10 April 2006

Anna Morgan
Indigenous Protected Areas Programme Review
Department of the Environment and Heritage
GPO Box 787
Canberra ACT 2601
Australia

Dear Anna,

RE: evaluation of the Indigenous Protected Areas Programme

Attached is a submission by The Wilderness Society supporting increased investment in the Commonwealth's Indigenous Protected Areas programme and an extension of the concept and role of IPAs.

Our arguments in support of this are based on our developing conservation planning framework – *WildCountry* – and the work we are doing within this framework on Indigenous environmental assessment, and on conservation area design which is inclusive of Indigenous rights and interests in 'Country'. Our submission contains the main policy argument and appendices, plus attached background documents.

Key points of our submission include -

- That the concept of IPAs needs to be further developed to incorporate recent advances in conservation science, international conservation policy in relation to Indigenous peoples, and progressive realisation of Indigenous rights and interests in Australia.
- That the legal frameworks for protected areas in Australia have been inadequate to dealing with, and accommodating, the rights and interests of Indigenous Traditional

Owners, and the positive contributions to be made by them in environmental protection and natural resource management, thereby placing IPAs at the margins of, or as an addendum to, Protected Area policy.

- That there needs to be greater development of the Indigenous aspects of all protected areas within the IUCN categories, including category 1a and 1b which are conventionally assumed to preclude compatibility with Indigenous environmental, cultural, social and economic interests. This should lead to reconceptualising the eco-cultural aspects, and attendant rights and interests, in the entire National Reserve System.
- That protected area status using IUCN categories I through IV should be the preferred status for IPAs and that the application of these categories should not affect the ownership and management rights by Indigenous Traditional Owners. This may require legislative reform to enable properly resourced and secured protected areas to make a full suite of protected area models available and attractive to Indigenous landholders
- That a comprehensive, graduated system of Indigenous land management, from natural resource management and multi-use homelands through to strict protected areas, should be facilitated by legislative and administrative supports, and backed by a sliding scale of public investment, with higher investments resulting in line with higher conservation outcomes.

This submission incorporates work being done collaboratively between the Wilderness Society, Chuulangun Aboriginal Corporation (a northern Kaanju Traditional Owner organisation), and the ANU WildCountry Research and Policy Hub.

Chuulangun currently have a proposal for the establishment of an IPA on northern Kaanju homelands and an awareness of the issues surrounding this have helped to inform our submission. A couple of the issues of pertinence to a review of the effectiveness of IPAs are –

- The lack of legal recognition and supporting structures for traditional ownership and governance at the clan estate level – the level at which natural and cultural resource protection and management traditionally takes place
- The use of community and corporate models of management that don't reflect, or may conflict with, the native title rights of the primary land managers – i.e. particular Traditional Owners with obligations to certain parts of Country

It would be valuable if the Indigenous Protected Area program can develop a more differentiated set of governance options to allow proper recognition and scope for Indigenous Traditional Owners to engage in primary conservation management.

One of the key elements of the Commonwealth's *Directions for the National Reserve System – a Partnership Approach* is "a process for engagement of indigenous communities in protected area management to be in place in all jurisdictions by 2005".

There is progress on this objective with examples such as the Northern Territory's renegotiation of the protected area estate to accommodate native title rights, and the Queensland Government's tenure resolution process for Cape York Peninsula based on the use of Indigenous Land Use Agreements to achieve conservation and Aboriginal land tenure outcomes.

However, further progress would benefit from a strong lead from the Commonwealth Government on the development of a more coordinated and consistent set of national and state arrangements, coupled with a major commitment to the creation of a substantial investment fund for Indigenous land and water conservation. For example, an expansion of the Indigenous Land Corporation's environmental program in line with this could add significant impetus.

We are happy to provide follow-up comment to any aspect of this submission. Please feel welcome to contact us.

Yours faithfully

Anthony Esposito
National Indigenous Program Manager
The Wilderness Society, Australia

136 Boundary St, West End, Brisbane
PO Box 5427, West End 4101
E-mail - anthony.esposito@wilderness.org.au -
Phone (mobile) - 0418 152 743
Phone (office) - 07 3846 1420

Web – www.wilderness.org.au – www.indig-enviro.asn.au –

Indigenous Protected Areas Program Review 2006

A submission by the Wilderness Society

Submission contents

Attachments

- Indigenous rights and interests in WildCountry in Australia
- Cooperation Agreement - Chuulangun Aboriginal Corporation and The Wilderness Society

Introduction

The Wilderness Society (TWS) is a national community-based not-for-profit conservation organisation dedicated to the protection, promotion and restoration of wilderness and natural processes across Australia.

In a world undergoing great change and environmental challenges, The Wilderness Society has developed a long-term vision and strategy to revolutionise conservation planning in Australia and give nature its best possible chance of survival in the future: *WildCountry*.

Using a new understanding of large-scale connections across the continent, WildCountry is developing an ecological knowledge driven, continent-wide approach to conservation planning. The critical difference with WildCountry is its focus on maintaining and, or, restoring ecological processes and connections in the land- and sea-scapes.

Establishing core protected areas, free from destructive and degrading practices, remains a cornerstone of WildCountry. We know if we are to ensure the long term survival of species and ecosystems, we must establish minimum fully protected areas as well as significantly reducing the impacts of all human activity across marine and terrestrial environments. In this context, it is important that the establishment of highly protected areas should apply across all lands and with support from all sectors.

Importantly, WildCountry provides an ecological framework for tackling protected area network design and off-reserve conservation strategies, as well as for tackling threats to nature such as land clearing, intensive logging, and damage to river, marine and other aquatic systems. WildCountry can provide a framework of conservation priorities which will provide long-term responses to today's environmental issues and promote close cooperation and integration across a wide range of conservation programs, including Indigenous conservation initiatives.

As conservation in Australia takes place in a 'peopled landscape', WildCountry will also address the needs of remote and regional communities and the Australian community generally. A central element of WildCountry is to promote the development of 'conservation economies'. It is particularly important that the ecological services provided to all Australians by protecting nature are recognised and rewarded and that real and sustainable employment and training opportunities are generated through the protection and restoration of nature. This is an important plank in the sustainability of Indigenous land and sea management and the viability of Indigenous homeland communities.

