community involvement in Park and the maintenance of
traditional customs & practices. For each of these, a number of measures are outlined by
which to monitor change. Each measure relates to a key issue emerging from the data,
as resilience assessments are issues-based (The Resilience Alliance 2007a). Further, the
measures were designed to ensure that Park managers have some ability to influence
outcomes should monitoring indicate an undesirable trend. For each measure, an
indication of the desired direction of change, to which case study it applies, and the
availability of data required for measurement is outlined. Each indicator is discussed in
turn and rationale for proposed measures of change explored in relation to the case
studies and the literature.
Opportunities for local communities to be involved in Park activities

The first indicator monitors opportunities for local community involvement in Park activities. Based on research findings, seven potential measures are suggested. These measures address issues that foster both connection and separation between local communities and the Parks (Table 7.2).

The first measure is the number of local youth attending Park-run environmental education programmes. Specific to the Kruger study, this measure assists in monitoring the development of a conservation ethic among local youth, corresponding to the need for measurable goals relating to the SANParks overarching ‘constituency building’ objective and ‘environmental education’ sub-objectives (SANParks 2009b). Environmental education currently does not operate in Purnululu although if in the future time and funding permit, implementation of similar programmes would be possible.

Environmental education presents a valuable means of nurturing a local conservation ethic and positive attitudes towards the Park. In Kruger, environmental education was highly appreciated by locals, with benefits including the opportunity to visit Kruger for free, receiving learning information and developing a greater appreciation of plants and animals. These appear related to the influence of poor Western education and a lack of money (Table 5.1), slow variables influencing local appreciation of environmental education by limiting the ability to pursue further knowledge/skills, as well as to pay for Park entry.

For these reasons, environmental education appears a key manner in which to potentially foster a deeper appreciation of the Park and its resources among locals, as well as assist in the development and maintenance of positive attitudes towards the Park (Chapter 5.2). Additionally, getting children involved in environmental education programmes can help to develop the capacity for learning and self-organisation among local communities, two key requirements for resilience.
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Potential measure</th>
<th>Desired movement</th>
<th>Applies to Kruger</th>
<th>Applies to Purnululu</th>
<th>Data available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunities for local community involvement in Park activities</td>
<td>No. local youth attending Park-run environmental education programmes</td>
<td>↑</td>
<td>+</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Perceived quality/learning outcomes of education programmes as measured by staff &amp; facilitator attitudes</td>
<td>↑</td>
<td>*</td>
<td>*</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>No. community members participating in voluntary stewardship programmes run by the Parks</td>
<td>↑</td>
<td>+</td>
<td>*</td>
<td>In part</td>
</tr>
<tr>
<td></td>
<td>No. opportunities for community members to provide culturally-specific training &amp; information to Park managers, tour operators or tourists</td>
<td>↑</td>
<td>N/A</td>
<td>*</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>No. local community members involved in Park-run resource harvesting trials</td>
<td>↑</td>
<td>*</td>
<td>N/A</td>
<td>In part</td>
</tr>
<tr>
<td></td>
<td>No. special cultural or community events held inside the Park</td>
<td>↑</td>
<td>*</td>
<td>*</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Perceived quality of cultural/community events as measured by attendee attitudes</td>
<td>↑</td>
<td>*</td>
<td>*</td>
<td>No</td>
</tr>
<tr>
<td>Maintenance of traditional customs &amp; practices</td>
<td>Percentage of requests for Park resources by traditional healers that are met or approved</td>
<td>↑</td>
<td>*</td>
<td>N/A</td>
<td>In part</td>
</tr>
<tr>
<td></td>
<td>No. known producers of artwork relating to the Park &amp; quality of artwork as determined by culturally appropriate figures</td>
<td>↑</td>
<td>N/A</td>
<td>*</td>
<td>In part</td>
</tr>
<tr>
<td></td>
<td>Percentage of youth representation among artwork producers/traditional healers</td>
<td>↑</td>
<td>*</td>
<td>*</td>
<td>In part</td>
</tr>
<tr>
<td></td>
<td>Percentage of youth representation on on-country trips with elders</td>
<td>↑</td>
<td>N/A</td>
<td>*</td>
<td>In part</td>
</tr>
</tbody>
</table>

+ Currently in use  * Potential application  N/A Not applicable
Being able to physically visit ‘nature’ is important in reducing perceived disconnect from natural environments, which results from the loss of context or meaning associated with cultural worldviews and beliefs (Pretty et al. 2008). Research highlights the need to monitor the development of a conservation ethic, promotion of environmental awareness and the provision of environmental education experiences by protected areas (e.g. Schianetz & Kavanagh 2008; Tsaur et al. 2006; Vereczi 2007). Park-run environmental education encapsulates these areas of interest and so represents an ideal means of monitoring relationships between the Parks and local communities.

However, simply monitoring the number of attendees is not sufficient, as this can lead to ‘bean counting’ and reduced quality of education as staff attempt to meet annual targets. Therefore, the number of attendees are to be monitored together with the perceived quality/learning outcomes of education programmes. The development and consistent use of a short feedback or evaluation form for environmental education staff or facilitators would enable perceived quality to be monitored over time. A similar process could be applied to school children themselves in a pre/post experience manner, to see what learning has been achieved and if awareness has been heightened (Ross & Wall 1999).

A third measure of local involvement in Park activities is the number of community members participating in voluntary stewardship programmes run by the Parks. Participation in voluntary stewardship projects, for example Kruger’s ‘Honorary Ranger’ or ‘Steenboks’ programmes, offers opportunities for locals to become involved in Park activities (Chapter 5.3). This measure thus in part monitors support for resource conservation (Tsaur et al. 2006), the involvement of people in support clubs such as ‘friends of the park’ groups (WTO 2004) and has similarities to the social capital literature, which often uses ‘community volunteerism’ as an indicator (Productivity Commission 2003).

Community respondents identified involvement in these stewardship programmes as offering tangible as well as intangible benefits including opportunities to enhance personal knowledge of plants and animals and opportunities for cultural exchange with tourists. Data would be easy to collect based on existing records although there is a recognised need to set up a centralised database to enable effective planning and intervention for these programmes (SANParks 2009a).
Currently this measure applies to Kruger only. Purnululu does not operate formal community programmes, although similar voluntary programs do exist in other jointly managed parks in Australia. Uluru-Kata Tjuta and Booderee National Parks, for instance, operate ‘Junior Ranger’ programmes involving local Indigenous children. These programmes seek to help young people engage with conservation and cultural heritage (Director of National Parks 2009a, b). A number of Canadian national parks have similar programmes intended to encourage the maintenance of cultural ties to land in national parks (Timko & Satterfield 2008).

A fourth measure of local involvement in Park activities is the number of opportunities for community members to provide culturally-specific training and information to Park managers, tour operators or tourists. Information regarding culturally appropriate behaviour and social mores may help to encourage more culturally sensitive business operations or personal behaviours (WTO 2004), potentially reducing conflicts. This measure may be more pertinent to the Purnululu study, where respondents noted cultural differences complicating governance and management, as well as difficulties of cross-cultural communication (Chapter 6.3.1).

Other jointly managed parks in Australia are characterised by a specific training strategy and the delivery of interpretive and environmental programmes by Indigenous people (Director of National Parks 2009b). These programmes and the measure proposed here address multiple areas of concern to respondents in the Purnululu study. These include the provision and incorporation of cultural information by Park staff and tour operators; employment for local Indigenous people; and the ability to impart cultural information to younger generations. The measure also corresponds with the need to provide tourists with information about local customs, behaviour and heritage (Choi & Sirakaya 2006; Roberts & Tribe 2008; Twining-Ward 2003; Viljoen 2007). It partly addresses the need for indicators measuring the formal recognition of Indigenous culture (SCRGSP 2005) as well as recognition of Indigenous governance and laws (United Nations 2006).

Although currently not a feature of the Purnululu study, this measure would aid tour operators in meeting licence conditions regarding ‘social environment performance’, for example culturally sensitive behaviour (Table 7.1). Further, this measure appears more quantifiable than existing methods of assessing culturally sensitive behaviour. Currently, these are measured through ‘demonstrated understanding of culturally-appropriate behaviour to the satisfaction of the Park Council’, ‘reputation as shown by
references from local groups’ and ‘accreditation through a recognised Indigenous accreditation scheme’ (DEC 2009; Maunsell Australia 2003) (Table 7.1). While the latter provides a good indication of achievement, the former two seem weaker measures.

A fifth measure of opportunities for local involvement in Park activities, relevant only to the Kruger study, concerns the number of local community members involved in Park-run resource harvesting trials. Currently, Kruger staff monitors the number of resource harvesting projects although it is not clear whether this includes participant numbers. This measure corresponds to SANParks ‘provisioning services’ and ‘sustainable consumptive natural resource use’ objectives that seek to promote and facilitate access to and sustainable use of selected natural resources. It also relates to proposals to implement a monitoring programme and indicators for evaluating the impacts of resource harvesting (SANParks 2009b).

Ensuring the access of various groups to natural resources is often a common consideration for management authorities (Timko & Satterfield 2008; Tsaur et al. 2006). This can reflect socio-cultural concerns, for example the use of traditional medicines. Permitting use of Park resources may also stem from economic realities and the need to assuage livelihood needs. However, Park authorities clearly need to monitor the threats local livelihoods and resource use pose to a protected area (Tsaur et al. 2006).

Consequently, the desired movement of this measure would change over time. An initial increase in people involved in resource harvesting trials would be appropriate to help meet immediate livelihood needs. Over time, a decrease in people involved would be desirable, signalling a lesser dependence on natural resources as a livelihood strategy. To achieve a reduction, it is important to combine efforts with supplemental income strategies that will help to increase flexibility and broaden the range of local livelihood strategies (Cinner et al. 2009). One means of achieving this is through providing further opportunities for employment, as suggested in Table 7.6.

A sixth measure of local involvement in Park activities is the number of special cultural or community events held inside the Parks. For example, community events associated with national heritage days, Park milestones and other environmental calendar days (SANParks 2008b). Special events where local communities can visit the
Parks for free and participate in events were greatly appreciated in the Kruger case study. Many community members cited such events as evidence of Kruger ‘working with’ local communities and being invited led community members to feel part of the Kruger experience. Thus, this measure clearly reflects upon opportunities for local communities to participate in Park activities. In Purnululu, this measure perhaps better relates to the second indicator, the maintenance of traditional customs and practices (Table 7.5), as events are more likely to reflect on the maintenance and transmission of Indigenous culture rather than involvement in Park activities.

A final and linked measure is the *perceived quality of events, as measured by attendee attitudes*. As with environmental education, it is important to measure not only the number of events, which can promote a culture of ‘quick and dirty’ approaches aimed at achieving set targets, but also the perceived quality of those events. Measuring perceived quality helps to gauge the potential success of events in demonstrating or building links between a Park and local communities. Inherently subjective, this measure could be gauged through the development and use of a short, one-page questionnaire distributed to attendees (in local languages) assessing attitude towards the content of the event. Alternatively, a very short interview of 2-3 questions could engage attendees with literacy issues.

**The maintenance of traditional customs and practices**

The second indicator for monitoring socio-cultural values held by local communities towards the Parks concerns the maintenance of traditional customs and practices by community members (Schianetz & Kavanagh 2008; Timko & Satterfield 2008; WTO 2004). Traditional customs and practices form a critical link between local communities and the Parks, with Parks containing resources used in traditional practices as well as being places of spiritual and cultural significance. Four measures are associated with this indicator (Table 7.5). These measures reflect intrinsic links between community members and the Parks, particularly bequest and spiritual values, as well as on underlying cultural norms (Table 5.1).

The first measure, relevant to the Kruger study alone, is the *percentage of requests for Park resources by traditional healers that are met/approved*. Among the general breakdown of traditional authorities in southern Africa (Shackleton *et al.* 2008; Twine *et al.* 2003), traditional healers may represent one local institution whose authority
remains legitimate. The use of traditional healers therefore reflects on and strengthens the existence of cultural traditions, knowledge and identity (Botha et al. 2004; Coad et al. 2008).

