

## **Appendix 7 – Communities, NRM Institutions and Knowledge**

### **7.1 Description and Values**

Natural resource management can only be truly effective if the wider community and NRM institutions support and take part in it. Further, NRM is benefited when underpinned by a comprehensive and solid knowledge base. In recognition of this, this plan has identified Communities, NRM Institutions and Knowledge as a fifth critical asset requiring support and management.

#### **7.1.1 Communities**

In the past few decades the Australian community has become increasingly aware of environmental issues and with this awareness has come an increased participation in the management of our natural resources. Australian communities are now considered both an important asset and stakeholder that must be considered in managing natural resources. Governments and natural resource management agencies now commonly include community consultation and community development in planning and on-ground works.

Australian communities have become willing and enthusiastic about being involved in local natural resource management. According to the Australian Bureau of Statistics, in 2001 over 609,000 Australians were involved in environmental management activities. There is some evidence to suggest that this willingness to participate is also true for NT communities where, for example, 62% of all broad acre industries are members of, or active participants in, the Australian Landcare movement.

Communities bring knowledge of local circumstances, opportunity to integrate with local activities and considerable manpower for prevention and restoration works. Without broad community support and assistance, plans and strategies generally lose momentum and fail to gain ongoing support from funding bodies. This INRM plan recognises the importance of communities in the management of the Territory's natural resources by identifying community as a natural resource asset of similar importance to the other assets, Terrestrial Biodiversity, Land, Inland waters or Coastal and Marine. The plan aims to contribute to the development of local communities and their capacity to participate actively in natural resource management.

Community involvement in NRM spans across numerous sectors, interest groups and tenures. Participants can generally be identified as Landcare groups, indigenous groups, private landholders or industry groups. These groups are in turn supported by a local, territory and Australian Governments and a number of non-government institutions and research institutions.

#### **7.1.2 Landcare Groups**

There are approximately 100 Landcare groups or associations affiliated with Landcare working on local NRM initiatives in the NT. This includes at least 17 urban Landcare groups, 23 rural groups, seven farmer/pastoral Landcare groups, 40 Indigenous ranger groups and partnerships, three partnerships with institutions and 6 partnerships with Territory-wide organisations (Map 37).

These groups are important natural resource management contributors as they generally do practical, on-ground natural resource management work on a local scale in areas which they are familiar with. They usually aim to prevent degradation of landscapes and ecosystems and to rectify any adverse effects on natural resources from invasive species like weeds and feral animals, uncontrolled fires and unsustainable land use practices. Most people involved are volunteers or are lowly paid and groups largely rely on external support through short-term funding from programs such as the Natural Heritage Trust, Envirofunds and NT Environment Grants. Despite these relatively low and intermittent resources, Landcare groups continue to be a significant and successful non-Government factor in achieving many of the Territory's natural resource management goals.

### **7.1.3 Private Landholders and Industry Groups**

Most of the NT's native vegetation exists on privately-managed commercial lands (mainly pastoral leases, but this includes agricultural and horticultural lands) or on Aboriginal Land. The number of landholders for most of this area is very small, with just 217 pastoral leases accounting for nearly 46% of the area of the Northern Territory (Pastoral Land Board Annual Report 2003). Private landholders have been active in managing natural resources both independently and through land management groups such as land management associations, Landcare groups, farmer associations and soil management groups. They are currently ineligible, however, for financial and institutional incentives to sustainably manage the natural resources on their own land. In some other Australian states these incentives have successfully built partnerships and encouraged land managers to join in sustainable NRM.

### **7.1.4 Indigenous Communities**

Indigenous communities are heavily involved in formal NRM across the Territory. Since 1997 over 35 new land management programs have begun on Indigenous lands with at least ten programs planned for the near future. These programs have increased capacity within many regions by providing employment, primarily for Aboriginal people, either directly or indirectly through the Australian Government's Community Development and Employment Program projects (over 300 people in the Top End alone (NLC 2004)). Programs are community-based and driven and they operate in cooperation with, and are supported by, agencies such as the Territory's four Aboriginal Land Councils. Many of these groups identify themselves as 'Rangers'. They all broadly work with Aboriginal and non-Aboriginal people to build the ability and confidence of local communities to actively participate in natural resource management activities and care for their country (NLC 2004).