TWS therefore has a strong interest in the role of Indigenous Protected Areas in helping to secure a long term future for all species, landscapes and ecological processes, and in underpinning a healthy environment essential to the social, cultural and economic well being of Indigenous and other Australians.

The effectiveness of Indigenous Protected Areas

For TWS, crucial matters that need to be considered in an evaluation of the effectiveness of IPAs include –

- Does it contribute to a conservation strategy capable of delivering a long term future for all species, landscapes and ecological processes and in underpinning a healthy environment essential to social, cultural and economic well being?
- Is it integrated with Indigenous governance and supportive of adaptive eco-cultural management?
- Does it give rise to a durable conservation management model for Indigenous people?
- Is the contribution of Indigenous conservation managers to ecosystem outcomes properly recognised and valued?
- Is it a secure and properly resourced framework to meet the needs of long-term protection and homelands communities?

As with other high-conservation-value protected areas, security of IPAs is dependent on long-term tenure arrangements and continuity of funding. It is also dependent on Traditional Owner aspirations to care for country in a way consistent with it being a Protected Area.

The national reserve system guidelines require that, for an area to be a 'protected area', it must -

1. Be dedicated for the primary purpose of protection and maintenance of biological diversity
2. Be able to be classified into one or more of the six IUCN Protected Area Management Categories
3. Be managed by legal or other effective means, which encompass both public protected areas managed by government agencies, and privately owned protected areas, including indigenous protected areas, with effective security of purpose, and
4. Contribute to the comprehensiveness, representativeness and adequacy of the National Reserve System

TWS considers that the IPA program meets these objectives, but that the objectives need to be either elaborated or refined.

Dot Point 1 requires a new nationally agreed framework for the protection of biodiversity. Our WildCountry-based analysis of the deficiencies of the current approach, along with the lack of Indigenous involvement in the development of effective conservation and reserve policies and strategies, are limitations that we need to address. In doing so, we will be able to take advantage of the leading edge of conservation science and build a higher level of acceptance by Indigenous people of the contemporary conservation agenda.

In relation to Dot Point 2, we share the international conservation view that Categories I to IV are the appropriate form for protected areas, and that Categories V and VI encompass a natural resource

management approach (valuable in itself), or leave protected areas open to a greater level of resource utilisation than would be compatible with the maintenance and full functioning of ecological processes.

However, while the most acceptable definition of an Indigenous Protected Area for Aboriginal groups remains Category V, then there is an inbuilt limit to the levels of conservation management that Indigenous interests will be likely or willing to adopt.

In relation to Dot Point 3, it appears to us that there are few instances in which traditional ownership and traditional governance (which lie at the heart of viable native title claims) and contemporary Aboriginal land titles and trusts neatly match, so as to provide the social and political security to underpin effective legal security. In addition, the lack of binding protected area tenures or conservation agreements within Aboriginal lands limits funding options and the level of general community support for public investment.

While customary law is and should be recognised as an appropriate form of management, the lack of legal frameworks and incorporation options to support this impedes the uptake of IPAs as a viable partnership model for conservation agencies and Traditional Owners.

As Bruce Rose, the then Assistant Director of the Indigenous Policy Coordination Section, noted in his submission to the Standing Committee on Aboriginal and Torres Strait Islander Affairs in February 2003, “in terms of long-term viability, the IPAs make a commitment to manage their land in perpetuity for conservation” but that this “is not a legally based decision; it is a decision about their aspirations. The issue of providing long-term funding from government to those lands is one that really needs to be addressed.”

For TWS, Dot Point 4 should also be subject to the expanded view of what conservation at a national scale requires, and that the CAR approach is only one component of an effective conservation and protected area strategy. We provide an outline of the broader approach later in our submission.

We recognise, as noted in “Terrestrial and Marine Protected Areas in Australia” by Cresswell and Thomas *(Environment Australia, 1997)* that “to date, the traditional model of protected areas in Australia (i.e. national parks and reserves) has not been generally acceptable or appealing to Indigenous people. In many instances, such areas have deliberately excluded the types of activities Indigenous people have pursued for thousands of years.” IPAs are a positive response to this situation and “the need for alternative conservation planning and management measures, a new concept in conservation management in these lands...”. (Thackway, Szabo and Smyth 1997).

It is clear that Indigenous Protected Areas can provide an important component of the National Reserve System, particularly across Northern Australia where Indigenous interests are prevalent. Although significant progress has been made in the development of Indigenous Protected Areas in some parts of Australia, two outstanding issues need to be addressed.

The first involves ongoing management funding support for the existing and future Indigenous Protected Areas. The need for active management of northern environments is now well documented, however at present few mechanisms are in place that ensure permanent public and private sector funding and technical support for the ongoing management of IPA’s.

It is critical that the Commonwealth and State Governments recognise the important biodiversity, scenic and cultural heritage benefits accrued for the Australian community through the voluntary declaration by traditional owners of IPA’s. Governments, in our view, should make a substantial commitment to provide

ongoing management and capacity support for traditional owners in the management of the IPA's based on Australian and International best practice standards. A related issue is the need to ensure that the management activities of land managers such Parks and Wildlife Services are coordinated and integrated with those of Traditional Owners.

A good example of the potential for mutual integration and support can be found in the case of the management arrangements negotiated between the Queensland Parks and Wildlife Service and Traditional Owners as part of the creation of the new Jack River National Park in south-eastern Cape York Peninsula. The benefits of such an approach include cost savings, capacity building and training opportunities and heightened cross-cultural awareness and support.

It is also critical that policy obstacles are identified and removed to allow private sector interests, including industry, to actively support and fund management operations for Indigenous Protected Areas.

The second outstanding issue regards the potential development of a nationally agreed hierarchy of funding and management support for classes of Indigenous Protected Areas along the lines of IUCN protected area categories 1 to 6. At the top of this hierarchy would be a small number of highly protected and well funded 'Indigenous National Parks' of outstanding natural and cultural heritage value, which could be cooperatively managed between Traditional Owners and Parks agencies on lease back arrangements similar to those found in the Northern Territory.

