



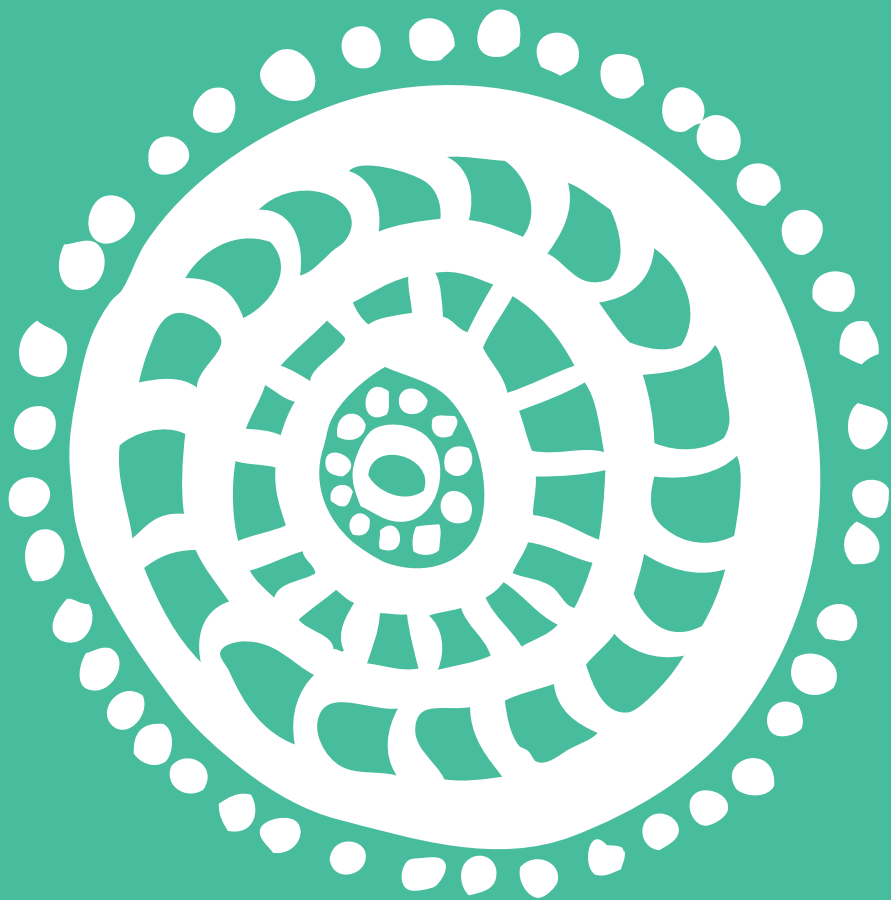
INDIGENOUS LAND MANAGEMENT IN AUSTRALIA

**EXTENT, SCOPE, DIVERSITY, BARRIERS
AND SUCCESS FACTORS**

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FOR
OUR
COUNTRY



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Acronyms

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences	FaHCSIA	Department of Families, Housing, Community Services and Indigenous Affairs
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies	GERAIS	Guidelines for Ethical Research in Australian Indigenous Studies
AQIS	Australian Quarantine and Inspection Service	GHG	greenhouse gas
ARRI	Aboriginal Rural Resources Initiative	IBRA	Interim Biogeographic Regionalisation of Australia
BRS	Bureau of Rural Sciences	ICIP	Indigenous Cultural and Intellectual Property
CAG	Community Action Grant	IEK	Indigenous ecological knowledge
CAPAD	Collaborative Australian Protected Areas Database	IHP	Indigenous Heritage Program
CAR	Comprehensive Adequateness Representative	ILC	Indigenous Land Corporation
CEPANCRM	Contract Employment Program for Aboriginals in Natural and Cultural Resource Management	ILMP	Indigenous land management program
CDEP	Community Development Employment Projects program	ILM	Indigenous land management
CFI	Carbon Farming Initiative	ILSM	Indigenous land and sea management
CRC	Cooperative Research Centre	IP	Intellectual Property
DAFF	Department of Agriculture, Fisheries and Forestry	IPA	Indigenous Protected Area
DEEWR	Department of Education, Employment and Workplace Relations	NATSISS	National Aboriginal and Torres Strait Islander Social Survey
DEIR	Department of Employment and Industrial Relations (QLD)	NGO	non-government organisation
DEWHA	Department of Environment, Water, Heritage and Arts (pre 2010)	NHT	Natural Heritage Trust
DIISRTE	Department of Innovation, Industry, Science, Research & Tertiary Education	NNTT	National Native Title Tribunal
DPSIR	drivers, pressures, state, impact, response	NRM	natural resource management
DSEWPac	Department of Sustainability, Environment, Water, Population and Communities	NRS	National Reserve System
ERIN	Environmental Resources Information Network	ORIC	Office of the Registrar of Indigenous Corporations
		PBC	prescribed body corporate
		PES	payment for ecosystem services
		TKRP	Traditional Knowledge Revival Pathways
		WALFA	West Arnhem Land Fire Abatement project
		WoC	Working on Country

1 Executive summary

Indigenous land and sea management, also referred to as ‘caring for country’, includes a wide range of environmental, natural resource and cultural heritage management activities undertaken by individuals, groups and organisations across Australia for customary, community, conservation and commercial reasons. These activities have their origins in the holistic relationships between traditional Aboriginal and Torres Strait Islander societies and their customary land and sea estates—or ‘country’—that have evolved over at least 50 000 years. Increasing formal involvement of Indigenous peoples was highlighted in the 2011 Australia—state of the environment report as one of four standout trends in environmental management over the past decade. These formal roles mean Indigenous land management (ILM) requires cross-cultural engagement with non-Indigenous land management and managers.

This report, commissioned by the Indigenous Working Group of the Australian Landcare Council to build the capacity of Landcare, presents the findings of a review of the extent, scope and diversity of ILM across Australia, and the associated success factors and barriers, together with best practice examples.

Key drivers of Indigenous land management activities are as follows:

- ♦ *Customary obligations for management and use of country.* Culture, family, language and customary law underpin Indigenous peoples’ responsibility for their traditional land areas throughout Australia (Figure 1).
- ♦ *Indigenous leadership at multiple levels of decision making.* This has led to the establishment of contemporary Indigenous land management (for example, through Community Rangers) since the 1980s.
- ♦ *Markets for land management and associated goods and services.* For

example, the Fish River Fire Project, approved as the first Indigenous carbon offset project under the Australian Government’s Carbon Farming Initiative, will generate about 13 000 Kyoto-compliant Australian carbon credit units each year for sale.

- ♦ *Recognition of Indigenous rights and interests in land through title and agreements.* Indigenous peoples’ interests are recognised formally through agreements or land title in well over half of Australia’s land area; in 16% of Australia, this recognition is through tenure; 8.3% through native title determined as being held over the whole area; in 12.9% through native title determined as held over part of the area; and in 39% through Indigenous land use agreements (ILUAs) with multiple other parties. More than one of these mechanisms apply to some land areas, and ILUAs may give limited or no access for Indigenous land management purposes.
- ♦ *Movement towards Indigenous and co-managed conservation areas.* This is reflected in 53 declared Indigenous Protected Areas (IPAs) covering 36 million hectares, just over 40% of Australia’s National Reserve System.
- ♦ *Investments for improved environmental and cultural heritage outcomes.* This has resulted in an increased proportion of Australian Government funding for environmental management that is allocated to ILM, up from \$0.5 million (1.3%) in 1992–97 to at least \$91 million (20%) in 2010–12.

Indigenous peoples with customary obligations have now organised themselves to respond to opportunities to have their land management activities supported through government funding. They now undertake significant projects across Australia, and are the key providers of land management services in many remote and regional areas, with some providers operating in urban centres. The Australian Government is

the largest investor in ILM, according to the data available for this study. A very small proportion of funding comes from philanthropic sources; investment by state and territory governments is larger than philanthropic funding, but was not able to be quantified for this study.

Multiple benefits have been derived from this investment including:

- ♦ **health and wellbeing benefits**—for example
 - lowered blood pressure levels, lowered diabetes and heart-attack risks saved an estimated \$260 000 per annum in one remote community.
- ♦ **cultural and social benefits**—for example
 - reduced anti-social behaviour of young people, and increased access to housing and employment.
- ♦ **economic benefits**—for example
 - reduced welfare payments and increased tax revenue reduced the costs of the Australian Government’s Working on Country program by up to 23%.
 - returns from the arts and crafts industry supported by NRM generating \$12–\$14 per hour for Indigenous peoples in remote locations.
- ♦ **environmental benefits**—for example
 - one study reported Indigenous NRM managed lands had lower rates of weed infestation and healthier fire regimes when compared to adjacent protected areas.
 - increased action in border protection, quarantine, fire management, wildfire abatement, carbon sequestration, weed and feral animal control, fisheries management and more.

Success factors and barriers in Indigenous land management

This study recognises that ‘success’ in ILM is dynamic, achieved when a balance exists between many internal and external factors. Success is sometimes temporary and fragile, and in broad terms is a journey that is never completed; rather, it is a road that is always under construction (Finlayson 2007). What constitutes best practice is also best regarded as an ongoing journey. Supporting the success factors associated with ILM, and taking action to address the identified barriers, will enable positive movement along the journey to best practice. We highlight stories of multiple journeys towards best practice in boxes within the report.

We focused our literature review on the factors that support success in ILM, and those that present barriers, rather than classifying particular examples as successful or as failures. Nine common themes of success are associated with ILM:

1. *Indigenous (culturally based) motivation.* ILM is an expression of identity, family linkages, customary law rights, responsibilities and obligations, triggering a high level of Indigenous motivation to do it—this is arguably the key success factor.
2. *Indigenous governance and co-governance arrangements that respond to customary institutions.* Indigenous governance is most successful for ILM where Indigenous people start it themselves through informed consent, traditional leaders are empowered, the local views are taken into account, and external agencies engage through supportive and facilitating approaches.
3. *Hybrid economies that generate multiple benefits.* Many successful ILM activities are part of hybrid economies based on commodities and practices that (i) can be sold in markets; (ii) are underpinned by Indigenous customs;

and (iii) are supported to an extent by government investments that stimulate synergies between Indigenous people and market engagement, rather than triggering welfare dependency.

4. *Indigenous-specific government programs that engage ILM through multiyear funding, real jobs and flexible case management.* Indigenous-specific funding enables Indigenous people to access funds for management based on their own cultural knowledge and practices, and works best with multiyear funding, real jobs and flexible case management.
5. *Brokers and brokering organisations.* Success in ILM is helped by brokering organisations and brokers who link community-based Indigenous organisations to the resources and support required to undertake ILM—for example, land councils, and NRM regional bodies.
6. *Relationships of trust, respect and mutuality.* Effective relationships of trust, respect and mutual interest underpin success in all ILM. Time spent together on country is important to relationship building.
7. *Diverse multimedia approaches for Indigenous knowledge.* A diverse range of multimedia approaches are successfully supporting Indigenous knowledge while ensuring intergenerational transfer, through methods such as youth videorecording of elders on country.
8. *Collaborative two-way knowledge engagement.* Equitable two-way knowledge engagement between Indigenous and scientific ‘tool-boxes’ for management helps success in ILM. Indigenous people are active partners in developing and implementing better understandings of their environmental management that include scientific knowledge.

9. Indigenous-driven planning.

Indigenous-driven planning provides a way for Indigenous people to take control of their own future, shape it and give it meaning.

Indigenous peoples also encounter many barriers on their journey to success and best practice in ILM:

1. *Limited respect, recognition and practical support for Indigenous knowledge and world views.* Loss of traditional knowledge and language is identified as a critical threat in many ILM situations. Barriers arise from power imbalances that lead to western systems playing the dominant role in education and in how land management is practised. Indigenous languages have a key role in the links between country, its management, culture, kinship and family. Of around 250 original languages, only 145 are still being spoken today, with 18 currently strong (being spoken by all age groups); 110 are in the severely or critically endangered categories.
2. *Limitations of native title, recognition of rights and access to traditional lands and waters.* A key barrier experienced by many Indigenous people is lack of access to their traditional lands that are held under other forms of tenure. Although native title and land rights legislation are driving an increase in land ownership and access, regaining land is a long and difficult struggle for many. For others who have their ownership recognised, accessing vast areas of traditional lands in remote locations with very low rates of human occupancy is very challenging.
3. *Limited access to resources for ILM.* Despite the notable growth in Australian Government expenditure on ILM, demand for resources still substantially outstrips supply. New mechanisms that can bring additional resources and reduce over-reliance on governments are urgently required.

4. *Constraints in organisational and institutional capacity.* ILM organisations face challenging roles in reconciling cross-cultural encounters. Many are extremely fragile, under-resourced and without access to effective long-term administration, governance and infrastructure support and systems.
5. *Socioeconomic and educational disadvantage faced by Indigenous peoples.* Many health and wellbeing issues affect Indigenous people's ability to undertake ILM. Disadvantage is reflected in the life expectancy gap between Indigenous and non-Indigenous people (12 years for males and 10 years for females). Many Indigenous people live in houses that are overcrowded and do not satisfy the basic Australian standards for shelter, safe drinking water and adequate waste disposal.

Outlook for Indigenous land management

ILM has emerged as an important phenomenon in Australia. Optimism is warranted in response to the positive environmental, social, economic and cultural outcomes reported from ILM across Australia. Indigenous peoples across all states and territories show a common desire to manage their traditional land and resources in Indigenous ways with a deeply emotional and spiritual connection to country. Local control and empowerment of Indigenous people is at the heart of many of the success factors. Effective organisations (many non-Indigenous) and policy responses that support this Indigenous leadership underpin the other success factors. Relationships of trust, respect and mutuality allow the productive negotiation of differences and positive outcomes.

Nevertheless, realism cautions that successes in ILM are patchy and need time to develop more evenly.

Overcoming one key barrier identified in this study—limitations of native title and rights recognition in Australia—depends on the larger context of Indigenous peoples' ongoing negotiation of their rights and status in the wider Australian society. Those directly engaged in ILM are consistently realistic about the daily challenges associated with the barrier of socioeconomic disadvantage. Realism also dictates that the ILM outlook depends on closing the gap in health and socioeconomic status between Indigenous and non-Indigenous Australians.

The outlook for ILM clearly depends in part on Indigenous policy settings broader than those of land management—for example, policy relating to overcoming socioeconomic disadvantage and recognising Indigenous rights. Nevertheless, we identify eight areas in which Australian, state and territory government policy relevant to land management can support a positive outlook by strengthening the success factors and removing barriers to ILM:

- ♦ Support Indigenous leadership and governance. This includes creating pathways to build Indigenous leadership through, for example, peer and mentor networks; and supporting culturally legitimate and practically capable Indigenous governance in all land and sea management organisations.
- ♦ Increase visibility by developing effective measures and promoting the benefits generated by ILM, for both Indigenous peoples and the wider Australian society. Simple and consistent measures of Indigenous health, wellbeing, economic, cultural, environmental, governance and sociopolitical outcomes from ILM would raise awareness of its benefits, and support the case for greater investment from a broader pool.
- ♦ Increase the share of government funding for Indigenous purposes that is allocated for ILM. Supporting and developing ILM programs and enterprises (e.g. Indigenous Protected Areas and Working on Country), which generate multiple benefits, should draw resources from multiple portfolios, including health, education and employment.
- ♦ Leverage new resources. This includes supporting innovative financing mechanisms to bring more resources to ILM, including through impact investment and carbon farming opportunities. Such mechanisms should bring funding from outside government, in the corporate and philanthropic sectors.
- ♦ Generate new Indigenous knowledge and language initiatives. Policy initiatives and investments are needed to support both Indigenous knowledge and collaborative two-way knowledge engagement with science, in existing and new environmental and land management research and training programs. The recommendations of the Our land our languages report (HoR 2012) should be implemented to strengthen and renew Indigenous languages.
- ♦ Recognise the role of brokers and brokering organisations in ILM, including both Indigenous organisations, such as the Central Land Council, and non-Indigenous organisations, such as the regional NRM bodies.
- ♦ Support Indigenous-driven planning. Country-based and comprehensive community-based planning initiatives are a key ingredient of effective ILM.
- ♦ Support hybrid economy approaches, such as government-funded Indigenous rangers undertaking fee-for-service contracts. This will include investigating ways to remove constraints on these hybrid economies from policies related to centralising services and ensuring competitive neutrality.

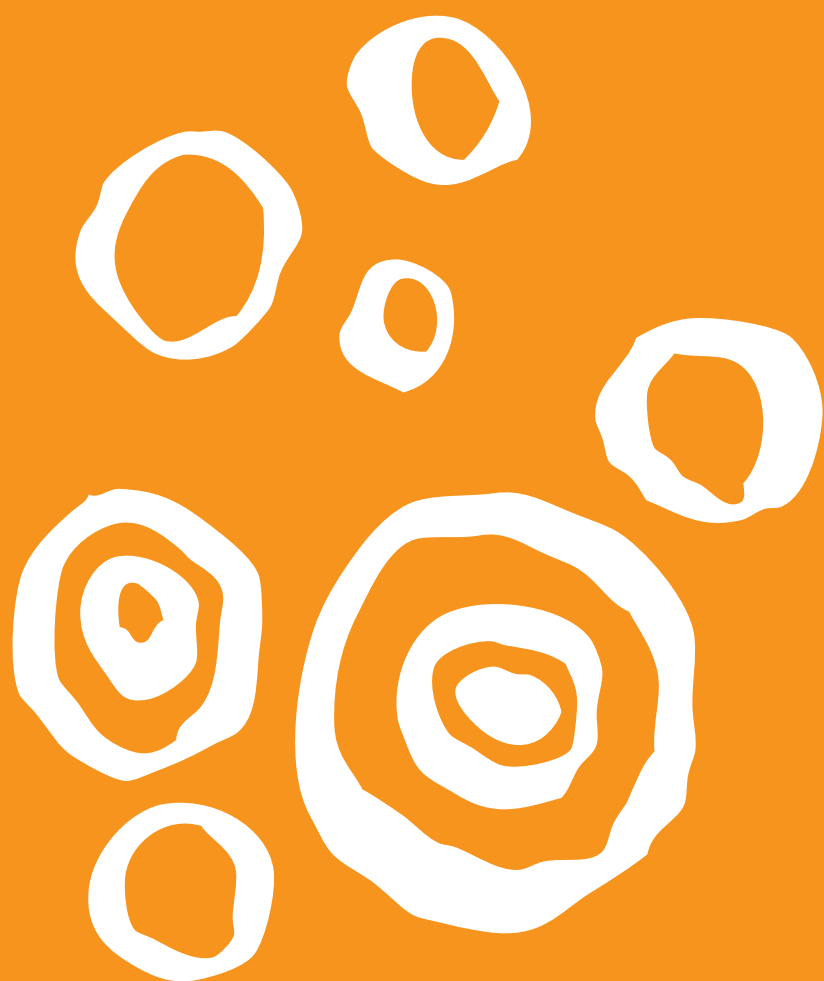
A high-level working group could be established with a central focus on ILM between agencies concerned with Indigenous affairs, sustainability, environment, agriculture, research, education and climate change. Such a group would assist in coordination of new funding and new policy initiatives to support Indigenous knowledge and link health, wellbeing, social, economic and environmental benefits with the central focus of ILM.

How can we rely on the findings?

This report responds to terms of reference provided by the Indigenous Working Group of the Australian Landcare Council in 2012. The research is based on an expansive literature review, and on spatial and quantitative analysis of data—mainly available publicly and online—on Indigenous land tenure, native title outcomes, and investment in ILM projects and organisations. These data include 2600 records of projects at 750 unique sites during 2002–12. Four elements ensure that the literature review is rigorous and valid:

- ♦ identification of relevant literature through a ‘most data-rich sources’ approach
- ♦ structured search of the relevant literature guided by a modified drivers, pressures, state, impact, response (DPSIR) analytical framework
- ♦ identification of relevant themes within the categories of the DPSIR framework using conceptual cluster analysis techniques
- ♦ evaluation of the contribution of the documents reviewed to the information sought by the study’s terms of reference.

Interim findings from the research were presented to meetings of the Indigenous Working Group of the Australian Landcare Council in April 2012, October 2012 and February 2013, and to the council itself in May 2012 and March 2013. The report was also reviewed by CSIRO internally, and comments were provided by staff of the Indigenous Land Corporation and the Australian Government Department of Sustainability, Environment, Water, Population and Communities. Valuable feedback from those meetings and reviews resulted in revision and improvement of the report.



2 Understanding Indigenous land management

2.1 What is Indigenous land management?

Indigenous land and sea management, also referred to as ‘caring for country’, includes a wide range of environmental, natural resource and cultural heritage management activities undertaken by Indigenous individuals, families, groups and organisations across Australia. These activities have their origins in the holistic relationships between traditional Aboriginal and Torres Strait Islander societies and their customary land and sea estates—or ‘country’—that have evolved over at least 50 000 years (State of the Environment Committee 2011).

In Australia, Indigenous peoples engage in land management with multiple stakeholders (governments, scientists, producer groups, conservationists and others) through a range of mechanisms: formal government-supported natural resource management (NRM) projects (Roughley & Williams 2007), Indigenous and co-managed protected areas (Muller 2003; Nursey-Bray & Rist 2009; Ross et al. 2009), endangered species initiatives (Nursey-Bray 2009), water planning processes (Jackson & Altman 2009) and the pursuit of cultural objectives conventionally in the absence of non-Indigenous actors (La Fontaine 2006). Land management activities are highly diverse. They include customary or cultural resource management (e.g. hunting, gathering, burning, ceremony, knowledge sharing), actions to improve conditions in settlements (e.g. dust mitigation, firewood collection, management of water supplies), commercial economic activities (e.g. bush harvest for sale, pastoral, management, art) and threat abatement (e.g. weed and feral animal control, fire management, threatened species management, revegetation) (Davies et al. 2010; Hill et al. 2012; Muller 2008b). Contemporary Indigenous management has different aims, goals and outcomes across the landscape according to the location of cultural sites, contemporary

land tenure arrangements and the availability of funding to engage in particular activities.

In this report, we interpret Indigenous land management (ILM) as including NRM, cultural resource management, commercial economic activities and activities to improve living conditions in settlements (Table 1). ILM includes planning, training, capacity building and knowledge integration, as well as action. Indigenous peoples do not make a distinction between Indigenous land management and Indigenous sea management—both are considered aspects of management of country. We focus here on the land-based component, but include some information about sea-based Indigenous management, where relevant. We also recognise that Indigenous peoples engage in a range of policy-level activities and partnerships to translate their responsibilities for people and country into land management programs, policies and legislation.

2.2 The cross-cultural context of Indigenous land management in Australia

ILM is multifaceted and diverse, and always situated within the broader Indigenous cultural and spiritual context. Increasing formal involvement of Indigenous peoples is one of four standout trends in environmental management over the past decade (State of the Environment Committee 2011). These formal roles mean Indigenous land management (ILM) requires cross-cultural engagement with non-Indigenous land management and manager (Ens et al. 2012). Both formal ILM roles and informal ILM activities, such as families undertaking bush trips onto their traditional country, are deeply embedded in unique customary institutions. ILM is influenced by Indigenous language, art, music, dance, stories, song lines, and story places, which cover all of

Australia with a dense network of lived experience and patterns of home. The distinctive relationships that Indigenous people have to their country, and to one another, affect their management decision-making processes, activities and agendas (Smyth 1994).

Table 1 Diverse components of Indigenous land management
(based on Davies et al. 2010)

CATEGORY	ACTIVITY
Customary or cultural resource management	Hunting, gathering Burning Ceremony Protection and management of culturally significant places Transfer and documentation of traditional ecological knowledge Documentation and translation of language Indigenous knowledge and activities for youth education Artistic expression through painting or craft
Natural resource management	Weed control and monitoring Feral animal control and monitoring Fire management Monitoring and management of threatened species and ecological communities Conservation of natural water bodies Soil erosion control and soil rehabilitation Native nursery, seed collection and planting Visitor and tourist management (e.g. track maintenance, signage) Monitoring threats to biosecurity
Land management for improved conditions in settlements	Dust mitigation Firewood collection Management of community water supplies (e.g. bore maintenance and testing) Management of rubbish and sewage disposal Parks and gardens Infrastructure (e.g. building, road maintenance and construction) Outstation infrastructure Protection from fire
Commercial economic activities	Horticulture (e.g. vegetable garden, orchard) and bush tucker horticulture Bush harvest of plant foods, medicines and seed for sale Harvest for commercial wildlife industries (e.g. crocodile egg harvesting) Pastoral and related activities (e.g. mustering and sale of feral animals) Plantations (e.g. firewood, sandalwood) Art and craft production Cultural ecotourism Rehabilitation and revegetation at mine sites or other disturbed areas Land restoration and other natural resource management services carried out under contract arrangements Employment in Indigenous and co-managed parks and protected areas

Indigenous world views place land management as a two-way interaction between people and country, differing from the more linear western world view of management as a process where people take specific actions to affect the environment (Ens et al. 2012). ILM exists in a cross-cultural context of Indigenous world views, arising from millennia of occupation of Australia by Indigenous people, and the world views of the more recent settler societies. Respect for Indigenous law, knowledge and responsibility for country is a precondition for cross-cultural cooperation on land, water and natural resource management across Australia. ILM is therefore both centrally the business of Indigenous peoples and an opportunity for cross-cultural learning and more effective land management outcomes across Australia (Ens et al. 2012).

Kakadu Ranger, Paddy Cahill, captures a 4.6 metre croc for tagging and tracking, 2012.
Photo: Samantha Deegan, Kakadu National Park



2.3 Purpose of this report

This report was commissioned by the Indigenous Working Group of the Australian Landcare Council through the Australian Government Department of Agriculture, Fisheries and Forestry. The Indigenous Working Group's goal has been to build the capacity of Landcare by understanding the extent, scope and diversity of ILM across Australia. The Australian Landcare Council requested an expansive literature review to identify successes and barriers, identify best practice for successful engagement with ILM organisations, and summarise the extent, scope and diversity of ILM. This report uses publicly available data to address these terms of reference, which appear in full in Appendix 1.

We wish to express our deep respect for Indigenous peoples and their cultures, languages and lives. This report does not, and cannot, do justice to the customary law, lore, language and relationships that are very important to ILM.

2.4 Approach and methods

This report is based on a comprehensive literature review, and on spatial and quantitative analysis of data (most of it publicly available) on Indigenous land tenure, native title outcomes, and investment in ILM projects and organisations.

The terms of reference (Appendix 1) sought an expansive literature review. Four elements underpin our approach to ensuring that this review is rigorous and valid:

- ♦ *identification of relevant literature* through a 'most data-rich sources' approach
- ♦ *structured search of the relevant literature* guided by a modified drivers, pressures, state, impact, response (DPSIR) analytical framework
- ♦ *identification of relevant themes* within the categories of the DPSIR

framework using conceptual cluster analysis techniques

- ♦ *evaluation of the contribution* of the documents reviewed to the information sought by the study's terms of reference (Liamputtong & Ezzy 2005; Kumar 2005).

Our first element, the 'most data-rich sources' approach, was chosen because systematic literature search using online scientific databases alone would not identify much of the relevant literature. As well as the peer-reviewed publications indexed by these databases, 'grey' documents are widely scattered across internet sites; in state and territory jurisdictions; in regional, local government and non-government organisations; and across sectoral boundaries (e.g. water management reports, biodiversity management reports). The 'most data-rich sources' method recognises that high-quality and valid literature research depends on ensuring selection of the documents that are most pertinent to the research purpose and question (Hart 2003), in this case the terms of reference for the consultancy (Appendix 1).

We initiated the literature review by bringing together a highly experienced team of CSIRO scientists with demonstrated Indigenous land management experience in diverse locations and sectors (Drs Hill, Pert, Davies, Robinson and Walsh). The team identified the most data-rich grey and white literature to produce an understanding of ILM in Australia, focusing on the period from 2000, and collated the identified literature into a searchable bibliographic database. This literature was augmented during the review by searching Web of Knowledge and Google Scholar in relation to emerging themes from the conceptual cluster analysis (see below), using an iterative process, until conceptual saturation point was reached (i.e. no new themes were being identified through additional literature review).