The presence of traditional practices, ritual activities and indigenous traditional knowledge are suggested as indicators of the production of cultural resources. The consumption of these cultural resources may be monitored by activities surrounding the use of this cultural heritage and the reinforcement of local and individual identities through carrying out religious, spiritual or traditional activities (Keitumetse in press). The measure proposed here is an attempt to quantify the ‘carrying out’ of traditional customs and activities, through a focus on traditional healers.

Data may be easily obtained through records of requests made to community forums or via correspondence/records held by Park authorities. This measure has some similarities with the previously discussed measure ‘number of local community members involved in Park-run resource harvesting trials’. It also corresponds to SANParks ‘cultural services’ objective and the identified need to promote cultural knowledge systems (SANParks 2009b). Preliminary feedback from Kruger staff suggests this measure could be amended to monitor active attempts by Park staff to ascertain and meet demands, rather than wait for requests.

Other studies suggest monitoring of traditional culture and activities. Tsaur et al. (2006), Choi and Sirakaya (2006), Vereczi (2007) and Viljoen (2007), for instance, cite the need to monitor the loss or strengthening of traditional culture as well as the provision of diverse cultural opportunities and possibilities for cultural exchange. The provision of such distinct cultural experiences often adds an ‘edge’ to tourism marketing. Beyond this, displays of traditional culture or practices offer a chance for local communities to transfer cultural information to younger generations, earn an income and to interact with tourists, all of which were highlighted as important to respondents.

The second measure of traditional customs and practices, number of known producers of artwork relating to the Park as well as quality of artwork as determined by culturally appropriate figures, applies to the Purnululu study only. Twining-Ward (2003) similarly suggests monitoring change in the number of known producers supplying the
souvenir trade as well as income accruing from it. The ability of this measure to reflect upon the maintenance of traditional cultures and practices is reliant on links between painting and the maintenance of cultural connections to country (Pelusey & Pelusey 2006).

The related measure, quality of artwork, helps to ensure that art continues to be an expression of Indigenous culture rather than being mass-produced for sale. Further, art can provide substantial income for community members while also potentially building skills and knowledge needed to enhance the ability of Indigenous people to become more involved with tourism. This measure reflects awareness that the maintenance of such traditional practices may in fact be more important for Indigenous people than mainstream measures of wellbeing such as formal employment (Scambary 2009; Taylor 2008a). The specific inclusion of a measure relating to the practice of Indigenous culture helps address concerns that standard indicators do not capture elements of wellbeing important to Indigenous people (SCRGSP 2005; Taylor 2008a).

The transmission of cultural knowledge to younger generations was a point of concern for some senior Indigenous respondents. A third and interlinked measure is therefore proposed, the percentage of youth representation among artwork producers. This measure helps to monitor cultural transmission of knowledge through the act of painting. This measure equally applies to the Kruger study, where it can be used to track the percentage of youth representation among traditional healers and so monitor the recruitment and skilling of youth in traditional medicine. In turn, this measure reflects on the continuance of traditional customs and practices among local communities. The need to stimulate learning among younger generations regarding traditional and cultural values to help ensure the continued provision of cultural services has been noted (Shackleton et al. 2008). Similar concerns have been raised as in relation to ensuring more effective joint management in Australia (Bauman & Smyth 2007).

A final measure of the maintenance of traditional customs and practices, relevant to Purnululu alone, is the percentage of youth representation on on-country trips with elders. This measure was perceived as particularly important by Park managers and relates directly to the maintenance of cultural norms and values, as well as opportunities for locals to visit the Park.
7.3.2 Local community benefits from Park tourism

The second grouping of indicators concerned local community benefit from Park tourism (Table 7.6). These indicators recognise economic benefit as central in determining relationships between Parks, tourism and local communities. Thus, they focus on tangible economic benefits accrued by local communities, which can often act as indicators of community resilience and vulnerability to external forces (Michaelidou et al. 2002). Cultural norms and values are not focused on but rather included indirectly, despite their influence on local engagement or otherwise with Park tourism (Table 6.1). This is largely because intrinsic socio-cultural values are intangible and difficult to define (Hockings et al. 2006; Pretty et al. 2008; Roberts & Tribe 2008).

Instead, focus is given to the influence of a lack of money on the ability of local communities to become involved with and benefit from Park tourism (Table 6.1). The section also focuses on less tangible investments in human capital, being the education, skills and business-related knowledge of community members, linking back to the influence of the slow variable of poor Western skills and education.

Four indicators relating to local community benefit from Park tourism are proposed. Table 7.6 outlines these along with corresponding measures, relevance to each case study and the level of data availability. The measures are explicitly designed to be implemented and influenced by Park managers at the local scale.

**Employment of local people**

The first indicator for monitoring local benefits from Park tourism centres on local employment. Two measures are proposed, the first being the percentage of total Park staff from local communities (full and part time employees) (Table 7.6). The principle of local employment is well established in the tourism literature (e.g. Roberts & Tribe 2008; Twining-Ward 2003; Viljoen 2007; WTO 2004). More generally, the need to monitor the provision of economic benefits to communities is called for (Tsaur et al. 2006). As shown in this research, economic benefits were predominately associated with employment in Park tourism.
Table 7.6: Indicators for monitoring local community benefits from Park tourism

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Potential measure</th>
<th>Desired movement</th>
<th>Applies to</th>
<th>Data available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment of local people</td>
<td>Percentage of total Park staff from local communities (full &amp; part time)</td>
<td>↑</td>
<td>*</td>
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</tr>
<tr>
<td></td>
<td>Percentage of local community members represented in higher levels of employment as a proportion of total staff at higher levels</td>
<td>↑</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Training &amp; skills development</td>
<td>No. training programmes for Park staff per level of employment</td>
<td>↑</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Percentage of employees participating in designated training courses</td>
<td>↑</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Social responsibility of Park authorities</td>
<td>Percentage of goods &amp; services obtained from local businesses</td>
<td>↑</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Percentage of total culled animals from which meat is distributed to local communities</td>
<td>↑</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Local businesses associated with Park tourism</td>
<td>Percentage of tourism ventures registered to operate in the Park with local community management &amp;/or level of ownership</td>
<td>↑</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>No. displays of traditional culture or customs within the Park by local communities</td>
<td>↑</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Perceived authenticity or quality of performances as assessed by culturally appropriate figure</td>
<td>↑</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Registered income received by community members from trade in artwork/curios at official points of sale</td>
<td>↑</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

+ Currently in use  
* Potential application
Data for this measure exists for Purnululu and is obtainable for Kruger, which keeps standardised employee records although the home village or base of employees is not recorded (Marutha, pers. comm., 2008). To accurately monitor the percentage of employees originating from local as opposed to other communities, management should make the recording of home residence a required component of employee records. This measure only applies to official Park employees, as Park authorities cannot monitor benefits accruing from informal employment associated with the Parks or tourism, e.g. roadside stalls. The employment of local people in tourism operations is similarly beyond the authority of Park managers. However this concern is partly accounted for in existing requirements regarding local employment for Purnululu’s licensed tour operators (Table 7.1) as well as legislation requiring black employment and partnerships in South Africa.

A related measure is the percentage of local community members represented in higher levels of employment as a proportion of total staff at higher levels. This measure seeks to monitor progression through levels of employment (Timko & Satterfield 2008; WTO 2004), for example unskilled, technical, administrative or managerial positions. By doing so, this measure monitors the levels of training and education among community members, reflecting upon human resources. These data are readily available in Purnululu. In Kruger, the percentage of black, white and coloured persons in each tier of employment is recorded and a performance indicator exists to monitor progress against employment equity targets. However as indicated these groupings need to be further disaggregated to specify the home village/base of employees also, to be able to specifically monitor local representation versus staff members originating from other areas.

**Training and skills development**

A second indicator, training and skills development (Table 7.6), stems from findings suggesting deficits in the skills and knowledge required to become involved with Park tourism among community members, be it through employment or starting up businesses. These deficits often hindered local employment in tourism or Park operations. Community members frequently noted this: education is the key ... young people need to be educated in project management... they don’t have are the management skills... [locals] should be trained to step up to the mark.
There is a clear need for investments in the human resources of community members, for example business skills, general literacy and numeracy and professional development schemes. Two interdependent measures address this need (Table 7.6): the *number of training programmes for Park staff per level of employment* and *percentage of employees participating in designated training courses*. Both measures correspond to key SANParks objectives including ‘capacity building for local communities’ and ‘skills development’ (SANParks 2009b). These measures apply to all staff, not just those from specific local communities as training is likely to be an agency-wide need rather than restricted to individual communities.

The two measures emphasise the importance of not only providing training opportunities at each level of employment, but also ensuring that staff participate in them and gain skills necessary to advance through levels of employment (WTO 2004). At a basic level, community participation in training is assumed to help develop necessary work habits including quality, reliability and timeliness, which represent one means of measuring community resilience and the ability of community members to respond to stressors, change and crises (Magis 2010). Investments in training and education are thus assumed to help build adaptive capacity. Here, training would include basic literacy and numeracy as well as other areas including business/project and financial management, to allow employees to move between different areas of employment and expertise.

**Social responsibility of Park authorities**

The third indicator of local benefit from Park tourism concerns Park social responsibility (Table 7.6), deliberate management actions taken to help ensure local benefit. One proposed measure is the *percentage of goods and services obtained from local businesses*. This measure attempts to quantify social commitments by Park managers to ensuring local economic benefit, as advocated in the literature (e.g. Roberts & Tribe 2008; Tsaur *et al.* 2006; Vereczi 2007; WTO 2004). Economic benefit can take a range of forms, for example direct purchase of goods such as furniture or curios for use in Park operations, or the hiring of local contractors to undertake works. Twining-Ward (2003) goes further, suggesting monitoring of the ‘percentage of non-local souvenirs stocked by main souvenir outlets’. This suggestion is highly relevant for the Kruger study where the majority of souvenirs stocked by camp stores, while sourced
from black majority-owned or operated companies or from small cooperatives, do not generally stock locally-produced goods.

This measure reflects both economic benefits accrued and skill development among community members, as these are required to start up businesses and establish supply contracts (Viljoen 2007) with the Parks. Further, it can easily apply to both Parks. Some jointly managed parks in Australia already monitor the contribution of Indigenous enterprises to park operations (Director of National Parks 2009a). Similarly, SANParks highlights the need for indicators of objectives including ‘access to procurement tendering processes’ and ‘effective participation in projects’ (SANParks 2009b).

This measure is specific to goods and services procured by Park authorities only, as their ability to control the expenditure of tour operators is highly limited. In Purnululu, tour operator licence conditions already include an indicator to monitor the proportion of expenditure on local businesses, although ‘local’ is not defined. The ease of monitoring this indicator is aided by the fact only three companies operate under special E class licences, simplifying data collection. However, the ability of both Park managers and tour operators to fulfil this measure is limited by the level of goods and service available locally, as well as the fact local businesses may not necessarily be Indigenous owned or operated.

The situation in Kruger is very different, complicating the potential application of a similar requirement to tour operators there. Perhaps, one means of achieving a commitment to local procurement by tour operators in Kruger is to increase their awareness of Kruger’s social responsibility objectives. This could happen by including information on Park objectives/actions intended to provide local economic benefits in annual licence documentation, i.e. the ‘Service Level Agreement for Safari Vehicles’ (SANParks undated-b). This approach may help spread awareness of the need to provide benefits to local communities and potentially enhance the likelihood that operators will stop to allow purchases at informal roadside stalls.

A second measure of Park social responsibility is the percentage of total culled animals from which meat is distributed to local communities. This measure is mostly relevant to the Kruger study, where respondents identified significant community benefits associated with meat distributed from damage-causing animals (DCAs). This benefit
was expressed as: [Kruger] didn’t return the elephant back to the Park; they kill it and gave it to the community. I think that is how [local communities] benefit, if the animal escapes, we get the meat... [we have] no money, is precious to the community to get food for eating, it’s very difficult to get food [community member]. Pending the outcome of current negotiations regarding ‘norms and standards for DCAs’, this measure may be superseded by others monitoring for instance the number of times or amount of compensation paid following DCA events. Such measures are likely more amenable to a sustained flow of benefits, although meat distribution has the potential to more widely distribute benefits among the communities.