Indigenous rights and interests in terrestrial and marine protected areas

Beyond consideration of IPAs, it needs to be recognised that Indigenous Traditional Owners maintain strong connections to their homelands and that the recognition of native title has opened a number of non-extinguishing tenures, such as many Parks and other conservation reserves, to claim. Through the native title claim process, determinations can lead to the need to recognise and accommodate Indigenous rights and interests in land and water management, natural resource use and maintenance of cultural heritage within protected areas.

Over the last decade there have been reviews and negotiations in various state jurisdictions to determine an ongoing role for Indigenous people in protected area and natural and cultural resource management. There are initiatives to incorporate Indigenous rights and interests in decision-making, land and water management, and cultural heritage protection through 'co-management' arrangements. These include the familiar 'joint management' arrangements such as Uluru and Kakadu; the negotiated legislative framework in the Northern Territory covering Aboriginal ownership of parks, national park lease arrangements, and related business, financial, cultural, and access and management benefits to Traditional Owners; the new ILUA (Indigenous Land Use Agreement)-based approach to the creation of new parks and conservation agreements in Cape York Peninsula; and various other state and territory approaches to co-management.

Benefits that accrue from the development of various co-managed and Indigenous-managed protected areas include -

- Addressing some of the social, cultural and economic needs of Indigenous communities
- Land justice and access to previously alienated homelands

- The application of Indigenous ecological knowledge to the management of lands and waters
- Employment and training in contemporary conservation
- Cross-cultural awareness and cooperation

It is important to lift Indigenous rights and interests in protected areas out of the arena of case-by-case litigation and land and sea claims and make them an accepted and standard part of the tenure and management of all protected areas. This way, Traditional Owners can have a viable and ongoing presence on Country and an appropriate role in management.

The Commonwealth and all States and Territories should develop a consistent framework for the recognition and inclusion of Indigenous rights and interests in protected areas; and expand the resources available to support Indigenous involvement, including developing ecological knowledge systems through collaboration between conservation scientists and planners and Indigenous knowledge holders.

There are also important links to be made to social and economic development programmes. Traditional Owners and Indigenous communities should be able to gain economic benefits from their homelands *as of right*, and this can include –

- Controlling and benefiting from bio-discovery and commercialisation of ecological knowledge
- Natural and cultural tourism opportunities
- Preferred employment as rangers and environment agency staff
- Natural resource management, including controlling and eliminating invasive species
- Access to and sustainable use of traditional foods and natural and cultural resources

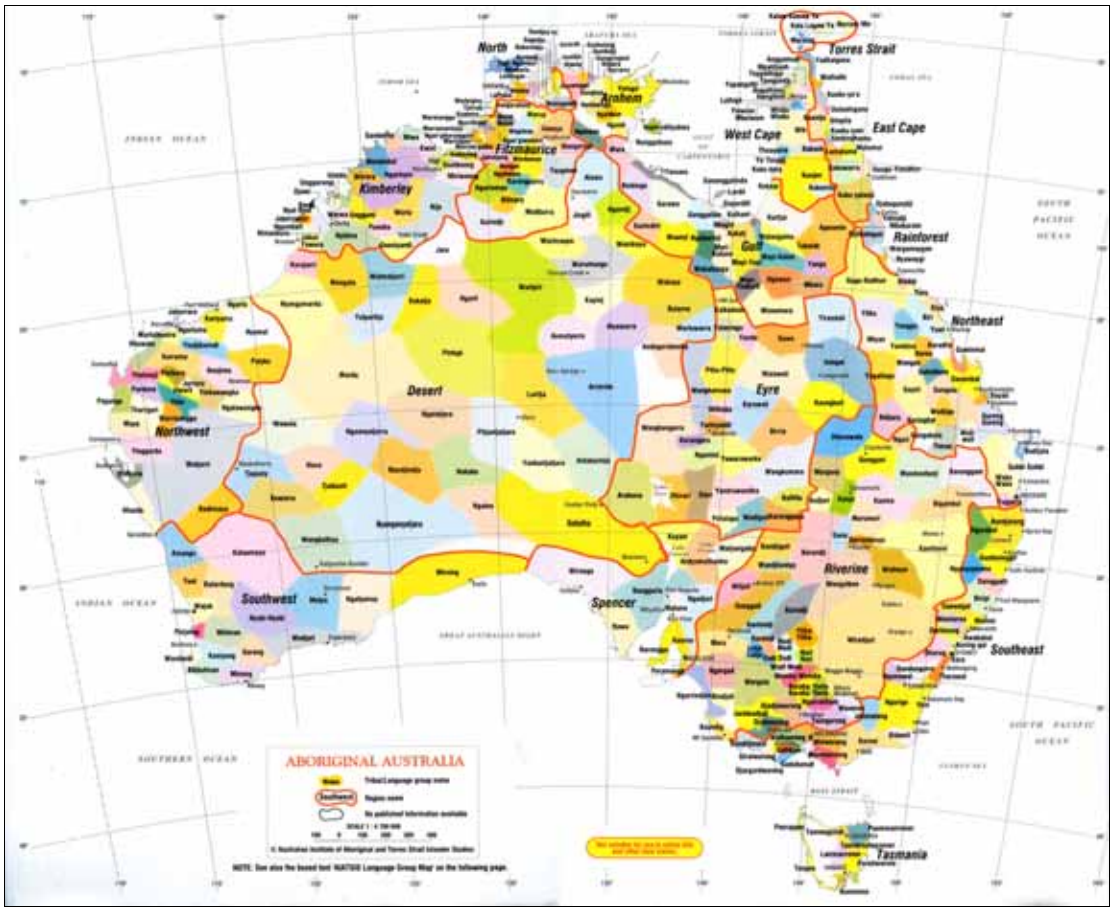
This approach should extend to the marine environment. In many regions across Australia, the strong indigenous connection to sea country needs to be recognised through negotiated agreements regarding co-management arrangements as well as Indigenous MPAs. To develop these agreements, the rights and responsibilities of Traditional Owner groups in relation to customary marine tenure, and their contemporary aspirations, should be fully determined.