Our second element, the DPSIR analytical framework, was selected after the team evaluated a number of existing analytical frameworks that could guide the literature review, including those produced in previous relevant research: *The engagement of Indigenous Australians in natural resource management* (Roughley & Williams 2007), the synthesis article from a recent special edition of *Ecological Management and Restoration* that focused on Indigenous land and sea management in remote Australia (Ens et al. 2012), and a multiyear multicase study of Aboriginal land management through the Desert Knowledge Cooperative Research Centre (Davies et al. 2010).

The research team selected the modified version of the internationally recognised DPSIR framework that was used in the recent *Australia—state of the environment report* (State of the Environment Committee 2011). This framework has the advantage of accommodating a chain of causal links, from driving forces for ILM, such as Indigenous people's traditional connections to country, to the current state of ILM and the risks faced by ILM in the future. In consultation with the Indigenous Working Group of the Australian Landcare Council, we further modified the framework to replace the categories of pressures and responses with 'barriers' and 'success factors', and to consider benefits generated by, as well as risks for, ILM.

For the third element, identifying relevant themes within the categories of the DPSIR framework, we collated the identified literature into a searchable bibliographic database. The database includes 570 sources, 253 of which are peer-reviewed journal articles relevant to Indigenous Australian land management published since 2000. Of these, 154 were published in the last five years. We believe that this recent growth in publications reflects both increased interest in the topic and progress in identifying and applying appropriate

research methods for ethical research in ILM (Carter 2008; Cullen-Unsworth et al. 2012). The lead author read (or re-read, in most cases) and reviewed the collated sources, using the techniques of theme identification through conceptual cluster analysis and synthesis from the practice of social science qualitative enquiry (Liamputtong & Ezzy 2005). Material relevant to the categories of the modified DPSIR framework (drivers, barriers, success factors, benefits, risks and adaptive capacity of ILM) was identified and coded within the 'keywords' field of the bibliographic database. Notes were taken from the reading and review, and tables were constructed for the categories in the framework, summarising the conceptual contribution from the document. Themes within each of the categories were drawn from these notes and tables.

The fourth element, evaluation of contributions of the documents, was underpinned by identification during the review of the type of document (e.g. peer-reviewed article, report to government) and the method used (e.g. single or multiple case study, ethnography, common inquiry framework approach). This information was recorded in the tables constructed for the thematic analysis. The themes identified within each category took account of the status and extent of the research underpinning the themes (e.g. whether published and peer reviewed or not, a single example or many examples from multiple documents). The expert team subsequently reviewed and revised the identified themes and the synthesis of review findings. These approaches to validity in qualitative literature review are referred to as triangulation and critically reflexive review (as opposed to the audit trail approach to validity that is used in a systematic literature review) (Creswell & Miller 2000).

Interim findings from the research were presented to a meeting of the Indigenous Working Group in April 2012, October 2012 and February 2013, and to

the Australian Landcare Council in May 2012 and March 2013. Valuable feedback from those meetings resulted in revision and improvement of the report and extended the critically reflexive review process. The report was also reviewed by CSIRO internally.

Table 2 Modified DPSIR framework to provide an analytical framework snapshot of Indigenous land management in Australia

DPSIR ANALOGUE	QUESTION RELEVANT TO INDIGENOUS LAND MANAGEMENT (ILM) IN AUSTRALIA
Drivers	What are the key activities and processes driving ILM?
State	What is the extent, scope and diversity of ILM since 2000? What are the benefits associated with ILM?
Success factors	What are the success factors that enable ILM to be effective?
Barriers	What are the barriers and obstacles faced by Indigenous people in undertaking ILM?
Risks	What are the key risks facing ILM now and in the future?
Outlook	Taking into account current and likely future drivers, responses and identified benefits and risks, what is the likely future state of ILM?

The data on investment in projects was obtained from online sources, with the exception of Indigenous Land Corporation (ILC) data on investment, which was provided directly by the ILC. The secretariat to the Australian Landcare Council provided a table summarising government and non-government investment programs in ILM. We used this table to guide our searching of online sites and documents, to compile an Excel spreadsheet that now includes 2600 records of projects at 750 unique sites.

We focused attention on the websites of the Australian Government (particularly the departments of Sustainability, Environment, Water, Population and Communities [DSEWPaC]; and Agriculture, Fisheries and Forestry), the National Water Commission and philanthropists (Myer, Christensen Fund, Australian Environmental Grantmakers Network, Lottery West, Pew Environment Group and Nature Conservancy). We looked at a number of corporate philanthropic organisations, including Rio Tinto Foundation, BHP Community Fund and Telstra Foundation, but did not find any ILM projects. We found data on the Queensland Wild River Rangers and expenditure from the Aboriginal Benefit Account established under the *Aboriginal Land Rights (Northern Territory) Act 1976* (Cwlth), from which we identified ILM expenditure items based on project titles. We were not able to locate other relevant data from states and territories in the time available for the project. We also identified a number of other possible sources of funding for ILM—cooperative research centres, state and territory governments, and private purchasers of ILM services—but were not able to collect data on them. The Australian Landcare Council secretariat requested that data be made available to us about the Working on Country projects (under the Caring for our Country program) from the Environmental Resources Information Network (ERIN); we received the spatial data for the location of all these projects, but not the investment

amounts. As noted above, we also received data from the ILC about its investments in ILM since 2002, together with data on the location of all its current and past properties. Although we were not able to source complete data on a number of other identified sources of investment, including investment by state and territory governments, private corporations and not-for-profit organisations, the data set is the most comprehensive, spatially located data set that has ever been assembled on ILM in Australia.

In all cases, we collected information on projects in which an Indigenous organisation was funded to carry out management of land, including collecting Indigenous ecological knowledge (IEK), and undertaking land and sea management. We also collected information for projects in which a non-Indigenous organisation was funded but the project involved ILM. In some instances, the ILM work was only one component of the project; in these cases, we estimated a proportion based on the project description. In relation to funding for NRM regional bodies, where Indigenous-specific activities were mentioned in the project summary, we estimated a proportion based on this description. Where Indigenous-specific activities were not mentioned, we allocated the same proportion as had occurred under the Natural Heritage Trust (NHT1 and 2) (Truss 2005) for the state or territory in which the NRM regional body is located. We recognise that the lack of specific identification of ILM activities in some data sources limits the robustness of these methods. However, our estimation criteria were conservative to minimise the risk of overstating ILM investment.

We collected data about the Indigenous Protected Area investments from the DSEWPaC website. For the years 2002–03 to 2005–06, we estimated funding to each of the Indigenous Protected Areas in receipt of funds to total the final expenditure for this period, as reported

in Gilligan (2006). After this time period, data are available online. In the case of multiyear funding, we divided the full amount of funding into equal amounts for each year. Data on the total sources of funding in NHT1 and 2 were sourced from data supplied to the Australian Parliament (Truss 2005). For Caring for our Country, data were sourced from the review of the program (Australian Government Lands and Coasts Caring for our Country Review Team 2012). These data were used to prepare the comparative analyses of trends in investment over time.

The spatial analyst in our team, Dr Pert, searched available data sources to identify spatial sets that provide insight into the status of ILM. A number of temporal data sets of Aboriginal lands were identified from the National Native Title Tribunal, ERIN (in DSEWPaC), the ILC, Geoscience Australia, the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), and CSIRO (Appendix 2).

The two main national data sets (from Geoscience Australia and ABARES) were land tenure for 1993, and areas managed primarily for traditional Indigenous use in 2005–06 (Land Use of Australia, Version 4) (Figure 2). The Australian Land Use and Management (ALUM) classification is the nationally agreed classification system for attributing land use information in Australia. It has a three-tiered hierarchical structure. Primary, secondary and tertiary classes are broadly structured by the potential degree of modification and the impact on a putative ‘natural state’ (essentially, a native land cover). Primary and secondary classes relate to land use—the main use of the land, defined by the management objectives of the land manager. Tertiary classes can include commodity groups, specific commodities, land management practices or vegetation information. The relevant tertiary class for our application was 1.2.5: Traditional Indigenous uses—area managed primarily for traditional

Indigenous use. Other Land Use of Australia time-series data sets available at the 1:2 500 000 scale are 1992–93, 1993–94, 1996–97, 1998–99, 2000–01 and 2001–02. However, for our study, the most up-to-date land tenure available is by local government areas in the form of Digital Cadastre DataBase (DCDB). Because of the time constraints on this project, obtaining state-by-state cadastre data sets was beyond our scope.

DSEWPac provided data relevant to Indigenous Protected Areas, as noted in Appendix 2, and the ILC provided data about the location of ILC properties and its ILM investments. The ILC also provided a map showing its acquisition activities, since data-sharing arrangements prevented provision of the actual cadastral data.

We imported the data into IBM's Statistical Package for the Social Sciences (SPSS) to produce the graphs and other numbers presented in this report, and into ArcGIS10 to produce the maps.

2.5 Drivers of Indigenous land management

We have identified six drivers of ILM:

- ♦ customary obligations to younger generations and country
- ♦ markets for land management and associated goods and services
- ♦ recognition of Indigenous rights and interests in land through title and agreements
- ♦ movement towards Indigenous and co-managed conservation areas
- ♦ investments for improved environmental and cultural heritage outcomes
- ♦ Indigenous leadership at multiple levels of decision making.

The next sections provide our review of these drivers.

2.5.1 CUSTOMARY OBLIGATIONS TO YOUNGER GENERATIONS AND COUNTRY

The word 'country' is often used by Indigenous Australians to describe their family origins and associations with particular areas of Australia. As Rose (1996) describes, Indigenous Australians use the word country in an entirely different way from non-Indigenous Australians:

Country in Aboriginal English is not only a common noun but also a proper noun. People talk about country in the same way that they would talk about a person: they speak to country, sing to country, visit country, worry about country, feel sorry for country, and long for country. People say that country knows, hears, smells, takes notice, takes care, is sorry or happy. Country is not a generalised or undifferentiated type of place, such as one might indicate with terms like 'spending a day in the country'...Rather, country is a living entity with a yesterday, today and tomorrow, with a consciousness, and a will towards life. Because of the richness country is home, and peace; nourishment for body mind and spirit; hearts ease (p. 7).

Customary obligations to teach and educate Aboriginal children in Aboriginal cultural knowledge and practices are a paramount driver of ILM (Fletcher 2009; Moxham & Mitchell 2011, Noble & Ward 2005). Aboriginal family groups, households and larger networks visit country throughout Australia to camp, hunt, fish and gather resources, and at the same time pass on knowledge of country to the next generations. A major workshop of Aboriginal people in 2008 concluded that culture is the primary basis of Indigenous management of country (Fletcher 2009). The cultural basis of ILM relates to family, community and personal identity, and cultural expression. Engagement in ILM can be an expression of ownership or being the right person for country, which underpins recognition

of cultural authority and authenticity (Davies et al. 2010).

Aboriginal languages form one lens through which better understanding of the customary governance of the use and management of Aboriginal lands can be gained. Approximately 250 Aboriginal languages existed before the colonisation of Australia (ATSISJC 2010b). Of the 145 Indigenous languages still being spoken today, only 18 are currently strong (i.e. spoken by all age groups), and 110 are in the severely or critically endangered categories. Figure 1 (Horton 1996) provides one well-known national representation of Aboriginal language groups. It is derived from resources published between 1988 and 1994. There are other maps for Australia as a whole (e.g. Tindale 1974) and other maps at a regional scale (e.g. IAD 2002). These maps, including the map in Figure 1, are the subject of disagreements and contestations regarding the naming and boundaries of some of these language areas, and the omission or amalgamation of some languages, dialects and clans. These contestations have intensified since the introduction of the *Native Title Act 1993* and its amendments (Bauman & Glick 2012). We therefore present Figure 1 with the following important caveats. Information in the figure is the best available information at the time of its publication. No published maps are available that identify the precolonial occupation by Aboriginal and Torres Strait Islander people across present-day Australia. Historically, Aboriginal language groups were important in Aboriginal governance and decision making in relation to particular areas of country. Today, some Aboriginal groups still define themselves by reference to their language and/or related cultural groups, and their customary derived knowledge and management is orientated towards language group (e.g. some Indigenous Protected Area plans are developed by Aboriginal language areas). Many people will only speak 'for their own country' and not the country of others.

Figure 1 Australian Indigenous languages (Horton 1996)

Reproduced with permission of the Australian Institute for Aboriginal and Torres Strait Islander Studies. Note: This map is not suitable for use in native title and other land claims.



Harvest of food and other resources adds economic dimensions to Indigenous relationships to country that are often neglected in Australia; considerably greater attention has been paid to cultural and spiritual relationships in Australian land claims and agreements than to these economic relationships. A major study of Indigenous customary harvest conducted over a two-year period in the Daly River (Northern Territory) and the Fitzroy River (Western Australia) demonstrates the high value of customary harvests as a replacement for store-bought goods (Jackson et al. 2011, 2012). The customary harvest of resources was, and is, the economic basis for much ILM practice and associated knowledge and beliefs.

Cultural mapping with Ngarrindjeri people and with the Murray Lower Darling Rivers Indigenous Nations illustrates the dense network of use and occupancy sites that reflect contemporary customary economies; these continue even in areas of Australia where non-Indigenous usage of country dominates (Tobias 2010). The economic value of wild resources harvested by Indigenous people in the Wallis Lake catchment in New South Wales is estimated to be between \$468 and \$1200 per adult per year (Gray et al. 2005). Harvest and trade are important in non-monetary customary economies of exchange, reciprocity and status (Bird & Bird 2009). Martu women in desert Australia hunt to provide for small kin networks, to feed children and to maintain their cooperative relationships with other women (Bliege Bird & Bird 2008; Walsh 2009).

Monitoring of the condition of country occurs as part of ILM responsibility and authority during trips onto country for these harvesting and usage purposes (Talbot 2005). Fires are frequently lit by groups of people as part of their ongoing expression of occupation of country, and for a range of resource management purposes (Bird et al. 2004, 2005; Bliege Bird et al. 2008; Hill et al. 1999). Seasonal

indicators are integral to fire and other customary management practices—for example, Yalanji people in northeast Queensland relate the appearance of a certain flower to the time for fires in certain parts of country (Hill et al. 2004). Seasonal triggers indicate the best times to collect particular resources (O'Connor & Prober 2010; Woodward et al. 2012). Research into the resource use strategies of the Bardi Aboriginal people of One Arm Point, Western Australia, identified that they time their harvest of fish and other species to maximise the consumption of specific beneficial marine fatty acids (Rouja et al. 2003).

ILM is based on extensive Indigenous ecological knowledge (IEK) systems. Berkes et al. (2000) recognised that these IEK systems have similarities to adaptive management, with its emphasis on feedback learning, and its treatment of the uncertainty and unpredictability that are intrinsic to all ecosystems. Wilson and Woodrow (2009) describe an Australian Indigenous adaptive management strategy, *Kuka kanyini*, that integrates wildlife science and management principles and practices with Indigenous law, culture and custom to manage species that are sought after by Aboriginal harvesters.

Appendix 3 (Table 4) presents one encapsulation of these multifaceted Aboriginal motivations that drive ILM activities.

2.5.2 MARKETS FOR LAND MANAGEMENT AND ASSOCIATED GOODS AND SERVICES

The opportunity to realise commercial return from harvests of bush resources heightens motivation for ILM, since management is necessary to maintain the productivity of those resources.

In the Top End of northern Australia, for example, feral buffalo harvested for consumption were a key industry for local Indigenous and non-Indigenous communities until the 1950s (Bowman & Robinson 2002; Robinson 2005).

Feral buffalo are one of the many pest plant and animal species that are a focus for ecosystem service payments for northern Aboriginal communities. Zander and Garnett (2011) have recently estimated that Australians could be willing to pay from \$878 million to \$2 billion per year for Indigenous people to provide environmental services; feral animal control, coastal surveillance, weed control and fire management attract the highest level of support. Various payment schemes—including surveillance for mosquitoes, marine debris and animal disease—have been funded by the Australian Quarantine and Inspection Service. Weed and pest animal control and endangered species management programs are also supported through various government and philanthropic programs (May 2010a, 2010b; Muller 2008b).

Interest has been growing in Indigenous fair trade in Australia (Spencer & Hardie 2011). This builds on policy interest and development surrounding how trade of Indigenous cultural heritage can contribute to the economic and social development of Indigenous peoples, while ensuring the protection of Indigenous intellectual property and ecological knowledge (Drahoš & Frankel 2012). For example, fair trade branding that honours traditional knowledge in the marketing of vitamin C-rich fruit and products from the gubinge tree (*Terminalia ferdinandiana*, also known commonly as Kakadu plum) could contribute to the pride that Indigenous producers have in their identity and to community development. It could also help Indigenous bush harvesters gain a market advantage over produce from large-scale plantations being developed in Brazil. Indigenous commercial harvest is best developed in the Kimberley and is small scale. It is reported to have multiple benefits for land management, through the commitment of harvesters to continue customary ILM practices as part of their harvesting. However, economic returns are complicated by sparse distribution of trees in native vegetation

communities (Cunningham et al. 2008; Konczak et al. 2009; Spencer & Hardie 2011).

In the Anmatyerr region of central Australia, desert raisin (*Katyerr* or bush tomato) is harvested for household consumption and for sale to traders. These sales intermittently inject additional cash into households (Alyawarr speakers from Ampilatwatja et al. 2009). An investigation of bush harvests in central Australia identified access to productive lands and narrow economic margins between costs and returns as problems for the future sustainability of these activities. Sustaining bush harvest also relies on future generations having necessary knowledge and skills, which highlights the importance of intergenerational knowledge and skill transfer (Walsh & Douglas 2011). Recently, government support for rangers has provided resources to help promote and manage activities that underpin this harvest (Holcombe et al. 2011). Art and crafts similarly involve customary rights to harvest resources and to represent cultural knowledge and places in imagery, and generates important cash resources (Koenig et al. 2011a, 2011b). Production and marketing through community art centres also engages state and territory funding, which is granted to many art centres for maintenance and management. The use of state and territory funding to support these market engagements is considered further in Section 3.2.3—hybrid economies as a success factor).

Indigenous landowners also engage with markets through pastoral and tourism enterprises (e.g. see ILC 2012) and aspire to do so through carbon economies (Hill et al. 2008a; Robinson et al. 2011). The Kyoto Protocol to the United Nations Framework Convention on Climate Change was adopted in 1997 and was ratified by Australia in 2008. In adopting the protocol, parties agreed to work towards reducing greenhouse gas (GHG) emissions through the preparation

of policies and other measures within their respective countries. In addition to establishing targets for emissions reduction, the Kyoto Protocol set out a range of ‘flexible mechanisms’ to assist countries in meeting their targets. In addition to the various international standards and frameworks under which a carbon project can have offsets recognised or certified, Australia has established a mandatory carbon market, including the Carbon Farming Initiative (CFI), which came into effect in July 2012.

A range of activities are currently recognised under Australia’s CFI. GHG emissions from savanna fires may be abated either by reducing the total area burnt, or by implementing early dry-season burns to reduce the incidence of more intense fires later; this reduces the emissions per unit area (Russell-Smith et al. 2009). The groundbreaking West Arnhem Land Fire Abatement project (WALFA) in Arnhem Land was concluded after a multiyear collaborative research effort established the feasibility of integrating traditional knowledge and science in ILM to manage fire in ways that reduce GHG emissions. WALFA, an agreement between Conoco Phillips Corporation and the Northern Territory Government, predated the CFI. It resources Indigenous land owners to reduce GHG through fire management in country where landowners had long aspired to re-establish ILM but lacked resources to overcome access difficulties (Whitehead et al. 2009). A savanna burning methodology, based on the methods that underpin WALFA, was approved under the CFI in November 2011. This methodology can now be used to generate Kyoto-compliant credits, accountable in national greenhouse gas inventories. The Australian Government granted \$9.1 million to the North Australian Indigenous Land and Sea Management Alliance to coordinate the development of the savanna burning methodology, build capacity of Indigenous rangers in application of the methodology, and establish regional projects in the Kimberley, Arnhem

Land, the Gulf of Carpentaria and Cape York. The first savanna burning project approved under the CFI was at Fish River (see Box 3), approved in October 2012, which is the only such project to date on Indigenous-owned land. Heckbert et al. (2012) calculate that at the Australian Government’s 2012–13 fixed carbon price of \$23 per metric tonne of carbon dioxide equivalents (CO₂-e), fire management would be economically viable across 51 million hectares, all within the higher monsoonal rainfall regions of northern Australia, abating 1.6 million tonnes of CO₂-e per year.

Reforestation, afforestation and environmental plantings are among other approved CFI methodologies that can generate Kyoto-compliant credits. DSEWPaC commissioned feasibility studies for four potential Indigenous environmental planting projects, which found that these would not necessarily provide a significant financial return (DSEWPaC 2012a, 2012b, 2012c, 2012d, 2012e). Soil carbon increase, rangeland restoration, increased carbon sequestration in trees and shrubs as a result of savanna fire management, and reduced emissions from feral animals are not approved CFI methodologies. Subject to further research and accreditation, they may offer Indigenous carbon market opportunities. Potential opportunities that are not Kyoto-compliant would attract a reduced market price.

The Indigenous Carbon Farming Fund has been established by the Australian Government to address the kinds of barriers to Indigenous participation in the CFI that are outlined in Section 3.3.4. The fund provides Indigenous organisations and individuals with \$22.3 million over five years for capacity building and business support, and for development of methodologies that are likely to have high Indigenous participation. Opportunities for local Indigenous communities to engage in carbon markets have been outlined in the National Indigenous Climate Change Opportunities Roadmap—a decision-

making tool that has been designed to help Indigenous and non-Indigenous collaborators to develop a carbon project (Robinson et al., in review).

A focus on the co-benefits of Indigenous participation in emission abatement and carbon sequestration strategies can generate mutual gains for Indigenous people, corporate enterprises and Australian governments. As carbon markets have evolved, the concept of ‘co-benefits’ has become more prominent internationally, as indicated by the Climate, Community and Biodiversity Standards and the Gold Standard, which promote the generation of carbon credits that have additional benefits for sustainable development in communities. A ‘co-benefit’ is a common description for a ‘benefit’ (to the environment, local people or other recognisable recipients) that is delivered along with a reduction in carbon emissions as part of a carbon offset project (Robinson et al. 2011). As a market-based incentive, Indigenous carbon co-benefits can include cultural, health and social benefits generated from targeted Aboriginal land and NRM activities—these include savanna burning, wetland and soil management, and other ‘caring for country’ activities that are founded on practices and understandings that are unique to Indigenous Australians (Heckbert et al. 2012; Robinson et al. 2012). For example, the Aboriginal Carbon Fund (AbCF), a not-for-profit company focused on supporting Traditional Owners in the areas of climate change and carbon farming, aims to develop a carbon farming methodology that combines horticulture with natural and cultural resource management to increase long-term carbon storage through enrichment plantings of gubinge (*Terminalia ferdinandiana*) in Kimberley vegetation communities, where the tree already occurs and supports harvest of fruit by Aboriginal people (Rowan Foley, General Manager, AbCF, pers. comm. 2012).

ILM occurs in association with commercial land uses, including

pastoralism, other agricultural uses and tourism, on many Aboriginal-owned properties, and contributes to the environmental and cultural aspirations of landowners. The activities of the ILC, which enable Indigenous people to own, manage and engage in ILM through both market and non-market arrangements, are notable in this regard. The ILC is an independent statutory authority of the Australian Government, established in 1995 under the *Aboriginal and Torres Strait Islander Act 2005*, to assist Indigenous people to acquire and manage land to achieve economic, environmental, social and cultural benefits. Of the payment of at least \$45 million that the ILC receives annually from investment returns of the Aboriginal and Torres Strait Islander Land Account established by the Australian Government, \$10 million is allocated each year for acquisitions, \$3 million for land management, and \$5 million for strategic projects that can be either land management or acquisition (ILC 2013). The balance is allocated to the ILC’s investment in business activities, including nationally accredited training for Indigenous people, and running the ILC and its programs. The ILC’s Land Management Program provides funds to Indigenous landholders for ILM, both on properties that have been acquired through the ILC (see Section 2.5.3) and on other Indigenous-held land around the country. The ILC also operates commercial businesses to deliver training and employment opportunities for Indigenous people in agriculture and tourism. The ILC undertakes substantial ILM on its businesses, through the ILC Environment and Heritage Strategy, including enabling access to country, maintenance and revitalisation of culture, and protection of culturally significant values. The ILC definition of ILM is the managed use, care and improvement of Indigenous-held land for the cultural, environmental, social and economic benefit of Indigenous people. Projects are varied, and may include the development of property management

plans and property works (e.g. fencing and construction) to develop viable enterprises on Indigenous-held land. The ILC also contributes to regionally significant ILM projects, such as the Indigenous Pastoral Program (Northern Territory) and the Indigenous Landholder Service (Western Australia), through strategic partnerships.

Mining, oil and gas production, and exploration drive a range of ILM activities, including site surveys, rehabilitation and restoration (Working Group 2007). The Tanami Biodiversity Strategy (Stoll et al. 2006) is an example of a partnership approach between a mining company and Indigenous people to support a range of mutually beneficial land management activities.

2.5.3 RECOGNITION OF INDIGENOUS RIGHTS AND INTERESTS IN LAND THROUGH TITLE AND AGREEMENTS

Indigenous land tenures have been created under a diverse array of laws and other arrangements in Australian jurisdictions (ATSISJC 2010a). This diversity presents challenges for understanding and monitoring trends. Data held by the ILC show that 16.1% of Australia is Indigenous-owned or controlled land, not including native title determination areas, except where these coincide with other Indigenous tenures (Productivity Commission 2011). Almost all this land (98.1%) is in very remote areas of Australia (Productivity Commission 2011). The most recent (1993) national release of Indigenous tenure data is very outdated, showing 13.4% of Australia as Indigenous tenure. More recent land use mapping classifies most Indigenous land tenure as ‘traditional Indigenous land use’ and indicates little overall change in Indigenous-held land since 2005, with most change being between different forms of Indigenous tenure.

Native title has been recognised over substantial areas of Australia since the passage of the *Native Title Act 1993*

(Cwlth). At the time of this report, the outcomes from native title determination are as follows:

- ♦ Native title exists in the entire determination area—8.3% of Australia.
- ♦ Native title exists in parts of the determination area—12.9% of Australia (Figure 2).

In addition, Indigenous land use agreements have been finalised across substantial parts of Australia (Figure 3). Godden (2012) identifies that this growing trend of agreement making by Indigenous people co-locates native title with ecology (and ecologically based land management) in common legal, economic and social framings—this is largely because areas where native title has been determined to exist coincide with extensive areas of naturally vegetated land. Although the growth of negotiated agreements indicates that the courts are progressively narrowing the scope of what Indigenous peoples can achieve through a litigation-oriented approach, it has also opened up a wide range of new opportunities for engagement in ILM (Agius et al. 2007; Godden 2012). Native title recognition and agreement making are important drivers of the trend to increasing formal ILM in Australia over the past decade (State of the Environment Committee 2011).

Numerous Indigenous organisations have been established to hold communal title to land, and take a prominent role in supporting delivery of ongoing ILM responsibilities. The Central Land Council, Northern Land Council, Kimberley Land Council and Balkanu Cape York Development Corporation, for example, have instigated support to Indigenous-led land and sea management activities for many years, including establishing ranger programs and IEK activities (Central Land Council 2010; Scott 2004; Sithole et al. 2008; Smyth et al. 2007; Young et al. 1991). Indigenous leadership in establishing alliances to enable a wide range of ILM activities is discussed in Section 2.5.6.

The ILC has played a significant role in recognition of Indigenous rights and interests in land, through land purchase and land management support, in conjunction with commercial enterprises and other activities, as outlined in Section 2.5.2. The ILC has acquired 242 properties since it was established in 1995, 70% of which have since been handed back to Traditional Owners (Figure 5).

2.5.4 MOVEMENT TOWARDS INDIGENOUS AND CO-MANAGED CONSERVATION AREAS

Development of the Interim Biogeographic Regionalisation for Australia, and the comprehensive, adequate, representative targets for the National Reserve System (NRS), led to recognition that meeting these targets would require inclusion of areas of Aboriginal land. Much or all of the land in some biogeographical regions is Aboriginal owned (Thackway 1996). The concept of Indigenous Protected Areas (IPAs) as voluntary, agreement-based arrangements for Indigenous peoples to own and manage their country for mutual benefits arose out of this context (Thackway et al. 1996). IPAs now make up slightly more than 30% of the NRS (Figure 4). In the 10 years between July 1997 and June 2007, approximately 18.5 million hectares were contributed to the NRS by Indigenous Australians through the IPA program, at a cost of approximately \$1 per hectare to the Australian Government; this area is 71% of all contributions to the NRS. The contribution made through the IPA model is significant in its size and cost-effectiveness relative to contributions by other NRS partners using other mechanisms to contribute land (Auditor-General 2011). Funding and other support, mainly from the Australian Government, for preparation of management plans, implementation of on-ground works, coordination of IPA management and networking IPA managers nationally, has driven increased ILM.