Equally importantly, Indigenous communities are also involved in decisions affecting natural resource management on non-indigenous owned land because of the responsibilities of the *Native Title Act 1993*. Under the Act, this authority is vested in the Northern and Central Land Councils on behalf of Traditional Owners.

### **7.1.5 Facilitator Network**

A network of Landcare Facilitators exists right across the Territory. This network, consisting of Territory-wide, Regional, Indigenous Land Management and Local Level facilitators, provides vital support for communities engaged in NRM activities. The network to date has been largely supported through the Natural Heritage Trust.

The primary role of facilitators is providing the link between LCNT, governments and the on-ground application of NRM, providing feedback mechanisms to policy makers and helping community groups adapt to changes occurring at their local level. The role is also to help build the capacity of the community and industry to better manage their natural resources through strategic planning, accessing funding and other resources, training, the development of widespread and diverse networks and partnerships, dissemination of information and assistance in the development, management and implementation of NRM projects.

Facilitators are a necessary component of the Territory's NRM framework as they help maintain continuity, momentum and community involvement in NRM across the NT's large land mass. This is a particularly important factor owing to the rather unique land tenure situation in the Territory; the two dominant land tenures (Aboriginal and Pastoral) account for about 90% of the land mass. This situation means that there is a far greater reliance on the community and landholders to implement NRM in the Territory. Facilitators are the primary means of coordinating the involvement of these two major landholder groups in NRM. Additionally, facilitators bridge the gap between Government and communities and work across cultures, often in situations where English is spoken as a second or third language.

### **7.1.6 Community Support Groups**

#### ***Non-Government Organisations***

The term 'non-government organisations (NGOs)' refer to those organisations which are not established for profit and do not represent industry. NGOs generally represent non-commercial aspects of natural resource management such as maintenance of biodiversity and environmental condition in general. They play a significant role in supporting community participation in NRM. For example, Greening Australia NT is renowned for the native vegetation management support it provides and its contribution to other natural resource management activities. The organisation's community support centres in Darwin, Katherine and Alice Springs provide technical advice, vegetation extension services, site inspections, training workshops and links to relevant experts and locally sourced seeds and plants. Greening Australia NT now carries responsibility for the community Waterwatch program.

Other NGOs represent the views of sections of the community and may actively influence natural resource management policy decisions. For example the Amateur Fishermen's Association of the Northern Territory lobbies strongly on behalf of amateur fishers on any fishing related issues and management decisions, while the Northern Territory and Arid Lands Environment Centres consistently campaign for greater consideration of the environment. Many NGOs, such as WWF and Greening Australia, also seek funding for on-ground natural resource management activities and programs, many of which are particularly effective at engaging local communities.

#### ***Industry***

Industry involvement in natural resource management has increased in recent years. In addition to meeting their own natural resource management obligations, many of which are legal obligations, private corporations or companies have funded and supported a variety of natural resource management projects.

Large industries such as fishing, mining, energy and pastoral industries sponsor community and private natural resource activities around the Territory. For example, the current eradication of Crazy Ants in the Nhulunbuy area is being partly funded by the local mining company, Alcan, while PowerWater Corporation funds some smaller environmental projects across the NT. Because these industries also make up a significant proportion of the greater NT community, their long-term role in on-ground best practice activities is crucial to sustainable NRM.

#### ***Local Government***

Elsewhere in Australia, local government is a major natural resource management stakeholder, particularly as all land is contained within a local government area. In the Territory, governance structures are different, with local government areas currently small islands in the greater non-local government landscape. The Local Government Association of the NT (LGANT) is currently discussing with the NT Government and other stakeholders whether local government areas should be expanded to encompass a greater proportion or the entire NT (Louise Fuller LGANT, *pers. comm.*).