TWS notes that the customary marine tenure of Traditional Owners is not fully reflected in, or protected by, common and statute law definitions of native title and that it receives lesser treatment than corresponding terrestrial title. This is despite there being no distinction to Traditional Owner groups between customary tenure on land or sea. TWS is extremely concerned that the proposed establishment of marine protected areas has failed to address in any comprehensive manner the recognition and incorporation of native title rights and responsibilities. We consider this is an essential first step in any such process.

Aboriginal lands and conservation

Aboriginal lands formed the primary template of land and natural resource management in Australia. Before colonisation, the clan estates were the foundations of a continent-scale, regionally distinct, social and economic life enjoyed by Indigenous communities. Ancient in origin, it was a uniquely adapted cultural system. Water, of course, is fundamental to the availability of natural resources and the pattern of use, productivity and ceremony was organised around catchments and seasonal water supplies.

This eco-cultural layer is reflected at a generalised level by the AIATSIS map of Aboriginal Australia, based as it is on major language groups and landscape drainage patterns. A more systematic and detailed mapping and evaluation of the link between eco-systems and Indigenous homelands would add to an appreciation of the eco-cultural relationships at the basis of land and water management and protection of country for millennia.



Australian Institute of Aboriginal of Aboriginal and Torres Strait Islander Studies – Horton: Map of Aboriginal Australia

Through the long passage of time in which Aboriginal societies have endured in Australia, Indigenous Traditional Owners developed a unique spiritual and material relationship to their lands. The relationship is one of inalienable possession. Indigenous nations, defined by protocols and pathways of exchange and engagement within extensive areas, conducted themselves in self-governing homelands. From these relationships derives the original “law of the land” and the make up the ‘cultural landscape’.

The radical changes in the cultural landscape and the necessity of environmental protection today will require the development and application of new ecological knowledge derived through fair and effective cooperation between Indigenous and other conservation knowledge holders.

The customary rights to cultural self-determination and the preservation of distinctive cultural identities are relevant to questions of land and natural resource management. Traditional owners hold particular interest in the governance structures that manage land and waters and in the right to harvest and husband the natural resources of their country. Governments should recognise they have a positive responsibility in natural resource management to protect Indigenous access and incorporate it into the priorities for management.

Indigenous cultural values - connection to country, maintenance of ancestral knowledge systems, and practice of traditional law and customs - are intrinsic to Aboriginal peoples’ cultural survival and social wellbeing, and to the determination by traditional elders of property and management arrangements within the customary tenure system.

Customary tenure involves a tightly integrated set of social, cultural and ecological relationships, giving rise to a highly specialised form of organisation and management. This is an important source for understanding the natural and cultural heritage values of ecosystems. In this sense, the boundaries of lands traditionally occupied by Indigenous groups and nations, Indigenous ecological knowledge, and 'caring for country' principles, should be ongoing features of the conservation of these critical natural resources.

Conservation in contemporary Australia has been shaped largely by the cultural values of the settler society and in response to the environmental impacts wrought by it from colonial times to the present. It has been assumed that conservation and environmentalism offer closer parallels to Indigenous traditional land and natural resource management than other aspects introduced with the colonial enterprise. Given the cultural grounding of the modern conservation approach, this assumption is not necessarily correct. However, there is a body of thought and practice developing on the common ground between contemporary conservation work (based on the adaptive learning principles of the environmental sciences) and Indigenous ecological knowledge and management, both traditional and evolving.

Conservation planning and Indigenous natural and cultural resource management

The ecological services provided to all Australians from protecting nature need to be fully recognised and rewarded by Governments. Recognising the economic benefits flowing to all Australians from conservation could provide a powerful incentive and secure basis for Indigenous Australians to stay on 'Country' and manage their land for the ecological and biodiversity benefits we all seek for future generations.

The current scientific framework guiding the development of Protected Area networks should be significantly strengthened. And the same recommended scientific principles should be applied to help guide ecological restoration and natural resource management programmes. The Protected Area estate will fail to meet even its most basic biodiversity conservation objectives if it is treated as islands in an ocean of unsustainable land and sea management. There is an urgent need to develop a conservation planning framework which integrates protected area design and natural resource management to achieve biodiversity conservation objectives at a landscape scale.

There is mounting evidence that changes to traditional land management practices across all land tenures is linked to extensive biodiversity declines in otherwise 'intact' ecosystems. Halting these declines may require a significant investment in supporting Indigenous Australians to maintain or restore traditional practices and, or, to help deal with new problems such as invasive species and inappropriate use of traditional homelands over the past two hundred years. Across Northern Australia, real partnerships between Indigenous communities and businesses, and non-Indigenous communities and businesses, need to be encouraged and supported by all levels of Government to help achieve improved environmental outcomes.

In *The Role of Connectivity in Australian Conservation*[1], Soulé et al note that "…critics of conventional conservation often suggest that long-term prospects for biodiversity will be enhanced the more the entire landscape, irrespective of tenure, is managed as a conservation (rather than a production) matrix. Such a transformation, however, will demand a bolder and more systematic approach to nature protection. This will require increases in the area protected, enhanced biotic and abiotic connections between core protected habitat areas, and reconsideration of the economic and recreational activities on lands where native ecosystems still dominate".

While not full recognition of Indigenous customary tenure, native title and statutory land rights combined are significant when considering the tenure and management arrangements that would underpin *WildCountry* conservation approaches and projects. These land and resource regimes have the potential to deliver 30%-40% of the continent into a variety of contemporary Aboriginal or co-managed titles – currently it is under 20%. Much of this land corresponds to the high-conservation value areas of the continent as identified in the National Wilderness Inventory and by mapping of Vegetation Assets, States and Transitions (VAST).