Parallel with the establishment of IPAs has been a strong trend of increased engagement of Indigenous people in governance and management of protected areas declared under state and territory legislation (Ross et al. 2009). This is driving increased involvement in ILM through Indigenous employment in government conservation agencies, preferential access for Indigenous people to tourism opportunities (Bauman & Smyth 2007), participation of Indigenous people in management planning, and new programs and projects that reflect Indigenous aspirations (Izurieta et al. 2011). The trend to co-management has been driven in part by the IPA program. Indigenous people consulted by the Australian Government about the initial idea of an IPA program insisted that resources be made available for Indigenous groups to negotiate co-management on lands that were within government-established conservation areas (Szabo & Smyth 2003). Inclusion of both Indigenous-owned and Indigenous-co-managed elements in the IPA program broke a longstanding deadlock in progressing co-management negotiations in several jurisdictions. Court decisions that indicated the survival of native title on government-established conservation areas have added further impetus to negotiation of co-management agreements (Hill 2011; Izurieta et al. 2011). All states and territories now have legislative arrangements that provide for co-management of protected areas between Indigenous peoples and governments (Ross et al. 2009), driving further expansions in formal ILM.

2.5.5 INVESTMENTS FOR INDIGENOUS ENGAGEMENT IN IMPROVED ENVIRONMENTAL AND CULTURAL HERITAGE OUTCOMES

The Australian Government has provided substantial resources to NRM programs since the early 1990s, including a budgeted \$2.2 billion over five years from 2013 announced in the

May 2012 budget. Since 1991, with the beginning of the National Landcare Program, Australia's NRM programs have undergone a paradigmatic shift in scale and scope (Lane et al. 2009). This shift can be traced in three main phases: NHT1 investment (1997–2002), NHT2 investment (2002–08), and Caring for our Country (2008–13). The initiation of the Biodiversity Fund in 2011–12 and the second five-year Caring for our Country program in 2012–13 marks a fourth stage. The movement overall has been towards collaborative multilevel environmental governance through 54 regional bodies.

Many investments in ILM throughout this period have been driven by a policy goal of increasing Indigenous employment and promoting economic development. ILM was first identified as an important area for investment by governments in 1985 because it provided motivation for Aboriginal people (Table 4) and offered opportunities for work that extended into remote regions, where formal labour markets were often poorly developed or non-existent (Johnston 1991; Miller 1985). Two national programs operated for close to a decade from the mid-1980s to 1996–97: the Aboriginal Rural Resources Initiative, and the Contract Employment Program for Aborigines in Natural and Cultural Resource Management. Both aimed to achieve social and economic outcomes, although environmental aims and contexts were also considered in the design of projects (Davies et al. 1999). The programs provided funding for short-term projects, often implemented in conjunction with the Community Development Employment Program (CDEP) in remote settlements and, from the early 1990s, in rural and urban areas. In managing these programs, the Bureau of Resource Sciences, and national, state and territory conservation agencies contributed to building awareness among environmental agencies about Indigenous people's knowledge, interests and capacities, and to building relationships. In spite of significant social benefits, neither program was effective in generating sustained increases

in Indigenous employment in land management, indicating the importance of sustained investment.

Indigenous groups continued to use the capacity that CDEP provided to employ Indigenous people in land management and for associated training, and sought supplementary project funding through the NHT and other sources. However, small short-term grants failed to provide effective investment and often carried a large administrative burden. Indigenous people involved in ILM often complained about stop–start work opportunities and continuous involvement in training programs that never actually led to jobs (Luckert et al. 2007; Putnis et al. 2007; Sithole et al. 2008).

The four-year Working on Country (WoC) program was announced in 2007 and subsequently extended. In 2012–13, it funded more than 680 rangers working in more than 95 Indigenous ranger teams across Australia to undertake a variety of land and sea management activities. Establishment of the program recognised that Australian Government investment was needed in real employment, business opportunities and career paths for Indigenous people in environmental management after CDEP subsidies for government service delivery were removed. WoC was incorporated into the Caring for our Country initiative from December 2007, together with the National Landcare Program, the NHT and the Environmental Stewardship program (WalterTurnbull 2010).

Compared with previous funding for Indigenous employment in land and sea management, WoC more overtly recognises the knowledge and customary responsibilities involved in ILM and the need for longer term and coordinated investments. Multiyear funding contracts and associated investments in coordination, training and equipment have been building the professionalism of ranger groups and the management capacity of ILM organisations since the 1970s, with various activities and stages related to diverse drivers (Table 5).

The IPA program investments are also contributing to this increased capacity, particularly where Indigenous groups manage both IPA and WoC investments, which is the case in half of the IPAs that have been declared (Auditor-General 2011). Unlike WoC, the IPA program directly targets outcomes for biodiversity and heritage conservation. In combination, these investments are apparently driving marked increases in ILM capacity. This increased capacity, combined with increased awareness of ILM generated through novel partnerships—notably the West Arnhem Fire Agreement (Whitehead et al. 2008)—appears to be driving further interest and engagement in ILM from non-government conservation organisations, research agencies and other prospective partners.

The majority of the investment is from government, with small amounts from philanthropics, including some corporate philanthropics. Some Indigenous land management organisations also receive investments on a fee-for-service basis for quarantine and invasive species management, and park interpretive and maintenance works (e.g. signage, walking track reconstructions) (Smyth 2011).

2.5.6 INDIGENOUS LEADERSHIP AT MULTIPLE LEVELS OF DECISION-MAKING

Indigenous leaders have been active in driving increased ILM arrangements at multiple levels of government decision making and practical action since the 1970s. For example, the Indigenous Advisory Committee to the Minister for Sustainability, Environment, Water, Population and Communities works with peak Indigenous bodies, experts, communities and other stakeholders to ensure that the views of Indigenous peoples are incorporated in the implementation of the Environment Protection and Biodiversity Conservation Act 1999 (the Australian Government's central piece of

environmental legislation) and in other work undertaken by the department for environment and heritage outcomes. Indigenous leaders from across Australia have also been involved in round-table talks with the Parliamentary Secretary for Climate Change and Energy Efficiency to ensure that Indigenous land provisions and other aspects of the CFI benefit Indigenous people (Robinson et al. 2011).

Indigenous peoples have established regional alliances to enable a wide range of land, water and natural resource policy issues to be addressed through their customary estates and institutions (Baker et al. 2001). For example, the Murray Lower Darling Rivers Indigenous Nations alliance was formed in 2001 to identify common ground and ways to work together on water resource management and entitlement issues, and has received funding support from the Murray–Darling Basin Commission (Weir 2009). The North Australian Indigenous Land and Sea Management Alliance (NAILSMA) was formed by the Carpentaria Land Council Aboriginal Corporation, Northern Land Council and Barkan Cape York Development Corporation in the early 2000s, with support from 2001 to 2009 from the Tropical Savannas Cooperative Research Centre (one of the few bodies funding ILM research at the time). NAILSMA now provides strategic support for local Indigenous communities to participate in carbon projects, enterprise development, Indigenous knowledge renewal and water resource management activities, and hosts a saltwater peoples' network.

2.6 State of Indigenous land management: scope, extent and diversity

The scope, extent and diversity of ILM in Australia has a number of dimensions that can be depicted statistically and in terms of spatial characteristics:

- At least 16% of Australia is now held by Indigenous peoples in a range of tenures other than native title (Altman et al. 2007; Productivity Commission 2011).
- Native title is held over the entire area of 8.3% of Australia, and over part of the area in a further 12.9% of Australia (Figure 2).
- On 39% of Australia, Indigenous land use agreements (ILUAs) have been registered; on a further 1.6%, ILUAs are currently in notification. ILUAs co-exist with the rights of multiple other users, and may give limited or no access for ILM purposes (Figure 3).
- Indigenous rights and interests are recognised formally to varying extents in well over half of Australia's land area through grant or purchase of land title, determination of native title, IPAs and ILUAs (Figure 2). On some lands, more than one of these forms of recognition apply.
- Fifty-three declared IPAs cover 36 million hectares, representing just over 40% of Australia's National Reserve System, and a further 47 consultation projects are under way, of which 7 are co-management projects (Figure 4).
- Eighty-three Indigenous ranger groups employ more than 660 individuals across Australia (Figure 6).
- At least \$116 million of investment in ILM projects was occurring in 2011–12 at 750 discrete sites throughout Australia, predominantly funded by the Australian Government (e.g. \$91 million of the Caring for our Country initiative, comprising 20% of this funding) (Figures 7 and 9).

- Investment in ILM has increased from \$2.3 million in 2002–03 to \$116 million in 2011–12 (Figures 9, 10 and 11).
- ILM comprised \$162 million in 2010–11 of budgeted Indigenous-specific expenditure across the Australian Government primary industries and environment portfolios, representing 4.6% of the total Australian Government expenditure on Indigenous-specific programs (an increase from 0.4% in 2000–01) (Figure 12).
- ILM comprises an increasing proportion of Australian Government funding for environmental management, from \$0.5 million (1.3%) in 1992–97 to \$90 million (19%) in 2010–11 (Figure 13).
- Of the 145 Indigenous languages still being spoken today, only 18 are currently strong (i.e. spoken by all age groups), and 110 are in the severely or critically endangered categories (HoR 2012).

Cultural attachment, as measured by indicators from the 2008 National Aboriginal and Torres Strait Islander Social Survey, is strongest in more remote areas and is slightly weaker among youth than among older people (Ursin & Eriksen 2010). Nationally, 73% of Indigenous people recognised a homeland or homelands, 26% lived on their homelands, and 45.7% said they were allowed to visit their homelands (Dockery 2011). Attendance at ceremony involved 25.8% of Indigenous people nationally, and 27.3% participated in cultural activity (arts, craft, music, dance, theatre, writing or telling stories) in the 12 months before the survey. The proportion of Indigenous people nationally who spoke an Indigenous language was 28.5% (Dockery 2011). However, more than 80% spoke only English in their homes. More than half (56%) of the 16% of Indigenous people who lived in very remote regions reported speaking an Indigenous language at home (Desert Knowledge CRC 2008).

Indigenous-specific expenditure across all programs represented 0.9% of total Australian Government expenditure in 2009–10 (Gardiner-Garden & Simon-Davies 2010). This proportion was around 0.2 % in 1968–69, peaked at 1.4% in 1999–2000, and has declined ever since.

Figure 2 Indigenous interests in country have been recognised to varying extents over more than half of Australia.

This includes over 16% held through tenure, 8.3% where native title is determined to be held over the whole area, and a further 12.9% where it is held over part of the area. Indigenous land use agreements, which occur over 39% of Australia, co-exist with the rights of multiple other users, and may give limited or no access for Indigenous land management purposes. Map drawn 1 March 2013 from data sources as dated on the map.

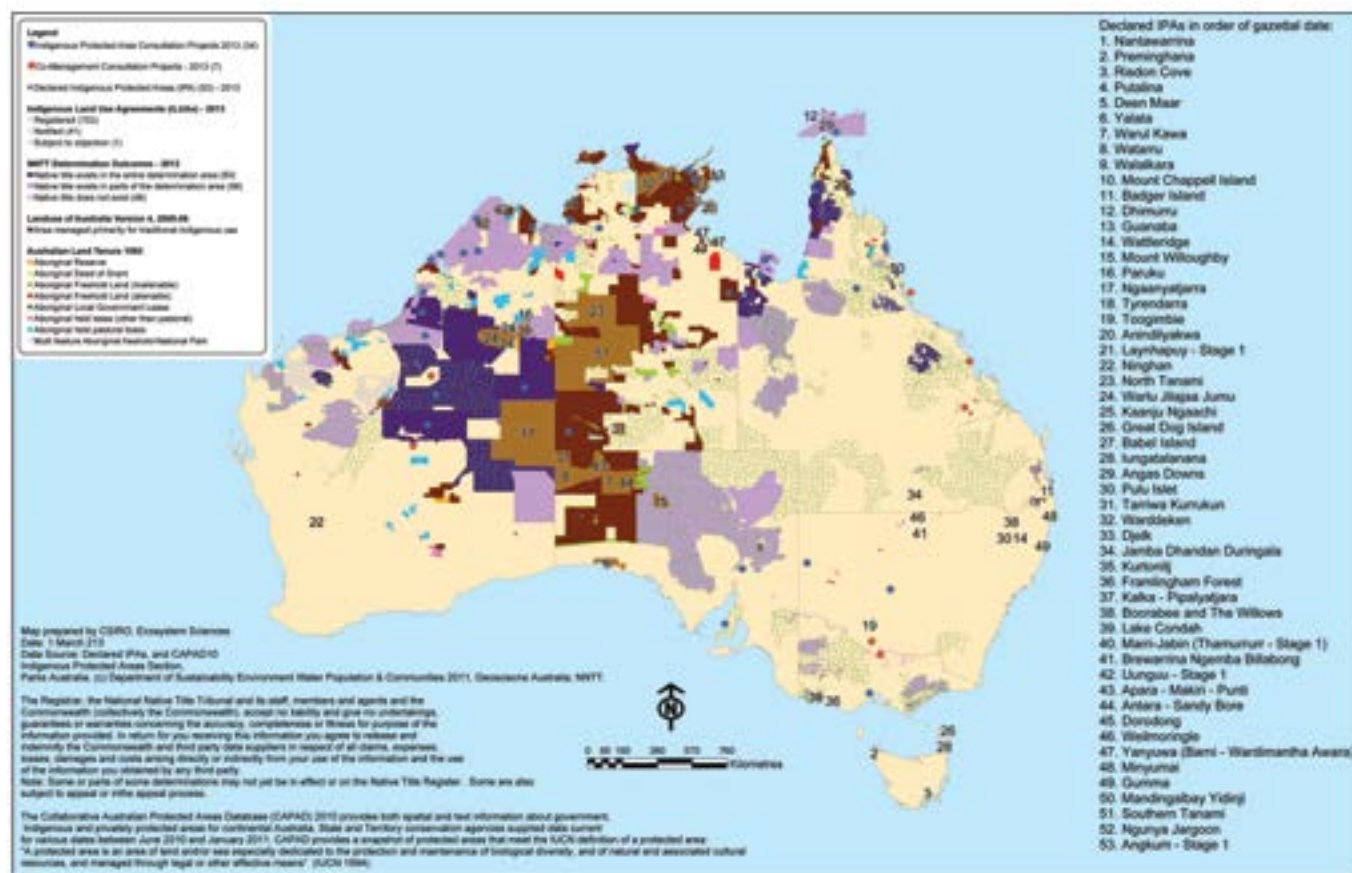


Figure 3 Indigenous land use agreements.

Note: ILUAs co-exist with the rights of multiple other users, and may give limited or no access for Indigenous land management purposes. Map drawn 1 March 2013 from data sources as dated on the map.

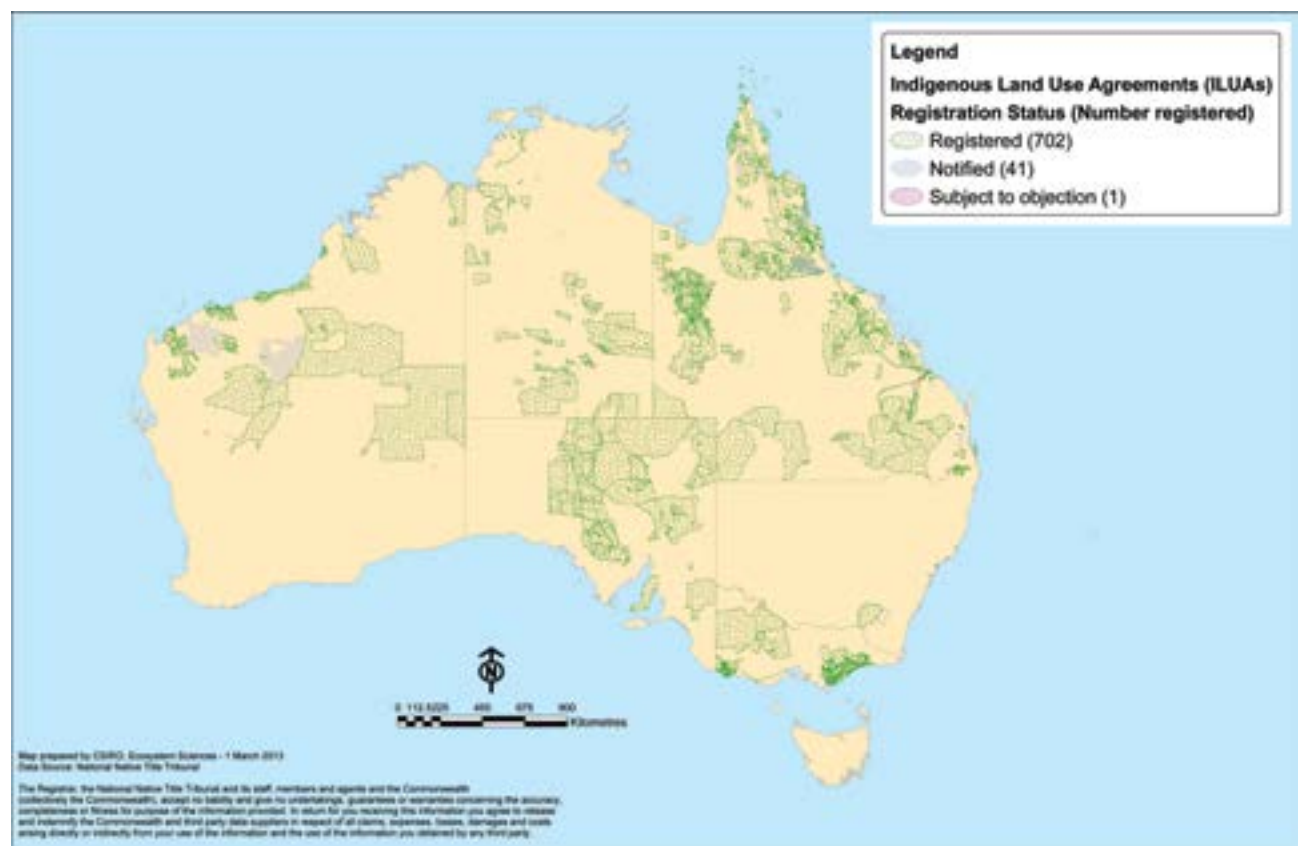


Figure 4 Indigenous Protected Areas and Australia's National Reserve System.

Map drawn 1 March 2013 from data sources as dated on the map.

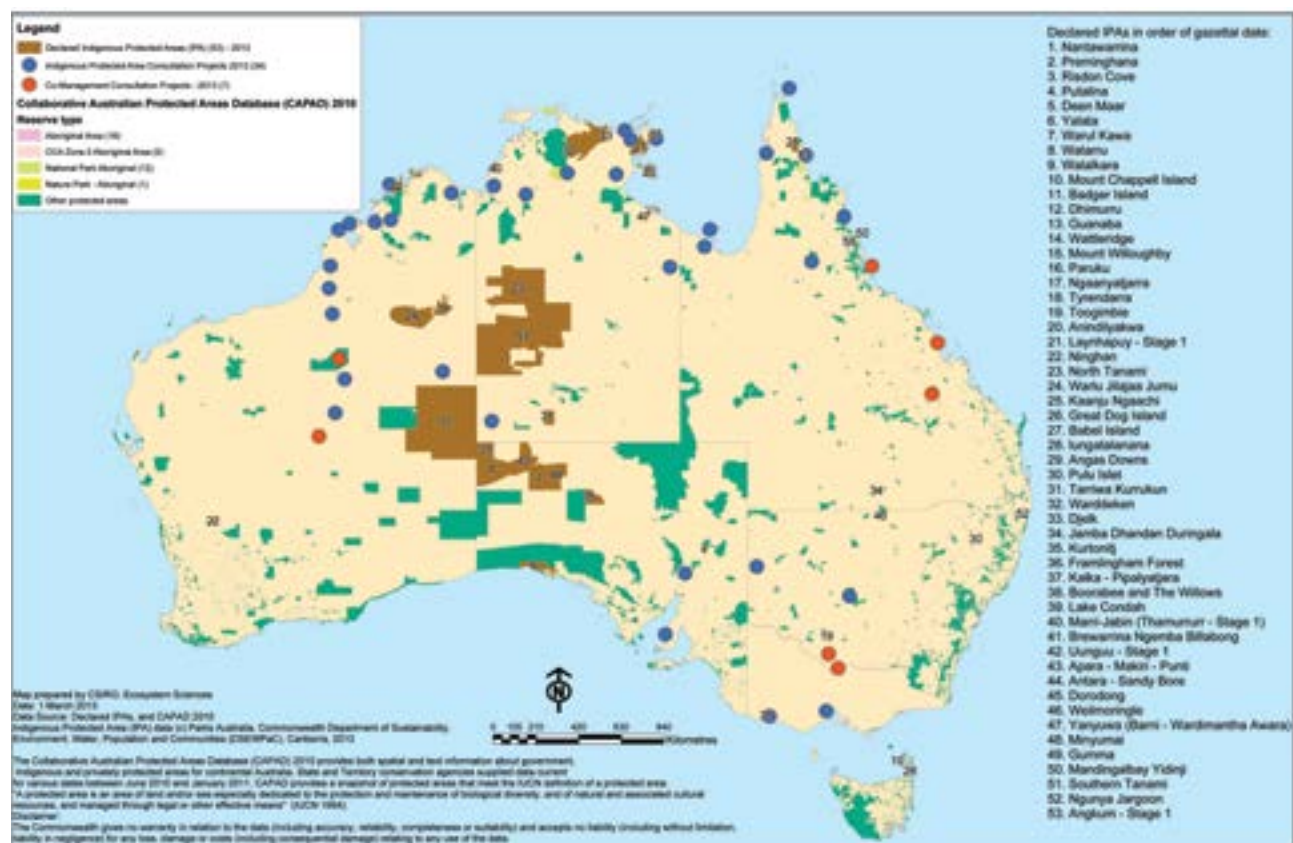


Figure 5 Indigenous Land Corporation land acquisition activity.

Map provided by the Indigenous Land Corporation, March 2013.

ILC Land Acquisition Activity

22 March 2013

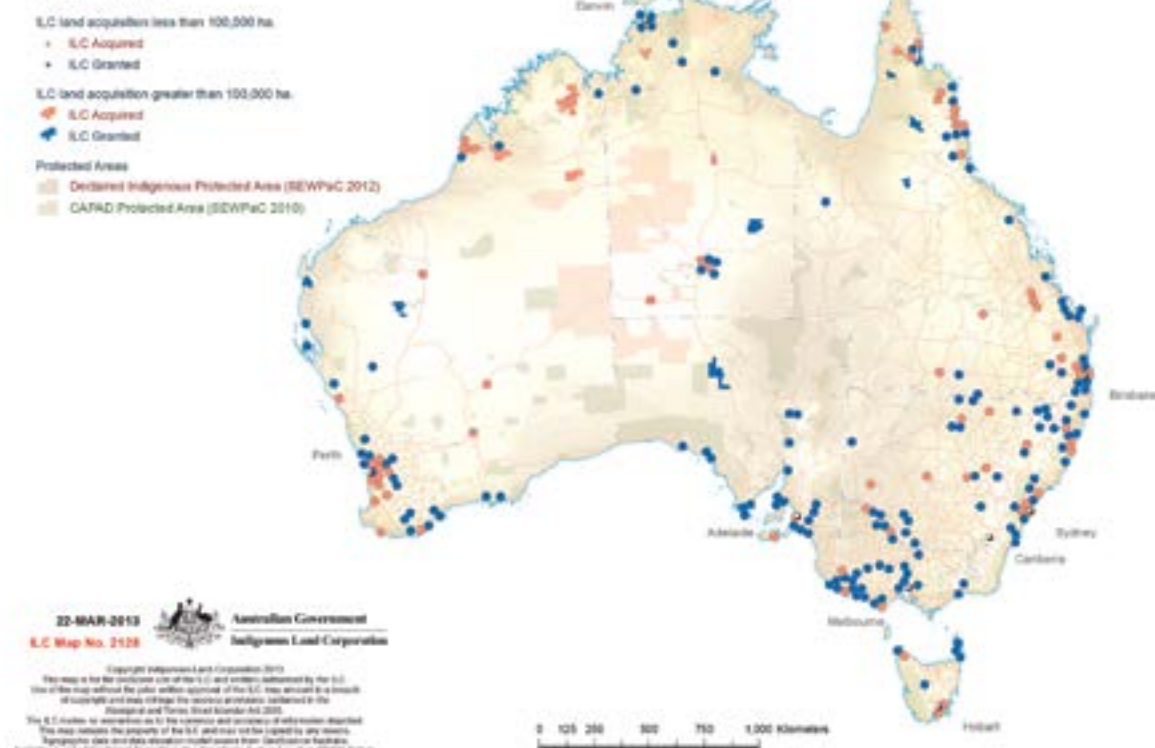


Figure 6 Indigenous ranger groups funded through the Australian Government's Working on Country and Indigenous Protected Area programs. Map drawn 20 February 2013 from data sources as dated on the map.

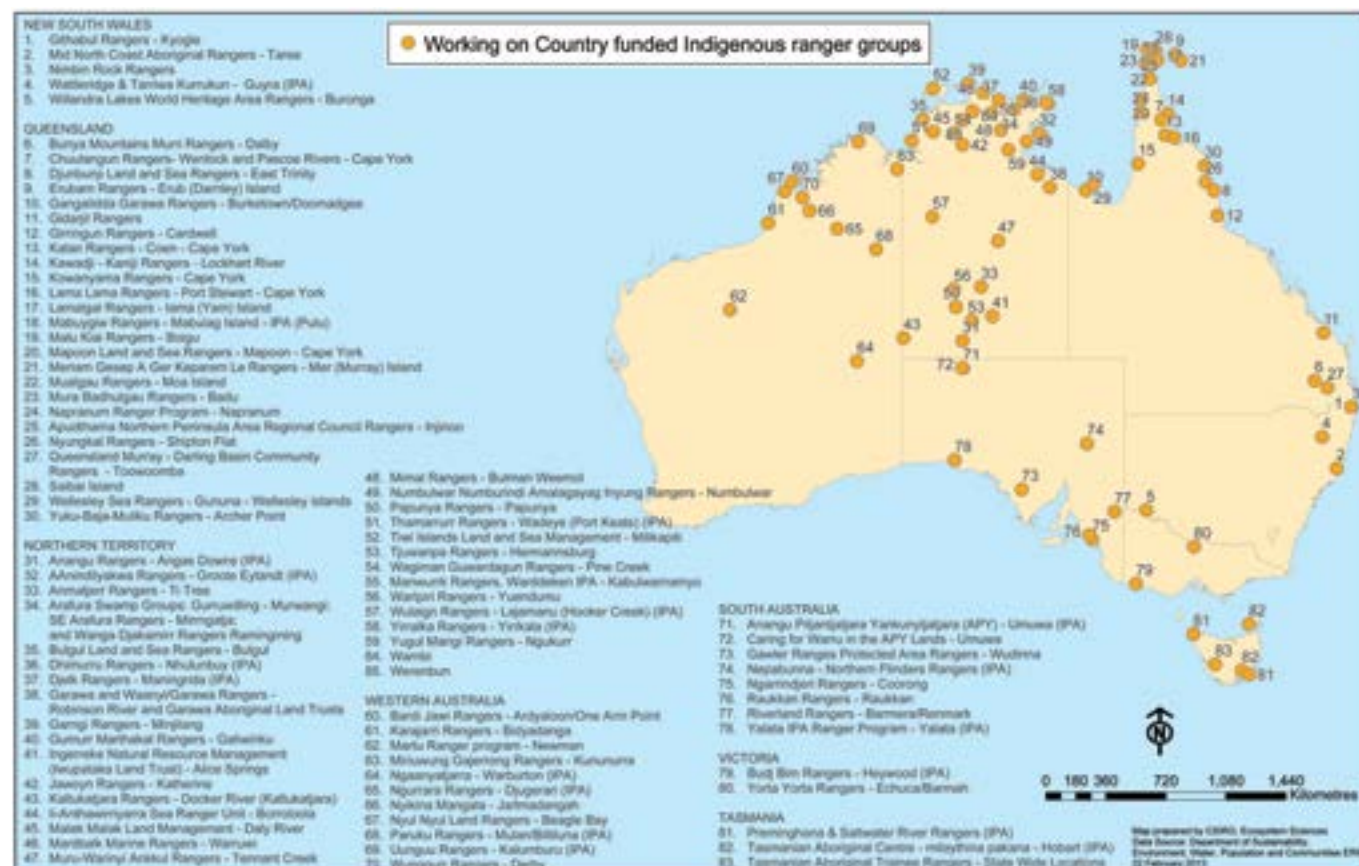


Figure 7 Investments in Indigenous projects on-country 2002-03 through to 2011-12.