Existing Local Government Councils and Community Councils support local community activities where possible. Councils are also key players in advising the Northern Territory Government on natural

resource management and community issues specific to their areas. If supported and resourced, local governments are well positioned to increase their contribution to local natural resource management. The limited resources available to remote communities are often directed to providing essential services. There are currently 64 local government bodies in the Northern Territory, including six municipal and 30 community government councils, 23 associations constituted under the Associations Incorporation Act, three associations incorporated under the Aboriginal Councils and Associations Act and one town on a special purpose lease.

### ***7.1.7 NRM Institutions***

NRM Institutions comprise the overarching component of the Territory's NRM organisational framework and provide the necessary foundation and direction for NRM in the Territory (For an overview of the NRM organisational framework, refer to Chapter 2 of the plan). Some of the core functions of these institutions include the administering of NRM related legislation and the provision of information relevant to management.

#### ***Northern Territory Government***

The Department of Infrastructure, Planning and Environment (DIPE) and the Department of Business, Industry and Resource Development (DBIRD) are the key Territory Government agencies managing natural resource issues, administering legislation and undertaking relevant research and monitoring. These departments focus on biodiversity conservation, vegetation, water and soil management, coastal management, pollution, development control and regularly deal with industries and associations involved in fishing, pastoralism, agriculture, horticulture, shipping, mining and nature conservation.

There is also a significant role for the regional development sections of the Department of Community Development, Sport and Cultural Affairs in natural resource management due to the close link between the natural resource assets and the sustainability of regional and remote communities.

Recently, the NT Government approved the development of an independent Environmental Protection Agency. Whilst timelines for the development of the agency are currently unknown, this agency will no doubt significantly influence the way in which NRM is delivered in the future.

#### ***Legislation and Policy***

Legislation pertinent to the management of natural resources in the Northern Territory is spread across a number of largely unrelated acts (see Appendix 9). There have been initial discussions within relevant Government departments about the incongruous elements and incompleteness of the Acts and the possible development of replacement NRM focussed legislation or overarching legislation to tie the various acts together in to an NRM legislative framework. Specific issues with regard to legislation are discussed further in the Issues and Threats section of this appendix.

There are a range of Territory policies and strategies relevant to natural resource management. These include:

- Building a Better Territory
- Building Stronger Regions, Stronger Futures Strategy
- Northern Territory Marine and Coastal Management Policy
- Northern Territory Parks Masterplan
- Northern Territory Planning Scheme
- Northern Territory Strategy for Greenhouse Action (Draft)
- Strategy for the Conservation of Biological Diversity of Wetlands in the Northern Territory of Australia
- Strategy for the Conservation of Marine Biodiversity in the Northern Territory of Australia (Draft)

A number of the management actions in the Plan are aligned to the priorities highlighted in these strategies and policies.

There also exists a broad range of Commonwealth policies related to NRM in the Territory. These are discussed in Appendix 9: 9.2.

#### ***Aboriginal Land Councils***

There are four Aboriginal Land Councils operating within the NT: Anindilyakwa, Central, Northern and Tiwi. These Councils were created under the *Aboriginal Land Rights (Northern Territory) Act 1976*. All of these councils play an important institutional role in the Territory's NRM framework through the support, facilitation and coordination of NRM on Aboriginal Lands. The Central and Northern Land Councils also play a pivotal role through their responsibilities outlined under the Commonwealth *Native Title Act 1993*.

#### ***Research and Environmental Education Institutions***

Charles Darwin University, and organisations such as the Tropical Savannas Cooperative Research Centre, the Desert Knowledge Cooperative Research Centre and CSIRO's Tropical and Sustainable Ecosystems Divisions are an important source of technical natural resource management knowledge and expertise for the Territory.