**Local businesses associated with Park tourism**

The fourth and final indicator of local economic benefit regards local businesses associated with Park tourism. Three measures are proposed (Table 7.6). The first measures the *percentage of tourism ventures registered to operate in the Park with local community management and/or level of ownership*. This measure correlates with Purnululu’s current requirement for licensed tour operators to achieve some level of Indigenous ownership (Table 7.1). The principle of local ownership/management is well supported in the tourism literature (e.g. Choi & Sirakaya 2006; Roberts & Tribe 2008; Twining-Ward 2003; WTO 2004) as well as being present in the community resilience literature, where monitoring new kinds of community businesses or employment opportunities is suggested (Magis 2010).

Monitoring tourism operations managed by/with a percentage of local ownership provides a clear measure of economic benefits accruing to local communities. DEC and SANParks already hold the required data, although some effort may be required to clarify the exact level of community ownership and/or management. This information could easily be obtained through inserting its provision as a component of annual licensing requirements, e.g. the *Service Level Agreement for Safari Vehicles* or in Purnululu, annual sustainability audits.

A second measure is the *number of displays of traditional culture or customs within the Park by local communities*. Four factors underlie this measure. One, it stems from the strong cultural traditions present in both case studies and the existence of cultural performance (dance) groups in the local communities. Two, cultural performances are paid, offering opportunities to earn an income from Park tourism based upon locally-
available skills. Indeed cultural entertainment is cited as an example of best practice in sharing nature based tourism benefits with local communities (Scholes & Biggs 2004). Three, the initiative taken to develop cultural displays or programmes for tourism (Twining-Ward 2003) in part reflects upon community agency and motivation to engage with Park tourism. Four, displays of traditional culture and customs are assumed to result in the strengthening of local ‘cultural capital’ (Michaelidou et al. 2002; Scheyvens 1999; Tao & Wall 2009) and represent a means of cultural heritage management (Anthony 2006).

An increase in displays of traditional culture and customs is desirable, based on assumed positive outcomes for local communities (financial benefit and strengthening of cultural practices). Park managers and tour operators also benefit through satisfying tourist demand for displays of local culture (especially prevalent in Purnululu). Yet this measure is not as straightforward as it appears. Displays of traditional practices can result in the commodification of culture (Choi & Sirakaya 2006), a risk recognised by Kruger staff. As such, Park authorities must carefully monitor performances and perhaps consider the future implementation of a measure of perceived authenticity or quality of performances. This authenticity/quality could be reviewed by an appropriate source such as the Tribal Authority or village indunas in the Kruger study and Warmun Council in the Purnululu study.

The third measure of local businesses associated with Park tourism is the (registered) income received by community members from trade in artwork/curios at official points of sale associated with the Parks (Table 7.6). This measure gauges economic benefits derived through the sale of art and curios at formal points of sale only, given the difficulty of monitoring income received by informal vendors. Formal points of sale could include the Warmun Art Gallery or through Park-sponsored curio stalls in the Kruger study, as well as perhaps within Park retail outlets. All outlets maintain official records of sales that would be available to Park managers, although some efforts may be required in Purnululu to differentiate artists affiliated with the Purnululu area from those affiliated with other areas of the landscape. Another complication of this measure is that, particularly in Purnululu, artwork may be sold from other locales or distributors.
Local community involvement in Park governance was the third area for which indicators were derived (Table 7.7). The indicators monitor local involvement and the influence of key slow variables constraining that involvement, namely poor Western skills and education (Table 6.1). Community involvement in formal Park governance structures produced a range of responses from respondents. In the Kruger study, limited involvement was of concern to only a few respondents while the majority appeared largely unaware or uninterested in opportunities to participate. A different story unfolds in Purnululu, where the Park Council was described as an arena where interactions were contested. However shortly after fieldwork was completed the Park Council was disbanded, joining the already-defunct Ntirhiswano Community Forum in Kruger.

Despite this current lack of opportunity for local involvement in Park governance, indicators for monitoring local involvement in the future are necessary given the importance of governance in determining attitudes and relationships between Parks and surrounding communities. Further, it is likely that opportunities for local participation in Park governance will be reinstated in the near future, through the re-establishment of the Ntirhiswano community forum and introduction of the Purnululu World Heritage Advisory Committee (PWHAC).

Table 7.7 outlines three indicators relating to local community involvement in governance, along with corresponding measures designed for implementation by Park managers at the local scale. In proposing these indicators, the inherent challenges involved in monitoring governance remain. These include the range of perspectives of what is considered ‘good’ governance, the diversity of factors influencing governance and the significant influence of leadership on outcomes (Cundill & Fabricius 2010).

Further, research findings from Purnululu appear to indicate that Western approaches may not be the most appropriate means of involving Indigenous people in Park governance. Given that the revised Purnululu World Heritage Advisory Committee is to follow a similar Western approach however, it was necessary to develop indicators relevant to this new Committee. Perhaps as the Committee gains momentum, revised measures and addendums could be added in response to feedback from members.
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Potential measure</th>
<th>Desired movement</th>
<th>Applies to</th>
<th>Data available</th>
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<tr>
<td>Number of formal meetings held; effectiveness</td>
<td>No. community forum/PWHAC meetings held</td>
<td>+</td>
<td>Kruger</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Presence of an agreed approach, in writing, for solving problems &amp; dispute resolution</td>
<td>Achieve</td>
<td>Purnululu</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Satisfaction with interaction between parties as reported by community forum/PWHAC members</td>
<td>+</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percentage of management strategies decided by the PWHAC that are implemented within agreed timeframes</td>
<td>+</td>
<td>N/A</td>
<td>Yes</td>
</tr>
<tr>
<td>Diversity of groups involved</td>
<td>No. groups represented on the community forum/PWHAC</td>
<td>?</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>No. formal links between the community forum/PWHAC &amp; other decision making bodies</td>
<td>+</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Support from higher levels of authority</td>
<td>Budget support as measured by the amount of funding provided to the community forum/PWHAC</td>
<td>+</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>No. training opportunities related to governance for community forum/PWHAC members</td>
<td>+</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

PWHAC = Purnululu World Heritage Advisory Committee.

+ Currently in use  * Potential application  N/A Not applicable
Number of meetings held and their effectiveness

The first indicator identified the need for formal meetings to exist, and for these to be effective in achieving their goals (Table 7.7). Four measures address this indicator, the first being the number of community forum/PWHAC meetings held. The ability of local communities to communicate with Park staff through formal meeting structures underpins management objectives for both Parks (CALM 1995; SANParks 2009b). Although the two meeting structures differ in purpose they can be served by the same measure, as this monitors the presence of opportunities for locals to participate in resource planning and management (Choi & Sirakaya 2006; Tsaur et al. 2006; Vereczi 2007; WTO 2004). Opportunities to participate are believed to be of particular importance for local and Indigenous communities regarding protected areas (Hockings et al. 2006).

This measure resonates with the social capital literature, which stresses repeat personal interactions are required to build trust between people and groups (Fafchamps 2006). Perhaps, as suggested for Kruger, this measure could be amended to include the distribution of meeting minutes (Grant, pers. comm., 2010). This amendment is likely not appropriate for Purnululu given that Western preferences for written communication do not accord with Indigenous approaches to decision making (Walsh & Mitchell 2002). Another possible amendment is to also monitor number of attendees in addition to number of meetings held.

A second measure, the presence of an agreed approach, in writing, for solving problems & dispute resolution, helps monitor ‘effectiveness’ of meetings in achieving desired objectives. This measure relates to conflict resolution, a critical component of governance, and reflects upon the capacity for collective action and collaborative decision making. The adaptive management, community resilience and governance literature highlights the need for such conflict resolution mechanisms in the development of a common interest and shared vision for future management and desired states (e.g. Cundill & Fabricius 2010; Magis 2010; Plummer & FitzGibbon 2006).

Indicators of social equity concur, emphasising the need to reduce conflict between parties and to monitor the extent to which respectful relationships exist between local communities and Park authorities (Timko & Satterfield 2008); elements of this also
align with the social capital literature and need for trust in order for members of a group to work together (Productivity Commission 2003). The presence of a written document outlining the decision making process indicates a proactive approach to governance and recognition among actors that uncertainty and conflict are likely to arise. The existence of documentation for making decisions and dealing with conflict thus aligns well with resilience thinking and the need to anticipate surprise and conflicting objectives.

A third measure of local community involvement in Park governance is the satisfaction with interaction between parties as reported by community forum/PWHAC members (Table 7.7). This measure derives from the need to ensure information sharing and collaboration between parties (Cundill & Fabricius 2010), as well as perceived equity in access to information (Engle & Lemos 2010). The level of cooperation among stakeholder groups (Choi & Sirakaya 2006; Vereczi 2007) as determined by norms of reciprocity and exchange (Pretty 2003) is important. In Purnululu, cooperation and sharing of information between members of the Park Council was complicated by differences in power and resources among stakeholders and access to technical and cultural knowledge. These findings highlight the need to focus on processes of engagement and the nature and degree of community involvement (Bauman & Smyth 2007). Satisfaction could be measured through a short written questionnaire or verbal questions put to forum/PWHAC members annually, perhaps by an independent person/body. Adding this measure helps in the ongoing monitoring of effectiveness of the community forum/PWHAC.

A fourth potential measure is the percentage of management strategies decided by the PWHAC that are implemented within agreed timeframes. This measure gauges the congruence between governance decisions and actual management actions undertaken within a given time. Currently this measure applies to Purnululu only, as Kruger’s community forums do not hold decision making powers. A number of jointly managed parks within Australia have a similar performance indicator measuring the proportion of management board actions addressed within agreed timelines (Director of National Parks 2009a). In part, this measure also addresses requirements in the social capital literature for ‘collective action’ and ‘working together’ (Bebbington 1999; Productivity Commission 2003).
Diversity of groups involved

A second indicator of local community involvement in Park governance reflects the diversity of groups involved. Two measures are proposed, the first being the *number of groups represented on community forums/PWHAC* (Table 7.7). These groups could include community members, Park staff, tourism industry representatives, non-government organisations and scientists, as well as others. The adaptive governance and community resilience literature assert the importance of incorporating a diversity of perspectives in planning and of engaging with cultural differences (Cundill & Fabricius 2010; Magis 2010). Diversity of partnerships, expertise and resources is also a critical factor influencing success of joint management arrangements in Australia (Bauman & Smyth 2007) and forms a central thesis of the social capital literature (Productivity Commission 2003). However it may be necessary to reflect further upon this indicator. While diversity can be helpful and necessary to provide a range of perspectives, too much diversity may preclude the ability to work together and can at times lead to complete paralysis in decision-making. This measure could be improved through monitoring feedback of information from community forums/PWHAC to the wider community, although it is unclear how Park managers could do this.

A second measure of diversity is the *number of formal links between the community forum/PWHAC and other decision making bodies*. These bodies would be specified by Park authorities as appropriate and may be cross-sectoral and cross-scalor (Choi & Sirakaya 2006). In Purnululu, these bodies may include the Kununurra Visitor Centre or regional tourism bodies such as the Western Australian Indigenous Tourism Operators (WAITOC), as well as State and national bodies such as Tourism WA or the Commonwealth Native Title Tribunal. In Kruger, desired links may include regional bodies such as the Mpumalanga Tourism and Parks Agency and Department of Agriculture. Establishing connections between the community forums and tourism bodies is also seen as desirable. It is likely also necessary to have some measure of the quality of these formal links; this associated measure could be added if required by Park managers.

This second measure provides an indication of open-mindedness (Magis 2010) and reflects on the presence of networks as emphasised in the adaptive co-management (Plummer 2009), social capital (Pelling & High 2005; Productivity Commission 2003)
and governance literature. Research using resilience or systems principles to quantify indicators for governance highlights the need for networks and sharing of information between a given local institution and outside partners (Cundill & Fabricius 2010; Engle & Lemos 2010). These outside partners may include government and non-government organisations, as well as researchers (Cundill & Fabricius 2010).