Note: figure predominantly shows Australian Government funding, with some Queensland Government and philanthropic sources accounted for. See 2.4 Approach and methods for data collection methods. Map drawn 20 February 2013.

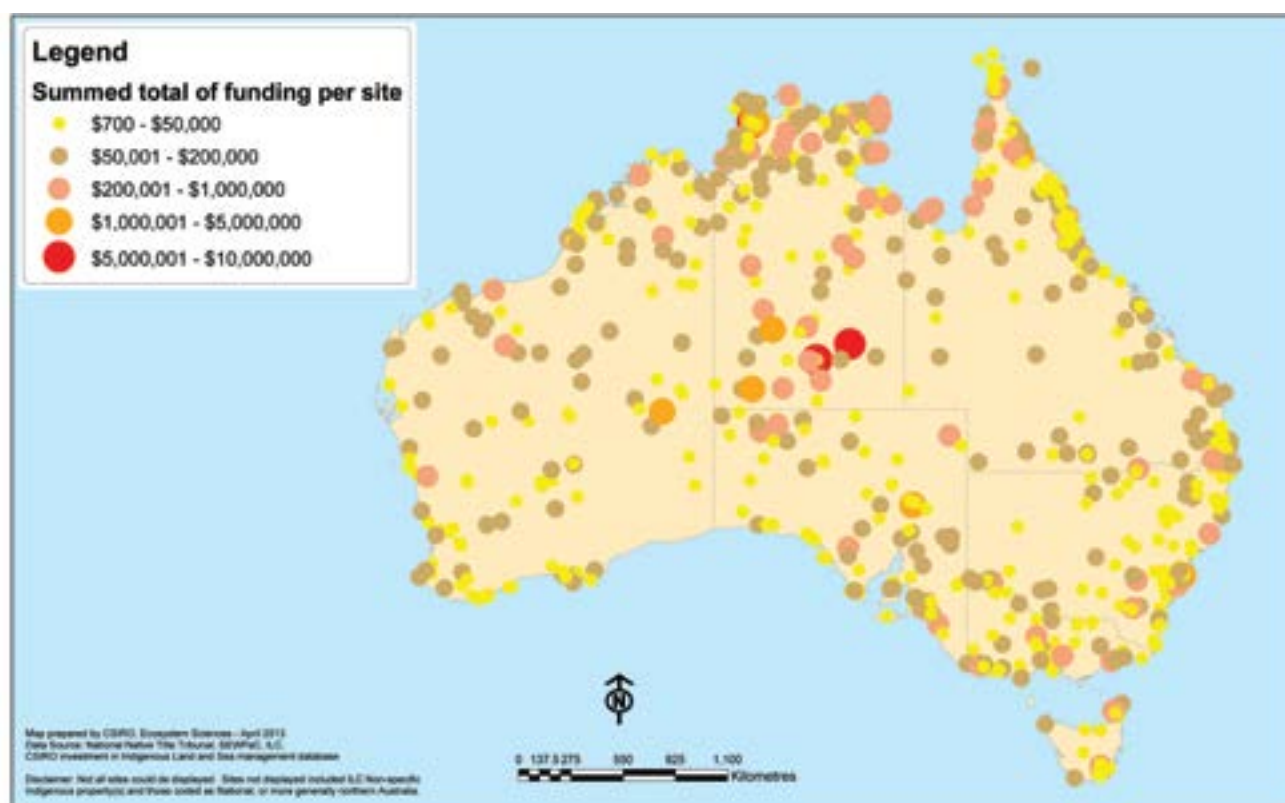


Figure 8 Sites where Indigenous land management activities have been funded, 2002-12.

Map drawn April 2013 from data sources shown on the map.

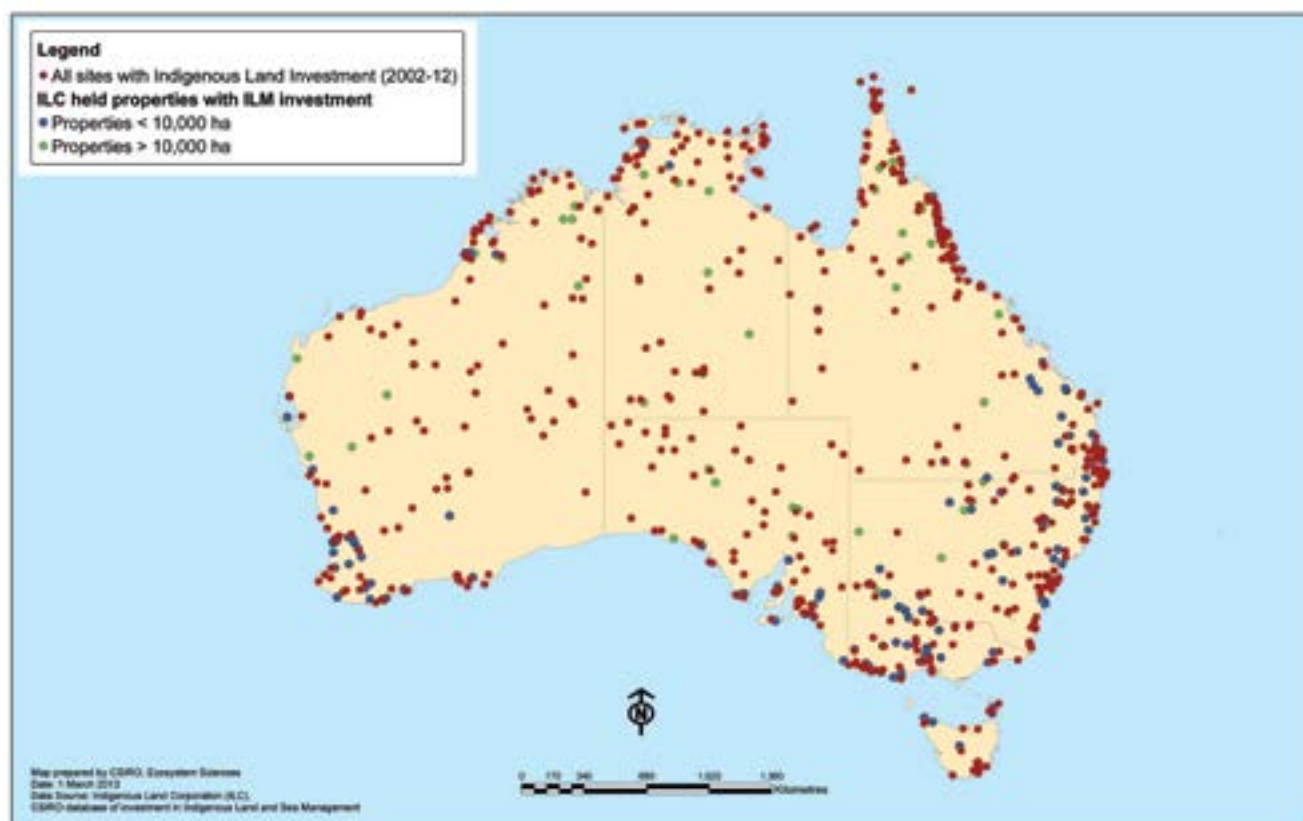


Figure 9 Investment in Indigenous Land Management in Australia by investor portfolio, 2002–12.

Note: the figure shows only Australian Government and philanthropic sources, except for some Queensland Government funding (Indigenous rangers investment).

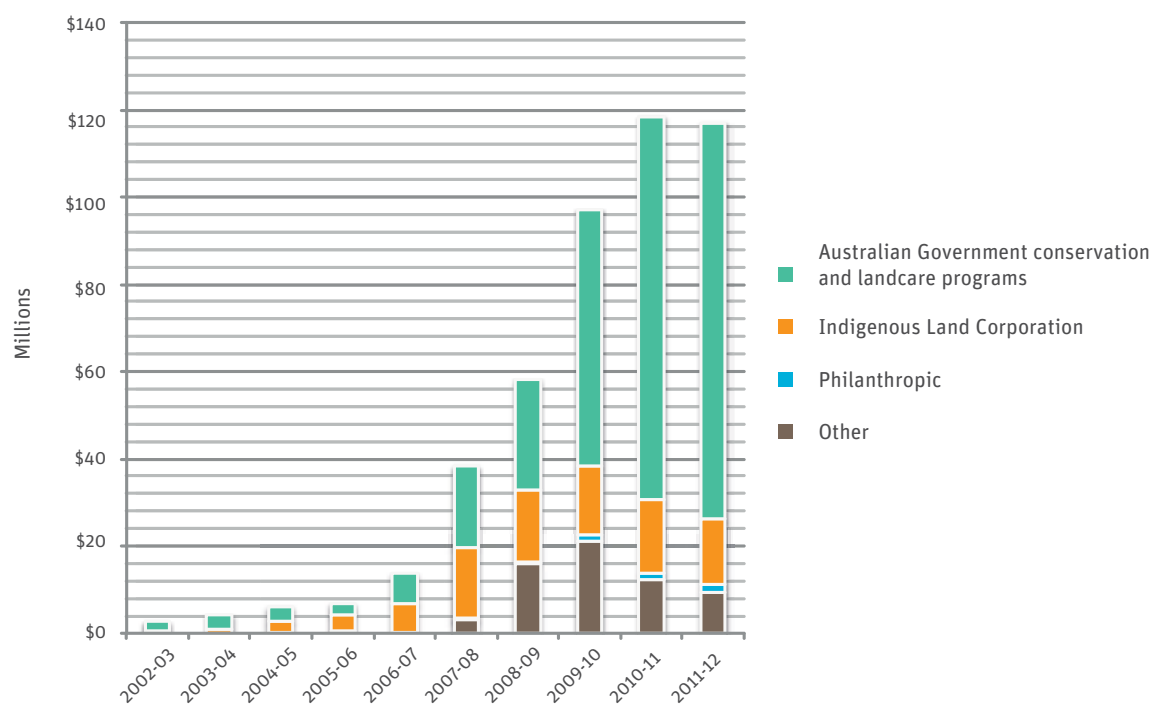


Figure 10 Investment in Indigenous land management in Australia by: (a) Australian Government conservation and land care programs; (b) Indigenous Land Corporation; (c) philanthropic organisations; and (d) other programs, 2002–12.

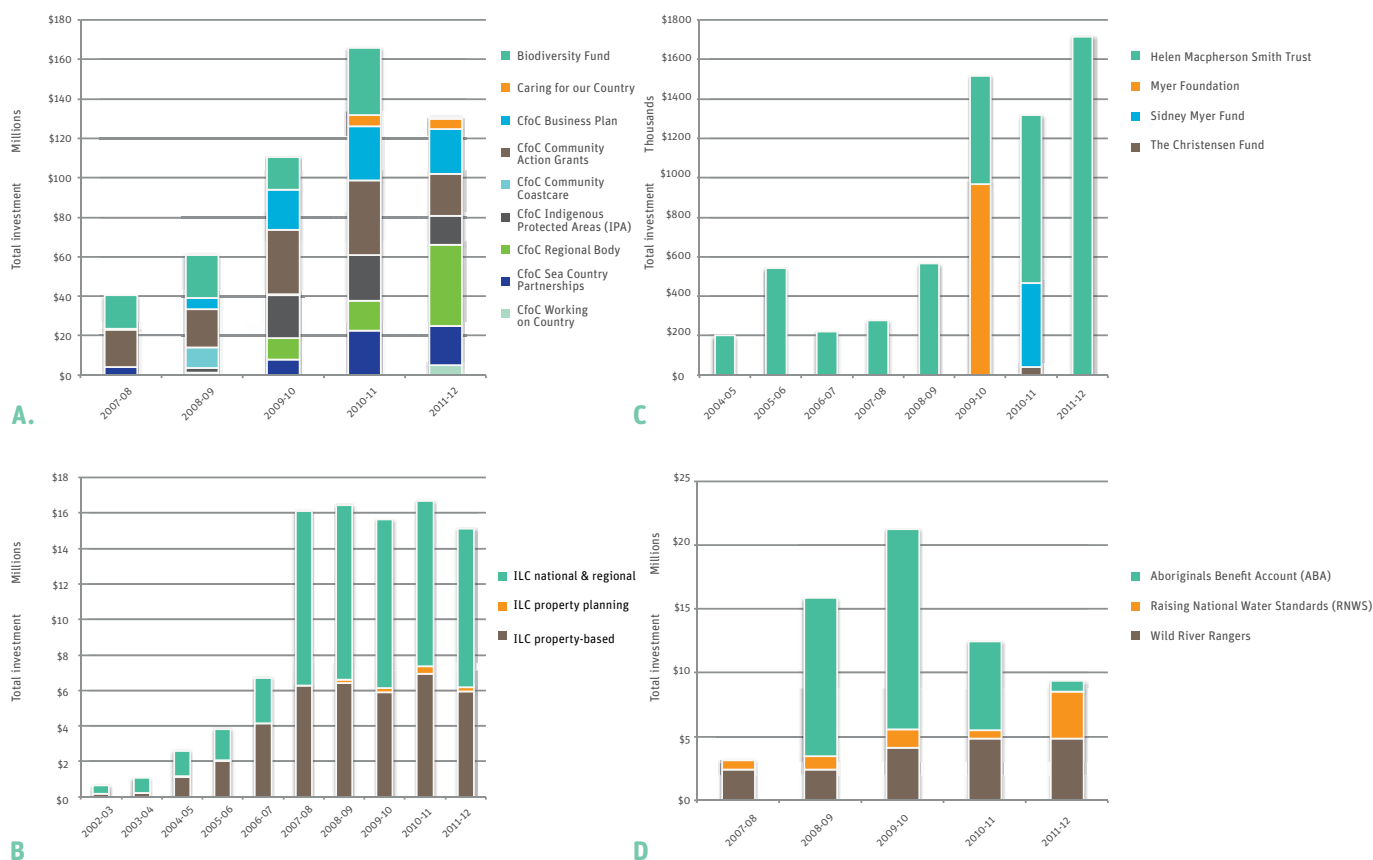
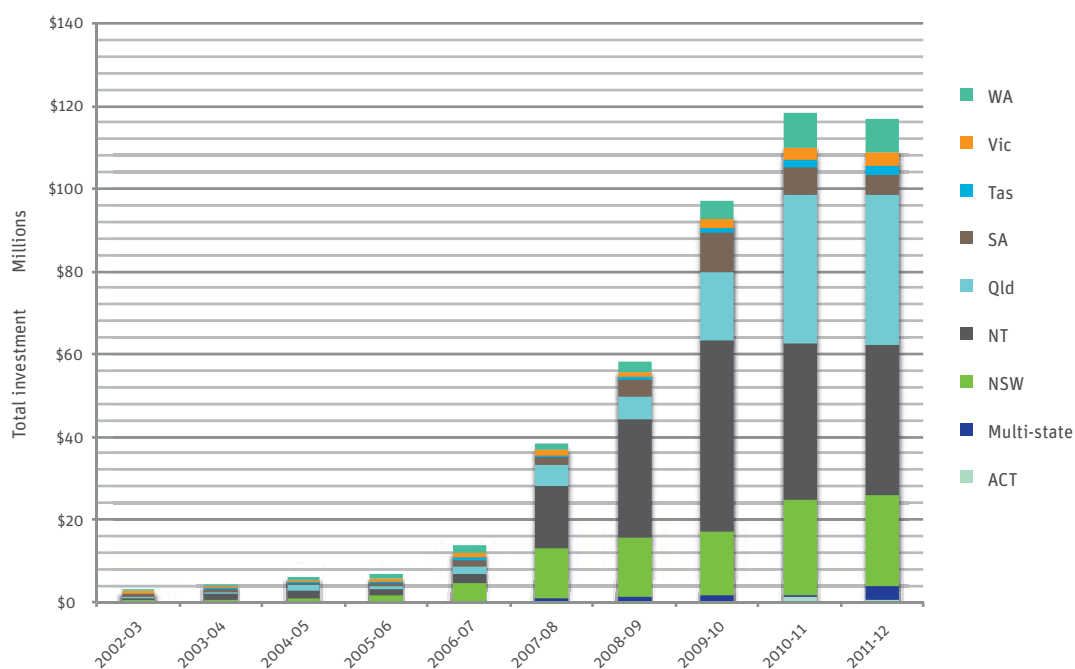


Figure 11 Australian Government and philanthropic investment in state and territory jurisdictions, 2002–12.

Note: the Queensland data also shows Queensland Government investment in Wild River Rangers investment



Waru Ranger, Bronson Bennett, radio tracking wild waru, 2011. Photo: Jasmina Muhic, DSEWPac





Figure 12 Australian Government Indigenous-specific funding through the agriculture and environment portfolios, and total Australian Government Indigenous-specific spending, 2000–01 to 2010–11. .

Source: Gardiner-Garden & Simon-Davies (2010).

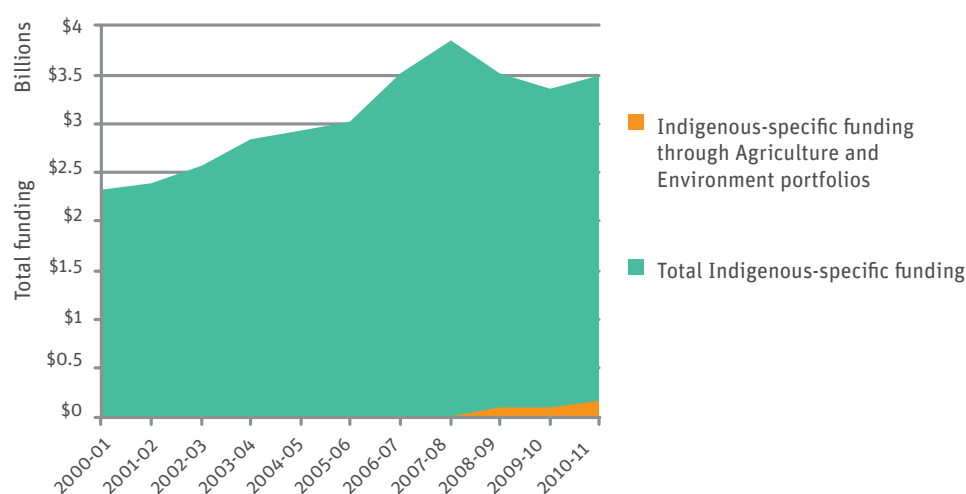
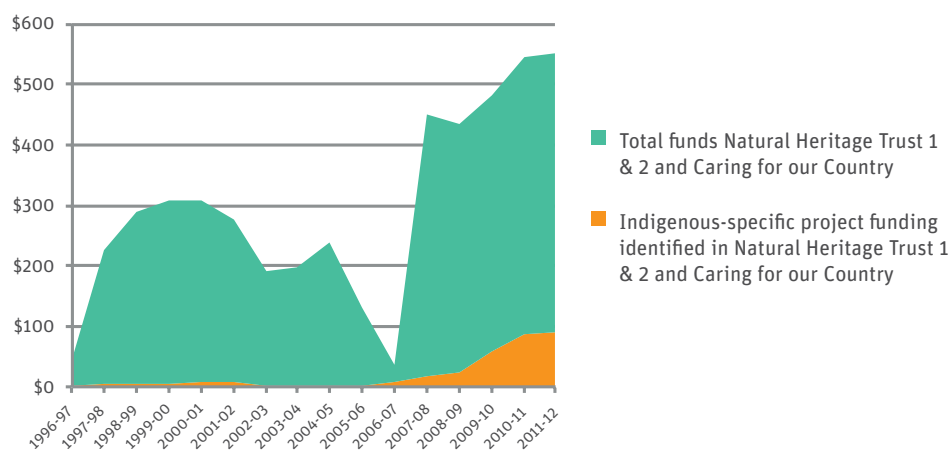


Figure 13 Proportion of Australian Government funding for environmental management allocated to Indigenous projects 1996-2012.

Sources: Data for 2002–03 collected from online sources for this project; data on totals for NHT1 and 2 from Truss (2005); other data from Caring for our Country review (Australian Government Lands and Coasts Caring for our Country Review Team 2012).



Munguru Munguru Ranger, George Sambo, using a cybertracker to monitor biodiversity. Photo: Jane Hodson, Central Land Council Working on Country Photography Competition 2012 1st Prize

2.7 Benefits associated with Indigenous land management

Four categories of benefits were identified as associated with ILM in a recent literature review (Weir et al. 2011):

- ♦ health and wellbeing benefits
- ♦ cultural and sociopolitical benefits
- ♦ economic benefits
- ♦ environmental benefits.

Health and wellbeing benefits from ILM are attributed to a number of factors. Systematic review of Australian and international research published in peer-reviewed journals indicates that these fall into three groups (Davies et al. 2011) (Table 3):

- ♦ reduction in health risk factors that are a result of Indigenous people's behaviours and lifestyles
- ♦ reduction in health risk factors that are a result of Indigenous people's social, political, ecological or physical environment
- ♦ psychosocial factors that moderate or mediate the direct impacts of the health risk factors and have powerful indirect impacts on health by strengthening Indigenous people's 'sense of control' or 'mastery'. This moderates the health impacts of sustained stress, which is a significant cause of illness and chronic disease among Indigenous people (Cass et al. 2004; Davies et al. 2011; Samson & Pretty 2006; Wilson 2003; Wilson & Rosenberg 2002).

Engagement in land management in one remote northern Australian community was associated with lower body mass index, lower systolic blood pressure, higher HDL cholesterol and lower cardiovascular disease risk (Burgess et al. 2009). Associated cost savings for primary health care were estimated at \$260 000 per year (Campbell 2011).

In their review, Weir et al. (2011) found that cultural and sociopolitical benefits of ILM include:

- ♦ support for intergenerational transfer of knowledge that is critical to the maintenance of cultural practices and institutions
- ♦ opportunities for transfer of gendered knowledge, including through men's cultural camps, and through women's hunting and gathering practices, healing ceremonies and kinship ceremonies
- ♦ practising of traditional arts and crafts, and cooking
- ♦ reduction of antisocial behaviour of young people, and increased access to housing and employment
- ♦ improved relationships between Indigenous peoples and those supporting ILM activities on country in government, community service, health and other organisations
- ♦ increased capacity for governance over lands for which Indigenous people have or share responsibility, including through development of synergies in the work of rangers and land-holding organisations.

Economic benefits of ILM were found by the review of Weir et al. (2011) to include:

- ♦ production of food sources and other resources in the customary economy
- ♦ employment as rangers and payment for environmental services activities—for example, fee-for-service contracts were estimated to be worth \$4–6 million in the Northern Territory in 2009
- ♦ synergies between the market, customary and welfare economies—for example, reduced welfare payments and increased tax revenue reduced the costs of the Australian Government's Working on Country program by up to 23% (Allen Consulting Group 2011)
- ♦ production of materials in the arts and crafts industry, estimated in one study to generate \$12–14 per hour

for Indigenous peoples in remote locations (Koenig et al. 2011b)

- ♦ commercial wildlife harvesting
- ♦ production of goods for sale in the carbon market (lowered emissions and increased carbon sequestration)
- ♦ cultural tourism and ecotourism
- ♦ native foods collection and production for sale into the market
- ♦ use of intellectual property of IEK in various enterprises, including medicines, and cross-cultural communication.

Environmental benefits of ILM were found by the review of Weir et al. (2011) to include:

- ♦ increased levels of activity in border protection, quarantine, fire management, wildfire abatement, carbon sequestration and trading, weed control, feral animal control, biodiversity conservation and fisheries management, generating benefits both for Indigenous people and the wider Australian society
- ♦ restoration of wetlands and water resource management
- ♦ improved environmental condition of lands under Indigenous management, with one study reporting lower rates of weed infestation and fire regimes that were more appropriate for maintaining biodiversity values than in adjacent lands
- ♦ adaptive management of wildlife resources
- ♦ enhanced production of some species through fire management, harvesting and cultivation practices.

As noted above, ILM delivers benefits to both Indigenous peoples and the wider Australian society, although the latter are rarely recognised. The Indigenous Natural Resource Management and Livelihoods project of the National Environmental Research Program will improve understanding of the full range of private and public benefits of ILM.

Table 3 Health risk factors and moderators explaining positive impacts of Indigenous land management on health in relevant research papers (n=17) that were identified through systematic review of ISI Web of Knowledge literature (international, all databases)

CLASS OF HEALTH RISK FACTOR OR MODERATOR	FACTOR IMPACTED POSITIVELY BY INDIGENOUS LAND MANAGEMENT	NUMBER OF ARTICLES ASCRIBING POSITIVE HEALTH IMPACT TO FACTOR
Behaviour and lifestyle	Diet, nutrition	12 ^a
Psychosocial	Cultural continuity, identity	11 ^b
Psychosocial	Coherence between Indigenous ontologies and agency	10 ^c
Behaviour and lifestyle	Physical activity	8 ^d
Environment	Social cohesion, customary governance structures	8 ^e
Psychosocial	Autonomy, self-esteem	6 ^f
Psychosocial	Relaxation, stress reduction	4 ^g
Environment;		
behaviour and lifestyle	Avoidance of trauma/aggression/ alcohol/substance abuse	4 ^h
Environment	Employment, economic participation	3 ⁱ
Psychosocial	Self-determination	3 ^j
Psychosocial	Spirituality	2 ^k

Source: Davies et al. (2011)

^a Burgess et al. 2005, 2009; Horton 1996; IAD 2002; Johns & Eyzaguirre 2006; Johnston et al. 2007; Liangputtong & Ezzy 2005; O'Dea et al. 1988; Park et al. 2012; Parlee et al. 2005; Rouja et al. 2003; Rowley et al. 2008

^b Burgess et al. 2009; Horton 1996; Johns & Eyzaguirre 2006; Johnston et al. 2007; Kingsley et al. 2009; McDermott et al. 1998; Morice 1976; O'Dea et al. 1988; Parlee et al. 2005; Rowley et al. 2008; Tindale 1974

^c Burgess et al. 2005, 2009; Johnston et al. 2007; McDermott et al. 1998; Morphy 2008; Parlee et al. 2005; Richmond & Ross 2009; Samson & Pretty 2006; Wilson 2003; Wilson & Rosenberg 2002

^d Burgess et al. 2005, 2009; Johnston et al. 2007; Morice 1976; O'Dea 1984; Parlee et al. 2005; Rowley et al. 2008; Samson & Pretty 2006

^e Burgess et al. 2005, 2009; Morice 1976; Morphy 2008; Parlee et al. 2005; Richmond & Ross 2009; Rowley et al. 2008; Samson & Pretty 2006

^f Burgess et al. 2005, 2009; Kingsley et al. 2009; Morice 1976; Richmond & Ross 2009; Samson & Pretty 2006

^g Johnston et al. 2007; Kingsley et al. 2009; Morphy 2008; O'Dea 1984

^h Burgess et al. 2009; Morice 1976; Morphy 2008; O'Dea 1984

ⁱ Burgess et al. 2009; Kingsley et al. 2009; Richmond & Ross 2009

^j Parlee et al. 2005; Richmond & Ross 2009; Rowley et al. 2008

^k Parlee et al. 2005; Wilson 2003



3 Success factors and barriers on the journey to best practice in Indigenous land management

3.1 Overview

The first major Australian study of success in Aboriginal organisations (Finlayson 2007) found that ‘success’ is dynamic, achieved when a balance exists between many internal and external factors. Success is therefore sometimes temporary and fragile—in broad terms, success is a journey that is never completed; rather, it is a road that is always under construction. This study also recognised that classifying Indigenous initiatives as ‘failures’ has three significant adverse effects: it masks important successes within those initiatives; it is dispiriting to Aboriginal people; and it reinforces stereotypical views about Indigenous people held by the general population (Finlayson 2007). We therefore focused our literature review on the factors that support success in Indigenous land management (ILM), and those that present barriers, rather than classifying particular examples as successful or as failures.