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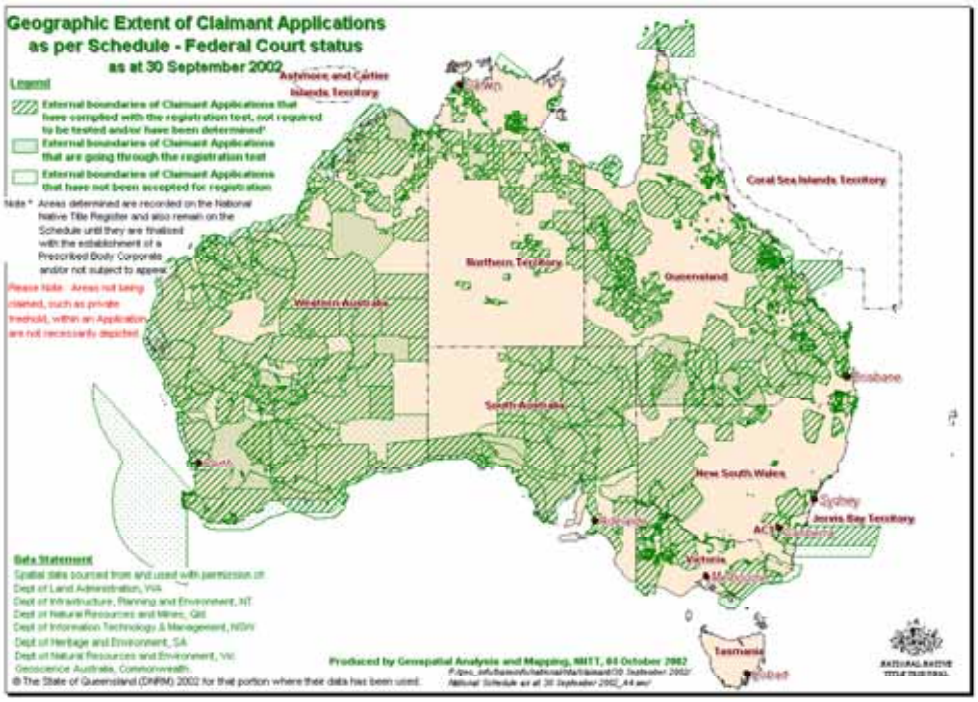
[1] M. E. Soulé, B. G. Mackey, H. F. Recher, J. E. Williams, J. C. Z. Woinarski, D. Driscoll, W G Dennison and M. E. Jones. Pacific Conservation Biology 2004

It is evident from the extent of native title claims that Indigenous connections to country remain strong and that calls for recognition of Indigenous rights and interests will continue (*see the Geographic Extent of Claimant Applications below*). Many of the most viable land and sea claims relate to areas that retain their high natural and cultural values and landscape and eco-system connectivity.

TWS considers that it is therefore important in developing a national conservation strategy to address the underlying tenure and management issues; to ensure good working relationships between Indigenous traditional owners and conservation interests; and together build a dedicated program around "Indigenous conservation strategies". This will also enable all Australians to benefit from the long-accumulated Indigenous ecological knowledge and management skills, where these remain in place and connected to Country, or are capable of recording and restoration.



The Geographic extent of claimant applications - Source: National Native Title Tribunal

For *WildCountry*, the environmental challenge in the Australian landscape is to understand its variability and productivity, and the role of connectivity in protecting and, or, restoring ecological processes on which Australian biodiversity depends. When considered against the rights and interests of Indigenous Traditional Owners a whole set of additional challenges emerge. Very positively, many answers to the problems of land management and nature protection can also flow from this engagement. After a couple of decades of change, the fields of environmental management and conservation in Australia are now open to addressing Indigenous cultural rights and customary tenure, and offer a rich knowledge base for the protection and sustainable management and use of the environment.

Facing up to the critical environmental problems in Australia has raised a number of fundamental issues in understanding and managing Australia's land- and sea-scapes and continental-scale processes[2]. The *WildCountry* program, based on new scientific analysis, is addressing these issues. While the new science will be extremely valuable in the development of models and approaches to nature conservation and land management in Australia, the Wilderness Society is also considering these questions in the context of the preceding tenure and management discussion and in relation to Indigenous ecological knowledge and the rights of Indigenous people[3].

Tenure and management arrangements underpin all protected areas, whether Indigenous Protected Areas, National Parks, Community Conserved Areas, or landholder conservation agreements. The Wilderness Society's *WildCountry* approach is to see all lands and waters managed within a continental-scale 'conservation matrix'. This involves a complex and challenging variety of conservation strategies and tenure, management and governance options.

The conservation of biodiversity and natural and cultural heritage demands a landscape-wide approach that recognises the importance of ecological connectivity. The processes that sustain and regenerate ecological systems and all their components, and that sit at the basis of traditional human-nature interactions in Australia, operate across a range of scales.

Many if not most of these systems work at space and time scales that far exceed those at which people currently manage land and natural resources. Thus, many important ecological processes involve connections at scales not considered by conventional conservation planning and management but that may, however, be commensurate with Indigenous ecological knowledge at an Aboriginal temporal and spatial scale.

Central to the approach being developed by the WildCountry Science Council is the need to evaluate biodiversity and identify priorities for biodiversity protection and restoration at a range of ecosystem scales – continental, regional, landscape – and to build scientific understanding of the eco-cultural dimensions of Indigenous homelands and traditional ecological use and protection.

The WildCountry Science Council was established in 2001 to develop a new conceptual framework and a new set of integrated methods for the analysis and evaluation of biodiversity and ecological processes

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[2] "In Australia and globally, nature and society face a historically unprecedented wave of extinction and ecological degradation (Wilson 2002)… In North America and elsewhere, it has been recognised that existing conservation initiatives fail to provide sufficient area and ecological connectivity to accommodate the key, large-scale, long-term ecological processes necessary to sustain natural systems (Soulé and Terborgh 1999). Neither do they allow for evolutionary adaptation to environmental change. The current situation for biodiversity in Australia is the same (Australian Government 2001)". The role of connectivity in Australian conservation - *M. E. Soulé, B. G. Mackey, H. F. Recher, J. E. Williams, J. C. Z. Woinarski, D. Driscoll, W G Dennison and M. E. Jones. Pacific Conservation Biology 2004*

[3] For example, The *UN Draft Declaration on the Rights of Indigenous Peoples*, Part 6, Article 28 states: "Indigenous peoples have the right to the conservation, restoration and protection of the total environment and production capacity of their lands, territories and resources, as well as to the assistance for this purpose from States and through international cooperation".

in order to advance the conservation of biodiversity on a landscape-wide basis, irrespective of land tenure.