**Support from higher levels of authority**

A final indicator for the involvement of local communities in Park governance is support provided to the community forum/PWHAC by higher levels of authority, i.e. the larger institutions of SANParks and DEC. Two measures are proposed (Table 7.7), the first being *budget support as measured by the amount of funding provided to the Community Forum/PWHAC*. This measure addresses requirements for a long term investment by authorities in fostering local involvement in governance, thereby helping to monitor the level of support present at local, regional and national scales (Choi & Sirakaya 2006; Plummer 2009). Long-term investments are necessary to overcome expectations of immediate results. It is inappropriate to assume that immediate changes will result from one year’s participation in governance, given the backlog of underinvestment in human resources characterising the local communities in the case studies. A long time is required to build stores of capital (Reynolds *et al.* 2010) and a shared approach to the management of protected areas should be seen as involving progressive, incremental improvements in capacity of all stakeholders (Bauman & Smyth 2007).

A second measure of support for local involvement in Park governance is the *number of training opportunities related to governance for community forum/PWHAC members* (Table 7.7). This may include training in business skills, management courses, conflict resolution, or cross-cultural training. Providing training opportunities reflects upon a long-term commitment to community involvement (Cundill & Fabricius 2010) in Park governance, and seeks to enhance the quality of that involvement through targeted skills development and capacity building (Bauman & Smyth 2007). The latter point is particularly relevant to the Purnululu study where respondents noted the need for cross-cultural training and skills development. In short, this measure monitor whether members of decision making or governance bodies have the capacity to do the job they are tasked to do (Timko & Satterfield 2008). This final measure directly relates to the
SANParks ‘institutional development’ objective that seeks to promote institutional development and capacity in regions surrounding parks (SANParks 2009b).

7.4 The application and use of identified indicators

The indicators represent the final phase of the guiding conceptual framework (Figure 2.1) undertaken as part of this dissertation research. They were derived from research findings generated through the first three phases of the framework, which developed an understanding of the case studies in terms of past change, drivers and current state/key interactions. Together, they represent an attempt not to control conditions affecting local communities, but rather to monitor interventions and efforts to enhance the ability of communities to respond to change, through the building of stocks of capital and resources.

The indicators offer a starting point for tracking change over time in the relationship between Parks, tourism and local communities. The next critical step is for Park staff and community members to monitor and refine the indicators and their associated measures to best suit local contexts and changing knowledge. This process would likely reduce the number of measures outlined here to that feasible for monitoring with current resources. Generally, data already exists or is easily obtainable by Park managers, making the integration of the proposed indicators into Park monitoring programmes relatively easy. Availability of data overcomes the requirement for extra time, effort or resources, which are common impediments to monitoring (Jacobson et al. 2008). Most of the proposed indicators apply to both Kruger and Purnululu, apart from instances where clear contextual differences exist, e.g. damage-causing animals and demands for use of natural resources only apply to Kruger.

The indicators can assist in the development of better relationships between Parks, tourism and local communities in a number of ways. Park managers can use the indicators in a pre/post-test manner to gauge the success of management interventions in achieving movement towards a desired state, or to help allocate funding resources. Alternatively, they can be used at a higher level to inform decision making and monitor the impact of policies (BRIM 2002; Magis 2010). They can also be used to demonstrate Park progress towards achieving social equity and showcase the benefits provided to surrounding communities (BRIM 2002). By demonstrating that they are making an effort and providing some benefits, this information may help to provide the Parks with
the ongoing social acceptability they require to persist into the future. One final and perhaps most important use of these indicators is that they provide an interim step towards the eventual derivation of socio-cultural thresholds for the impacts of Park tourism on local communities.

7.5 Summary

This Chapter has synthesised findings from the data (Figure 2.1, Phases 1-3) to develop a set of indicators for monitoring the relationship between the Parks, tourism and local communities. The indicators represent the final phase of research (Figure 2.1, Phase 4) and were developed for use by Park managers at the local scale. The indicators relate directly to key issues and processes emerging from the data and also reflect on critical slow variables including a lack of money, poor Western skills/education and cultural norms and values held by local communities. The resulting links between the indicators, key issues and slow variables differentiates them from indicators typically used in the impact literature. In particular, the social-ecological systems perspectives guiding their development ensured a focus on the interactions among system components and the capacity of local communities to become involved with and benefit from Park tourism, rather than focusing on the current state of the system.

Indicators were developed for three areas: socio-cultural links between local communities and the Parks; local community benefits from Park tourism; and local community involvement in Park governance. These three areas encapsulate identified areas of connection or separation between local communities, Parks and tourism as identified from the data, at the local scale. They are also highly relevant to Park goals and policies and offer a means to help ‘reconnect’ social and ecological realms through fostering links, building capacity and minimising conflicts.
CHAPTER 8 CONCLUSION

This final Chapter integrates findings from previous Chapters to present an overall view of the research in relation to the original research question and specific research objectives. The key intent of the research was to develop an understanding of interactions among local communities, the Parks and tourism. In particular, the impacts of the Parks themselves, and tourism associated with the Parks, on local communities, were central. The research was guided by the framing research question *how are local communities affected by protected areas and their associated tourism activities in South Africa and Australia?* This overarching research question was explored further through four associated research objectives, findings in relation to which form the basis of this Chapter. Future research directions are explored in closing.

8.1 Research findings

The ‘answer’ to the above research question is far from simple and highlights the inherently complex, dynamic and contested arena in which interactions among parks, tourism and local communities occur. The literature is replete with examples of the benefits afforded to local communities through protected areas and tourism (e.g. Eagles & McCool 2002; Wall & Mathieson 2006; WTO 2004). Research findings partly support this, with the presence of the Parks and tourism offering several potential opportunities for local community involvement and benefit. These opportunities centre on tangible economic benefit and the provision of employment, as found by other authors (Mill & Morrison 2006; Spenceley & Goodwin 2007). Other benefits included opportunities for community members to visit the Parks and in the Kruger case study, the provision of environmental education.

Although some economic benefits accrued to local communities, these were limited to a few families with members employed in the Parks and tourism, and their close relatives. It appears that the majority of community members had little to no involvement with Park tourism. These findings are not surprising, given that tourism rarely delivers significant benefits across a wide scale (Monakhisi 2008; Simpson 2009). A lack of necessary skills, education and money posed clear constraints to community members becoming more involved. These underlying drivers represent critical slow variables whose presence partly reflects the ongoing legacies of past discrimination and
marginalisation. These constraints accord with the literature, which suggests that benefits are typically shared among the ‘elite’, or those with the required education, skills or money to engage (e.g. Nieman et al. 2008; Spenceley & Goodwin 2007; Tosun 2000; Trau & Bushell 2008). In the Purnululu study, constraints associated with personal motivation seem to be a further factor in limiting community involvement in Park tourism. A lack of money and skills/education also influenced the ability of local communities to visit the Parks and to be involved in Park governance.

In Kruger, further issues included appreciation of environmental education, together with community demand for natural resources within the Park and conflict over damage-causing animals (DCAs) and their effect on local livelihoods. Each of these interactions offered opportunities for local benefit but were contested in their own way. This seeming conflict supports claims that while tourism has many potential benefits, it can also present a number of negative impacts (Archer et al. 2005; Dowling 2003; Wall & Mathieson 2006).

One interesting conceptual finding was that in addition to employment, local communities derived great personal benefits from intrinsic, non-pecuniary interactions such as opportunities to view wildlife and see ‘nature’, and to pass these opportunities on to future generations. While this finding accords with the widespread recognition of socio-cultural values linking Indigenous Australians to the landscape (Bird Rose 2004; Doohan 2008); it contrasts with much of the wider African and indeed global literature, which rarely highlight the significance of non-pecuniary benefits (e.g. Coad et al. 2008; Infield 2001; Shackleton et al. 2008). Findings from this research clearly indicate that local communities place great value on both tangible economic and intrinsic benefits accruing from Parks and natural areas. These findings have implications for the range of ways that Park managers can build more meaningful relationships with local communities.

By suggesting that economic returns are not the only way in which benefits are perceived, the research also highlights the fundamental role played by culture, and cultural norms, in determining attitudes and perceptions of benefits among local communities (Pretty et al. 2008). While these are commonly identified as drivers influencing social-ecological systems (Nelson et al. 2006; Walker et al. 2009), their manner of influence is often unclear. The research assists in this regard, through
providing some explanation for the role of culture and cultural norms at the local level. The influence of cultural norms and values accounts for a second conceptual insight emerging from the research, being the tension between negative impacts on local livelihoods resulting from the Parks and tourism, together with a distinct sense of pride and emotional attachment to the Parks.

A third conceptual insight arising from the research was the presence of perceived separation among community members, from the Parks and tourism. This perception is likely a function of the negative impacts of Parks and tourism on local communities. In particular, separation may relate to the inability of community members to visit the Parks and resulting views that the Parks were places for rich or white tourists, not locals.

8.1.1 Develop a conceptual framework to investigate interactions among protected areas, tourism and local communities

The research viewed interactions among protected areas, tourism and local communities as being highly dynamic, complex and “messy” (McCool 2009; Plummer & Fennell 2009). This complexity and messiness can be traced to three fundamental reasons. One, managers of protected areas often hold dual mandates: the conservation of biodiversity and provision of recreational, including tourism, opportunities. Two, protected areas have diverse and often unpredictable institutional arrangements. Three, they are often surrounded by resource or economically dependent human communities. Together, these core features of protected areas result in situations of inherent complexity that challenge existing approaches to management and offer opportunities for new ways of thinking and understanding reality.

This research used a conceptual framework that is especially useful in understanding protected area tourism, given the complexity in which it operates. Social-ecological systems and resilience thinking inform the framework, offering perspectives for viewing the world that are explicitly cognisant of need to anticipate and work with change, dynamism and complexity. In particular, the framework draws heavily on recently developed guidelines for resilience assessment (The Resilience Alliance 2007a, b).

The resulting framework (Figure 2.1) defines four overlapping phases of research, through which a progressive understanding of the interactions among protected areas,
tourism and local communities was developed. These four phases were: (1) system definition; (2) past system change; (3) current system state; and (4) monitoring change. These phases of research were used to build an overall picture of interactions occurring in terms of conditions, drivers, issues and possible future scenarios. Such an approach, which explicitly considers and accounts for system interactions and interdependencies across multiple scales, is novel for the field of protected area tourism and offers an alternative to existing linear methods for assessing sustainability (Strickland-Munro et al. 2010).

In developing the framework, two interrelated aspects of ‘system definition’ were predetermined based on research interests. One aspect concerned research interest in social resilience, being the ability of local communities to adapt and respond to stressors, crises and opportunities offered by protected area tourism. This social focus bounded the study and was given greater attention than ecological aspects of protected area tourism. In part, this was motivated by the dearth of social research in the two Parks in relation to ecological data, particularly in Kruger. Although ecological aspects were not the focus of the study, they emerged as integral parts of the system in terms of key issues including use of natural resources and intrinsic values of nature.

The second aspect of system definition involved a focus on, and interest in, the views of local communities, those people living adjacent to or within a protected area. The context-specificity of protected areas and their impacts on surrounding environments make a local scale best suited to investigating the interactions among protected areas, tourism and local communities. This local scale was also appropriate for developing indicators for monitoring for the case studies, as these have an important contextual basis (Plummer & Armitage 2007). Broader stakeholder views were also incorporated, including representatives of Park management and staff, government and non-government organisations and tourism interests. Thus, the conceptual framework was explicitly developed to draw upon diverse stakeholder views in order to assess protected area tourism in a manner consistent with emerging understandings of social-ecological systems and a future assured of increasing uncertainty and change (Strickland-Munro et al. 2010).

This approach and focus on local community views was not without its own set of complexities. Part of the complexity lies in the fact the research framework attempted to
investigate issues and interactions occurring across spatial and temporal scales. However, the close participation of stakeholders led to views largely located at the local or micro scale, resulting in the development of system boundaries based on highly localised worldviews. While not unique to protected area tourism, system definition requires careful consideration to ensure the acknowledgement of interactions and processes occurring across scales. The short-term timeframes within which humans operate pose another quandary for the framework, in that many of the issues raised will be of an immediate nature. Care must be exercised to ensure consideration of longer-term impacts and interactions. Extensive consultations of the literature assisted in this regard, serving to supplement stakeholder views and provide a broader awareness of impacts and interactions occurring in other areas.