Our investigation of the concept of best practice in engagement with ILM encountered similar dynamics. There is no one-size solution to successful engagement with ILM organisations. Different contexts for the engagement—for example, whether it is about research, policy, or on-ground activities; whether it is in a peri-urban or remote setting—will require different approaches. Many best practice guidelines relevant to ILM engagement in diverse contexts are available to help those new to the field (Appendix 5). Practitioners should select the guidelines most suited to their purpose, taking account of the situation and circumstances of the community that is being engaged, and with an open mind to tailoring and changing the approach to suit the context. ILM dynamics mean that what constitutes best practice is best regarded, like success, as an ongoing journey. Supporting the success factors associated with ILM, and taking action to address the identified barriers, will enable positive momentum along the journey to best practice.

We present here our literature analysis that identified nine success factors associated with ILM, together with a box for each factor that gives examples to illustrate the journey to best practice in a variety of situations. These examples are not intended to imply that the other success factors were not present; rather, they aim to give real-world insights into what these factors look like on the ground. In most of the examples, many, if not all, of the other success factors have had a significant impact. We also note in these boxes how these success factors have contributed to overcoming some of the barriers analysed in more detail in Section 3.3.

The nine common themes identified from the literature review of success factors associated with ILM are:

1. Indigenous motivation
2. Indigenous governance and co-governance arrangements that respond to customary institutions
3. hybrid economies that generate multiple benefits
4. Indigenous-specific government programs that engage ILM through multiyear funding, real jobs and flexible case management
5. brokers and brokering organisations, particularly those linking Indigenous networks to external sources of information, expertise and resources
6. relationships of trust, respect and mutuality
7. diverse multimedia approaches for Indigenous knowledge
8. collaborative two-way knowledge engagement
9. Indigenous-driven planning (cultural, country based and comprehensive).

Five common themes of barriers associated with ILM emerged through the literature reviewed:

1. limited respect, recognition and practical support for Indigenous knowledge and world views
2. limitations of native title, recognition of rights and access to traditional lands and waters
3. limited access to resources for ILM
4. constraints in organisational and institutional capacity
5. socioeconomic and educational disadvantage faced by Indigenous peoples.

3.2 Nine success factors and examples of the journey to best practice

3.2.1 INDIGENOUS MOTIVATION

A key success factor associated with ILM, arguably the key success factor, is that Indigenous people are highly motivated to do it. As noted in Section 2, ILM is an expression of identity, family linkages, customary law rights, responsibilities and obligations. ILM practices also generate many direct benefits for Indigenous people, such as food and materials for trade, and for arts and crafts projects (Holcombe et al. 2011). Many Aboriginal motivations are engaged through ILM, as shown in Table 4 (Appendix 3), which was developed in relation to remote desert ILM (Smyth et al. 2007). Formalised ILM, and creation of associated contemporary institutions and roles such as community rangers and land and sea organisations, began as a bottom-up grass-roots movement driven by the aspirations of Indigenous people (May 2010b). Indigenous people have challenged or reshaped mainstream institutions that presented barriers, partnered with organisations with apparently mutual interest, and negotiated considerable

change and innovation in policy, as the chronology in Table 4 indicates.

Indigenous motivation to work in ILM continues in the face of the passivity that Pearson (2000) notes as a widespread and significant impediment to Indigenous socioeconomic development in Australia. Indigenous peoples throughout Australia are highly motivated to ensure intergenerational transfer of Indigenous knowledge, including ecological knowledge (Fletcher 2009; Merlan 2005). The evaluation of an Indigenous ecological knowledge (IEK) program conducted from 2007 to 2010 in the Northern Territory found that Aboriginal people overwhelmingly expressed their enthusiasm for the intergenerational transfer work that occurred (Moxham & Mitchell 2011). Although the cultural attachment of Indigenous youth could be expected to be less than for adults, data from the National Aboriginal and Torres Strait Social Science Survey show that differences between age groups are very minor (Dockery 2010). The commonly reported view that younger Aboriginal people are not interested in traditional culture needs to be interpreted with caution because intergenerational differences in modes of learning, use of new technologies and external cultural influences can mask underlying interest and motivation (Josie Douglas, CSIRO and Charles Darwin University, of Wardaman descent and a research higher degree student, pers. comm. 2012).

Mapoon Land and Sea Rangers, Maggie and Geri, spraying a mixture of weeds at a lookout above the Wenloch River, 2012. Photo: Jocelyn de Jersey



Box 1 Indigenous motivation and the best practice journey: Ikuntji (NT) and Wallis Lake (NSW)

ILM is an expression of identity, family linkages, customary law rights, responsibilities and obligations. The examples here show how two motivations—to pass on knowledge to children, and to harvest customary resources—are leading to best practice land management outcomes in contrasting situations of remote and settled Australia. These culturally motivated actions help address barriers of limited respect and recognition for Indigenous knowledge and world views.

Intergenerational knowledge transfer in Haasts Bluff (Ikuntji) (NT)

Haasts Bluff, 240 km west of Alice Springs, has 100–150 Luritja residents. Local people are highly motivated to go on trips to country with elders so that children can extend their existing skills and learn more about plants and animals. ‘Teaching up’ children in practices associated with species, country and its interactions are a high priority for people who live at Ikuntji. However, school learning is dominated by English and standard national curricula requirements.

Ikuntji School invited a skilled educator to work alongside teachers and students to advance two-way environmental learning (Tangentyere Landcare 2007). School trips complement ‘out-of-hours’ family-based trips where people hunt goanna, and find witchetty grubs, honey ants, desert raisin and other resources. School trips provide a formalised learning structure. On one trip, a senior woman and Aboriginal teacher aide collected plant specimens as the group drove on a half-day excursion. Later, each plant was laid out; all were bush food resource species. Children discussed the names and uses of the plant species. Follow-up classroom activities included specimen pressing, drawing and a short text record of the species in Luritja.

Aboriginal children were keen, highly engaged and interested in the content of these trips. Elements that are leading

to best practice in this context include senior knowledge experts who volunteer to teach children on country, a classroom teacher who recognises and is committed to the educational benefits of culturally based learning, an Aboriginal teacher aide who is capable and confident in their culturally derived practice, direction of activities by these local people, personnel carrier vehicles and an environmental educator (Tangentyere Landcare 2007).

recorded as used but not included in the valuation, due to data limitations.

The motivations for these harvests included undertaking a customary activity, expressing an Indigenous identity and obtaining food. This journey to best practice for Aboriginal harvesters relates to how they follow customary rules that they believe prevent depletion of resources during these harvests—for example, they would never take more of a resource than they and their families needed.



Family-based aquatic resource use in Wallis Lake (NSW)

The value of wild resources harvested by Indigenous people in the Wallis Lake catchment was estimated to be \$468–1200 per year in one study (Gray et al. 2005). Wallis Lake is a large estuarine area listed as a Wetland of National Significance, and had an Aboriginal population of round 800 at the time. Thirty different aquatic species contributed to this valuation, most of which were harvested for personal consumption or for sharing with family beyond the household. More than 50 other species of plants and animals were

Many have noticed that the native species they harvest are less abundant than in the past, and attribute this primarily to impacts of recreational and commercial fishers, as well as environmental degradation. Forster Aboriginal Land Council engages in bush and land restoration activities that aim to repair some of this damage.

Under the guidance of Alice Nampitjimpa, Aboriginal assistant teacher at Ikuntji School, Benisa Marks invites school children to name a bush food plant. Photo: M. Mooney.

3.2.2 INDIGENOUS GOVERNANCE AND CO-GOVERNANCE ARRANGEMENTS THAT RESPOND TO CUSTOMARY INSTITUTIONS

Culturally legitimate and practically capable Indigenous governance is essential for sustaining Indigenous socioeconomic activities, including land management (Smith 2008; Smith & Hunt 2011). A recent multiyear multi-case study research project has established that Australian Indigenous peoples maintain distinctive forms of governance, with an emphasis on networks, and leaders who operate as nodes in these networks (Hunt et al. 2008). Cultural legitimacy arises from a complex array of factors, including how communication occurs in the networks, how consensus is reached, and how decisions are drawn from cosmological authority based in customary law and the Dreaming (Smith 2010). Contemporary institutions for Indigenous governance and co-governance are most effective where Indigenous people initiate the institutions themselves on the basis of informed consent, where traditional nodal leaders are respected and empowered, where the local views about cultural legitimacy are taken into account, and where external agencies engage through supportive and facilitating approaches (Smith & Hunt 2011).

Culturally legitimate and practically capable Indigenous governance is associated as a success factor with several aspects of ILM. First, ILM operates as an expression of the relationships between Aboriginal and Torres Strait Islander peoples and their traditional (land and sea) country (Smyth 1994; Sullivan et al. 2012; Taylor 2012). Native title recognition, particularly if the determination recognises exclusive rights, and land rights legislation enable this expression to be secured through the institutions of Australian governments. Secure tenure that enables governance over land to be implemented in practical terms is obviously critically important

to ILM. Culturally legitimate governance ensures that ILM decision making and actions operate in accordance with customary laws—captured in the expression right country, right people, right processes (Hill 2011). Successful ILM relies on Indigenous governance that can mediate customary rights in the contemporary context—this is often crowded, with multiple organisations established to hold (or represent) communal tenure under state and national native title, land rights and other laws (Mommott 2007; Mommott & Blackwood 2008).

Second, Indigenous governance and co-governance is associated with the successful integration of Indigenous ecological knowledge into ILM (Hill et al. 2012). At Kakadu, fire management has been found to be effective under conditions that enable Aboriginal people to exercise control of their fire management knowledge, and have the opportunity to put their knowledge into practice and pass it on to the next generation (McGregor et al. 2010). Indigenous governance also underpins co-generation of new, converged forms of IEK and science knowledge (Edwards & Heinrich 2006; Hill et al. 2012; Kennett et al. 2010).

Third, capable Indigenous governance underpins the transparent and inclusive Indigenous decision-making and dispute management facilitative processes that are necessary to ensure that ILM decisions are owned by communities, and are therefore sustainable (Bauman 2006).

Box 2 Indigenous governance and the best practice journey: Dhimurru (NT) and Girringun (QLD)

Indigenous governance and co-governance arrangements that respond to customary institutions underpin the journey to best practice. The following two examples highlight how strengthening Indigenous governance provides a platform from which to advocate, negotiate and partner to apply ILM knowledge and expertise on traditional estates. These actions help address barriers of limited recognition of rights and access to land.

Dhimurru Aboriginal Corporation (NT)

Dhimurru Aboriginal Corporation celebrated its 20th year in operation as an Indigenous land and sea manager in 2012. The Yolngu people (Traditional Owners and custodians) in north-east Arnhem Land established Dhimurru in response to concerns about unfettered access, recreational impacts and other problems, such as ghost nets entangling and drowning turtles. Dhimurru has a governance system based on customary institutions, a key part of its ongoing best practice journey. The Dhimurru Vision explains 'The decision makers are the landowners, the clans that are connected through Yothu-Yindi and Mari-Gutharra kinships'. Yolngu control and empowerment is the first guiding principle of all Dhimurru's work (Marika & Roeger 2012). Dhimurru's directors are members of the clans with relevant interests.

At the time Dhimurru started, there was no effective method for Yolngu to control access of people to their country, which they own under the Northern Territory Land Rights Act 1976. Dhimurru introduced an access permit system negotiated through the Northern Land Council, and invested all of the income from permit fees back into the operation of Dhimurru (Dhimurru 2006; Dhimurru Aboriginal Corporation 2008).

Yolngu launched Dhimurru using their own resources, with three rangers, an executive officer, a second-hand vehicle



and a shared office. Today, they employ 13 Yolngu rangers and 6 non-Indigenous staff, and run a large number of projects, including an Indigenous Protected Area, and the longest running marine debris monitoring program in Australia. Building partnerships and leveraging funding from multiple sources has contributed to their success (Hoffmann et al. 2012)

Girringun Aboriginal Corporation (QLD)

Girringun was formed in 1996 by nine Traditional Owner groups to provide them with capacity to fulfil their holistic environmental and social goals of 'caring for country'. Girringun's board is made up of two representatives of each group. Their customary lands and waters are located in the southern part of Australia's wet tropics, and include significant areas of parks and state forests, as well as freehold and leased farm lands generally owned by non-Indigenous people. In the absence of strong legal rights to land and natural resources, Girringun has focused on building relationships and collaboration. Girringun has many innovative partnerships to bring their

customary institutions into play for land management. Girringun's capability to speak for the nine Traditional Owner groups is key to these partners' willingness to engage seriously with them, and a primary element supporting their journey to best practice (Zurba et al. 2012). Today, Girringun runs multiple ILM activities, including an Indigenous Protected Area, a traditional resource use management agreement, and an Indigenous ranger program. They hosted the highly successful Second Indigenous Land and Sea Management Conference in 2008.

Dhimurru Rangers and Australian Landcare Council delegates collecting mud mussels. Photo: Dhimurru Aboriginal Corporation

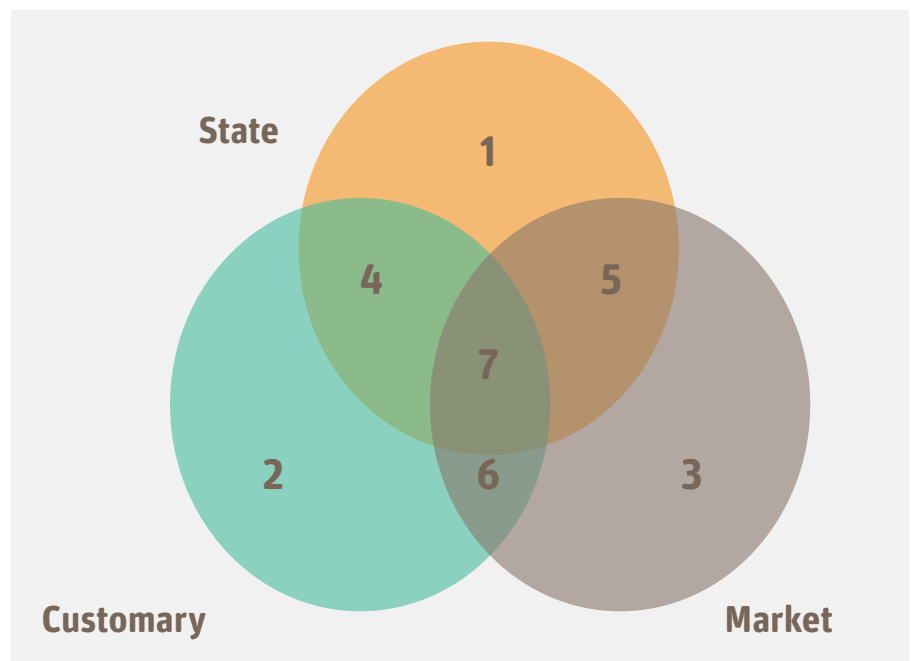
3.2.3 HYBRID ECONOMIES

Altman (2001) introduced the concept of the hybrid economy, made up of market, state and customary components, as a distinctive characteristic of Aboriginal land in remote and regional Australia (Figure 14). This economy is poorly understood; consequently, important Indigenous contributions remain unquantified and unrecognised in mainstream calculations of economic worth, which focus on the market economy. Section 2.7 presents a summary of the multiple benefits generated by ILM.

Altman (2001) also argued that success is associated with enterprises that synergise the relationships between customary, state (government) and market enterprises. While the hybrid economy is made up of the three sectors represented by 1, 2 and 3 in Figure 14, the interlinkages represented by 4, 5, 6 and 7 are important features (Altman 2007). A key point in this model is recognition of the role of government payments in Indigenous contexts of helping build economies—the Australian governments are the ‘guiding hand of development’ rather than providers of welfare benefits (Altman 2004). A new vision for development is emerging from the activities of Indigenous people working on country through hybrid economies: development based on environmental services, self-provisioning, tourism and the arts (Altman 2012b).

Figure 14 The hybrid economy, made up of three sectors (1, 2, and 3) and their interlinkages (4, 5, 6 and 7).

Source: Altman (2007). Reproduced with permission.



Box 3 Hybrid economies and the best practice journey: Fish River Fire Project (NT) and ghost nets management (QLD, NT, WA)

Many successful ILM activities are part of hybrid economies based on commodities and practices that (i) can be sold in markets, (ii) are underpinned by Indigenous customs, and (iii) are supported to an extent by government programs. The two examples below highlight how both tangible assets (e.g. land) and intangible assets (e.g. ecological knowledge) can support these types of economies and help address barriers posed by limited resources.

Carbon farming in northern Australia—the Fish River Fire Project (NT)

Early dry-season savanna burning activities for greenhouse gas (GHG) abatement can support Indigenous fire management practised as part of local Indigenous customary land management regimes (Yibarbuk et al. 2001). The Fish River Fire Project is the first savanna burning project and the first Indigenous project approved under the Australian Government's Carbon Farming Initiative (CFI). Fish River Station, located along the Daly River in the Northern Territory, was purchased in 2010 by the Indigenous Land Corporation in collaboration with The Nature Conservancy, the Australian Government's National Reserve System and Pew Environment Group, with support from Greening Australia. Indigenous rangers work on country to abate GHG emissions from savanna fires. By using methods that draw on Indigenous customary patterns and science, the area of land that had been historically burnt each year by late dry-season wildfires has been reduced from 69% to 3%. The project will deliver about 13 000 Kyoto-compliant Australian carbon credit units per year for sale, enabling more resources to be available to benefit the environment and strengthen Indigenous knowledge and practices (NAILSMA media release, 2 November 2012; Nerissa Walton, Indigenous Land Corporation Senior Policy and Environment Advisor, pers. comm. 2013).



Indigenous engagement in ghost net management (WA, NT and QLD)

Some Indigenous ranger groups in northern Australia have accessed funding from government, non-government organisations (NGOs) and philanthropic sources to provide a variety of environmental services (Ens et al. 2012; Muller 2008b). One example is the collation and analysis of information, collected through Indigenous ranger patrol data, that contributes to the Ghosts Nets Australia Program—an alliance of Indigenous ranger groups, researchers, regional natural resource management bodies and conservation groups concerned with the impact of fishing nets on marine wildlife, particularly endangered turtle species. I-Tracker is an important decision-support tool for these Indigenous

ranger surveillance patrol efforts, and has enabled marine wildlife and ghost net data to be spatially located and described. The provision of ranger patrol information has become a useful funding source that supports conservation NGO and government program objectives, as well as local Indigenous ranger efforts to respond to and report back on local ILM priorities.

Darren Sambono, Larbaganyan man and Traditional Owner of Fish River, undertaking and early dry season controlled burn. Photo: Indigenous Land Corporation

3.2.4 INDIGENOUS-SPECIFIC GOVERNMENT PROGRAMS THAT ENGAGE ILM THROUGH MULTI-YEAR FUNDING, REAL JOBS AND FLEXIBLE CASE MANAGEMENT

Establishment of Indigenous-specific funding programs is important because it ensures access to land management resources for Indigenous peoples who were consistently marginalised from mainstream sources of funding and support through the Natural Heritage Trust (NHT 1 and 2) (Hill & Williams 2009; Lane & Corbett 2005; Lane & Williams 2009). The Indigenous specificity enables Indigenous people to access funds for management of their own traditional lands, without having to attempt to mould their ILM into the criteria for funding mainstream natural resource management (NRM) programs. The prescriptive targeting of these mainstream programs does not fit well with Indigenous aspirations or ILM based on Indigenous knowledge.

Two major Indigenous-specific Australian Government ILM programs are now in operation: Indigenous Protected Areas (IPAs) and Working on Country (WoC), and both are widely regarded as successful (Auditor-General 2011; Australian Government Lands and Coasts Caring for our Country Review Team 2012; Walter Turnbull 2010).

Indigenous specificity in the IPA program has enabled the development of a policy model of co-production, taking advantage of a shared interest in country, the short-hand term to describe the family origins and associations of Indigenous people with particular areas. The IPA program engages with Indigenous Australians through their strong traditional and cultural associations with country, while delivering National Reserve System and land management outcomes for the Australian Government. The Indigenous specificity also enables the provision of expert advice from the Indigenous Advisory Committee, which assists in

assessing IPA applications and provides ongoing advice about the design of the program (Auditor-General 2011).

The WoC program provides funding for ranger positions, training, and environmental and cultural activities, and intersects with the IPA program, since many of the rangers are employed in roles within IPAs. The Indigenous Land Corporation (ILC) Real Jobs project also supports Indigenous rangers. In 2011–12, ILC-funded activities led to improved land management on 135 Indigenous-held properties across Australia through property management planning, infrastructure development, and cultural and environmental protection. Environmental heritage values were protected and/or restored through 13 projects involving 549 Indigenous people, and cultural values were maintained or revitalised through 15 land management projects involving 654 people (ILC 2012).

Indigenous specificity in WoC enables the government to respond in a positive way to the Indigenous-driven caring for country movement. This is based on cultural rights and obligations that were strengthened through the recognition of Indigenous land rights from the 1970s onwards (Baker et al. 2001; Smyth 2011). Rangers deliver environmental benefits, as well as employment, economic and cultural benefits and training opportunities that reflect government priorities, while maintaining a strong sense of Indigenous control of priorities in WoC overall (Australian Government Lands and Coasts Caring for our Country Review Team 2012; Walter Turnbull 2010).

The IPA and WoC programs are viewed by both Indigenous and government partners as an effective program for successful engagement in ILM (Auditor-General 2011; Australian Government 2011; Smyth 2011). A number of design elements have been identified as key ingredients in this success (despite the need for improvements in delivery of some of these design elements):

1. Multiyear and consolidated funding. Multiyear funding (3–5 years in IPAs, 4 years in WoC) provides certainty for organisation planning and staff recruitment; lowers transactions costs in applying and administering grants; enables proper monitoring and evaluation to be put in place; and encourages elders to share their knowledge with rangers, ensuring that IEK is applied and transferred across generations (Smyth 2011). Consolidated funding (such as through the IPA program) lowers the transaction costs associated with the multiple grant applications that face many Indigenous organisations. However, although the IPA and WoC programs have led to some consolidation, there are substantial opportunities for improvement (May 2010b).

2. Real jobs. Many Indigenous rangers started working under Community Development Employment Program initiatives, or ‘work-for-the-dole’ scheme. Rangers report that this experience of a real job through WoC transformed their lives, improving their individual capacity, self-confidence, self-esteem and financial security (Smyth 2011). Ranger networks through conferences and meetings are highly valued; there remains a need to develop ranger career paths. Support is also important in the movement from Indigenous-driven to more formal roles, to ensure that the flexibility and attunement to local needs and Indigenous community demands and priorities remains strong (Gorman & Vemuri 2012).

3. Flexible case management. Many organisations responsible for ILM remain extremely fragile and under-resourced (May 2010b). The Australian Government Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) has developed specific tools to assist communities in the IPA context with this; for example, agency staff pre-populate the biannual report format for each IPA project with activities prescribed in the grant recipient’s scope of works and the associated budget. Program participants then complete the formatted report, describing activities completed; community outcomes achieved; funds expended across environmental management, cultural, social and economic outputs; and financial management. In addition, DSEWPaC takes a ‘case management’ approach to IPA program grants, with the majority of communication taking place by phone, at times by email, and whenever possible by face-to-face contact onsite (Auditor-General 2011). Flexibility in who could apply for funds and when they could apply, and the capacity to recognise multiple outcomes across education, employment, justice, youth and health benefits were identified as key factors underpinning success in the Northern Territory IEK program (Moxham & Mitchell 2011).

Box 4 Well-designed Indigenous-specific programs and the best practice journey: Indigenous Protected Areas and Working on Country (Australia-wide)

Government programs that provide targeted support for improved environmental outcomes are a key ingredient in most successful ILM outcomes. The two examples here show how appropriate design of Indigenous-specific government programs contributes to best practice and helps address barriers posed by constraints in organisational and institutional capacity.

Indigenous Protected Area Program (Australia-wide)

The Indigenous Protected Area (IPA) program, established in 1997, is a way for Indigenous people to keep looking after their land and sea country with support and recognition from the Australian Government. An IPA is defined by the Australian Government as ‘an area of land and/or sea over which the Indigenous Traditional Owners or custodians have entered into a voluntary agreement with the Australian Government for the purposes of promoting biodiversity and cultural resource conservation’. As at February 2013, there are 53 declared IPAs, covering 38 million hectares of Australia, making up nearly one-third of Australia’s National Reserve System. As well as environmental benefits, IPAs assist Indigenous people to protect their significant cultural values, and generate spin-off health, education, economic and social benefits. IPAs are operating successfully in all Australian states and the Northern Territory.

Although IPAs started on freehold lands acquired under land rights legislation and property purchases, they now rely on a variety of legal bases, including native title and a variety of tenures. The Mandingalbay Yidinji IPA, declared in 2011, was the first multi-tenured IPA, declared over freehold, leasehold and existing terrestrial and marine parks areas, resulting in a form of co-management with governments. Grants are initially provided to support Indigenous landowners to consult with their communities about whether they



wish to declare their land as a protected area, and consider potential risks and benefits. The consultation phase is around 3–4 years. The acceptance of a grant for consultation does not obligate the Indigenous people to declare their land as an IPA. Many IPAs receive five-year funding agreements for management once they are declared. The new Caring for our Country Business Plan commits governments to a 40% increase in IPAs over the next five years.

Working on Country Rangers (Australia-wide)

The Working on Country (WoC) program was announced in 2007 and now funds more than 680 rangers, working in more than 95 ranger teams across Australia, to undertake a variety of land and sea management activities. Many of these ranger groups were started by Indigenous communities to fulfil cultural obligations, following recognition of Indigenous rights over country from the 1970s onwards. Palm Island Community Council, for example, established a sea ranger group with a boat to undertake patrols in the mid-1980s. However, the funding for these earlier initiatives was short term and insecure, primarily through the Community

Development Employment Project (CDEP), the ‘work-for-the-dole’ scheme. The WoC program is viewed by many as a welcome government response to these Indigenous initiatives, providing an opportunity to align the Indigenous economic, social, cultural and other priorities in land management with those of governments.

WoC is provided over a five-year timeframe. Indigenous rangers regard these longer timeframes as very important. Many of their environmental management activities, such as weed and feral animal control, are only effective through consistent effort over a long period. In addition, the greater certainty over future opportunities has encouraged elders to share their traditional knowledge with the rangers, ensuring that the knowledge is applied and transmitted across generations. An evaluation revealed that this was the first experience of ongoing employment for many WoC-funded rangers, and the experiences and targeted, personalised training had transformed their lives (Smyth 2011).

Dhimurru Rangers, Ngalkanbuy and Gathapurra, hunting termites in foreign timber as part of a marine debris survey. Dhimurru Rangers are supported by IPA and WoC. Photo: Lisa Roeger, Dhimurru Aboriginal Corporation

3.2.5 BROKERS AND BROKERING ORGANISATIONS

Social networks are important for linking poorly resourced community-based Indigenous land and sea management organisations and ranger groups with the resources and support required to undertake ILM (Woodward 2008). Social network analysis has identified a heavy reliance on a few brokers within these networks for external linkages (Robinson et al. 2009b; Woodward 2008). The development and growth of ILM in central Australia has been underpinned by brokers, commonly non-Indigenous people, whose long-term engagement is recognised as a key success factor (Davies et al. 2011). Recognising the key role of mid-level organisations and individuals as brokers for biodiversity and other compatible services (such as ecotourism, sustainable grazing, carbon sequestration, and monitoring of land condition and water resources), together with investment in building capacity in all other elements of the market chain, are important to establishing markets for ILM (Hill et al. 2008a; Smyth et al. 2007).

Indigenous peoples have strong and dense bonding networks, but sparse bridging networks (Maru & Davies 2011). In the Landcare context, this pattern is correlated with resistance to changes necessary for sustainability (Compton & Beeton 2012). In the Indigenous employment context, brokers have been found to foster new norms that mediate the conflicting values and expectations held by potential Indigenous employees and employers, who are generally not Indigenous people. Social network theory suggests that bridging and linking provide advantage to the broker. However, stress and burnout are readily suffered by the people who broker networks with divergent values in cross-cultural settings, highlighting the importance of recognising and supporting their roles (Maru & Davies 2011).