Co-chairs of the Science Council are Emeritus Professors Henry Nix and Michael Soulé. Other members of the Council are Professor Hugh Possingham, Emeritus Professor Harry Recher, Professor Richard Hobbs, Professor Brendan Mackey, Professor Jann Williams, Dr John Woinarski, Dr Rob Lesslie and marine science experts Dr Regina Counihan, Dr Trevor Ward and Dr Helene Marsh. The work of the Science Council is being advanced through a WildCountry Research and Policy Hub established at the Australian National University and an Australian Research Council Linkage Grant where TWS is the 'industry partner'.

The fundamental principles underlying the approach being taken (some of which are not new) include -

- Conservation planning must take a large scale perspective (in space and time)
- The key elements to long term conservation planning include large, relatively undisturbed core areas, embedded within a landscape matrix of buffers and linkages
- Core reserves must be complimented by appropriate off-reserve management that together ensure connectivity of key ecological patterns and processes, particularly at larger space/time scales
- "Connectivity" is a foundational concept, and can be defined in terms of a set of ecological processes that demand large scale connectivity (See 'The Role of Connectivity in Australian Conservation", Soule, Mackey et al, Pacific Conservation Biology, Vol 10 2004)
- While these "connectivity processes" are well-recognised phenomena, to date they have not been brought together in an integrated framework and applied in any substantial way to inform and guide conservation planning
- Many environmental characteristics are both natural and cultural, and crucial ecological processes are described in, and important to, Indigenous cultural activities. Safeguarding the integrity of traditional Indigenous interactions may be vital to the protection, maintenance and evolution of a land- or seascape.

Other foundational concepts include the need to recognise the highly variable nature of 'landscape productivity' (the availability of food and habitat resources) in Australia. This variability is linked to highly variable rainfall patterns across the continent. A unique analysis of that variability has been conducted at 250metrre scale for the entire continent utilising MODIS satellite data since 2000. This analysis has greatly advanced our ability to understand the nature of year to year as well as seasonal variability across Australia.

Part of the ARC research programme is exploring the links between productivity variability and dispersive fauna. Strong arguments appear to be emerging for the need to protect highly productive parts of the landscape as well as to incorporate this knowledge into improved natural resource management.

Importantly, the work of the science Council has highlighted the need to give greater emphasis to protecting large, intact, relatively undisturbed natural areas.

Utilising the 'Vegetation Assets States and Transitions' analysis by Thackway and Lesslie (Bureau of Rural Sciences) we have also been able to factor in condition and integrity into our conservation planning.

Ensuring that the National Reserve System encompasses areas of low disturbance and seeks to minimise threatening processes in adjoining lands should be a priority guiding reserve selection and Protected Area Network design. Such an approach would help minimise management costs and provide greater security for biodiversity gains.

TWS of course strongly supports the role of Protected Areas as a critically important but not sufficient means of protecting life on Earth. We would also argue that current approaches to Biodiversity conservation (including reserve selection) are necessary but not sufficient if we are to meet this conservation challenge.

In particular we are wary of: approaches which suggest achieving percentage targets for reservation will secure biodiversity protection (as you would appreciate, such targets are always politically rather than scientifically based); approaches which focus on threatened species after they have crossed the extinction threshold; and approaches which elevate 'species richness' above the integrity of characteristic biomes/ecosystems.

We strongly urge that existing approaches be supplemented by an approach which -

- Recognises the evolved characteristics of biomes and ecosystems (i.e., the life forms and life history strategies best adapted to selective forces; and the biodiversity that is optimal given the environmental and disturbance regimes)
- Protects and restores processes that sustain system dynamics and evolutionary potential (i.e., processes that constitute evolutionary selective forces e.g. fire regimes; and generate and sustain system dynamics and habitat resources e.g. productivity and condition
- And which recognises that 'connectivity' needs to be defined with respect to integrity (functionality) of processes as well as patterns

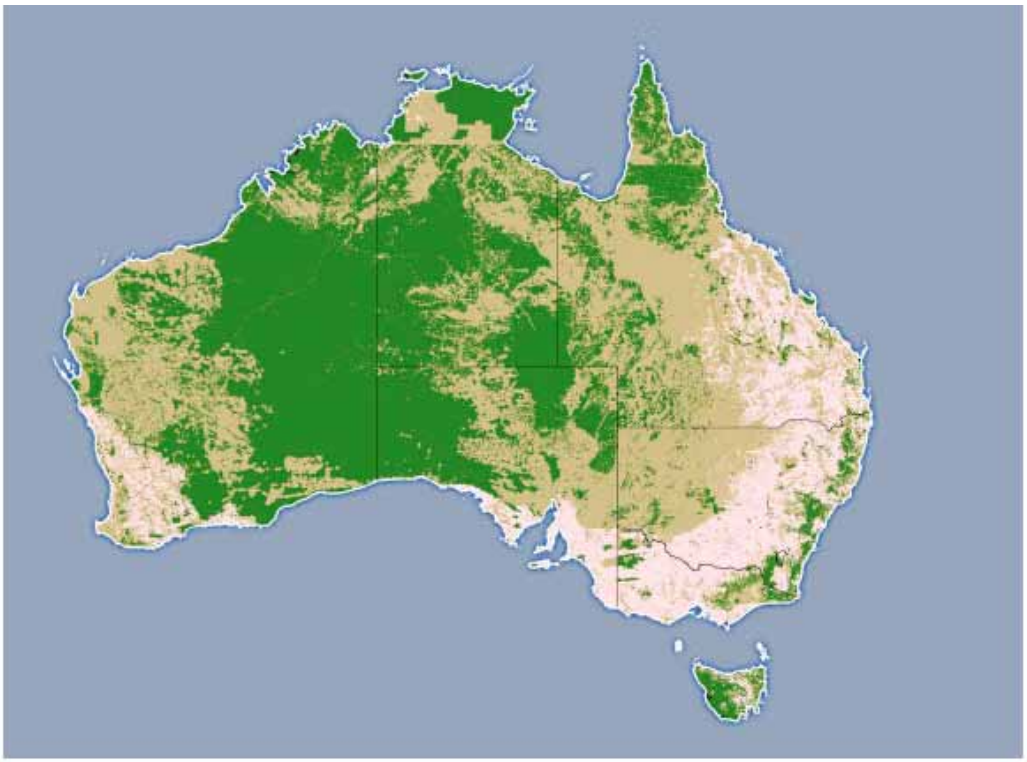
To implement these ideas some new analytical capabilities are required: a landscape classification system which defines characteristic biodiversity and the system drivers and responses; and analysis of vegetation condition and productivity (mapping and monitoring ecosystem dynamics and fluxes in habitat resources). These new tools have been developed by the WildCountry Science Council. Combined with traditional bio-diversity assessments, these new tools provide a basis for managing landscapes across all land tenures; identifying core protected areas; and identifying options for maximizing landscape connectivity inclusive of multi-scaled context and processes.