8.1.2 Apply the conceptual framework to two case studies

The second research objective involved applying the conceptual framework to investigate interactions among protected areas, tourism and local communities at two case studies, based on Kruger and Purnululu National Parks. Although they face a number of similar challenges, the two case studies were not comparative. Rather, the intent of the research was to build theory through applying the conceptual framework to two different case studies to advance protected area and tourism research, as well as resilience assessment. This approach aligns with literal replication (Yin 2009), where a rich theoretical framework is developed from separate case studies.

The choice of two Parks, one in South Africa and one in Australia, was based upon similarities between the two countries. Three main elements of similarity were considered relevant. These were that both countries have a long history of protected areas; a past characterised by inequity and racial discrimination; and a current emphasis on redressing those inequities through management approaches based on developing relationships and sharing benefits of protected areas with local communities.

Despite these similarities, the context-specific socio-political and economic histories that influence equity outcomes and relationships between parks and local communities are acknowledged; these were developed in the relevant Chapters. Indeed the centrality of context to case study research, as well as to understanding social-ecological systems, was a key factor in adopting a case study approach. This approach provided a broad yet in-depth understanding of local context and realities was made possible (BRIM 2002),
allowing the identification of many structural and systematic tensions in current attempts to reconcile Park tourism with the needs of, and benefits for, local communities.

The case studies themselves were selected based on several criteria. One, the Park’s iconic status, hypothesised as potentially offering greater opportunities for local community involvement and benefit. Two, the Parks needed to have high tourism visitation or potential, to increase the likelihood of benefit accrual while also offering a greater chance of negative interactions. The third criterion was presence of nearby or adjacent historically disadvantaged communities.

‘Disadvantage’ implied unfavourable circumstances or conditions in relation to infrastructure, geographical location relevant to economic opportunities and markets, as well as socio-politically. This third criterion was based on researcher interest, and the hypothesis that such communities offered interesting insights into the relationships and impacts of protected area tourism. These insights were of interest given that visiting the communities is discouraged, either by legal means (i.e. Warmun is a ‘closed’ community) or owing to safety concerns and stereotyping (Cork and Belfast). The study communities therefore offer an atypical approach to investigating relationships and impacts of protected area tourism, one that was hypothesised as resulting in lesser accrual of benefits.

An initial, month-long field visit to both case studies took place in 2007. Data collection itself occurred in 2008 over a period of four months in the Kruger study and three months in the Purnululu study. In total, 92 respondents were involved in the Kruger study. In the Purnululu study, cultural restrictions limited the sample size to 18 respondents; in addition, four respondents provided supplementary information regarding joint management in Purnululu. Respondents included those holding formal community roles such as community leaders and council members; those involved or associated with the protected area, such as Park staff and government officials; and those with an occupational or entrepreneurial involvement in local tourism, such as local business owners or tour operators. Other people theorised as having little interaction with the Parks or tourism were also included, for instance unemployed persons, single mothers and the elderly. Interviews were supplemented by participant observation and document review, for example Park, tourism and government reports.
and other appropriate literature. These documents helped in including information from beyond the local scale and formed an integral part of framework application.

In applying the conceptual framework to the case studies, a combination of inductive ethnographic methods and deductive theorising based on social-ecological systems and resilience perspectives took place. Grounded theory and data coding informed by these perspectives was used to analyse data. As discussed, the tensions inherent in this mixed inductive/deductive approach were dealt with through the development and use of the conceptual framework to guide the research.

Based on social-ecological systems and resilience perspectives, the framework was deductive in nature and guided questioning for the ethnographic fieldwork. This inductive phase of research developed a number of emergent categories of data which corresponded to elements of the deductive conceptual framework i.e. drivers, issues and indicators. However, the data also emphasised a number of socio-political concerns that did not seem central to the original conceptual framework (Strickland-Munro et al. 2010, Appendix 3). This early difficulty clearly illustrated that while the systems approach provided a good framework for exploring interactions across multiple scales, qualitative approaches such as ethnography were needed to complement systems analyses and to provide a richer description of the socio-political aspects of human systems. The framework was thus reworked to better integrate and reflect these socio-political realities. Figure 2.1 depicts this reworked conceptual framework, which helped to merge the inductive and deductive research approaches into a coherent and synthesised method, in which both elements contributed to an overall understanding.

For instance, ethnographic approaches, widely used in determining the social impacts of developments such as tourism on communities, proved useful and effective in accessing local peoples’ experiences and aspirations. Concurrently acknowledging the case studies as social-ecological systems, encompassing the Parks, tourism and local communities, was similarly useful. This perspective ensured that the researcher looked for impacts at the interfaces between system components, for example, the apparently conflicting existence of intangible cultural connections and separation that were apparent at the Park-community interface.
If the Park or the communities had been examined in isolation from each other, such insights would have been less likely. Further, the combined ethnographic and social-ecological systems approach ensured attention to the multiple scales contributing to impacts; for example, the lack of employment in the study communities is largely due to historical legacies rather than any local phenomenon. It is an example of events at much broader scales driving impacts at local scales. This combined approach provided a clear description and analysis of the interactions between Parks, tourism and local communities, as well as the impacts of Park tourism experienced by local communities.

### 8.1.3 Analyse the case studies and describe interactions with an emphasis on drivers and key issues

The third research objective provided a description of how the Parks, tourism and local communities interact in the two case studies. The data suggest these interactions as complex, contested, and at times surprising or counter-intuitive. These findings were made possible through a focus on identifying drivers of change and key issues for the PATS.

Key issues represent aspects of protected area tourism that respondents were concerned about or wished to maintain. They help to frame a local perspective of the ‘desired state’ with respect to benefits and costs of protected area tourism. Those identified in this research were: nature conservation and intrinsic values held by local communities; environmental education; use of Park natural resources by local communities; damage-causing animals; visits to the Parks by local people; employment; and the involvement of local people in Park governance.

Governance, the policy and institutional environment in which interactions occur, greatly influenced these key issues. A handful of central, underlying drivers also influenced the issues. These were cultural norms and values based on a respect for nature; poverty/lack of money; poor (Western) education; and economic opportunities associated with tourist arrivals. Table 8.1 summarises the hypothesised relationships between these drivers and key issues as identified in earlier Chapters (see Table 5.1 and 6.1).
Drivers (Table 8.1) were identified from both the data and the literature. Although the drivers have a significant influence on how the Parks, tourism and local communities interact, they are largely beyond the ability of local decision-makers to influence. Instead, they represent fundamental, higher-scale processes not easily amenable to change by Park managers. In some instances, namely a lack of money and poor (Western) education, the drivers reflect the legacies of past policies and practices of discrimination. This finding is supported in southern Africa, where recent research concludes the poor are “at the mercy of many external drivers and trends, including those impacting the delivery of ecosystem services, against which they are relatively powerless” (Shackleton et al. 2008 pxii).

Apart from the economic opportunities associated with tourist arrivals, a fast variable that can change quickly in response to factors such as disease, fuel costs and terrorism, the drivers are slow in nature. This dominance of slow variables presents a source of vulnerability (Chapin et al. 2009) for the case studies, as it may take many years for the constraints posed by underlying poverty and poor education to be addressed. However, as explored in Chapter 7 and below, measures to strengthen the capacity of local actors to deal with these slow variables are possible. In contrast, the presence of culturally embedded norms valuing nature, which are unlikely to change rapidly, offer a promising and enduring platform through which local communities and Park managers can engage.

The adaptive cycle model provided another means of exploring interactions in the case studies. The capacity of the adaptive cycle to highlight key drivers, rates of change over time and cross-scale influences proved useful in exploring interactions among the Parks,
tourism and local communities. Modelling provided an indication of the likelihood of system change, with case study position within the cycle used to suggest appropriate management actions. For instance, modelling suggests the Purnululu study is within a maladaptive spiral characterised by the need for capacity development, leading to the derivation of specific indicators targeting Indigenous capacity for involvement and benefit from Park tourism (Chapter 7).

While useful, the subjective nature of modelling based on the adaptive cycle potentially limits its use as a research tool, with any conclusions researched unable to be ‘proven’ and at times hindered by lack of historical data. Despite these difficulties, the adaptive cycle remains a valuable tool in exploring and understanding interactions within the case studies.

The research adopted an issues-based approach for investigating the PATS case studies, as advocated by the Resilience Alliance workbooks (The Resilience Alliance 2007a). The issues usefully describe interactions among local communities, protected areas and tourism at the local scale, and lend themselves to indicator development. In turn, a range of underlying drivers, including both fast and slow variables, influenced these issues. The following overview explores each of the seven key issues emerging from the research and briefly discusses them in relation to key slow variables that greatly influence local outcomes. As throughout the thesis, greater emphasis is placed on the Kruger rather than Purnululu study.

**Intrinsic socio-cultural values**

The first issue concerned the presence and strength of intrinsic socio-cultural values held by local communities, towards the Parks. Community respondents displayed a clear appreciation of the natural Park environments for the intrinsic benefits they provided, including existence, aesthetic and bequest values. The presence of this intrinsic appreciation was unexpected in the Kruger study, where assumptions based on the literature indicated local communities would be inherently disconnected from the Park because of previous exclusion and discrimination (e.g. Garland 2008; Kepe 2009). This assumption rapidly proved unfounded; rather, intrinsic values held by community members seemed to provide a solid foundation for feelings of stewardship towards Kruger and its resources. Thus, the intrinsic socio-cultural values held represent a key point of connection between local communities and the Parks. Local feelings of
stewardship were particularly strong in relation to bequest values and ensuring the children in the future would be able to see, learn and enjoy nature. Similar perceptions were evident in the Purnululu study; this was expected given acknowledged Indigenous connections to country and the intrinsic link between culture and the physical landscape (Plumwood 2003; Staiff 2008).

This first issue highlighted the historic and ongoing influence of cultural norms and values based on a respect for nature. These cultural norms and values are a critical slow variable that appears to significantly influence how local communities perceive and engage with the natural environment of the Parks (Table 8.1). This finding concurs with the literature, which suggests that cultural norms and values are often key influences on social-ecological systems (Nelson et al. 2006; Pretty et al. 2008; Walker et al. 2009). Tourist arrivals, a fast variable, also appear to hold some influence in the Kruger study where locals expressed pride in living close to a national icon and popular tourist destination.

Other drivers potentially influencing intrinsic values were touched upon in earlier Chapters. These include land transformation; overharvesting; commodification of resources/spiritual sites; weakening of traditional or spiritual leadership; the erosion of traditional values; and dominant community-based natural resource management initiatives that afford little recognition to local knowledge and intrinsic connections to nature (Biggs et al. 2004; Shackleton et al. 2008). Many of these drivers are interrelated, making the identification of cause and effect within the case studies highly unlikely. This difficulty of separating driver influence (Smit & Wandel 2006) accords with complex systems perspectives.

**Environmental education**

A second issue was that of environmental education. Currently, Park-run environmental education programmes are only present in Kruger, making this issue relevant to that case study alone (Table 8.1). Respondents discussed environmental education as a great benefit of the Park accruing to local communities, in terms of chances to ‘experience’ Kruger and to further knowledge. These benefits are contextualised by recognising the influence of slow variables including poor levels of Western education (e.g. DWAF 2008; Pollard et al. 2008), unemployment/poverty (Shackleton 2005) and a lack of money to afford to visit Kruger (Table 8.1).
These pervasive realities and legacies of the apartheid era position environmental education as a highly significant benefit and point of connection between local communities and Kruger. For instance, environmental education offers locals a chance to enter Kruger for free, which many could otherwise not afford because of high unemployment and corresponding lack of money to pay Park entry fees. Similarly it offers learning opportunities that generally are not provided at local schools and are seen by many as increasing chances of future employment. SANParks staff recognise the potential for environmental education to help achieve a more favourable attitude towards conservation among surrounding communities. This potential has been reported elsewhere in South Africa (e.g. Anthony 2006; Faasen 2006; King 2007) and currently forms a core function of the People and Conservation Department (SANParks 2009a).