### **7.1.8 Partnerships**

Strategic partnerships continue to develop between agencies and groups to improve community capacity and to integrate different areas of need. Among current developments are the relationships that are being developed between Indigenous land and sea management groups and government authorities such as the Australian Quarantine Inspection Service and the Australian Customs Service. These are excellent examples of community NRM groups taking a more active role across a broader range of responsibilities.

#### ***NT Government-Community Partnerships***

In working with communities on natural resource management, much of the Territory Government's role has been to provide support and resources for these communities. In more recent times, however, the Government has also devoted a great deal of time and effort to establishing partnerships with communities. The Parks and Wildlife Service of the NT (PWSNT) have been particularly progressive in pursuing the development of such partnerships.

Currently, the NT has more than 90 parks and reserves, covering almost 4% of the landmass. The Northern Territory Department of Infrastructure, Planning and Environment manage these reserves through agencies such as the PWSNT, which are relatively well resourced and have highly skilled staff. PWSNT has recognised the benefits of involving the community in the management of these parks and reserves and has initiated a range of collaboratively developed partnerships with communities, which allow community involvement in park management. An example of one such partnership is the PWSNT Junior Ranger program. Other initiatives involving the community include the Volunteer Program (including the Caravan and Motor home Volunteer Program) and Friends of the Parks. The Service also actively seeks to engage the community in its planning processes.

The Northern Territory Government is establishing partnerships with relevant traditional owners to jointly own and manage parks and reserves and to conserve biodiversity across the 50% of the NT which is owned by Aboriginal people. These initiatives are closely related to and flow from the negotiations surrounding the *Parks and Reserves (Framework for the Future) Act*, which provides the framework for transfer of title for a number of parks to Aboriginal traditional owners and joint management of the majority of parks. These initiatives also place considerable emphasis on supporting Indigenous conservation and land management initiatives in pursuit of the dual aims of delivering conservation outcomes across Aboriginal lands and helping Aboriginal communities to reach the critical mass needed for socioeconomic development.

The Parks and Wildlife Commission is also pursuing partnerships with the pastoral industry as the most effective and cost efficient way of managing conservation across the vastness of the NT. The aim is to use the skills and expertise of landholders and build regional capacity. Appropriate incentives are also being considered.

#### ***Commonwealth Government – Community Partnerships***

The Commonwealth Government mainly contributes to community participation in natural resource management through Natural Heritage Trust funding. One of the Commonwealth's most significant contributions has been the funding for a variety of on-ground projects across the NT through groups such as Landcare Council of the Northern Territory, the Department of Infrastructure, Planning and Environment, Aboriginal Land Councils, Landcare groups and other non-government organisations. The Commonwealth has five facilitators based in Darwin and also financially supports a network of other natural resource management facilitators. This facilitator network includes a regional facilitator for each of the Arid Centre, Savanna and Top End regions, two Indigenous Land Management Facilitators based in the Northern Land Council and Central Land Council main offices and 18 full or part-time local facilitators based in a variety of government and non-government offices across the NT. This facilitator network is crucial in furthering development and maintenance of community participation and maintaining a Territory-wide understanding of the status of our natural resources.

The Commonwealth jointly manages Uluru-Kata Tjuta and Kakadu National Parks in the NT with the Aboriginal landowners. The divide between these relatively well resourced parks and their under-resourced neighbouring properties creates ongoing difficulties for the efficient management of fire, weeds and feral animals for these Parks. The Commonwealth also supports or is a partner in significant natural resource research such as the Tropical Rivers program and the National Land and Water Resources audit.

#### ***Aboriginal Land Council Partnerships***

Land councils have seen positive outcomes from combining their different skills and knowledge with partnerships set up either for specific projects or for the long-term. The Northern land Council has partnerships with government, non-government, education and research organisations (Caring for Country Unit 2004). For example, the Aboriginal Landcare Education Program (ALEP) is a partnership between Greening Australia NT and the Northern Land Council, with Aboriginal staff based in Greening Australia NT's Darwin and Katherine offices. ALEP works with Aboriginal communities and other organisations to build indigenous capacity to manage natural and cultural resources through two-way education and training; developing sustainable businesses; and assisting access to resources.