A new integrated approach to biodiversity conservation could be developed where biodiversity outcomes are prioritised across all land tenures, and ample support given to Indigenous landholders to respond to contemporary environmental and natural resource issues. Such support additionally requires the development of an ecological knowledge system based on the collaboration of Indigenous and contemporary conservation science, and compatible with the cultural responsibilities of Traditional Owners.

Appendices

Vegetation Assets, States and Transitions (VAST) map

Vegetation condition in the Australian landscape



Key to VAST map colours:

VAST cover class	
0 Bare	Intact
I Residual	
II Modified	Disturbed
III Transformed	
IV/V Replaced	Non-native
VI Removed	

Map produced by Richard Thackway and Rob Lesslie, Bureau Rural Sciences, Australian Government Department of Agriculture, Fisheries and Forestry – used with permission of R. Lesslie

An approach to Indigenous Environmental Assessment

B. Mackey, A. Esposito, D. Claudie, T. Brown. 2006

Environmental Values

The set of environmental values identified here are drawn from a number of sources, including those used for assessing the natural heritage value of places for National and World Heritage listing (Mackey et al. 2002). We have also draw upon new scientific thinking about conservation science (Soulé et al. 2004). In addition, we have attempted to articulate environmental values that relate to traditional Indigenous human-nature interactions through use of the term "eco-cultural". In particular, we have drawn on contemporary Indigenous conservation references in understanding the relationship between natural and cultural values (Claudie et al 2005).

For the purposes of the report, the environmental values of a place can be considered in terms of the contributions it makes to -

1. Knowledge of Earth's biophysical formation
2. *In situ* conservation of biophysical and eco-cultural diversity
3. The protection and restoration of natural integrity, ongoing natural processes, and eco-cultural integrity

1. Knowledge of Earth's biophysical formation

This environmental value relates to geomorphic or physiographic features, ecosystems, plant and animal communities or natural processes or phenomena, the study of which contributes significantly to an understanding of Earth's biophysical formation and natural history, and the relations between culture and nature. Places would contain examples representing major stages of Earth's evolutionary history. Three categories are recognised:

1. Significant geological processes that have contributed to the development of landforms, or significant geomorphic or physiographic features;
2. Examples representing major stages of Earth's biological evolutionary history, including the record of life such as fossils, primitive plants, and relictual species;
3. Places embodying traditional stories and knowledge about human-nature interactions which explain the way in which the living world is formed and organised.

2. In situ conservation of biophysical and eco-cultural assets

This environmental value concerns the material contribution a property makes to conserving Australia's natural heritage assets and associated traditional human-nature interactions, including:

1. Land that contains significant natural habitats for the *in situ* conservation of Australia's evolved biodiversity (and naturalised species such as the Dingo), including genetically distinctive populations, species and the ecological communities they form and inhabit
2. Significant lands for the *in situ* conservation of geo-diversity, including those containing rare or threatened features of scientific interest
3. Land important to the *in situ* conservation of traditional human-nature interactions, e.g., properties containing important story places, ceremonial grounds, totemic sites, areas of rock carving and painting, and Indigenous natural and cultural resources

3. The protection and restoration of natural integrity, ongoing natural processes, and eco-cultural integrity

Natural integrity can be represented by a gradient indicating the degree landscape processes and patterns are altered by human activity. At some point along this gradient, landscape becomes dominated by human technology and natural processes are impaired. Ecosystems can then collapse, or the landscape transformed into a different kind of system maintained through ongoing inputs of human capital, labour, and technology. A landscape can possess a high level of natural integrity and support people so long as the human culture and technology are integrated with, rather than dominate or replace, natural process.

Natural processes are physical, biological, ecological, and evolutionary. It is the continued functioning of these processes that define the natural characteristics of landscapes recognised by humans - the vegetation cover, the soil mantle, the wildlife. Plant seed is dispersed by wind, water and wildlife. The vegetation changes in response to the climate, fire regimes and other influences. Animals move through their home range and many migrate large distances. The genetic characteristics of populations change over time, new species evolve, and natural selection maintains the best-adapted organisms in the landscape given prevailing conditions. Complex ecological relationships arise between organisms and their surrounding environment, including trophic interactions (e.g., predator-prey relationships), biogeochemical cycling (of water, carbon and nutrients) and the structure, composition and productivity of the vegetation cover.

Eco-cultural Integrity refers to places significant for maintaining the integrity of cultural practices and governance associated with the cosmology defining traditional Indigenous human-nature interactions. It covers Indigenous traditional owners' connections to Country and the ecological knowledge embedded in systems of traditional governance and management. It recognises that many environmental characteristics are both natural and cultural and that ecological processes are described in, and important to, Indigenous cultural activities. Safeguarding the integrity of the traditional interactions is vital to the protection, maintenance and evolution of a land or seascape.

Environmental Criteria

Various criteria have been developed over the last 20 or so years for assessing the environmental values of a place. These conventional criteria are largely scientifically based and are now regularly used by government and non-government organisations to identify new protected areas and locations warranting special conservation management. Various programmes are in operation that make use of these criteria at local, state and national levels. In addition, public policy and programmes have begun to recognise the environmental services that flow to society from healthy ecosystems, including water supply and regulation, and soil conservation. Again, there are state and national level planning overlays that identify the conservation values of landscapes from this environmental services perspective.

A set of criteria have been identified for use here that enable an area to be assessed in terms of the three primary conservation values described above. These criteria have been drawn from established approaches to systematic conservation planning (Margules and Pressey 2000). In addition, we have drawn upon a set of so-called connectivity processes and associated planning guidelines developed by the *WildCountry* Science Council and colleagues (Woinarski et al. 1992; Soulé et al. 2004; Mackey et al. 2006). We have used these sources to inform the selection of appropriate criteria for assessment of the environmental value of places (see Reference 1 - **Wild Country Scientific Connectivity Principles** - below).