Use of natural resources within the Parks, by local communities

In counterpoint to these central elements of connection linking local communities to the Parks, two contested and conflictual issues emerged that serve to separate communities from the Parks. One of these involved the use of natural resources within the Parks, by local communities (Table 8.1). This issue pertained to the Kruger study alone, seemingly because the Kruger study has a far greater population density and dependence on natural resources for livelihoods. Further, the use of natural resources by Indigenous people in permitted within Purnululu, so long as excessive amounts are not removed and incompatible hunting activities are not undertaken in designated tourist areas.

In the Kruger study, community members evidenced demand for fuel wood, medicinal plants and meat. These demands reflect both livelihood necessities and the continuing disadvantaged state of the communities, which persists despite the end of apartheid practices. The presence of such demands for natural resources was not surprising given the socio-political realities of the case study. Further, literature from across the globe reports a similar demand for natural resources among local communities living near to protected areas (e.g. Cihar & Stankova 2006; Coad et al. 2008; McLean & Stræde 2003; Shackleton et al. 2008; Spiteri & Nepal 2008).

The use of natural resources by local communities appeared influenced by two key slow variables: cultural norms and values respecting nature and a lack of money (Table 8.1). As perhaps to be expected, the latter appeared to dominate as expressed by the
immediate needs of survival and feeding families (Shackleton et al. 2008). Other drivers influencing the use of natural resources include population pressures, environmental degradation, unemployment, poor education, HIV/AIDS, changes to land tenure and decline in local institutions governing resource access and erosion of traditional knowledge (Shackleton et al. 2008). Again, many of these drivers were touched upon in earlier Chapters and, as noted, are mostly slow variables that display cumulative effects (Shackleton et al. 2008). This persistence emphasises the ongoing presence of legacies arising from past policies and practices, i.e. apartheid (e.g. Pollard et al. 2008).

One final and ubiquitous influence on the use of natural resources by local communities is the policy environment, which can change quickly. Policies regarding the use of natural resources in South Africa are in a state of change. National legislation allowing resource harvesting within protected areas was recently introduced (e.g., the Protected Areas Act (2003) and Biodiversity Act (2004)) and new, Kruger-specific policies for sustainable resource harvesting are in a nascent state. While the influence of these revised policies remains to be fully realised, such changes suggest that the use of natural resources is one particular issue that Park managers and indeed the national government appear to be treating seriously.

**Damage-causing animals**

A fourth issue, and one that also conflicts with the intrinsic values held by local communities, was related to the impacts of damage-causing animals (DCAs) in the Kruger study (Table 8.1). DCAs were perhaps the most significant area of concern for local communities in the Kruger study and had a significant influence on local perceptions of the Park as a result of damage incurred to local crops, livestock and occasionally, human life. The significance accorded to DCAs by respondents aligns with other research linking DCAs with diminished local support for protected areas (e.g. Gadd 2005; Madden 2004; McLean & Stræde 2003).

The policy environment in which DCAs exist is highly complex and hampers efforts by Kruger and local communities themselves to address local concerns. Three key role players, one of whom is Kruger, currently hold responsibility for DCAs. The relationship between these role players appears strained at times, which hinders communication and timely response to DCAs. This strained relationship is to the detriment of local communities, who hold no powers or rights in regards to DCAs. Both
Kruger itself and the South African government have highlighted the significance of DCAs and are actively attempting to rectify rights and responsibilities in an attempt to help resolve the issue, although progress on this appears slow. Other drivers influencing DCAs and their complex policy environment include population pressures, lack of money and education among community members through which to challenge their ‘powerlessness’ and the erosion of traditional knowledge.

Interestingly, despite overwhelmingly negative views associated with the impacts of DCAs, some community members tempered their antagonism with respect for the animals. This links back to the stabilising presence of cultural norms and values based on a respect for nature, a slow variable that seems also associated with a respect for the animals themselves. This tension between emotional connections to Kruger and negative impacts on local livelihoods was a key conceptual insight. Further, in a clear illustration of the complexity underlying the formation of local attitudes towards protected areas, most community members held an overall positive view towards Kruger despite the significant costs associated with DCAs.

**Ability of locals to visit the Parks**

A fifth issue concerned the inability of local community members to visit the Parks for pleasure. Findings indicated all community respondents from Warmun had visited Purnululu and almost all respondents from Cork and Belfast had previously visited Kruger. However, the ability of local people to visit the Parks was constrained by a lack of suitable transport (both Kruger and Purnululu) and cost of entry (Kruger only). Both of these constraints were supported by the literature (e.g. Brown 2009; Faasen 2006; Simelane *et al.* 2006; Walsh & Mitchell 2002).

The frequency of visits to Purnululu was severely hampered by the need for a four-wheel drive vehicle and costs involved in purchasing fuel. In Kruger, only four out of the 56 community respondents who had visited the Park did so for pleasure. The majority had had visited did so for employment (one third of community respondents) or as part of environmental education (one third of respondents). These findings indicate that community members, particularly in the Kruger study, have limited opportunities to experience the Parks as a ‘tourist’. In the Purnululu study, the inability to visit the Park area was not associated with desire for a ‘tourist’ experience, but rather to maintain
connections to country. These missed opportunities to visit the Parks were clearly linked to perceptions of separation, a key conceptual finding that emerged from the research.

Kruger is aware of the need to provide opportunities for local communities to visit the Park and have instigated a number of initiatives to facilitate this. Examples include reduced entry prices for locals and the hosting of free ‘cultural days’ inside the Park. Both of these initiatives are greatly appreciated by community members, and relate to underlying slow variables that influence the ability of local communities to visit the Parks (Table 8.1): a lack of money through which to purchase suitable transport, or pay for fuel, or to pay for entrance fees and goods/services within the Park. In turn, a lack of money itself derives from other factors including unemployment, poverty and in the Australian context, a dependence on government welfare (Hunt 2008; Taylor 2003). Some also argue that choice or interest in visiting the Park is hampered by the legacies of past alienation of black people from conservation areas in Africa (e.g. Garland 2008; Kepe 2009). This position appears to have some (limited) relevance to the Kruger case study.

In Australia, changes to conservation and land rights policy represent an important influence enabling Indigenous people to gain better access to, and involvement in the management of, country. For example, the formal recognition of Indigenous native title over many areas of the continent, including protected areas, has led to the increasing implementation of joint management arrangements between Park authorities and local Indigenous groups. Joint management plays a significant role in the Purnululu study, offering opportunities for local community members to visit the Park and become involved in its management (see below).

**Employment**

Employment of local people by Park managers directly, or in tourism businesses associated with the Parks, was of both great benefit and concern for respondents (Table 8.1). Largely, it appears that local communities are not extensively involved with Park tourism in either case study, for a variety of reasons. Findings instead depict a greatly appreciated but limited benefit accrual by local communities. These findings accord with the broader literature, which often highlights the limited extent of actual benefits derived from tourism (e.g. Monakhisi 2008; Simpson 2009). Further, in both the Kruger
and Purnululu case studies, community members evidenced a great demand for more job opportunities as well as support for establishing small businesses.

In the Purnululu study, employment was limited. Only two Indigenous people were employed in Park operations at the time of research. In addition, four respondents gained financial benefit through producing artwork for sale. However, financial gain from employment appeared less important than intangible benefits relating to ‘caring for country’, practicing traditional law and customs, and being involved in Park management. These findings underscore the influence of cultural context (Scambary 2009; Walsh & Mitchell 2002) in determining benefits and choices regarding engagement with Park tourism. Findings further suggest that a seeming lack of motivation among Indigenous people may be a factor in the low levels of employment. This lack of motivation was intrinsically connected to the presence of welfare dependency that reduces the desire of necessity to find employment (Hunt 2008; Muloin et al. 2001; Pearson 2006; Trau & Bushell 2008), as well as a lack of skills among community members.

In Kruger, one third of community respondents (20 people) were employed in both official roles (e.g. housekeeping, gate security, reception) as well as informal businesses associated with Park tourism (e.g. roadside sales). Employment in the Parks or Park tourism afforded a range of flow-on benefits including the ability to provide for livelihoods and support extended families and education for children. These financial benefits appear limited to those households with a directly employed member rather than being widely distributed among the community. These findings of inequity challenge the often implicit assumption that tourism and protected areas are economic ‘money spinners’ believed to generate widespread financial benefits for local communities (Brockington et al. 2008a; Goodwin & Roe 2001).

Slow variables influencing the ability of community members to gain employment include poverty and a consequent lack of money with which to gain education or start up businesses, and poor (Western) education or business skills/knowledge required for tourism (Table 8.1). In large part, these factors represent the cumulative legacy effects of past policies and practices. The fast variable of tourist arrivals and the economic opportunities they generate also play an important role, in that the availability of jobs for community members is predicated on the existence of tourism industry in the Parks.
In the Purnululu study, employment is also influenced by land tenure/property rights and governance relating to native title and joint management policies designed to increase the level of Indigenous employment and ownership of tourism operations.

In both Parks, managers recognise the significance of employment to local communities and have policies that attempt to increase the employment opportunities available to local communities. Purnululu has a number of criteria that tour operators must meet and employs Indigenous staff wherever possible given logistical constraints. Kruger has an active programme of initiatives intended to support local economic benefit such as economic empowerment projects, preferential hiring practices and tender procedures. At the same time, the need for Kruger to pragmatically ‘manage’ unrealistic community expectations of employment is also important.

**Involvement of local communities in Park governance**

The final issue emerging from the research was that of the formal involvement of local community in Park governance (Table 8.1). At the time of research, the Ntirhiswano Community Forum in the Kruger study was not functioning. Thus, it was only possible to observe dynamics of the Purnululu Park Council.

Findings indicated the Park Council was an arena where interactions were contested arena. Council operation and functioning was hindered by difficulties of cross-cultural communication, with both parties perceived as lacking skill sets required for operating in the other’s domain. These findings relate to the literature, which highlights a general imbalance in authority held by park managers versus local communities with respect to parks and their resources (Berkes 2009; Clark *et al.* 2008; Plummer & Fennell 2009).

The use of local interpreters during future meetings and consultations involving Indigenous people, as occurs in Uluru, Kakadu and Booderee National Parks (Director of National Parks 2009a, b), may be a viable exercise. This would both aid in cross-cultural communication as well as provide a further avenue for local employment and benefit.

Slow variables influencing Indigenous involvement in Park governance included a lack of Western skills/education necessary for operating in a formal management environment and Indigenous modes of governance (Walsh & Mitchell 2002). However, Park staff were also characterised by a lack of cross-cultural knowledge necessary to
engage with Indigenous domains of governance, which differ greatly from non-Indigenous modes of decision-making (Pursche 2004; Walsh & Mitchell 2002). In this instance therefore, the role played by cultural norms and values was two-fold (Table 8.1). Naturally, the policy environment, i.e., native title and joint management policies, was also a key influence. The Park Council was greatly complicated by the fact Park managers must answer to both State and Federal legislation, which conflict with each other.

8.1.4 Derive potential indicators, based upon research findings

The fourth research objective involved the derivation of indicators for use by Park managers in tracking change over time in the interactions among Parks, tourism and local communities. ‘Sustainability’ for the case studies, in terms of relationships between system components, as well as minimising negative and maximising positive impacts on both social and natural environments, may be a function of how ‘connected’ or separated Parks, tourism and local communities are. For this reason, the indicators focus on tracking changes in interactions among system components and more specifically, local involvement or benefit from opportunities associated with Park tourism. They were derived from findings from earlier phases of the conceptual framework, which developed an understanding of the case studies in terms of past change, drivers and current state/key issues (Figure 8.1). Many also build upon Plummer and Armitage’s (2007) resilience-based framework for evaluating adaptive co-management. Their framework, also designed to be informed by local perspectives, directs attention to the livelihood impacts of specific management interventions, in this case specific Park and tourism policies.