Three attributes of successful brokerage for ILM have been identified:

- ◆ Brokers and organisations understand the key contextual issues affecting Indigenous environmental governance.
- ◆ Brokers have the individual and organisational capabilities to respond to key issues affecting Indigenous environmental governance.
- ◆ Indigenous knowledge is integrated into environmental planning and management.

An assessment in central Australia identified the opportunity for improved outcomes for brokerage across all three aspects. Brokers' accounts and experiences show that it is both very important and far from easy to achieve partnerships that seriously engage Indigenous people in environmental planning, management and review, while maintaining the support of all other partners (Indigenous, non-Indigenous and government) (Robinson et al. 2009).

Regional NRM bodies are useful brokering organisations that are associated with success in ILM (Inovact Consulting 2011a). Indigenous organisations surveyed reported a high satisfaction with regional NRM bodies. The regional NRM bodies were less confident that they are effectively engaging Indigenous participants than they were about their engagement processes for participants as a whole (Inovact Consulting 2011c). Indigenous brokering initiatives vary greatly across the regional organisations; they include delivering Indigenous-specific projects, developing NRM capacity, establishing relationships and communication channels, and raising consciousness of Indigenous cultural considerations among staff, landholders and other stakeholders (Vogel 2011).

Australian Government NRM Indigenous Land Management Officers (ILMOs) are employed to act as a practical two-way link between Indigenous land managers and the Australian and state and territory

governments. An evaluation found that these officers have been important catalysts, contributing to awareness raising, and fostering Indigenous involvement in NRM issues and planning, cross-cultural training and improved partnerships. Robinson and Lane (in press) concluded from interviews with ILMOs in 2007–08 that their efforts had been frustrated by various factors, including:

- ◆ that the geographies of Indigenous organisations and their NRM activities were overlooked when NRM regions were established
- ◆ poor funding opportunities for Indigenous people to participate in regional NRM programs
- ◆ that Indigenous knowledge was narrowly defined when Indigenous people were invited to contribute to NRM planning decisions.

Box 5 Brokers and brokering organisations and the best practice journey: Central Land Council (NT) and regional natural resource management bodies (Australia-wide)

Brokers and brokering organisations have been critical to achieving effective collaborations between Indigenous land managers and scientists, farmers, community organisations and others. These two examples illustrate how both Indigenous and non-Indigenous organisations and individuals can act as brokers and help address barriers posed by capacity constraints and socioeconomic disadvantage.

Central Land Council and measuring greenhouse gas emissions from spinifex fires (NT)

The Central Land Council (CLC) in Alice Springs undertook a key brokering role between CSIRO scientists and Traditional Owners to implement pilot research on spinifex fuels and burning efficiency in the Northern Tanami Indigenous Protected Area (IPA). The CLC is a key brokering organisation because (i) its statutory functions include ensuring that Traditional Owners agree to any activities, including research, that take place on their land; and (ii) its Land Management section coordinates planning and management of the Northern Tanami IPA. Hence, CSIRO and the CLC made a collaboration agreement for the project. Various CLC staff filled numerous brokering roles. They consulted with Traditional Owners of specific localities that the scientists had identified as suitable options for the biophysical field research, convened a meeting of the Northern Tanami IPA Steering Committee to consider the proposal, scheduled the field work into the Wulaign rangers' work program, and organised the logistics of Traditional Owner and ranger transport to field sites. Some Traditional Owners played key broker roles in translating new concepts into language and metaphors that were meaningful to their peers. These multifaceted brokering engagements enabled scientists, rangers and senior Traditional Owners to work together very efficiently. Within a few days of starting the field work, several rangers were



working confidently in all-Indigenous teams to measure the grass fuels (Davies et al. 2009; Holmes 2009).

Australia's regional natural resource management (NRM) bodies (Australia-wide)

The Australian Government supports 54 regional NRM organisations with baseline funding for three areas that contribute to national program and policy outcomes: (i) regional planning and prioritisation that cohere with national drivers, (ii) specialist skills to lead regional-level changes, and (iii) a suite of relationships that can be leveraged to translate national priorities into on-ground change. Indigenous communities are recognised by the regional NRM bodies as one of five key NRM participants; the others are community groups, farmers, local councils, and organisations representing business and environmental outcomes. Around 80% of Indigenous organisations surveyed as part of an evaluation of NRM reported that they found their respective NRM organisations to be helpful. Eighty per cent of the NRM organisations, in turn, reported that they provided

information to their stakeholders about Indigenous communities in their region.

The regional bodies adopt a diverse array of approaches to brokering with Indigenous communities. Territory NRM, for example, spends around 50% of its budget on Indigenous NRM, largely for Indigenous-held lands. The Namoi Catchment Management Authority (CMA), on the other hand, engages with Kamilaroi people in a context where much of the land is held under freehold title by non-Indigenous people. There are 12 local land councils representing 6500 people with traditional associations. Namoi CMA has started to address the issue of brokering Indigenous access to land for cultural purposes through a survey that showed that, although only 12% of landholders had ever facilitated such access, 50% were willing to engage with the idea.

Despite a growing record of successful brokerage, regional NRM bodies view their Indigenous engagement as less effective than their engagement with other NRM participants, highlighting the need and opportunity for improvements (Inovact Consulting 2011a, 2011b, 2011c).

Wulaign Rangers measure and record shrub fuels, Northern Tanami IPA, 2009.
Photo: M. Holmes

3.2.6 RELATIONSHIPS OF TRUST, RESPECT AND MUTUALITY

Effective relationships of trust, respect and mutual interest underpin ILM across all its manifestations. Indigenous people undertake substantial ILM through informal activities and trips onto country that are invariably underpinned by Indigenous kin relationships—the dense networks of ties that link people to one another and to responsibility for the management of country (Hunt et al. 2008; Maru & Davies 2011; Walsh & Mitchell 2002). Relationships of trust and respect within the intercultural (Indigenous and non-Indigenous) spaces of the formal ILM sector are recognised as critical to effective operation (Hunt et al. 2008). Long-term engagement of non-Indigenous people and their willingness to step back and give space for Indigenous people to step into ILM roles are two attributes associated with effective relationships (Hill 2011; Walsh & Davies 2011). ‘Sitting down together’ and ‘having a yarn’ are two phrases that encapsulate the necessary processes of deliberation and respectful relationship building; these processes enable movement towards addressing the deeper issues of social justice and equity that underpin effective two-way ILM (Nurse-Bray 2005; Preuss & Dixon 2012). Time spent together, particularly time spent on-country together, underpins the development of relationships of trust and respect (Ens et al. 2012; Hill 2011; Preuss & Dixon 2012).

Box 6 Relationships and the best practice journey: desert raisin in central Australia (NT)

Many people emphasise the importance of relationships of trust, respect and mutuality as the basis of successful outcomes through engaging with Indigenous peoples in natural resource management. The following example shows relationships in a multigenerational inter-Indigenous context and a contemporary cross-cultural setting.

Indigenous relationships in managing bush raisin in central Australia (NT)

Central Australian Aboriginal harvesters and associated traders provide the bulk of produce sold in the emerging Australian bush food industry. Effective relationships between harvesters and traders are essential in linking regional supplies to regional and national markets. Desert raisins are usually managed and harvested from Aboriginal

Land Trusts. Women and family groups pick desert raisins, and family members fulfil many other roles. These seasonal activities provide monetary returns and many other benefits, including the reinforcement of kin networks and Indigenous knowledge transfer (Holcombe et al. 2011).

The harvesters supply several traders, including an Aboriginal-owned company, a pastoral-owned company, a sole trader and a small bush food company (Walsh & Douglas 2011). In all cases, there are personal relationships between the harvesters and the traders. These relationships are long term, sometimes spanning three generations. Traders locally advertise their product requirements or respond to harvesters notifying them of their supplies. Traders travel long distances, pay directly on produce exchange and provide ancillary services to harvesters, as requested and

reasonable. The commodity markets are mainly interstate and remote from Aboriginal harvesters and traders, so the traders are critical links between markets and harvesters, producing co-dependence. These harvester-trader relationships are critical to the ongoing operation of harvesting and management activities.

Peter Yates weighs a bag of produce harvested by Mr Casson and his family before payments are made. The direct observation of this process helps reinforce clear and honest transactions, and strengthens relationships of trust.

Photo: G. O'Loughlin



3.2.7 DIVERSE MULTIMEDIA APPROACHES FOR INDIGENOUS KNOWLEDGE

Indigenous peoples are strongly motivated to ensure that ILM is based on their Indigenous ecological knowledge (IEK). The ongoing loss of Indigenous knowledge, including loss of language, is highlighted as a key threat in numerous IPA management plans, and to the future ability of Indigenous people to derive livelihood benefits from bush food harvest and trade (Walsh & Douglas 2011; Walsh et al. 2011). A diverse range of multimedia approaches is proving effective at simultaneously recording knowledge and ensuring intergenerational transfer. Evaluation of the IEK program that ran from 2007 to 2010 in the Northern Territory identified that use of multimedia approaches was highly successful in engaging young people with IEK work (Moxham & Mitchell 2011). In Queensland, the Traditional Knowledge Revival Pathways (TKRP) uses video to record elders and younger clan members practically demonstrating and transmitting their knowledge while on-country (Browning et al. 2008). Repetition of interactions in situ allows country to speak to the people and people to speak to country, an important element of IEK (Hill et al. 2004). The TKRP project originated from grassroots Indigenous-identified action led by Indigenous peoples directed by their elders (Standley et al. 2009). Further, the communities in which it operates maintain ownership and control of their TKRP project. The video method was developed jointly by elders and researchers, a process that enables cultural interaction to be recorded and allows room for vital values and beliefs, the finer nuances of the knowledge embedded in country, and the behaviour of walking country (Browning et al. 2008). The videos are incorporated into an electronic database of IEK and underpin the gradual implementation of Indigenous fire management in parts of Cape York Peninsula (Bidwell et al. 2008).

Maps that include representation of Aboriginal dreamings are being used as the basis for spatial aspects of ILM in central Australia (Walsh et al. 2010). Use and occupancy mapping enables spatial representation of the multiple contemporary Indigenous interactions with country through camping, hunting, collecting, fishing and visiting. Such mapping by Ngarrindjeri and the Murray–Darling River Indigenous Nations has resulted in dense visual expressions of the living landscape of Indigenous connections, which had previously been relatively invisible to the non-Indigenous people in the region (Tobias 2010). Paintings of country are a key expression of ILM for many Australian Indigenous people (Hill et al. 2011b; Muller 2012). Seasonal calendars have been shown to be a very effective means of bringing Indigenous knowledge into a contemporary visible expression (Prober et al. 2011).

Investigations of diverse visual techniques (photographs, video, diagrams, painting, sculpting) identified their ability to enable conceptualisation and expression of features and relationships in the landscape that had important (positive or negative) influences in NRM with Australian Indigenous peoples (Petheram et al. 2011). The visual techniques also supported important processes of dialogue that underpin social learning for ILM.

Box 7 Diverse multimedia approaches for Indigenous knowledge and the best practice journey: Indigenous ecological knowledge (NT) and the Traditional Knowledge Revival Pathways (QLD, international)

A diversity of multimedia approaches is proving effective at simultaneously supporting recording of Indigenous knowledge and contributing to intergenerational transfer. The two examples here highlight how video recording on-country is supporting the best practice journey towards application of in-depth knowledge of country to challenging issues such as fire management.

local people, who have strong visual and oral skills but generally poorer literacy and text-based skills. Incorporation of emerging media technologies increased the roles of young people in the small locally focused projects.

The CLC program offered to local people eight multimedia kits, including still cameras, video cameras and GPS. Budgets included training in audio-visual editing and contracted expertise.

Traditional Knowledge Revival Pathways (QLD, international)

The Traditional Knowledge Revival Pathways was developed from the aspirations of Indigenous elders to preserve and recognise Indigenous knowledge. Two Kuku Thaypan elders, Dr Tommy George and 'Old Man' Musgrave (deceased 2006) worked with Victor Steffensen from 2002, going out onto country and practically demonstrating their knowledge in front of a video camera. The first Awu-Laya computer database was established to hold this knowledge, categorised and linked across topics such as plants, story places and country type.

TKRP has since expanded to support many Indigenous communities to own, store and retrieve their own knowledge in other parts of Australia, New Zealand and the United States. In each of the TKRP projects, elders demonstrate and translate their Indigenous knowledge in front of a camera held by a younger Indigenous trainee, guided by mentors. Elders and the younger participants work together to transcribe and categorise video segments for storage into the database, and have also produced a number of documentary videos on issues such as fire management, bush foods and water management. TKRP has also expanded into spatially located data to support fire management, using a GIS database, and mapped products, including fire scars, vegetation, topography and other layers, to link to visual media created by the project. TKRP holds an annual Indigenous Fire Training Workshop that brings people together from different locations and communities to share and learn about Indigenous fire practices and their application to contemporary land management (Standley et al. 2009).

Arrernte IEK specialist Veronica Dobson (right) looks on as younger Arrernte woman Beena Gorey and video editor Dave Richards review a video of Veronica speaking about medicinal plants. Photo: F. Walsh



Indigenous ecological knowledge project of the Central Land Council and Northern Territory NRM 2008–11 (NT)

The Central Land Council (CLC) hosted an Indigenous ecological knowledge (IEK) program across the southern Northern Territory (the North Australian Indigenous Land and Sea Management Alliance [NAILSMA] hosted the northern program). This was funded by the Natural Heritage Trust 2 program and managed through the NRM Board (Northern Territory). IEK intergenerational transfer and documentation were two key objectives. The principle and preferred means of IEK transfer was directly 'on-country', with senior people guiding younger people in active, practical contexts (e.g. travelling, walking, hunting, singing). Text-based documentation did not suit the needs of

About 1600 Aboriginal people from 13 language groups were involved in the southern program. Eighty-seven discrete DVD products resulted from the funding investment. These varied in duration, content and quality of production. Workshop reports and external evaluations identified the incorporation of multimedia as a key success factor to the program (Central Land Council 2011). For example, at the IEK forum in October 2010, the majority of the 15 Indigenous presenters chose to present via short videos. This gave them a strong voice, and subsequently they made active contributions to the forum. One non-Indigenous participant with 20 years of cross-cultural experience observed that this was the most interactive workshop led by Indigenous people that they had observed.

3.2.8 COLLABORATIVE TWO-WAY KNOWLEDGE ENGAGEMENT

The theme of diverse multimedia approaches continues in many collaborative two-way engagements between Indigenous and scientific knowledge that underpin success in ILM. Collaborative cultural heritage two-way exchanges have resulted in landscape approaches that move beyond mapping of sites to the broader interactions of Indigenous peoples and others in place (Moylan et al. 2009). A Bayesian belief network built between scientists and Indigenous peoples in the Kakadu region resulted in a highly visual web-based platform capable of representing many aspects of IEK (McGregor et al. 2010). A Tropical Indigenous Ethnobotany Centre established between Traditional Owners and several leading science agencies in far north Queensland is using digital databases, field-based studies and herbarium collections to support IEK renewal and transmission (Hill et al. 2011a). Ethnobiological databases have proven effective in redressing erosion of IEK (Edwards & Heinrich 2006). Seasonal calendars provide an organising framework for the recovery, retention and cross-cultural communication of IEK, and for linking to its broader cultural and cosmological contexts, as well as its NRM applications (Prober et al. 2011; Woodward et al. 2012). Visual multimedia techniques have also been identified as a key means of shifting concepts and generating ideas and awareness among policy stakeholders in ILM (Petheram et al. 2012).

Equitable two-way knowledge engagement between Indigenous and scientific ‘toolboxes’ for management is recognised as important to ILM (Ens et al. 2012). Effective two-way knowledge engagement has been associated with successful management of wetlands (Grice et al. 2012), fire regimes (McGregor et al. 2010), the impacts of buffalo (Ens et al. 2010), invasive ant species (Hoffmann et al. 2012) and Australian deserts (Preuss & Dixon 2012). Principles identified as

important in successful cross-cultural engagement include a focus on the time, capability and commitment to build relationships of trust and respect; and underpinning partnerships with formal documents, regular meetings and an adaptive management framework (Hoffmann et al. 2012).

Nevertheless, Indigenous people often still experience a sense of domination by western science and conservation paradigms in two-way NRM engagements, and struggle to achieve what they perceive as real equity (Muller 2012). Achievement of the equitable relationship between scientific knowledge and IEK that is sought by Indigenous peoples challenges partners to attend to tacit and unquantified knowledges, and to create a language of equals between Indigenous and non-Indigenous sciences (Muller 2012). Common problem framing is a key means of achieving successful engagement between science and IEK (Cullen-Unsworth et al. 2012). Ultimately, addressing underlying power imbalances and rights recognition is a key to achieving equitable engagement (Barbour & Schlesinger 2012; Hill 2006). Indigenous Australians want to be active partners in developing better understandings of the environment and implementing management that reflects shared agendas. Open discussion of these issues in collaborative two-way engagement will create better opportunities for effective ILM (Barbour & Schlesinger 2012; Muller 2012).

Box 8 Collaborative two-way knowledge and the best practice journey: gubinge (WA) and Lake Condah Sustainable Development (VIC)

The integration of different knowledge systems and cultural values is a key success factor for ILM and is underpinned by cross-cultural collaboration between Indigenous and non-Indigenous land managers. The two examples here highlight how two-way knowledge engagement supports ILM activities in both remote and settled Australia. Such engagements help address the barrier posed by the limited respect, recognition

Indigenous training initiative led by the Kimberley Training Institute has engaged local Indigenous students to cultivate gubinge (billy goat plum or Kakadu plum) to become a commercial plantation. The gubinge tree is of cultural significance and nutritional value to many Aboriginal groups in the Kimberley and Top End of the Northern Territory, and has commercial value as a natural source of vitamin C.

Central to Gundjimarra management is the sacred landscape Budj Bim (now known as Mt Eccles), home to potentially one of Australia's largest aquaculture systems, and now managed as a National Heritage Landscape. Partnerships with Monash University archaeologists have detailed how Gundjimarra society permanently occupied, modified and managed this landscape of approximately 100 square kilometres to sustainably grow, harvest and preserve the shortfin eel, whose life cycle includes migration to New Caledonia. Large communities of perhaps 6000–10 000 grew around this eel farming enterprise, living in villages of permanent stone huts (Builth 2006).

Partnerships with Parks Australia, the Australian Biological Resources Study, BHP Billiton and Museum Victoria have also investigated the rich biodiversity present in the Budj Bim reserve system through the Bush Blitz and Working on Country ranger programs.

The Victorian Government returned Lake Condah to the Gundjimarra people in 2008, following a successful native title determination. In December 2011, the lake was flooded with water for the first time since it was drained 60 years ago, realising a long-held Gundjimarra aspiration. Gundjimarra people are now pursuing World Heritage listing for Budj Bim through a collaborative two-way knowledge engagement process; this included hosting scientists and researchers to present their findings at a Symposium in 2011.

Partnerships with Parks Australia, the Australian Biological Resources Study, BHP Billiton and Museum Victoria have also investigated the rich biodiversity present in the Budj Bim reserve system through the Bush Blitz and Working on Country ranger programs.



and practical support afforded Indigenous knowledge and world views.

Building a shared understanding of environmental management of gubinge (WA)

Better understanding of the human, knowledge and wellbeing dimensions of Indigenous people's relationships with, and use of, bush tucker can offer a critical ingredient to guide two-way knowledge engagement (Walsh & Douglas 2011). Two-way knowledge engagement has been used to understand Indigenous ecological 'calendars' of seasons, events, indicators and wildlife use activities (e.g. Prober et al. 2011; www.bom.gov.au/iwk/about/index.shtml), and to develop some bush food industries. For example, an

Bush Blitz scientists and rangers Deb Rose and Simone Sailor recording some of the animal life at Lake Condah in Victoria. Photo: Mark Norman, Museum Victoria

Lake Condah Sustainable Development (VIC)

The Gundjimarra people have pursued their land management aspirations through the Lake Condah Sustainable Development project. Their approach is based on collaborative partnerships, concentrating on capacity building for people, organisations and businesses. The project's vision is of restoration, reconciliation and healing to facilitate flowering of the social and technical ingenuity that are required to make the successful transition to sustainable development.

3.2.9 INDIGENOUS-DRIVEN PLANNING (CULTURAL, COUNTRY BASED, COMPREHENSIVE)

Indigenous-driven planning is identified as a critical success factor in several case studies of successful ILM—for example, Miriuwung-Gajerrong protected area co-management in the east Kimberley (Hill 2011; Hill et al. 2008b), numerous small Indigenous communities in central Australia (Walsh & Mitchell 2002), joint management endeavours at Mootwingee National Park in New South Wales (Lane & Hibbard 2005), and cultural and natural resource planning in the wet tropics (Larsen & Pannell 2006; Worth 2005). Moorcroft et al. (2012) described how they transformed a conservation planning method that typically puts conservation planners and facilitators into the driving seat, to take on board Indigenous governance structures, local protocols and priorities that enabled the Indigenous people to drive the process. Core concepts about ecological processes and systems were adapted to include categories defined by Wunambal Gaambera Traditional Owners and incorporate Indigenous knowledge. The resulting plan and process are widely respected as a good outcome and model for others (Hill et al. 2011b; Wunambal Gaambera Aboriginal Corporation 2010).

Two aspects of Indigenous-driven planning are worthy of further note: country-based planning and strategic cross-sectoral planning.

Country-based planning refers to a process in which Indigenous peoples identify their aspirations and strategies across the whole of their traditional territories, unconstrained by the tenures that are recognised by governments (Smyth 2008). Country-based planning provided the framework for two multi-tenure IPA proposals—Yanyuwa (Bradley & Yanyuwa families 2007) and Mandingalbay Yidinji IPAs—comprising land under various tenures, and shoreline and marine areas (MYAC 2006). Country-based planning has

been developed at Kakadu as a way of bringing Indigenous knowledge and management practices together with western science-based management for improved decision making for specific issues, starting with feral animals (Robinson et al. 2006). Country-based planning and management in this context help to match people's responsibilities with the authority to meet these responsibilities.

Strategic cross-sectoral planning allows Indigenous peoples to map their aspirations for the future across environmental, social, cultural and economic domains (Bentrupperbäumer et al. 2001). Such comprehensive planning is gaining recognition as a strategic pathway to ongoing success in ILM as part of Indigenous peoples' self-determined futures (Ngarrindjeri Regional Authority Inc 2009).

Country-based cross-sectoral planning offers a strategic framework for Indigenous people to consider how values and issues beyond the scale of a particular legal land tenure parcel, and beyond the ambit of a particular sector, should influence governance and management approaches, and lead to future developments, including ILM options such as IPAs and commercial developments (Davies et al., in press).

Box 9 Indigenous-driven planning and the best practice journey: Ngarrindjeri (SA)



Indigenous-driven planning provides a way for land managers to take control of their own future, to shape it and give it meaning. Community-based and participatory methods can help to counter the passive and powerless position that some Aboriginal communities describe themselves as being in and the measureable socioeconomic disadvantage they face.

Ngarrindjeri planning (SA)

Ngarrindjeri land and sea management is underpinned by their nation-building strategy. The Ngarrindjeri have established a regional authority to represent their communities and organisations, and pursue a pathway of healing, development and negotiating rights to carry Ngarrindjeri culture and society into the future. Indigenous-driven planning and caring for country are both integral to this strategy. The Ngarrindjeri Nation Yarlularu Plan (Ngarrindjeri, Ngarrindjeri Heritage Committee, and Committee 2007) was prepared to help government agencies, natural resource managers, researchers and the wider Australian community to

better understand and recognise rights and responsibilities to country. It sets down Ngarrindjeri vision for country and opportunities for partnerships, and has underpinned the successful development of many land management activities, including revegetation, seed collection and propagation, weed control, and the work of cultural rangers in site recording and management (Ngarrindjeri Tendi et al. 2007).

Ngarrindjeri have since planned their land management at a finer scale—for example, with their Ngarrindjeri Murrundi Management Plan, No. 1—Pomberuk Le:wunanangk (Ngarrindjeri Regional Authority Inc. 2009), which sets out their custom- and tradition-based approaches to the Murray Bridge Railway Precinct and Hume Reserve. Ngarrindjeri view rehabilitation of country as a primary pathway towards wellbeing, based on a just and productive relationship with the broader Australian economy and society, together with the cultural and spiritual dimensions of wellbeing (Birkhead et al. 2011).

Sea country planning: bothways management, 2010. Photo: Vanessa Drysdale and Dhimurru Rangers, Dhimurru Aboriginal Corporation

3.3 Barriers associated with Indigenous land management

3.3.1 LIMITED RESPECT, RECOGNITION AND PRACTICAL SUPPORT FOR INDIGENOUS KNOWLEDGE AND WORLD VIEWS

IEK and Indigenous languages are declining globally and in Australia, along with the biodiversity in the associated cultural landscapes (Cullen-Unsworth et al. 2012). Douglas's (2010) study in central Australia identified widespread recognition by Aboriginal people that 'this is a critical time in history' and 'a lot of knowledge will go with this generation of elders'. Overwhelmingly, there was concern that children should have 'strong language' and 'strong culture' so that they are in a position to 'carry culture forward'. Aboriginal languages and the knowledge embedded in them are important assets in natural and cultural resource management. Indigenous peoples encounter major barriers in obtaining support and resources to keep language alive, and to practise the dance, song, painting and other activities on-country that are essential to ILM (La Fontaine 2006). Loss of traditional knowledge and language is a critical threat in many ILM contexts, including in the wet tropics region (WTAPPT 2005), the Kimberley (Moorcroft et al. 2012) and southeastern Australia (Kingsley et al. 2009). Western culture poses threats of ongoing erosion of Indigenous cultures and languages (Charles Darwin University et al. 2007).

Indigenous people have initiated many projects aimed at supporting Indigenous language renewal and survival across urban, regional and remote settings. The recent national inquiry into Indigenous languages recognised that language work is close to the heart of many Indigenous people. The important role that language plays in reinforcing ties between kin, country and family was

highlighted to the inquiry, as was the devastation to communities that results when language is lost (HoR 2012). The inquiry found that, of the 145 Indigenous languages still being spoken today, only 18 are currently strong (spoken by all age groups), and 110 are in the severely or critically endangered categories.

Although there is wide acknowledgement of the potential benefits of IEK, many Aboriginal people encounter barriers in their efforts to engage their knowledge in the contemporary formal ILM context. Management of knowledge across Indigenous, scientific and management domains is rarely addressed explicitly in the literature on ILM, leaving open the question of how the integration of science and Indigenous knowledge is achieved in practice (Robinson & Wallington 2012). Yolngu people identify that barriers arise from both legal and administrative state structures that impede recognition of their rights, and from power imbalances between knowledge systems and world views that favour western systems (Yunupingu & Muller 2009). The challenge of bridging the gap between Indigenous world views, environmental philosophies and the associated management practices emerges as a theme across many studies of formal ILM, which always involves a cross-cultural context (Ens et al. 2012; Hill 2006; Nursey-Bray & Rist 2009; Nursey-Bray et al. 2010). This requires considerable and appropriate 'work' between Indigenous and non-Indigenous managers to negotiate interactions between different knowledge systems, while maintaining the integrity of each knowledge system (Robinson & Wallington 2012). Education and training for those working in ILM needs to be bicultural, to help underpin the two toolbox approach (Altman 2012a).

Barbour and Schlesinger (2012) identify that western conservation paradigms still play the dominant role in how NRM is practised, and western ecologists still most often lead ecological research on

Indigenous land. This can leave out the ideas of Indigenous people and does little to address underlying inequitable power relationships. Indigenous Australians' views of land management as a two-way process of interaction, where they speak to country and country speaks to them, encounter barriers to implementation in NRM practice (Howitt & Suchet-Pearson 2006). Some studies identify ongoing frustration and difficulty for Indigenous peoples who are marginalised and dominated in encounters that fail to respect Indigenous knowledge and entrench patterns of racialised disadvantage, institutional racism and marginalisation (Carter & Hill 2007; Howitt et al. 2012; Muller 2008a, 2012; Yunupingu & Muller 2009). While others identify a range of successful encounters and mechanisms that can support bridging the divide, all agree that attention to achieving equity between knowledge systems and world views is required, and that lack of such equity is a significant barrier to ILM (Ens et al. 2012; Hill 2006; Lee 2003; Muller 2012; Prober et al. 2011; Weir et al. 2012).