### ***7.1.9 Knowledge***

Educational institutions continue to play an important role in building NRM partnerships. Environmental education is seen as increasingly important and is now regularly included in school programs. More than 70% of schools in the NT have participated in different natural resource management activities including Landcare projects, WaterWatch, CoastCare, RiverCare, as well as in event days such as National Tree Day. More recently discussions have also been held about the possible introduction of Sustainable Schools Program in NT schools. A range of natural resource management and related courses are offered by Charles Darwin University and Batchelor College.

### ***7.1.10 Coordination of Research and Data Management***

The NT Government has made a commitment to developing a knowledge economy and helps to identify and coordinate opportunities for research and innovation. The Government has established a Research and Innovation Board and Fund and developed a partnership agreement between the Northern Territory Government and Charles Darwin University with an aim to developing and maintaining a critical mass in various research sectors. There is a potential abundance of opportunities for innovation and the application of natural resource management knowledge in the NT.

## 7.2 Issues and Threats

### 7.2.1 *Community Capacity*

Community capacity building aims to increase understanding in communities and then increase their involvement in natural resource management; it encompasses the human, technological, organisational, financial, scientific, cultural and institutional (United Nations Development Program 1996). It is described by the World Bank (1997) as an investment in people, institutions and practices that will together enable communities to achieve their development objectives.

The generation and maintenance of community capacity poses particular problems in the Northern Territory compared to most other jurisdictions because of the remoteness of many regions, which is exacerbated by the seasonal cut-off of many roads and the sparsity of population over a large area. These barriers all contribute to the high cost of resourcing NRM in the NT. Nonetheless, community participation has been critical to the success of many NRM projects in the NT and will continue to be very important in achieving long term sustainability of the Territory's natural resources. For effective community natural resource management, there must be a commitment to building the capacity of communities to become involved.

The major constraints facing the natural resource management community in the Territory and their management of their natural resources can be summed up by the paucity of people in a vast landscape, recent changes in landscape management and current socio-economic circumstances, in particular:

- the limited socio-economic options and opportunities for marginal lands;
- the recent and ongoing depopulation of country by Indigenous Territorians;
- reconciling the different approaches to stewardship of land practiced by different landholders;
- the ongoing permanent loss of Indigenous Ecological Knowledge; and
- the lack of data from which informed management decisions can be made.

Gaining and maintaining NRM capacity is essential for effective community participation in natural resource management within the Northern Territory, particularly in remote regions. Because there are significant socioeconomic and environmental variations across Northern Territory communities, natural resource managers need to:

- adapt their approach to suit local circumstances;
- be aware of cultural perspectives, particularly for Indigenous communities; and
- understand the influence of different perspectives on natural resource management.

Many direct and indirect factors will add to the capacity for communities to run natural resource management programs. Communities need the skills, support and knowledge for managing natural resources and they need to be in real and effective partnerships.

### 7.2.2 *Limited Community Awareness*

Territorians are generally receptive to environmental matters and appear to value the relatively unmodified state of our unique environment. They appear to recognise the importance of appropriate natural resource management in the NT or at least perceive the potentially devastating impacts that could be associated with mismanagement of natural resources.

It is important that community members are aware of the contribution they themselves can make to environmental degradation, as well as their potential to contribute to effective natural resource management. Unless the community understands the full impacts of degradation, natural resource management may become an inappropriately low political priority. Integrating natural resource management with programs to address other important community issues such as community health, employment and economic development is likely to ensure greater success in attracting funding and better community outcomes.

### **7.2.3 Limited Knowledge, Skills and On-Ground Support**

Despite awareness, enthusiasm and motivation, there are often limited opportunities for communities to improve their natural resource management knowledge and build relevant skills. This is epitomised by the lack of training opportunities for natural resource managers and leaders in remote areas.