The indicators developed in this research build on traditional indicators in that they are grounded conceptually in social-ecological systems and resilience thinking. This conceptual basis aided in deriving indicators that more explicitly recognise the interdependencies between Parks, tourism and local communities. They attempt to focus more on underlying processes and interactions among local communities, the Parks and tourism, rather than focusing on the current state of the PATS. In doing so, the indicators offer a starting point for the further investigation and eventual development of socio-cultural thresholds for the impacts of Park tourism on local communities.
Figure 8.1 depicts the relationship between identified key drivers and issues, using a colour-coded system to indicate influence. For example, a lack of money (coloured purple) influences in various ways local perceptions of environmental education, use of natural resources, locals visiting the Parks, damage-causing animals and employment. The issues are then grouped in relation to which indicators they correspond.

![Figure 8.1: Relationship between drivers, issues and indicators](image)

Indicators were developed for three areas: intrinsic socio-cultural links between local communities and the Parks; local community benefits from Park tourism; and the community involvement in Park governance. These three areas are directly related to key issues arising from the data, as well as to underlying drivers (Figure 8.1). Further, they were designed to be explicitly relevant to Park policies and objectives. This allows them to assess change in relationships between the Parks, tourism and local communities relative to a desired state as expressed by respondents.

Each set of indicators address a different set of key issues arising from the data, as well as corresponding drivers. Indicators for socio-cultural links between local communities...
and the Parks, for instance, track the maintenance of local cultural norms and values. This underlying driver influencing the relationship between local communities, the Parks and tourism is monitored through changes in key issues including participation in environmental education, use of natural resources and the maintenance of traditional customs and practices. The second set of indicators, local community benefits from Park tourism, focus on tangible economic opportunities and benefits. These indicators mostly monitor changes and improvements in local finances and levels of Western skills/education, both of which were identified as key barriers to local involvement and benefit from Park tourism. The third set of indicators, local involvement in Park governance, monitors the local community involvement in formal governance structures by tracking investments in Western skills/education as well as the ability or success of efforts to ‘work together’.

No attempts were made to assign threshold values to the indicators as monitoring impacts of Park tourism on local communities is in its infancy for both Kruger and Purnululu, and little if any baseline data exists. Further, this research represents an initial exploration of how to apply social-ecological systems and resilience thinking to PATS. The development of threshold values therefore is an area for further investigation as knowledge builds.

8.2 Contributions of this research

This study has made a number of significant contributions to protected area and tourism research in terms of knowledge, as well as conceptual and methodological contributions. These contributions include:

- Provision of in-depth knowledge on how local communities interact with and benefit or otherwise from Parks and tourism in Kruger and Purnululu National Parks, as well as insights regarding local community attitudes and perceptions. This knowledge contributes to the international literature and provides practical input to daily management.

- Revealing the tension between perceptions of connection and separation between local communities and the Parks. These had three elements:
  - The tension inherent in the simultaneous presence of pride and emotional attachment to the Parks, together with significant negative impacts on local livelihoods (Kruger study only).
The strong presence of intrinsic socio-cultural values such as appreciation of existence, aesthetic and bequest values held by community members, towards the Park environments.

The widespread presence of ‘perceptions of separation’ among local community members, in which community members felt themselves to be ‘outsiders’ or psychologically ‘removed’ from the Parks as a result of their inability to visit or experience the Parks.

- Developing and applying a novel conceptual framework for investigating the effects of protected area tourism on local communities. Social-ecological systems and resilience perspectives inform the framework. This application to identifying community perceptions of protected area tourism offers a process-oriented approach in response to identified gaps in previous research. The conceptual framework addresses perceived limitations of current linear approaches to assessing impacts and devising indicators. It offers an investigatory process that explicitly recognises past and future change, uncertainty and complexity through concepts including slow variables and the adaptive cycle.

- Methodologically, the research is unique in combining a complex systems approach with qualitative ethnographic methods offering a strong ‘local’ emphasis. While the guiding conceptual framework was deductive in nature, it was informed by inductive findings from ethnographic fieldwork. Although the framework required restructuring to better represent research findings, together with ethnographic fieldwork it proved useful in providing a synthesised and coherent method of investigation.

- Developing indicators for Park managers in Kruger and Purnululu to monitor interactions among and changes in the relationship between Parks, tourism and local communities. The indicators offer an interim step towards the eventual development of socio-cultural thresholds. Their development is of practical use to the Parks, which have limited monitoring of the impacts of the Parks and tourism on surrounding local communities.

8.3 Future research directions

A number of areas for future research emerged from this study. These include:

- Applying the conceptual framework developed here to other localities. This would further the application of social-ecological systems and resilience thinking to the
fields of protected areas and tourism, as well as to refine and further develop the framework itself. The approach of combining the conceptual framework with case study analysis is recommended for similar applications, especially where society and nature interface in complex and intriguing ways.

- Exploring further the ecological aspects of protected area tourism and how these relate to social aspects. In this research, social aspects were privileged over ecological ones. The indivisibility of the two realms became apparent when ecological aspects formed a central context for many key issues. Further exploring the ecological aspects of protected area tourism would provide a more complete, transdisciplinary understanding of how PATS function.

- Widening the scope of investigation to include a focus on other local communities within PATS or a broader geographical scale of research. For instance, the Purnululu study could be broadened to include other local communities including Djaru people. In Kruger, investigation could be expanded to include a greater number of adjoining villages. Widening the scope of investigation would potentially aid in increasing the generalisability of research findings.

- Investigating the existence or possibility of thresholds of change that may influence the case studies. This includes the ongoing monitoring, review and further investigation of the indicators in line with social-ecological systems and resilience thinking.

- Exploring further the specific cultural factors and intrinsic socio-cultural values influencing how and why local people engage with the Parks and tourism. This further exploration would add to the information generated in this research and for the African region, would address the general dearth of information regarding this in the African region.

- Investigating the perceived versus actual impacts of damage-causing animals in the Kruger study.

This thesis has provided an initial investigation of the interactions among local communities, protected areas and their tourism. Many interesting and practical insights have been gained into the interactions among local communities, the Parks and their associated tourism. Ongoing monitoring and investigation of these interactions is required to continually improve upon these complex relationships to the benefit of all involved.
REFERENCES


Aboriginal Economic and Policy Research, Australian National University: Canberra.


Resilience for the Process of The World Summit on Sustainable Development.


Government of Western Australia (2007). *Indigenous Conservation Title Bill*


Haberkern, N. (2009). *Overview of Native Title and Joint Management Arrangements for Protected Areas in Western Australia*. Australian Institute of Aboriginal and Torres Strait Islander Studies: Canberra.


State of Western Australia (1905). Native Administration Act (No. 43 of 1936).

State of Western Australia (1944). Native (Citizenship Rights) Act (No. 23 of 1944).


Walker, B. H., Anderies, J. M., Kinzig, A. P. and Ryan, P. (2006b). Exploring resilience on social-ecological systems through comparative studies and theory...


Appendix 1: List of terms & abbreviations

**Adaptation**
Cultural or behavioural adjustment by individuals or organisations to the external environment; provides flexibility and responsiveness to deal with disturbance (Walker & Salt 2006)

**Adaptive capacity**
The capacity to respond, adapt to and shape change as determined by stocks of capitals/resources held by local communities. A core feature of social-ecological systems often used as a synonym for resilience (Berkes et al. 2002; Kofinas & Chapin 2009)

**Adaptive cycle**
A heuristic metaphor used to understand change in social-ecological systems. Consists of four phases: exploitation, conservation, release and reorganisation (Holling & Gunderson 2002)

**Complex adaptive system**
Systems whose components interact in a manner causing the system to adjust/adapt in response to changing conditions. Characterised by uncertainty, dynamism, non-linearity, emergence, multiple scales and self-organisation (Hartvigsen et al. 1998; Levin 1998)

**Cross-scale**
Term used together with the notion of ‘panarchy’ to represent the existence of interactions across and within scales, over both time and space (Gunderson & Holling 2002; Holling et al. 2002b)

**Driver**
Natural or anthropogenic factor that either directly or indirectly cause change in a given system (Nelson et al. 2006; Walker et al. 2006a)

**Emergence**
Systems have properties that are not explainable simply through properties of system components. A key characteristic of social-ecological and complex systems (Folke 2006)

**Empowerment (community)**
Achieved through increasing the capacity or ability of a community to do things for itself. Includes for example skills, confidence, more effective organisation, developing a sense of ownership

**Endogenous variable**
Variable of interest within the focal system of interest. Influenced by variables outside of the focal system of interest (both exogenous and environmental variables) (Meadows 2009)

**Exogenous variable**
Variable outside of the focal system of interest that influence endogenous variables but are not affected by them (Meadows 2009)

**Feedback**
A key concept of social-ecological systems highlighting reciprocal interactions between humans and ecosystems (Meadows 2009; The Resilience Alliance 2007a)

**Governance**
The act, process or power of governing as determined by both formal and informal rules and norms guiding management. Involves interactions among structures, processes, rules and traditions that determine how people make decisions, share power, exercise responsibility and ensure stakeholder input into management (Borrini-Feyerabend et al. 2004; Graham et al. 2003; Lebel et al. 2006)
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td><strong>Higher scale</strong></td>
<td>Scales above that of the focal scale of interest (i.e. sub-national through to global)</td>
</tr>
<tr>
<td><strong>Issue</strong></td>
<td>Element of concern or interest to stakeholders. Issues arise due to interplay between social and ecological components of the PATS, i.e. between/within local communities, the Parks and tourism</td>
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<tr>
<td><strong>IUCN</strong></td>
<td>International Union for the Conservation of Nature</td>
</tr>
<tr>
<td><strong>Joint management</strong></td>
<td>Type of co-management arrangement where various parties interact within a management body holding decision-making authority, responsibility and accountability (Borrini-Feyerabend et al. 2004; Worboys et al. 2005). In Australia, parties typically include government conservation agencies and Indigenous groups. Typically run by a management board comprising representatives from stakeholder groups and in Australia, usually with an Indigenous majority representation</td>
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<tr>
<td><strong>Local community</strong></td>
<td>Occupants of a geographically defined settlement (Burns &amp; Sofield 2001)</td>
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<tr>
<td><strong>Mismatch</strong></td>
<td>The existence of differences between the scale/realm of an issue and its management (Biggs et al. 2004; Cumming et al. 2006). Often causes ambiguity and conflict in expectations and over resource use (Yandle 2007). Common examples include mismatch over property rights and between traditional and western management authorities</td>
</tr>
<tr>
<td><strong>Non-linearity</strong></td>
<td>A relationship in which cause and effect is not clear or relational; outcomes are often unpredictable (Folke 2006; Walker &amp; Salt 2006)</td>
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<tr>
<td><strong>Panarchy</strong></td>
<td>Recognises nested/hierarchical relations within and between systems across time and space (Gunderson &amp; Holling 2002; Holling et al. 2002b). A given system of interest is comprised of subsystems operating at lower (finer) scales as well as being embedded within larger systems operating at higher scales (Anderies et al. 2004; Young et al. 2006)</td>
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<tr>
<td><strong>Park-people relations</strong></td>
<td>Relationship and interactions between local communities and protected areas. Ideally (normative) characterised by a functional working relationship in which two-way communication occurs and positive attitudes held by locals towards the protected area</td>
</tr>
<tr>
<td><strong>PATS</strong></td>
<td>Protected area tourism system. Comprises protected areas, tourism operations and local community as key subsystem components (Strickland-Munro et al. 2010)</td>
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<tr>
<td><strong>Poverty trap</strong></td>
<td>Maladaptive state where a system is impoverished by circumstances beyond local control. A social-ecological system in this state may have many ideas and raw materials yet lack the capacity to focus resources on an idea and move the system forward (Carpenter &amp; Brock 2008; Folke et al. 2009). Also used in the Indigenous development literature to refer to entrenched inequity and dependence on government welfare payments (Altman 2007)</td>
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<tr>
<td><strong>Resilience</strong></td>
<td>Capacity of a social-ecological system to absorb or adapt to change while maintaining system structure and processes over time (Berkes et al. 2003; Holling &amp; Gunderson 2002). In this thesis, resilience is specifically defined as the ability of local communities to anticipate and respond to changes associated with protected area tourism and to minimise, cope with and recover from disturbances to their livelihoods as a result.</td>
</tr>
<tr>
<td><strong>Self-organisation</strong></td>
<td>The ability of a system to organise itself: to develop structure, learn and diversify (Meadows 2009) e.g. the evolution of social norms and cooperation</td>
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<tr>
<td>Term</td>
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<tr>
<td>Social-ecological system</td>
<td>A type of complex adaptive system characterised by interdependent social, economic and ecological components. Emphasises a ‘human in nature’ perspective and the arbitrary divisions between social and ecological realms (Folke 2006; Gunderson &amp; Holling 2002; Walker &amp; Salt 2006)</td>
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<tr>
<td>Stewardship</td>
<td>The responsible use (including conservation) of natural resources in a way that takes full and balanced account of the interests of society, future generations, and other species, as well as of private needs, and accepts significant answerability to society. Implies ideas of looking after nature ‘in trust’ for others and recognition of intrinsic value (Worrell &amp; Appleby 2000)</td>
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<tr>
<td>Sustainability</td>
<td>A state of transition increasingly linked to resilience and the ability to adapt to change over time while maintaining essential processes and options for the future systems (e.g. Berkes et al. 2003; Farrell &amp; Twining-Ward 2005; Walker et al. 2002; Walker &amp; Salt 2006)</td>
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<tr>
<td>Sustainability indicator</td>
<td>Indicators that attempt to capture complexity and monitor interactions between resources and stakeholders through greater recognition of socio-political, environmental and economic interdependencies (Choi &amp; Sirakaya 2006; Viljoen 2007). A means to monitor progress towards (locally-defined) ‘sustainability’ or ‘sustainable development’ (Pollard et al. 2009)</td>
</tr>
<tr>
<td>Systems thinking</td>
<td>Recognises/emphasises the existence of complex adaptive systems characterised by non-linearity, uncertainty, emergence and adaptation across scales. Emphasis is on the interrelations between components (Chapin et al. 2009; Folke et al. 2009)</td>
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<tr>
<td>Threshold</td>
<td>Critical levels separating different patterns of operation and functioning for social-ecological systems (Berkes et al. 2003; Walker &amp; Salt 2006)</td>
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<tr>
<td>Traditional owner</td>
<td>Increasingly used in a generalised and unspecified sense to mean those Aborigines who belong to certain places and have the right to speak for those places based on their own laws and customs. This more generalised use necessitates the definition of ‘traditional owners’ in specific contexts (Doohan 2008). In this research, refers to people/groups who are common law holders of native title for the area of land and waters in the Purnululu National Park, recognising that native title remains contested and as-yet, not formally determined</td>
</tr>
<tr>
<td>Xa mina i xawena</td>
<td>It’s mine, it’s yours (Shangaan term)</td>
</tr>
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Appendix 2: The Resilience Alliance guidelines