3.3.2 LIMITATIONS OF NATIVE TITLE, RECOGNITION OF RIGHTS, AND ACCESS TO TRADITIONAL LANDS AND WATERS

We noted in Section 2 the increase in recognition of Aboriginal access to land through native title, land rights legislation, conservation co-management arrangements and agreement making as important drivers of the growth in formal ILM over the past decade. Nevertheless, for many Indigenous people, regaining land is a long and difficult struggle, and lack of access to country remains one of the primary barriers to their ILM aspirations (Hunt 2012). In some cases, lack of access occurs where people have their land rights recognised but do not have the vehicles and other resources necessary to make trips onto often vast areas of traditional lands in remote locations with very low rates of human occupancy

(Charles Darwin University et al. 2007; Markwell Consulting 2011; Sithole 2007). For example, the Central Land Council represents around 24 000 Aboriginal people from 15 language groups who have responsibility for 381 792 km² of Aboriginal-owned land (Central Land Council 2010). In other cases, traditional lands are occupied by towns, farms and other tenures so that Aboriginal people rely on agreement making to obtain access for ILM purposes (Hill et al. 2008a; WTAPPT 2005). Indigenous people who access these lands typically do so for hunting, teaching, picnics, funerals or management of cultural sites. In one case in South Australia, native title holders have also participated in land condition monitoring and restoration of natural water sources on pastoral leases where an Indigenous land use agreement had been concluded between the native title holders and the pastoral lessees (Orr et al. 2009; Parry Agius, South Australian Native Title Service, pers. comm. 2008).

Despite the positive outcomes for Indigenous Australians from native title, many remain disappointed that the Native Title Act 1993, its amendments since 1998 and the outcomes of subsequent legal actions have led to an interpretation that denies the reality of the processes of change and adaptation within Indigenous tradition (Edmunds 2012). Some regard these interpretations as errors of law that will in the future be rectified by courts, or through passing of legislative amendments—for example, through reversing the onus of proof by assuming continuity of traditional connection, with objectors required to prove otherwise (Keating 2012; Keon-Cohen & Seidel 2012; McNeil 2012). The lack of recognition of Indigenous rights to water in Australia, unlike in Canada and New Zealand (nations with similar British-law based systems), highlights the inequities resulting from these narrow treatments (Durette 2008; Jackson & Altman 2009). Indigenous water needs are most effectively met through a combination of secure water entitlements and collaborative water

planning arrangements (Bark et al. 2012). Indigenous peoples argue that cultural rights and the equitable use of water are fundamental to their human rights, and suggest that amendments to the Native Title Act 1993 are needed to provide for these (NAILSMA 2010).

The lack of regularly updated spatial data on Aboriginal tenure presents challenges for assessing the ILM activities and needs associated with the Indigenous estate (see Altman et al. 2007, where these issues are discussed at length). About 10 years ago, South Australia and Victoria both developed strategies for Aboriginal-managed land to help address this gap. In South Australia, where substantial areas in the north and west of the state are Aboriginal owned, the strategy increased awareness and strategic attention to ILM on more than 100 smaller Aboriginal-owned properties (SAMLISA Steering Committee 2000). The strategy, which was developed through a partnership between Aboriginal land-owner groups and the state government, was developed progressively and led to an increasing flow of resources to facilitate ILM in South Australia. With development of the strategy, a devolved grants program was also implemented over two years, which made NHT funding more accessible to Aboriginal owners of relatively small land parcels. In Victoria, 95 Aboriginal-owned properties were identified, making up 16 313 hectares (0.07% of the land mass of Victoria), highlighting the inequitable situation of access to land for Aboriginal people in that state (SAMLIV Project Team 2003). The strategy identified the need for greater coordination, capacity building and availability of resources for management of these lands. However, there is no evidence of ongoing implementation of the strategy.

3.3.3 LIMITED RESOURCES FOR INDIGENOUS LAND MANAGEMENT

The Australian Government has provided substantial resources to NRM programs since the early 1990s, including \$2.2

billion over five years from 2013 announced in the May 2012 Budget. Despite the expressed intent to engage community, including Indigenous peoples, in these collaborative programs, Indigenous people struggled to obtain equitable access to NRM resources throughout the period to the beginning of 2007–08. From 2007–08, the Caring for our Country program substantially increased the availability of resources through Indigenous-specific programs (Hill & Williams 2009; Lane & Williams 2009; Lane et al. 2009) (see Figure 13).

Young et al. (1991) documented the challenges Aboriginal people encountered in moving from a period of claiming to one of managing traditional land. Indigenous peoples were marginalised from most mainstream sources of funding and support through NHT 1 and 2 (Lane & Corbett 2005; Lane & Williams 2009). Establishment of Indigenous-specific funding programs was recommended as a key means of redressing this imbalance, and the WoC and IPA programs have moved some way towards redressing this imbalance (Hill & Williams 2009). Nevertheless, the demand for resources still substantially outstrips the supply (Auditor-General 2011; Hill et al. 2008a; Smyth 2011). Finding ways to diversify funding and bring in more resources, while reducing over-reliance on government funding, remains a key challenge (Altman 2012b).

The apparent role of the hybrid economy in underpinning capacity for Indigenous people to engage in ILM is poorly recognised in Australian policy. The importance of homelands to Indigenous peoples and the negative impacts of discouraging access to remote localities through centralising service delivery into regional centres are discussed in the 2009 Social Justice Report (ATSISJC 2010b). More broadly, macroeconomic reform since the 1990s has focused governments on fee-for-service contractual models, such as purchase by governments of environmental services, rather than alternative models

that might have state and territory investment lead and guide directions for regional development (Altman 2012b). Contractual models are arguably poorly suited to the maintenance of multifunctional landscapes where production is integrated with biodiversity and sociocultural values (Potter & Tilzey 2007), such as occurs in the hybrid economy of remote Aboriginal lands. National Competition Policy, implemented progressively from 1995, is acknowledged as having adverse impacts on the social fabric and economy of Australia's small communities (National Competition Council 2002; Productivity Commission 2005). The associated policy requirement for competitive neutrality aims to create a level playing field for market transactions between government-owned and -funded and other enterprises; this may be poorly suited to sparsely populated areas with thin markets, such as remote Aboriginal lands, or developing economic sectors, such as ILM. However, to our knowledge, the specific impact of National Competition Policy, and of its successor the National Reform Agenda, on Aboriginal capacity to engage in ILM has not been examined.

3.3.4 ORGANISATIONAL AND INSTITUTIONAL CAPACITY CONSTRAINTS

Many involved in NRM in Australia struggle to navigate the interactions between Australian, state, territory and local government responsibilities, and the competing mandates of multiple agencies at every level in the collaborative environmental governance system (Robinson et al. 2009a). Nevertheless, the challenge for Indigenous people is much more complex (May 2010a, 2010b). ILM throughout Australia occurs within complex and often conflicting sets of policy and legislative rules and regulations established to recognise the rights and interests of Indigenous people in diverse political contexts.

On Cape York Peninsula, for example, Aboriginal land is held as native title, deed of grant in trust lands, Aboriginal (inalienable) freehold title, national park (Cape York Peninsula Aboriginal Land) and Aboriginal-held pastoral leases (Holmes 2011; Memmott 2007). Numerous Aboriginal organisations with diverse legislative origins have been established to hold and manage these lands—land trusts, prescribed bodies corporate, associations, and land and sea centres. Although recent Queensland legislative change enables amalgamation of some of these organisations, an ongoing complex set of arrangements will be required (Memmott & Blackwood 2008).

Customary ownership institutions in Australia are also highly dynamic. Although there are traditional associations between language groups and country throughout Australia, it is misleading to consider customary ownership rights as belonging to some fixed groups of people. Smyth et al. (2007, p. 100) note that:

- among language groups, individuals tend to be able to access a variety of pathways to claim customary ownership rights to resources at particular places
- the autonomous actions of individuals and negotiations within the group have a significant impact on how property rights are distributed.

Aboriginal people always have to muster support and recognition from others in deciding which ancestor's country is their primary country. The scale of the political processes through which individuals, family groups and broader collectives, such as the members of statutory title—holding bodies, negotiate their property rights varies, depending on the issue (Smyth et al. 2007). Newly established ILM organisations need to mediate the transition from the Aboriginal system of land tenure to the holding of title under a corporate, statutory entity; structure the membership to reflect traditional

social organisational arrangements; and have the capacity to manage any politicisation and power politics associated with rights assertion within the group (Memmott & Blackwood 2008).

In addition, Indigenous communities are increasingly faced with a requirement to reconcile cultural differences in Indigenous and non-Indigenous land management. They engage with government management regimes to respond to state forms of management while maintaining the legitimacy of their own systems. Government land and water management processes that seek to accommodate Indigenous perspectives of resource management can help overcome the barriers to integration (Bark et al. 2012; Robinson & Jackson 2009).

The majority of Indigenous land and sea management groups remain extremely fragile, under-resourced and reliant on a multitude of small, tied grant funding sources that only fund project costs, rather than wages or management and infrastructure costs (May 2010b). In addition, many organisations require better support to establish and maintain effective systems of financial, human resource and contract management, and of accountability back to their members (Sithole et al. 2008). Recruiting and retaining competent staff are a challenge in many remote and regional contexts. Fragmentation in government arrangements presents these organisations with a complex and diverse set of short-term opportunities from which to seek resources to enable ILM, each with their own separate accountability requirements (Putnis et al. 2007). Howitt (2010) identifies the development of wickedly complex administrative systems, continuing structural and procedural racism, and state hostility to Indigenous rights as the key factors underpinning Indigenous vulnerability to poverty, addiction and underdevelopment. The coordinated management of three separate

programs by DSEWPaC (WoC, IPA and the Indigenous Heritage Program) with multiyear funding agreements has been an important start to addressing the administrative complexity that has burdened many ILM groups (Auditor-General 2011; Hoffmann et al. 2012).

Carbon markets are another area with potential to build ILM capacity (see Section 2.5.2). Nevertheless, there are obstacles to Indigenous participation in carbon markets, related to land tenure arrangements, geographic and biophysical considerations, methodologies, appropriate recognition of traditional ecological knowledge, and how each of these issues intersects with cultural responsibilities and sensitivities. For example, some carbon project opportunities may be marginal simply because establishment and transaction costs involved in maintaining a carbon offset project are too high (Polglase et al. 2011). Indigenous organisations and local Indigenous communities need to have the capacity to adapt their operations and activities to pursue carbon market opportunities. This requires Indigenous organisations to have enough information and appropriate resources to participate in existing carbon market opportunities (Robinson et al. 2011).

Indigenous societies in Australia are undergoing change; after more than two centuries of the colonial processes of territorial acquisition and suppression of culture and language, the (albeit limited) recognition of Indigenous cultural and resource rights is enabling renewal of links to land, language and cultural practices (Bauman & Glick 2012). However, the requirement for proof of continuity of Indigenous traditions as part of native title actively discourages this process of evolutionary change (Keon-Cohen & Seidel 2012). The study of Petheram et al. (2010) of Indigenous perspectives of adaptive capacity identified that participants were primarily worried about how to mitigate overarching poverty and community wellbeing issues. Participants believed

that major constraints to strengthening capacity had external origins, at regional, state and federal levels. Examples are poor communication and engagement, top-down institutional processes that allow little Indigenous voice, and lack of recognition of Indigenous culture and practices. Government policy initiatives have affected the structures of the Indigenous ranger programs, making them less responsive to culturally appropriate decision makers for land management (Gorman & Vemuri 2012). Narrowly defined avenues for Indigenous knowledge contributions in the Australian institutions to support ILM have led to a patchwork of different levels of Indigenous participation and capacity-building support across regions (Robinson & Lane, in press). In addition, the ability of Indigenous peoples to access their traditional lands, and to occupy outstations and living areas on these lands, is undermined by the Australian Government's policy of centralising service delivery into remote regional centres (ATSISJC 2010b).

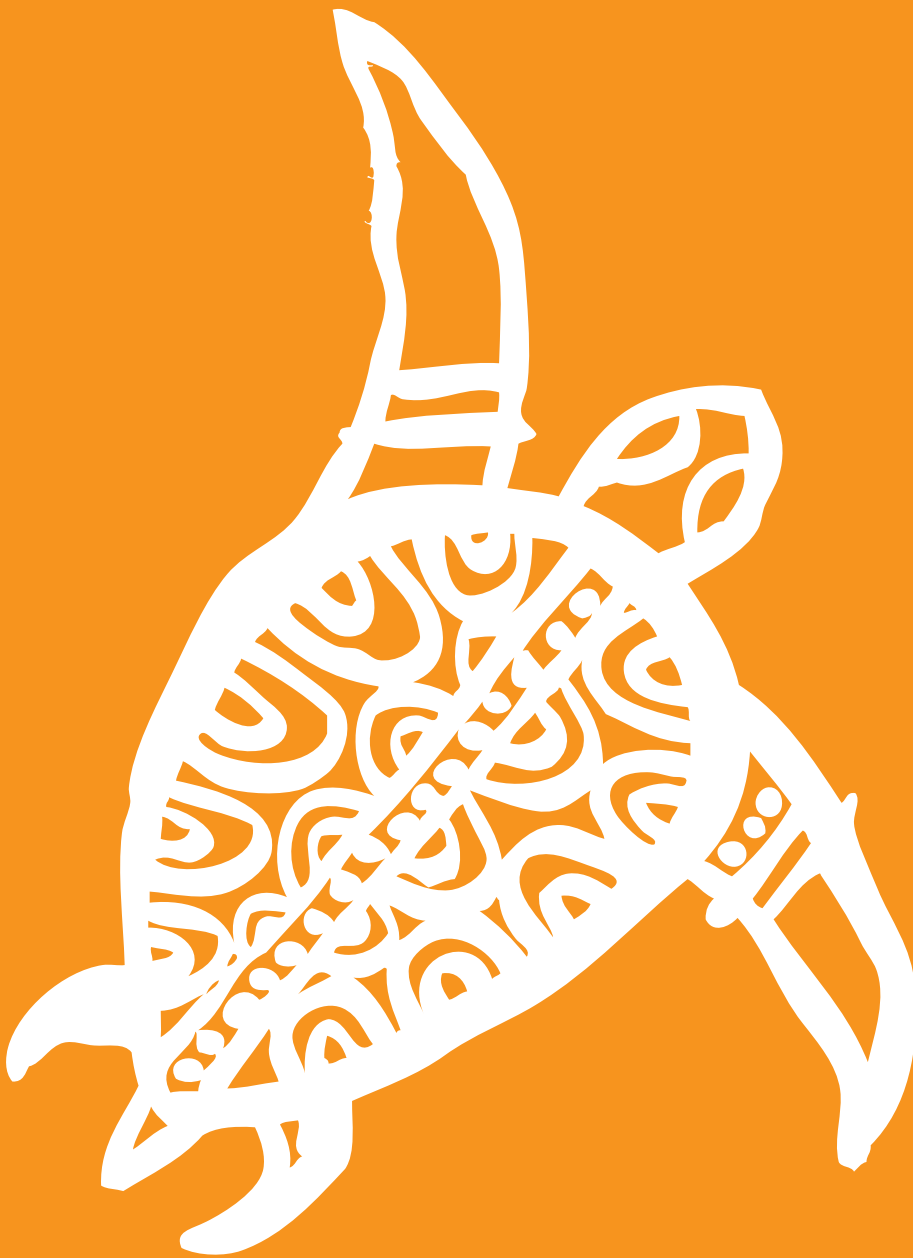
From this brief review of organisational and institutional capacity constraints, we conclude that evolving Indigenous institutions support the capacity of ILM to adapt to and shape change in ways that contribute positively to its state and trends; however, some aspects of the institutions of state and federal governments (e.g. Native Title Act, land tenure arrangements) are not well positioned to encourage the capacity of ILM.

3.3.5 SOCIO-ECONOMIC AND EDUCATIONAL DISADVANTAGE FACED BY INDIGENOUS PEOPLES

Australia's Health Report (AIHW 2010) highlights many health and wellbeing issues that affect Indigenous people's ability to undertake ILM. The life expectancy gap between Indigenous and non-Indigenous people is 12 years for males and 10 years for females. Many Indigenous people live in houses that are overcrowded and do not satisfy the

basic Australian standards for shelter, safe drinking water and adequate waste disposal. Results from the 2006 Census show that one-quarter (23%) of Indigenous adults completed Year 12 as their highest year of school, compared with one-half (49%) of non-Indigenous adults. Overarching poverty and wellbeing issues limit the capacity of many Indigenous people to engage in ILM (Smyth et al. 2007), as well as their capacity to adapt to change, including climate change (Petheram et al. 2010). Climate change impacts heighten the vulnerability of Indigenous societies, including the distressing conditions of poverty and social disadvantage (Green et al. 2009a, 2009b; Langton 2005). Even where Indigenous people are able to access resources—for example, through mining agreements—inappropriate funding arrangements can exacerbate community conflicts, for example, issues around rent seeking, and can interfere with Indigenous leaders' efforts to mobilise the resources to build long-term capacity (O'Faircheallaigh 2011).

Lateral violence and the fragmentation of Indigenous institutions through the colonial process are recognised as an impediment that can be increased in the context of resources becoming available for long-held aspirations (ATSISJC 2012a, 2012b). Jealousy over the distribution of benefits, taking of money from mineral agreements as cash payments, and not re-investing in broader social and physical assets adds to these barriers (Hill et al. 2008a).



4 Outlook for Indigenous land management

4.1 Optimism and realism

Indigenous land management (ILM) has clearly emerged as an important phenomenon in Australia. Altman (2012a) concluded from a five-year multicase study of ILM, primarily in the Northern Territory, that optimism is needed to respond with justice to the positive stories contributed by their project partners. Our national literature analysis supports this outlook: positive environmental, social, economic and cultural outcomes are reported from ILM across Australia. Indigenous peoples across all states and territories demonstrate a common desire to manage their traditional land and resources in Indigenous ways that encompass a deeply emotional and spiritual connection to country. Local control and empowerment of Indigenous people is at the heart of many of the success factors identified here: Indigenous (culturally based) motivation; Indigenous governance; hybrid economies that link customary, market and government sectors; diverse multimedia approaches to Indigenous knowledge; and Indigenous-driven planning. Effective (largely non-Indigenous) organisational and policy responses that support this Indigenous leadership are at the heart of many of the other success factors: the Indigenous-specific funding programs that engage ILM through multiyear funding, real jobs and flexible case management; brokers and brokering organisations; and collaborative two-way knowledge engagement. This alignment is underpinned by relationships of trust, respect and mutuality that point to the sort of productive negotiation of differences between Indigenous and western world views that provides optimism about the future for ILM (Altman 2012a).

Nevertheless, realism cautions that ILM's successes are patchy and need time to develop more evenly. One key barrier identified in this study, that of

limitations of native title and rights recognition in Australia, is largely a legacy of the colonisation process. This process based the occupation of Australia on the concept of *terra nullius*, a denial of Indigenous human and other rights, which continues today in compromised jurisprudence (Bauman & Glick 2012). Realism dictates that the outlook for ILM therefore depends on the larger context of Indigenous peoples' ongoing negotiation of their rights and status in the wider Australian society. Those directly engaged with ILM are consistently realistic about the daily challenges associated with the barrier of socioeconomic disadvantage: getting welfare-dependent people into regular work, dealing with alcohol and substance abuse, attempting to simultaneously build two-way capacities in western and scientific knowledge and Indigenous knowledge, maintaining the ability of people to live close to their traditional lands, and addressing the need to reduce overdependence on the state (Altman 2012a). Realism therefore also suggests that the ILM outlook depends on positive outcomes of the Australian Government's initiatives to close the gap in health and socioeconomic status between Indigenous and non-Indigenous Australians.

4.2 Potential for impact investment to improve the outlook for Indigenous land management

New financing mechanisms appear important, given the need to continue to grow investments in a context of declining overall Indigenous-specific spending as a proportion of total Australian Government spending (Gardiner-Garden & Simon-Davies 2010). Ecotrust Australia made a presentation to the Australian Landcare Council in early 2012 regarding the potential of impact bonds and other impact investments policy mechanisms to link the generation

of social, cultural and economic outcomes for Indigenous peoples with ILM, and attract collaborative financing.

Impact investments are made with the intention of generating measurable social and environmental impacts alongside a financial return, and are considered to hold great potential to drive innovative solutions and bring new financing to social endeavours. Impact bonds were developed in the United Kingdom in the context of the need to lower prisoner recidivism rates. For any one cohort of prisoners leaving custody, around 75% are back in custody within 10 years. An organisation can buy a Recidivism Impact Bond associated with a cohort leaving jail; if they are able to achieve only a 50% recidivism rate at the end of 10 years, the government pays them the amount set out in the impact bond. How the organisation achieves the lowered rate is entirely up to the organisation, within normal legal and ethical bounds. Essentially, the impact bond is a form of contract that allows the organisation to raise capital in the form of loans, government grants and corporate investment. The organisation buying the bond carries the risk, as governments do not pay unless the result is delivered. An Indigenous impact bond would work in an analogous manner, but the deliverables could involve a range of social, environmental and health outcomes. Ecotrust Australia is undertaking work to further develop the concept, and robust research partnerships would be required to develop metrics and design features.

4.3 Land management policy settings for a positive ILM outlook

The outlook for ILM clearly depends in part on Indigenous policy settings broader than those of land management—for example, policy relating to overcoming socioeconomic disadvantage and recognising Indigenous

rights. However, land management policy settings are also important in promoting a positive outlook for ILM and best practice for successful engagement with ILM organisations. Key areas are as follows:

- ♦ Support Indigenous leadership and governance. This includes creating pathways to build Indigenous leadership through, for example, peer and mentor networks; and supporting culturally legitimate and practically capable Indigenous governance in all land and sea management organisations.
- ♦ Increase visibility by developing effective measures and promoting the benefits generated by ILM, for both Indigenous peoples and the wider Australian society. Simple and consistent measures of Indigenous health, wellbeing, economic, cultural, environmental, governance, and sociopolitical outcomes from ILM would raise awareness of its benefits, and support the case for greater investment from a broader pool.
- ♦ Increase the share of government funding for Indigenous purposes that is allocated for ILM. Supporting and developing ILM programs and enterprises (e.g. Indigenous Protected Area and Working on Country), which generate multiple benefits, should draw resources from multiple portfolios, including health, education and employment.
- ♦ Leverage new resources. This includes supporting innovative financing mechanisms to bring more resources to ILM, including through impact investment and carbon farming opportunities. Such mechanisms should bring funding from outside government, in the corporate and philanthropic sectors.
- ♦ Generate new Indigenous knowledge and language initiatives. Policy initiatives and investments are needed to support both Indigenous knowledge and collaborative two-way knowledge engagement with science, in existing

and new environmental and land management research and training programs. The recommendations of the Our land our languages report (HoR 2012) should be implemented to strengthen and renew Indigenous languages.

- ♦ Recognise the role of brokers and brokering organisations in ILM, including both Indigenous organisations, such as the Central Land Council, and non-Indigenous organisations, such as the regional NRM bodies.
- ♦ Support Indigenous-driven planning. Country-based and comprehensive community-based planning initiatives are a key ingredient of effective ILM.
- ♦ Support hybrid economy approaches, such as government-funded Indigenous rangers undertaking fee-for-service contracts. This will include investigating ways to remove constraints on these hybrid economies from policies related to centralising services and ensuring competitive neutrality.

A high-level working group could be established with a central focus on ILM between agencies concerned with Indigenous affairs, sustainability, environment, agriculture, research, education and climate change. Such a group would assist in coordination of policy initiatives that support Indigenous knowledge and link health, wellbeing, social, economic and environmental benefits from ILM. However, we caution that government policy to support ILM needs to remain cognisant of the risk of shaping it in ways that undermine its Indigenous legitimacy—as noted above, local control and empowerment of Indigenous people is at the heart of success in ILM.

Dhimurru Ranger, Bawuli (centre), and sisters Miliminyina and Dhumudal, Traditional Owners of the island called Dhambaliya, spread the red clay called Bularrarr on themselves. The clay has both spiritual significance and medicinal properties, as it is good for skin. Photo: Lisa Roegeer, Dhimurru Aboriginal Corporation

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Appendix 1: Terms of reference

Revised Terms of Reference

Indigenous Land Management in Australia

Commissioned by the Indigenous Working Group of the Australian Landcare Council

1. Goal:

To build the capacity of Landcare by understanding the extent, scope and diversity of Indigenous land management across Australia and to identify the issues and barriers to Indigenous land management.

2. Project description:

The study will undertake an expansive literature review to extract and identify successes and barriers that have been identified in association with Indigenous land management in Australia. It is also required to identify best practice for successful engagement with Indigenous land management organisations.

This literature review should also include a synthesis/summary of the extent, scope and diversity of Indigenous land management in Australia.

3. Methodology:

a) A literature review of key published material including, but not limited to:

- national and state based studies
- grey literature
- government and non-government reports.

b) Priority should be placed on literature published post 2000. Relevant literature before this date should also be included if the findings have current relevance and application.

4. Deliverables:

A report (based on the literature review) including:

- a) A synthesis/summary of the extent, scope and diversity of Indigenous land management in Australia
- b) Clearly identified barriers and opportunities experienced by current Indigenous land managers and an examination of the barriers experienced by Indigenous people wishing to become land managers
- c) An analysis and summary of best practice (and notable failures) in engaging successfully with Indigenous land management organisations or individuals.

Other deliverables required:

- d) Simple state and national maps and/or data sets demonstrating the locations of specific studies contained within reviewed literature. These maps should be post code based and be accompanied by the postcode/location list in Microsoft excel format. Maps are to be provided in high resolution .jpg and 300dpi .pdf format.
- e) A 'fact sheet' summarising the findings. To be supplied in both word and .pdf formats as appropriate for electronic dissemination.
- f) An executive summary drawing out themes from the research results.
- g) Appropriate graphical representation of statistics/findings is encouraged in the report and fact sheet. Graphs should also be provided as separate .jpg image files.

5. Timing

The project is to be completed by Friday 11 May with a draft final report provided by 30 April. (Note: Timelines were amended in project contract: completion by 31 July 2012, with draft final report by 30 June 2012.)

6. Tender Process

Selection process for the project will be by direct sourcing and in line with the Commonwealth Procurement Guidelines.

7. Evaluation

Quotations will be assessed by a panel of departmental officers from the Department of Agriculture Fisheries and Forestry and in line with the Commonwealth Procurement Guidelines.