Without appropriate natural resource management knowledge and skills, land and sea managers may act inappropriately or be unenthusiastic because they lack confidence in their own ability or in the potential outcomes. Cost-effective training and extension programs, combined with access to relevant knowledge, can build on and support skills for effective on ground management. Innovative approaches to deliver these programs to remote regions in a cost-effective manner are needed. Maintenance of the skill base in remote areas must also be considered in the development of such programs. Again, integrating with other priority issues, such as health and economic development, and catering for significant cultural and landscape diversity are also important factors that should be considered in the development of any such programs.

Language barriers exacerbate the problem. Consideration must be given to the forty-two Indigenous languages that are spoken in the NT and the fact that more than 20,000 people use English as a second, third, or more, language. There are also significant numbers of people speaking English as a second language within the non-Indigenous community, particularly in the horticulture and agriculture industries in Darwin's Rural Area.

### **7.2.4 Limited Economic Support**

The Territory has a small regional economy with limited options for generating income and nowhere is this more obvious than in many remote communities. In addition, social issues (such as health, housing and employment) in some remote communities are understandably a more immediate priority than natural resources.

With economic options limited in most of the Territory, the focus for potential new economic enterprises is often on sustainably using wildlife and other natural resources. Such enterprises often build on the customary economy. The customary economy includes any productive activities based on cultural activities such as hunting, gathering and fishing as they create economic benefit. The real value of the customary economy is currently generally unquantified or unrecognised (Altman 2001). More recently, export of Indigenous Ecological Knowledge has also been recognised as a potential enterprise, although intellectual property rights issues are expected to be complex.

Recognition and encouragement of customary economies is important as it:

- keeps Indigenous people on country;
- generates economic benefit;
- opens up opportunities for commercial enterprise; and
- has on-ground benefits and mainstream economic implications through improved NRM (Altman 2001, Altman & Whitehead 2003)

More detail on the customary economy is given in Appendix 4, 4.4.1 (Land).

To date, community based NRM projects have primarily been funded through Federal and Territory Government initiatives. The NHT is a positive example of the effective use of NRM funding but the NRM community would also like to stimulate greater support from the private sector (INRM Consultation Database 2004). Due to its relatively small population and lack of secondary and tertiary industries, the Northern Territory has had a limited number of enterprises with the economies of scale large enough to support any substantial NRM programs. Industrial developments like the Australasian Railway, the East Arm Port and developments associated with offshore Liquefied Natural Gas opportunities may open the way for future significant private sector investment in NRM.

The short-term nature of funding for many community programs is a key threat to the sustainability of community NRM capacity because, even with quality programs, once the funding ends programs often collapse and the knowledge and capacity that has been generated is lost from the local community (INRM Consultation Database 2004). Maintenance of community NRM capacity will require proactive management to ensure any continuation of funding in a region is determined well in advance of the cessation of previous funding streams.

NRM can also be integrated within projects funded from other fields or disciplines. This requires partnerships and networks that expand beyond traditional NRM stakeholder groups. Sustainable use of natural resources can result in both regional development and quality NRM programs.

### ***7.2.5 Inefficient Institutional Frameworks<sup>5</sup>***

As discussed earlier, the Territory has no overarching legislation for managing natural resources. Natural resource legislation is spread across a broad number of acts and regulations (see Appendix 9) and, which have been progressively added as required. Government Departments responsible for the administration of these acts have initiated discussion to improve the integration of various Acts. The integration of legislation may further be improved with the proposed formation of an Environmental Protection Authority for the NT.

As described in Chapter 2: Current NRM in the Territory – NRM Organisational Framework, the NT Government plays a pivotal role in directing NRM in the Territory. Territory government departments work and interact with a wide variety of natural resource managers ranging from Indigenous organisations, Landcare groups, Industry representatives and NGOs. These layers of natural resource management imposed by the existing legislation can add complexity including in information flow, and in the structure and role of natural resource managers and organisations. A simplified system would positively impact on natural resource management in the Territory.