(adapted from The Resilience Alliance (2007a; 2007b))

1. Resilience of what?
1.1 Bound the system: Describe the present
- What is the system of interest? What spatial & temporal scales are appropriate for investigation?
- Who are the key stakeholder groups, what are the key resources & relevant policies?
- What are the key issues/conflicts/challenges/management goals?
1.2 Expanding the system: Multiple scales
- What are key social, economic, political and ecological scales that exist above & below the focal scale of interest?
1.3 Linking the past to the present: Historical timelines
- Construct an historical timelines of significant events & changes, identify connections across scales
- Characterise patterns of change/underlying drivers over time at the focal scale
1.4 Resilience to what? Disturbances
- Document critical disturbances affecting the focal system & their frequency/impact; & changes in these
- Identify underlying drivers
1.5 Specified & general resilience (new addition to the workbook since the time of research)

2. Assessing alternate states & thresholds
2.1 Alternate states
- What possible alternate states could the system be in; & what would be the characteristics/desirability of these states?

2.2 Thresholds
- Consider possible critical thresholds for the system, & factors involved in pushing the system closer to them
- Develop a list of influential system drivers, especially slowly-changing ones

2.3 Scenarios
- Develop (coarsely) 3-4 plausible, alternative future scenarios for the system (each represents an alternative system state as per above)
- Consider indicators worth monitoring to determine what trajectory the system in following

3. Assessing cycles of change
3.1 Cycles of change: The adaptive cycle
- Develop an adaptive cycle model; determine key vulnerabilities & disturbances underlying changes

3.2 Cross-scale interactions: Influences from below & above
- Identify vulnerabilities/benefits at the focal scale arising from finer & larger scales, & management strategies for minimising/fostering these

4. Adaptability & transformative change
4.1 Adaptability & transformation
- Is transformation of the system desirable/necessary? What obstacles exist, how might these be overcome?
- Are there mechanisms to develop leaders & leadership skills?
- How would you characterise the level of trust among key stakeholders?
- Do stakeholders at all levels of governance have a say in management of the system?
- What mechanisms are in place for gathering & incorporating stakeholder input?

4.2 Social networks among stakeholders (new addition to the workbook since the time of research)

5. Interventions & management
5.1 Interventions
- Develop a list of high-priority interventions based on possible thresholds
- Explore the potential effects of specific interventions across multiple scales; & their type/timing in relation to the adaptive cycle & panarchy

5.2 Adaptive assessment & management
- Consider & pursue the development/use of an adaptive management approach
Appendix 3: Original conceptual framework as published in Strickland-Munro et al. (2010)

Framework developed after The Resilience Alliance (2007a; 2007b)

**Define the protected area tourism system**
- System components (e.g. a given protected area, tourism & appropriate stakeholders, including both local communities & communities of interest)
- Scale (e.g. research focus at local or sub-national scale)
- Key issues & interactions (e.g. biodiversity conservation, economic benefits, natural resource use)

**Historic and current influences**
- Develop a historical profile to explore the role of past events
- Drivers (e.g. population growth, religion and taboo systems)
- Disturbances (e.g. extreme weather events, terrorism, fluctuations in tourist visitation)

**Governance and power relations**
- Key players (e.g. park managers, community leaders, government & tourism officials)
- Governance & power concerns (e.g. power inequities & conflict over resources such as cultural sites, charismatic species, natural resources)
- Relevant policies, regulations, laws etc (e.g. benefit sharing policies, sustainable tourism guidelines, enclave operations, land rights)

**Development of system models**
- Adaptive cycles
- Future scenarios (e.g. fall in tourist numbers, ecosystem degradation)
- Potential thresholds (e.g. Indigenous involvement in land management, shifts from ecotourism to mass tourism)
Appendix 4: Interview outline

Lives in:
Name, position in village/in relation to tourism/the Park:
Last visit to the Park, why, frequency of previous visits:
Factors important in the community:

**PHASE 1 The Park**

1. How do you feel about the Park?
   - Do you think it is important to have a place like the Park?
   - Do local people go into the park? Why do they go?

2. Is the Park good for you; for your village/community?

3. Is the Park not good for you/your village/community?

4. Over the last X years, have there been improvements in the village because of the Park?

5. What do you think about the [relevant] picture below?
   - Who receives most of the benefits from the Park?
   - What benefits would you like to receive from the Park, if you could?
   - Do the village and the Park work together?

6. If the Park was not there, what would you want to do with the area?
PHASE 2 Park visitors

7. What do you have to do with visitors to the Park?

8. Are visitors are good for the village/community?
   - For the Park?

9. Are visitors are not good for the village/community?
   - For the Park?

10. Have there been changes in the village/community because of tourists?

11. Who owns/controls local tourism businesses; has this changed over time?

12. Has the Park/tourists have affected the opportunities for the village/community?

13. Do you or your village/community have a say in what happens in the Park?

Other comments:
Appendix 5: Preliminary research findings presented to respondents

Research feedback: Cork & Belfast villages

**MBUYELO WA VULAVISISI**

* Xosungula hi rhandza ku khensa un’wana na un’wana wa n’wina loyi anga vulavula na hina a hi nga ta swikota handle ka n’wina
* Hi ta timhaka (swirilo) swa n’wina hi swi rhumela E Kruger National Park (kambe ahi nge boxi mavito ya n’wina)

**XANA KRUGER PARK YI KAHLLE EKA N’WINA/TIKO RA N’WINA?**
1) Mintirho (vo tala la va hlamuseleke)- 54%
2) Nyama ya swiharhi loko swibalekile- 19%
   Tidyondzo eka vana hi mayelana na Kruger National Park- 19%
3) Vaakelani va park lavo tala va kota ku vona swiharhi- 11%
   Kusuhi, vantswa/vana vahina va ta vona eKruger National Park- 11%
* A kuna swi nwana leswi mi lavaka ku siwengetela laha wani?

**XANA KRUGER PARK A HI YINENE EKA N’WINA/TIKO RA N’WINA?**
1) E-e Kruger Park iyinene- 33%
2) Swiharhi swa fohla swita etikweni ra hina- 27%
3) Akuna nhluvuko wu humaka e Kruger National Park- 12.5%
4) A hi pfumeleriwi ku nghena hi tsovela (mirhi yo lapha)- 8%
   Swa tika ku kunghena e park hi fanele hi hakela- 8%
* A kuna swi nwana leswi mi lavaka ku siwengetela laha wani?

**U EHLEKETA KURI ‘XA MINA I XA WENA’ I NTIYISO?**
1) A hi Swi vona, vo vula ntsena- akuna vumbhoni- 16%
2) Hi swona hi le kusuhi ni park ha hanyisana- 11%
   Na kambe kuna va aka tiko lava tirhaka e park- 11%
3) Minkarhi Yinwana ka ngeniwa mahala e park- 9%
* A kuna swi nwana leswi mi lavaka ku siwengetela laha wani?

**U EHLEKETA KURI VAVHAKI E PARK VAKAHLLE EKA TIKO RA N’WINA?**
1) A ndzi swi tivi ahi sitshama hi hlanga- 24%
2) Hi swona- va endla kuri va akelani va park va kuma mintirho- 19%
3) Hi swona- hi xava swiambalo swohumla eka vona- 16%
4) Va endzi ava se tshama va hi hoxisela vo tihundzela hi va tsakela ngopfu- 12.5%
   Va endzi a va svieni endlu swo biha eka hina- 12.5%
* A kuna swi nwana leswi mi lavaka ku siwengetela laha wani?

**XANA VAENDZI AHALE ETIKWENI RA N’WINA?**
1) Ahi swona- I vanene (kuhlamusela vo tala)- 61%
2) A va vhaki eka matiko ya hina- 18%
* A kuna swi nwana leswi mi lavaka ku siwengetela laha wani?
GOOD THINGS ABOUT PURNULULU NATIONAL PARK
1) It is close to Warmun: you can visit easily, good for recreation
2) You can be involved in Purnululu National Park: through the Park Council, you are able to work and train on country, there are opportunities for future involvement in Purnululu
3) Culture: kids can learn about country, links to Dreamtime, you would like to live in the Park

* Is there anything else you would like to say about this?

BAD THINGS ABOUT PURNULULU NATIONAL PARK
1) You cannot live on country: there is no housing/shops
2) It is hard to be involved in the park: jobs are hard to fill, need a 4WD to get there, traditional owner humbug
3) Government gets most of the money from Purnululu, not locals

* Is there anything else you would like to say about this?

GOOD THINGS ABOUT TOURISTS
1) They are ok: bring in money to the art centre, to the roadhouse, helicopter flights
2) They are interested in our culture

* Is there anything else you would like to say about this?

BAD THINGS ABOUT TOURISTS
1) They are not good: they do not talk to the TOs, you don’t talk to the tourists/tourists do not talk to people in Warmun
2) They behave badly: take photos, danger to Warmun kids
3) There are too many tourists in Purnululu National Park
4) You only talk to tourists at the art centre and roadhouse

* Is there anything else you would like to say about this?

FEELINGS ABOUT DEC
1) There is not enough talk between Warmun people and DEC: traditional authority is not respected, money is not shared properly
2) Ranger in Purnululu is good

* Is there anything else you would like to say about this?