Appendix 2: Datasets

SOURCE	DATASET NAME	DESCRIPTION
NNTT	Schedule of Native Title Determination Applications	This dataset is stored by the jurisdiction and reflects the boundaries of applications, as per their status within the Federal Court. These include claimant, non-claimant and compensation applications.
	Registered Native Title Determination Applications	Applications included in this dataset are those that fall either totally within or partly within the state jurisdiction. Boundaries of claimant applications, as per the Registered Native Title Corporation, are reflected in this dataset.
	Determinations of Native Title	This dataset is stored nationally and attempts to reflect the area that has been determined for claimant, non-claimant and compensation applications. Determinations are categorised into 3 classes: native title determined by consent, native title determined by litigation, and native title determined unopposed.
	Registered/Notified Indigenous Land Use Agreements	This dataset is stored nationally and attempts to reflect the geospatial record of Indigenous land use agreements that are in the public notification processes or have been registered and placed on the Register of Indigenous Land Use Agreements (s. 199A).
DSEWPaC/ERIN	Declared Indigenous Protected Areas	This dataset details the declared Indigenous Protected Areas (IPAs) across Australia through the implementation of the Indigenous Protected Areas program. Both point and polygon (area) formats are available. These boundaries are not legally binding. An IPA is an area of Indigenous-owned land or sea where traditional Indigenous owners have entered into an agreement with the Australian Government to promote biodiversity and cultural resource conservation.
	Indigenous Protected Area Consultation Projects	Point locations of undeclared Indigenous Protected Areas—consultation projects currently under way
	Co-Management Consultation Projects	Point locations of undeclared Indigenous Protected Areas—co-management consultation projects currently under way
	Collaborative and Protected Areas Database (CAPAD) 2010	<p>CAPAD is both a textual and spatial database compiled from information supplied by the Australian, state and territory governments and other protected area managers.</p> <p>CAPAD summarises information at a national, state and territory level. For each grouping, CAPAD includes information about the following (IBRA statistics only apply to Terrestrial Protected Areas):</p> <ul style="list-style-type: none"> List of all protected areas. This list includes information on IUCN category. Protected areas classified according to reservation type designations, e.g. national park, conservation covenant, Indigenous Protected Area. Protected areas classified according to IUCN management categories, e.g. number of designated Category III protected areas in New South Wales. Protected areas classified according to type designations as a proportion of IBRA (Version 6.1) regions. Protected areas classified according to IUCN management categories as a proportion of IBRA region, e.g. number of Category II protected areas in Queensland and the percentage of those IUCN categories within the Queensland IBRA regions The level of protection of IBRA regions resulting from new additions to CAPAD. Protected areas classified according to governance, e.g. government, local government, indigenous, and private (since 2006). <p>Full metadata are available from: www.environment.gov.au</p>

SOURCE	DATASET NAME	DESCRIPTION
ILC	ILC held and granted properties represented as points ILC business properties represented as points	<p>ILC held and granted properties—one point per property</p> <p>Note: Does not include 12 properties that were acquired but later disposed of (due to inability to achieve benefits for Indigenous people). It includes business properties that are currently ILC held or granted.</p> <p>Property-based land management projects from 2002 to present</p> <p>Note: This includes all projects receiving funding in 2002 (and onwards):</p> <ul style="list-style-type: none"> • ‘Property-based’ projects, which focus on improving land condition, developing infrastructure and assisting with land management activities. Latitudes and longitudes provided. • ‘Regional’ projects—we initiate or contribute to regional land management projects that generally deliver capacity building and infrastructure development. Postcodes provided for beneficiary groups where we have them. • ‘Property planning’ projects assist Indigenous landholders to develop a plan for managing and using their property. Latitudes and longitudes provided.
Geoscience Australia	National Public and Aboriginal Lands (NPAL) Pre-1998	<p>A digital spatial database that contains boundary and attribute information for areas within selected land tenure categories. The categories fall into three major groups:</p> <ul style="list-style-type: none"> • public lands (state Crown lands and Commonwealth-owned lands) broadly classified by primary reservation purpose and subdivided by specific reserve type • Aboriginal lands, comprising private leasehold, freehold and reserves held by or on behalf of Aboriginal communities • private lands: the balance of freehold and Crown leasehold land. Private lands are not differentiated by type, and no cadastral boundaries are included.
	Australian Land Tenure 1993	<p>Australian Land Tenure 1993 has been derived from Geoscience Australia’s National Public and Aboriginal Lands data and supplemented with additional information. It identifies all public and private land tenure, including Aboriginal and Torres Strait Islander lands vested in communities or equivalent bodies. Data are sourced from government gazette notices, cadastral maps and plans. The data cover the whole of Australia and are classified according to selected land tenure categories. These categories fall into three major groups:</p> <ul style="list-style-type: none"> • public lands (state Crown lands and Commonwealth-owned lands), broadly classified by primary reservation purpose • Aboriginal lands, comprising private leasehold, freehold and reserves held by or on behalf of Aboriginal communities • private lands: the balance of freehold and Crown leasehold land.
ABARES	Australian Land Use, Version 4, 2005–06	<p>The Australian Land Use and Management (ALUM) Classification is the nationally agreed classification system for attributing land use information in Australia. It has a three-tiered hierarchical structure. Primary, secondary and tertiary classes are broadly structured by the potential degree of modification and the impact on a putative ‘natural state’ (essentially, a native land cover). Primary and secondary classes relate to land use—the main use of the land, defined by the management objectives of the land manager. Tertiary classes can include commodity groups, specific commodities, land management practices or vegetation information. The relevant tertiary class for our application is 1.2.5 Traditional Indigenous Uses—Area managed primarily for traditional indigenous use</p> <p>Other Australian Land Use time-series datasets available at the 1:2 500 000 scale are 1992–93, 1993–94, 1996–97, 1998–99, 2000–01, 2001–02.</p>

SOURCE	DATASET NAME	DESCRIPTION
CSIRO	Locations of Registered Native Title Body Corporate organisations	Administration point locations of Registered Native Title Body Corporate organisations offices/registered addresses. These were derived from official lists of land councils registered with the Office of the Registrar of Indigenous Corporations. Note: this does not mean that land management or work was necessarily carried out at this location.
	Locations of Aboriginal Ranger Groups	Point locations of Aboriginal ranger groups
	Locations of Aboriginal Corporations and Land Councils	Point locations of Aboriginal corporations and land councils offices
	Working on Country project locations	Point locations of Working on Country projects (with Indigenous focus)
	Other Indigenous land management project locations	Point locations of other indigenous land and sea management projects for biodiversity conservation, traditional ecological knowledge

ABARES = Australian Bureau of Agricultural and Resource Economics and Sciences; DSEWPoC = Australian Government Department of Sustainability, Environment, Water, Population and Communities; ERIN = Environmental Resources Information Network; IBRA = Interim Biogeographic Regionalisation for Australia; ILC = Indigenous Land Corporation; IUCN = International Union for Conservation of Nature; NNTT = National Native Title Tribunal

Table 4 Aboriginal motivations driving Indigenous land management activities (Davies et al.2010; Smyth et al. 2007)

[illegible]

Appendix 4: Chronology of key Indigenous land management events

Table 5 Chronology of key events relevant to the drivers of the contemporary Indigenous land management, with an emphasis on South Australia and the Northern Territory (Davies et al. 2010)

YEAR	DRIVER	EVENT
Early 1970s	Customary obligations	Homelands movement begins to develop momentum
1977	Investment	CDEP begins, in remote settlements
1975	Conservation co-management	National Parks and Wildlife Conservation Act 1975 (Cwlth) makes provision for funding for cooperative conservation management with Aboriginal people
1976	Rights	Aboriginal Land Rights (Northern Territory) Act 1976 (Cwlth)
1979	Conservation co-management	Kakadu National Park established, joint management begins
1981	Rights	Pitjantjatjara Land Rights Act 1981 (SA)
1981	Indigenous leadership	Tangentyere Land Management services began (Carmody 1986)
1984	Rights	Maralinga Tjarutja Land Rights Act 1984 (SA)
1985	Investment	The Miller report, a national review of Aboriginal employment and training, finds that ALM is an important area for government investment
1985	Conservation co-management	First national workshop convened by Council of Nature Conservation Ministers (now within Natural Resource Management Ministerial Council) on Aboriginal ranger training and employment (at Stirling SA)
1985	Conservation co-management	Handback of Uluru-Kata Tjuta National Park to Aboriginal owners; first joint management Board of Management established
1985	Indigenous leadership	Alice Springs workshop on science and technology for remote Aboriginal development (Foran & Walker 1986), stimulating development of Centre for Appropriate Technology and of Central Land Council's Aboriginal land management program (Davies 2007)
1987	Investment	National Aboriginal land management programs (CEPANCRM and ARRI) begin (ending in 1995–96)
1987	Indigenous leadership	Central Land Council appoints its first coordinator for land management
1988	Conservation co-management	SA National Parks and Wildlife Service conference on Aboriginal involvement in nature conservation, at Emu in the Great Victoria Desert (Kean et al. 1988)
1989	Investment	Cairns TAFE Aboriginal land management courses start
1990	Conservation co-management	Second national workshop convened by Council of Nature Conservation Ministers, on Aboriginal and Torres Strait Islander involvement in natural resource management (in Cairns)
1990	Investment	National review of ALM support: Caring for Country report (Young et al. 1991) commissioned by Aboriginal and Torres Strait Islander Commission and Australian Nature Conservation Agency
1990	Indigenous leadership	Anangu Pitjantjatjara Land Management established (now Anangu Pitjantjatjara Yankunytjatjara Land Management)
1991	Customary obligations	Kowanyama Aboriginal Land and Natural Resources Office established, and leads development of total catchment management for the Mitchell River

YEAR	DRIVER	EVENT
1991	Customary obligations	Djelk Rangers established by Bawinanga Aboriginal Corporation
1991	Customary obligations	SA Aboriginal Land Management Steering Committee forms to develop strategic approach to funding and priorities for ALM training
1991	Investment	Royal Commission into Aboriginal Deaths in Custody reports, including recommendations to expand CEPANCRM and ARRI programs
1992	Customary obligations	Dhimurru Land Management Aboriginal Corporation established in north-east Arnhem Land
1992	Rights	Mabo decision in High Court, recognising native title as part of Australian common law
1993	Rights	Native Title Act passed as part of Australian Government's response to the High Court's Mabo decision
1994	Investment	Caring for Country national consultative project for curriculum development in Aboriginal land management started by SA Aboriginal Land Management Steering Committee, Cairns TAFE, and Torrens Valley Institute of TAFE, SA
1994	Investment	Aboriginal Landcare Education Program established by Greening Australia
1995	Indigenous leadership	Central Land Council publishes Bruce Rose (1995) report: Land management issues: attitudes and perceptions amongst the Aboriginal people of central Australia
1995	Investment	Indigenous Land Corporation and Indigenous Land Fund established as part of the Australian Government response to the High Court's Mabo decision
1996	Indigenous leadership	Northern Land Council's Caring for Country Unit established
1996	Conservation co-management	Design of Indigenous Protected Areas program, spurred by government realisation that achievement of a comprehensive, adequate representative protected areas system required inclusion of Aboriginal land (Thackway et al. 1996)
1998	Indigenous leadership	First Indigenous Protected Area declared, Nantawarrina, Flinders Ranges
1999	Indigenous leadership	First annual rangers' conference, hosted by the Djelk Rangers on the Blyth River
2000	Investment	Conservation and Land Management Training Package development starts, managed by Rural Training Council of Australia, to include Aboriginal and Torres Strait Islander-specific competencies drawn from the national 'Caring for Country' curriculum project.
2000	Investment	Top End Aboriginal Land Management and Employment Strategy (TEALMES) agreement is signed by the Northern Land Council, Australian Government agencies and the Indigenous Land Corporation, primarily to improve Aboriginal people's on-ground capacity to manage <i>Mimosa pigra</i> on their land
2002	Investment	Conservation and Land Management Training Package endorsed by Australian National Training Authority

YEAR	DRIVER	EVENT
2003	Indigenous leadership	North Australian Indigenous Land and Sea Management Alliance (NAILSMA) formed
2005	Investment	Northern Territory Fisheries funds six Top End NT ranger groups (\$60 000 per year each) for sea ranger services
2005	Indigenous leadership	First National Aboriginal Land Management conference hosted by Central Land Council, Ross River, central Australia
2006	Investment	Australian Quarantine and Inspection Service (AQIS) begins developing fee-for-service arrangements with 14 Aboriginal ranger groups in the Northern Territory
2006	Investment	West Arnhem Land Fire Agreement established between NT government and ConocoPhillips for greenhouse gas emissions abatement through Aboriginal fire management
2006	Investment	'Healthy Country Healthy People' Schedule to Commonwealth–Northern Territory Bilateral Agreement signed
2006	Investment	Indigenous Protected Area program review finding that the program is cost-effective in contributing to conservation, with important social and cultural outcomes, but lacks assured funding (Gilligan 2006) leads to expansion of the program
2007	Investment	Australian Government Working on Country program establishes grant funding for Aboriginal community-based ranger jobs and expands rapidly in NT with additional funding through the NT Emergency Response
2007	Indigenous leadership	Gawler Ranges Native Title Management Committee; and SA Native Title Services pilot collaboration with SA Pastoral Board for monitoring land condition of pastoral leases (Blesing & Harding 2008)
2008	Investment	Australian Government funds Martu people for Stage 1 development of land management partnerships and capacity on native title lands, Great and Little Sandy Deserts, WA
2008	Conservation co-management	Australian Wildlife Conservancy enters partnership with Queensland Aboriginal landowner to sublease land for conservation
2010	Investment	38 declared Indigenous Protected Areas, comprising about a quarter of the total area of Australia's National Reserve (protected area) System, and 23 consultation projects for establishment of new IPAs
2010	Investment	Target of 600 community ranger positions nationally under the Working on Country program

Appendix 5: Best practice guidelines

GUIDELINES	DOMAIN OF APPLICATION
Engaging Today, Building Tomorrow: A Framework for Engaging with Aboriginal and Torres Strait Islander Australians (FaHCSIA 2011)	Generic framework of seven principles focused on government-led engagement
Guidelines for Ethical Research in Australian Indigenous Studies (AIATSIS 2012)	Formal settings for research in Indigenous studies
Protocol for Aboriginal Knowledge and Intellectual Property (Desert Knowledge CRC 2008)	Formal settings for research with Aboriginal people in arid Australia
Guidelines for Working with Indigenous Knowledge in Natural Resource Management (Natural Heritage Trust 2004a, 2004b, 2004c); Guidelines for Indigenous Participation in Natural Resource Management (Australian Government 2004);	Formal NRM settings supported by Australian Government funding
Guidelines for Indigenous Ecological Knowledge Management (including archiving and repatriation) (Holcombe 2009); Handbook for Working with Indigenous Ecological Knowledge & Intellectual Property (Davis 2009)	All those involved in some way in using IEK in NRM, with the Handbook particularly useful for Indigenous peoples
Our Country Our Way: Guidelines for Australian Indigenous Protected Area Management Plans (Hill, Walsh, et al. 2011)	Indigenous-driven planning for IPAs
Ethical guidelines for commercial bush food research, industry and enterprises (Merne Altierre-ipenhe (Food from the Creation time) Reference Group, Douglas, and Walsh 2011)	People with a commercial interest in bush foods, both in research and industry

ENGAGING TODAY, BUILDING TOMORROW: A FRAMEWORK FOR ENGAGING WITH ABORIGINAL AND TORRES STRAIT ISLANDER AUSTRALIANS

This Framework establishes that engagement is not a single process or set of activities. It is an ongoing process or conversation that builds trust and relationships. The type of engagement activity used will depend on the nature of the program, policy or activity being developed or implemented, and the level and type of involvement with Aboriginal or Torres Strait Islander Australians. Indigenous land management (ILM) similarly is a diverse set of activities and the various guidelines above will prove useful in particular contexts. The FaHCSIA (2011) Framework recognises seven principles that underpin good engagement: respectful; informed; ethical; meaningful; sustainable; outcomes-focused; and with follow-up.

GUIDELINES FOR ETHICAL RESEARCH IN AUSTRALIAN INDIGENOUS STUDIES (GERAIS)

The GERAIS (AIATSIS 2011) are developed specifically for formal research settings, and include fourteen principles:

1. Recognition of the diversity and uniqueness of peoples, as well as of individuals, is essential.
2. The rights of Indigenous peoples to self-determination must be recognised.
3. The rights of Indigenous peoples to their intangible heritage must be recognised.
4. Rights in the traditional knowledge and traditional cultural expressions of Indigenous peoples must be respected, protected and maintained.
5. Indigenous knowledge, practices and innovations must be respected, protected and maintained.

6. Consultation, negotiation and free, prior and informed consent are the foundations for research with or about Indigenous peoples.

7. Responsibility for consultation and negotiation is ongoing.

8. Consultation and negotiation should achieve mutual understanding about the proposed research.

9. Negotiation should result in a formal agreement for the conduct of a research project.

10. Indigenous people have the right to full participation appropriate to their skills and experiences in research projects and processes.

11. Indigenous people involved in research, or who may be affected by research, should benefit from, and not be disadvantaged by, the research project.

12. Research outcomes should include specific results that respond to the needs and interests of Indigenous people.

13. Plans should be agreed for managing use of, and access to, research results.

14. Research projects should include appropriate mechanisms and procedures for reporting on ethical aspects of the research and complying with these guidelines.

Effective management of natural resources is now recognised as requiring an adaptive approach in which social learning plays a critical role (Leys & Vanclay 2011). Many aspects of formal ILM in contemporary Australia involve effective collaborative research that has benefited from the application of ethical principles (Vaarzon-Morel & Edwards 2012). Cullen-Unsworth et al. (2012) based their research on ethical principles and identified seven determinants of success from this foundation: strong Indigenous governance, cooperative problem framing and conceptualisation, relationship building, transparent data collection and management, considerations of scale, agreed dissemination of results, and evaluation. As noted previously, tension over western science dominance remains an ongoing challenge in research encounters (Barbour & Schlesinger 2012; Muller 2012). Zurba (2009) and Nursey-Bray et al. (2010) note how the policy and discourse centred on endangered species management through scientific information undermines attempts at knowledge collaboration.

PROTOCOL FOR ABORIGINAL KNOWLEDGE AND INTELLECTUAL PROPERTY

The protocol developed by the Desert Knowledge Cooperative Research Centre (CRC) for Aboriginal communities (Desert Knowledge CRC 2008; Orr et al. 2009), with whom the CRC worked closely in research and innovation, is considered by the Aboriginal and Torres Strait Islander Social Justice Commissioner

to be a very useful guide towards best practice and an example of what needs to be considered in the development of a national protocol for Australia (ATSISJC 2009). The protocol encompasses ethics, confidentiality, equitable benefit sharing and the management of information. In conjunction with Waltja Tjutanku Palyapayi, the Desert Knowledge CRC also developed a guide to the protocol for Aboriginal community members (Kristenson et al. 2004). The guide aims to help community members develop a good understanding of the research and to assess whether the researchers are implementing the research in accordance with the protocol.

GUIDELINES FOR WORKING WITH INDIGENOUS KNOWLEDGE IN NATURAL RESOURCE MANAGEMENT

The Guidelines for Working with Indigenous Knowledge in Natural Resource Management (Natural Heritage Trust 2004a, 2004b, 2004c) were developed from an Indigenous Knowledge Forum held at Alice Springs on 28–29 May 2003. They are based on a framework of principles, a partnership approach, an Indigenous Knowledge Support Plan, an Indigenous natural resource management (NRM) planning process, protocols for working together, and recommendations to improve community engagement processes.

GUIDELINES FOR INDIGENOUS ECOLOGICAL KNOWLEDGE MANAGEMENT (INCLUDING ARCHIVING AND REPATRIATION) AND THE HANDBOOK FOR WORKING WITH INDIGENOUS ECOLOGICAL KNOWLEDGE & INTELLECTUAL PROPERTY

The Guidelines for Indigenous Ecological Knowledge Management (including archiving and repatriation) (Holcombe 2009) and the Handbook for Working with Indigenous Ecological Knowledge & Intellectual Property (Davis 2009), together with a report on the status of

Indigenous intellectual property (Janke 2009) were developed through a project supported by the Northern Territory NRM Board.

The guidelines (Holcombe 2009) are for all those who use, practise and are involved in some way with Indigenous ecological knowledge (IEK) and NRM and who wish to ensure that the rights of Aboriginal knowledge holders are respected and upheld. The guidelines aim to be best practice and to be flexible for a range of diverse settings. The centrepiece of the guidelines is a chapter on the four stages of IEK management:

1. collection of IEK
 - ♦ ethics
 - ♦ free prior informed consent (education and understanding)
 - ♦ benefit sharing (how will participants gain)
 - ♦ application and use (applying and using the research)
 - ♦ documenting IEK in NRM research (depending on who is keeping the records)
2. storage and access
3. attribution and due credit
 - ♦ suggested, including notice that traditional knowledge should not be used, adapted or commercialised without free prior informed consent of the relevant custodians
 - ♦ alternatively, Aboriginal copyright
4. repatriation
 - ♦ return and feedback
 - ♦ commercialisation and equitable benefit sharing.

The guidelines also contain case studies and other material to help support their use.

The handbook (Davis 2009) is a guide for Aboriginal people, to:

- ♦ understand how intellectual property can be used to benefit them

- ♦ prevent other people wrongly using their culture and knowledge
- ♦ strengthen the use and practice of their knowledge on country.

It covers a range of very useful topics, including: definitions for IEK, NRM and ICIP (Indigenous Cultural and Intellectual Property); understanding copyright and patents, using and sharing knowledge, keeping knowledge strong on country, prior informed consent, benefit sharing, participating in research, storing and getting access to IEK, returning knowledge the community, and developing enterprises from IEK.

The report on the status of Indigenous intellectual property gives technical detail on legal instruments and policy in the field, including copyright; patents; plant breeders' rights; confidence and privacy laws; trademarks; trade practices and passing off; designs; agreements and contracts; environmental laws; land and heritage laws; protocols; guidelines and policies; archives, museums, libraries and research institutions' laws and policies; sui generis legislation; and international treaties and instruments. Case studies are used as illustrative material throughout, and an extensive bibliography and example of an informed consent form are provided.

GUIDELINES FOR INDIGENOUS PARTICIPATION IN NATURAL RESOURCE MANAGEMENT

The Guidelines for Indigenous Participation in Natural Resource Management (Australian Government 2004) present a number of guiding principles: Indigenous people need to be represented on regional decision-making committees; consultation will occur with Indigenous organisations; known sites should be recognised and accounted for in plans; Indigenous land ownership and/or management and joint management agreements should be identified and their special cultural and practical significance taken into account; existing partnerships between Indigenous

peoples, landowners and others should be built on and strengthened; the regional plan should acknowledge Indigenous interests and relationships to country; legal and policy instruments that relate to Indigenous land and sea management should be recognised in the regional plan; Indigenous committees should be identified and their interests taken into account; and Indigenous cultural values should be incorporated into planning processes. The guidelines highlight positive approaches, including cultural mapping and developing Indigenous planning through a separate parallel process. Attention is also given to some of the issues that are challenging for Indigenous engagement in NRM, including family obligations, need for financial support and the intimidating contexts that can exist for Indigenous peoples in some NRM meetings.

OUR COUNTRY OUR WAY: GUIDELINES FOR AUSTRALIAN INDIGENOUS PROTECTED AREA MANAGEMENT PLANS

Indigenous Protected Areas (IPAs) are a ground-breaking initiative that straddles two major contemporary issues: environmental management, and Indigenous cultural survival and adaptation. The Australian IPAs have arisen since the mid-1990s, in parallel with similar global movements reflected in the term Indigenous and Community Conserved Areas. Our Country Our Way was written for the managers of IPAs, IPA and co-management consultation projects, and their staff. Their primary aim is to provide practical guidance about how to achieve management plans that recognise the connections between Indigenous people, country, traditional law and culture, while also meeting national and international standards for protected area management. In so doing, this document invites planners and others to enter an Indigenous conceptual terrain and consider some highly innovative and, at times, challenging intercultural adaptation (Hill et al. 2011b).

The guidelines introduce a number of tools to support planning and identify five key components of management plans:

- ♦ statement of vision and intent
- ♦ story of the journey to the IPA
- ♦ governance foundations
- ♦ focus for action: values, threats to these values, desired community benefits, and strategies that will protect values, ameliorate threats and generate benefits
- ♦ learning from and improving the management plan.

The guidelines include 31 case studies illustrating this content.

ETHICAL GUIDELINES FOR COMMERCIAL BUSH FOOD RESEARCH, INDUSTRY AND ENTERPRISES

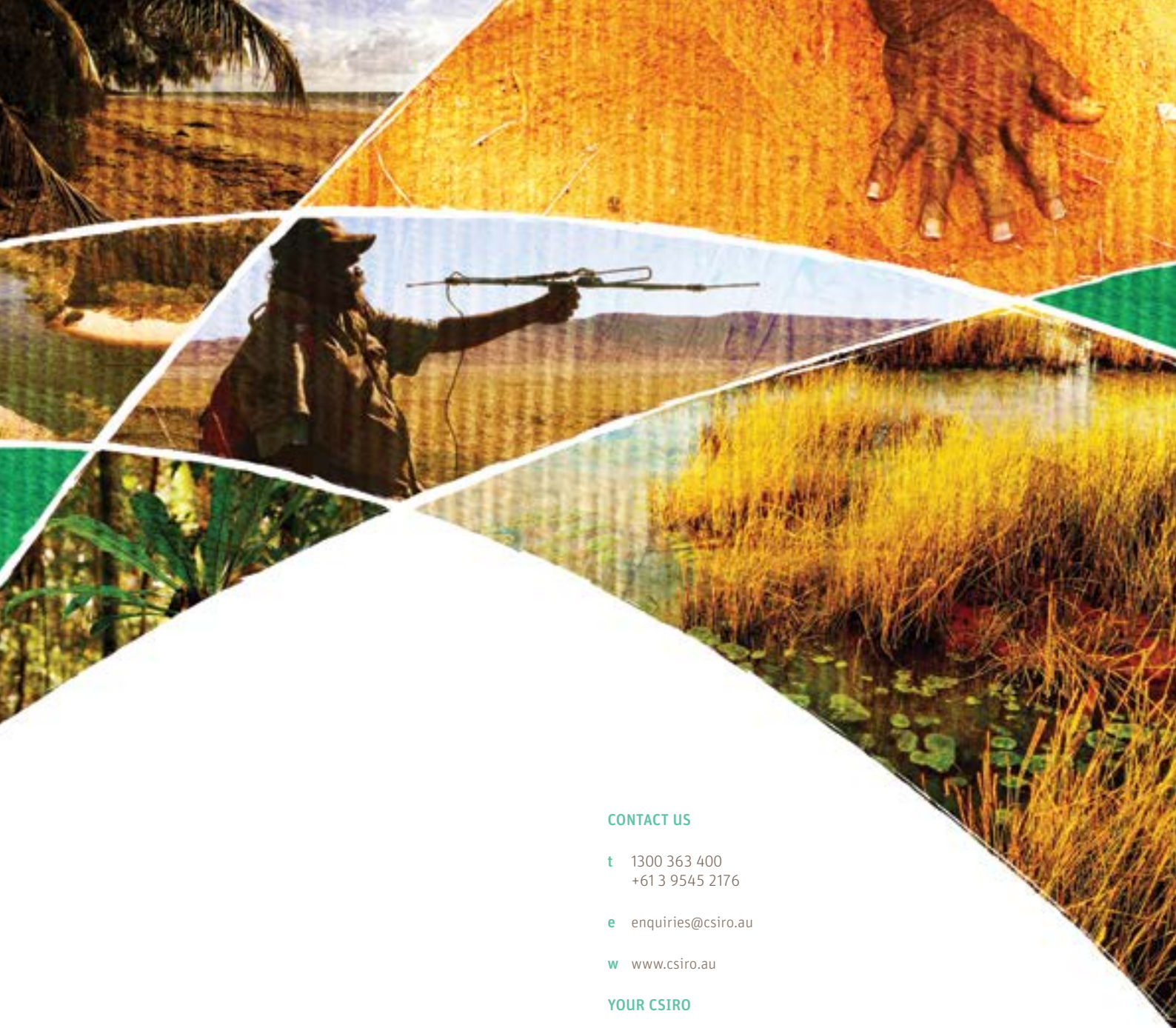
The Merne Altyerre-ipenhe (Food from the Creation time) Reference Group includes individuals from the major language groups across central Australia (Merne Altyerre-ipenhe (Food from the Creation time) Reference Group et al. 2011). They developed their guidelines to help people with a commercial interest in bush foods, both in research and industry. Ethical guidelines are viewed as sitting between Aboriginal laws and other Australian laws. The principles espoused in these guidelines are:

- ♦ recognition of Aboriginal knowledge, skills and practice
- ♦ respect for Aboriginal elders, workers and youth
- ♦ roles and responsibilities chosen by Aboriginal people
- ♦ returns and benefits to Aboriginal custodians and knowledge holders
- ♦ restoration and care for Aboriginal lands, ecosystems and plants
- ♦ repatriation of knowledge and support to intergenerational knowledge transfer.

The nine guidelines are:

1. Learn and act on ethical and social responsibilities related to bush food species, their custodians and knowledge experts.
2. Ensure fair and equitable benefits and returns for Aboriginal people and communities.
3. Use an ethical approach to negotiated agreements about intellectual property derived from Aboriginal knowledge and custodial rights.
4. Enable Aboriginal employment and training within bush foods enterprises and industry.
5. Support older Aboriginal people to pass on knowledge about bush foods and their importance to the younger generation.
6. Improve governance roles for Aboriginal people within all stages of the bush foods economic chain and wider industry.
7. Restore country, ecology and bush food species through natural and cultural resource management and landcare.
8. Identify and label the geographic origin of plants under the directions of local custodians.
9. Communicate with Aboriginal people using clear and accessible media with relevant and useful content about developments in bush produce research, enterprises and industry.

Image next page: Warru Rangers conducting a hazard reduction burn around the perimeter of the warru fence, 2011. Photo: Jasmina Muhic, DSEWPaC



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