At workshops and meetings the community has clearly said that it is difficult to define who is responsible for what, it is hard to get information and there appears to be duplication of roles between some of the agencies (INRM Consultation Database 2004).

### ***7.2.6 Legislation***

Northern Territory Natural Resource Management legislation comprises a significant number of mostly unrelated Acts. Each Act is generally effective in addressing specific threats and is revised as necessary for that purpose. During the development of this plan and as part of other issues such as discussions about the sustainable use of the Daly River district and the development of the Land Conservation Bill, stakeholders have consistently referred to difficulties associated with the complexity associated with a myriad of different Acts to address some threats and in other instances, the lack of integration (see Table 13, Appendix 9).

Land, water and coastal areas, their biodiversity and their associated threats have a multitude of interacting relationships not currently reflected in legislation. For instance, fire in a riparian zone may result in the destruction of significant habitat, the loss of key species and the introduction of weeds, which may halt re-colonisation and act as an obstruction to native animals and land managers. The associated waterway may become fouled because of rapid increases in nutrients from the burnt vegetation or the banks of the associated waterway may become eroded, causing increased turbidity and/or algal blooms. These may then result in anoxia and death of aquatic organisms which could in turn affect coastal and marine organisms.

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<sup>5</sup> For the purposes of this plan institutional frameworks refers to the processes and structures by which NRM is managed and includes legislation and management structure.

Although managers generally aim to be aware of the downstream effects of resource management actions these effects are, in many cases, not clearly controlled in legislation. Other Australian states have dealt with this issue in different ways. South Australia has developed entirely new integrated natural resource management legislation while Tasmania has developed overarching legislation, which acts as a framework for their existing legislation.

In addition to accounting for downstream effects, integration of the legislation should also, at a minimum, clarify which legislation takes precedence where an issue could be interpreted under more than one Act.

In February 2005 the NT Government announced that an independent Environmental Protection Authority (EPA) will be established. The structure of the EPA and a timeframe for implementation is yet to be decided but this may represent an opportunity for a review and possible restructure of NRM legislation.

There are also some concerns about the effectiveness of various existing Acts but these are generally reviewed as required. Table 14 (Appendix 9) provides an overview of the effectiveness of current legislation including any known gaps or conflicts. It also details key legislation and policies associated with each of the Acts.

An example of one of the major policy and planning gaps that has emerged under current structural arrangements is the way we manage our coastal and marine environment. At present there is limited policy direction to guide and underpin management and the NT's current Coastal Policy is under review. In its existing form, it fails to set any real timelines for results and it has no statutory basis. There is no Marine Protected Areas Strategy for the Northern Territory, which is a significant marine gap in biodiversity conservation. These strategies are being adopted Australia-wide and are overwhelmingly recognised as one of the most effective ways of conserving the marine environment and achieving sustainable use.

### ***7.2.7 Organisational Effectiveness***

Effective management of natural resources is dependent not only on legislation, but also on the structure and interrelationships of natural resource management bodies. During consultation stakeholders consistently identified substantial uncertainty about how natural resources are managed in the Northern Territory and the lack of coordination between relevant natural resource management bodies.

Natural resource management is complex. It involves coordination of a large number of bodies including Commonwealth, NT and local governments, pastoral, agricultural, fishing, mining and defence industries, Aboriginal land councils, community groups, and a range of research organisations including Commonwealth and NT Government research, Cooperative Research Centres, and tertiary education institutions. In some assets, where current management is fragmented with only informal coordination across the region, partnerships across regions could help fill management gaps. Existing expertise is often thinly spread across, and within a series of departments. This does not allow for a strategic, integrated approach and may in fact lead to a lack of accountability, repetition of research and poor dissemination of information amongst managers (INRM Consultation Database 2004).

In a 2003 study of planning in the Northern Territory, McDonald et al. examined the strengths, weaknesses, opportunities and threats of four key themes:

- Management across tenures;
- Broader coordination of planning activities and functions;
- Informing and involving communities; and
- The capacity of key players.

The study identified a range of possible improvements for consideration under the headings:

- Greater coordination of Government business involving planning activity;
- Rethinking planning legislation and statutory tools to create improved management;
- Aligning NRM planning and regional development planning;
- Developing effective engagement approaches; and
- Improving the capacity of key players,

This was not an exhaustive study and it was noted that the high degree of interconnection of issues made detailed analysis of discrete issues, difficult. A more intensive analysis appears warranted but is outside the scope of this Integrated Natural Resource Management Plan.

One significant issue that has risen from the limited coordination of institutional arrangements is the fragmented storage of NRM-related data. A considerable amount of natural resource data has been collected but to date this data has largely been managed and maintained by individual sections of government and research institutions. Meta-databases exist where records of the type, extent and location of research and monitoring data can be found, but they are not comprehensive at this stage, possibly because contribution to the meta-databases is voluntary. There is a general recognition of the need for improved management and interoperability of data. Standards are being developed for recording and understanding of information by a range of natural resource management sectors at the national level and the Australian Government now often requires delivery of research information in a prescribed format. This data is a valuable asset and needs to be treated accordingly. Resources are required to ensure data is identified, standardised, maintained and securely stored. The lack of a central data storage system has severely impaired the transfer of information to on ground managers.

### ***7.2.8 Loss of Indigenous Ecological Knowledge***

Although scientific natural resource knowledge is limited in the Territory compared to other jurisdictions (due to its relatively short history and small economic base) there is a wealth of Indigenous natural resource knowledge, much of which is yet to be recorded. Indigenous people hold many diverse and complex systems of knowledge about species, populations and ecosystems (Tropical Savannas CRC 2004). Social circumstances have changed in recent times and many Aboriginal people have moved away from their country, leaving large parts of the landscape essentially depopulated. Opportunities for transference of this knowledge about country from elders are being lost (Tropical Savannas CRC 2004) and as a result not all knowledge is being passed on to younger generations. More importantly, the number of Aboriginal elders who retain this important Indigenous knowledge is rapidly declining and without them, facets of Indigenous Ecological Knowledge will be permanently lost, along with the chance to cooperatively understand and incorporate this information into landscape management.

### ***7.2.9 Insufficient Baseline Knowledge***

Insufficient baseline knowledge is a major threat to effectively managing our natural resources. In the Territory, there are large information gaps across all assets (see relevant Appendices for specific gaps in knowledge for each natural resource asset). Insufficient baseline information affects the ability of natural resource managers to make good management decisions, act more effectively and adaptively manage the NT's natural resources. Gaps in data also affect decisions; for example, the Tiwi Land Council (2004) uses the Precautionary Principle to refuse developments where there is insufficient data. Land managers and technical experts see this threat as a high risk to NRM and strategically filling gaps in baseline knowledge as a high priority, while the broader community rank it slightly lower (INRM Consultation Database 2004).

Knowledge gaps in many instances are essentially the result of limited research, monitoring and reporting. Unfortunately these gaps have arisen for two major reasons:

- the large expanse of the NT, the diversity of ecosystems and the relatively small economy in which monitoring and reporting must gain funding priority; and

- environmental issues in the Territory have generally not been as well resourced as more conspicuous cases of the restoration of environmental dysfunction and degradation in more densely populated parts of Australia.

Knowledge gaps are sometimes perceived rather than actual, although this effectively amounts to the same problem if knowledge is not accessible. Data is often scattered, making it inaccessible; or collected in different ways making it difficult to use for any other purpose than that originally intended (Roper River Landcare Group 2004). Much of the information that exists is too broad for other uses. Good data relies on consistent reporting from land managers and this may be difficult with the relatively high turnover of staff that occurs in much of the Territory (*ibid*).

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