The criteria recommended here for Indigenous environmental assessment of a property or landscape, cover five broad categories –

Context

- What are the main environmental characteristics of the property?
- What kinds of landscape ecosystems does the property represent?
- Where else are there similar landscapes?
- What Indigenous cultural sites and groupings of sites are, or were, present in the area?

Composition

- What species and ecological communities are present on the property?
- Are there any threatened species or ecological communities present or likely to be present on the property?
- Are there ecological communities or ecosystems on the property that are particularly important for traditional human-nature relations?

Condition

- To what extent has the vegetation cover of the property been degraded by modern land use activity?

- Has the soil been eroded or contaminated, or the water polluted?
- Are feral animals or invasive plants a problem?
- Is Indigenous natural and cultural management continuous or discontinuous?

Connectivity

- Can the property enhance the viability of an existing protected area (e.g., by buffering the boundary or linking two currently unconnected areas)?
- Does the property have habitat resources that are important for migratory animals (e.g., wetlands) or ecologically important species (e.g., seed dispersing birds)?
- Does the property play an important role in hydrological processes (e.g., encompasses a ground water recharge zone)?
- Is the property part of connected Indigenous estates and homelands

Restoration Potential

- If the ecosystems or ecological communities on the property are in poor condition, are there good prospects for ecological and eco-cultural restoration?

See Reference 2 - **Background on the Indigenous Environmental Assessment (IEA) criteria -** below, which discusses technical aspects of these criteria in more detail.

These criteria have been applied to the northern Kaanju homelands as a case study. See Reference 3 - **The Northern Kaanju homelands IEA case study** - below.

Reference 1

Wild Country Scientific Connectivity Principles

The following dot points are taken from Soulé et al. (2004) and Mackey et al. (2006):

- *The conservation requirements of highly interactive animals* – A good example is the Dingo. There is good evidence that a healthy dingo pack may regulate feral cats and foxes. This in turn may reduce predation on so-called "critical weight" (i.e., smaller) marsupials. A property may provide important habitat for healthy dingo packs.
- *The conservation requirements of dispersive animal* - Many animals (in fact, about half or ~350 of our bird species) travel large distances between seasons or from year-to-year often to find scarce food and other habitat resources (Gilmore et al. 2006). A property may contribute to the *in situ* conservation of biodiversity because it provides refuge habitat in times of drought. Another example is a property that provides wetland habitat for migratory birds.
- *Adaptation to Climate Change* - Human use of fossil fuels along with land clearing is causing rapid climate change. Plants and animals can persist in the face of rapid climate change by evolving, dispersing to more suitable locations or taking refuge. A property may contribute to the *in situ* conservation of biodiversity because it provides habitat for animals dispersing in response to rapid climate change.
- *Ecological Fire Regimes* – Fire has been part of the Australian environment since the continent broke free of Antarctica some 60 million years ago and began its slow drift northwards. Ecologically, what is important is not a single fire event but the pattern of fire experienced in a region over time, so-called fire regimes. All Australian plant species are adopted to persist through particular fire regimes. Contemporary fire management is generally geared towards protecting people and property and may be ecologically and culturally inappropriate. How a network of properties is managed for fire can influence the persistence of a species in the landscape.
- *Hydro-ecology* – Water is the main environmental resource limiting landscape productivity in Australia. Rainfall is both limited and highly variable from year to year. This variability has been a major selective force on the evolution of Australia's plants and animals. Environmental assessment needs to consider the special relationships between the surface/groundwater resources and the vegetation cover. For example, a property might be part of an important ground water recharge zone.
- *Spatially-dependent evolution* – The way new species evolve is by animals dispersing through the landscape and establishing new populations. These populations can then become isolated from the other populations of the species. Over time, the new, isolated population can develop a sufficiently different genome that it becomes a new species. So, in the long term, over evolutionary time scales, it is important that humans do not place in the landscape barriers to species dispersal.

- *Coastal zone fluxes* – The land and marine environments are linked through the flow of water, nutrients and organisms; such as the movement of fish from coastal catchments to near coastal marine ecosystems. What happens on costal catchments therefore affects near-coastal marine ecology. We need to think about these connections when undertaking environmental assessment.

Reference 2

Background on the Indigenous Environmental Assessment (IEA) criteria

1. Context

Application of this criterion requires that the nominated property be placed in a regional and continental context. The representativeness of the property can be assessed by locating it within a continental or regional classification system,

At a continental scale, the Australian Government has produced an Interim Biogeographic Regionalisation of Australia (IBRA; DEH 2005), and has undertaken additional analyses to rank the regions according to their conservation priority. Another Australian Government initiative has been the identification of "biodiversity hotspot" regions (Australian Government 2005). The ANU *WildCountry* Research and Policy Hub has also developed a more detailed landscape classification of the continent which complements the IBRA approach (Mackey et al. 2006). The Australian Institute for Aboriginal and Torres Straight Islander Studies (AIATSIS) has produced a map of Aboriginal Australia using watershed basins as a template to determine the larger groupings of Indigenous people (Horton 2000).

2. Composition

a. Ecosystem composition

Ecosystems can be defined at a range of scales and using different variables. Broadly defined vegetation types are commonly used as a form of ecosystem classification or as an ecosystem surrogate. Each state governments has adopted different approaches to this problem such that at a state level it is possible in at least some regions of most states to identify the vegetation ecosystems within which a property is located (e.g., the ecological vegetation groups of the Victorian State Government, and the regional ecosystem mapping by the Queensland State Government; EPA 2005). However, these vegetation-based classifications tend not to be compatible across state borders.

b. Species composition

Most states have databases that provide information about geographic patterns in species distributions, e.g., the plant and animal atlases of Victoria

c. Threatened/Special Interest Species and Communities

The Australian Government along with all State and Territory Governments have official lists of threatened species and ecological communities. Thus, it is possible to compare the official State and Commonwealth lists of threatened species with a list of species that are known to use (based on field observation) or may use the nominated land - predicted from information about species potential distributions and habitat requirements for food, shelter, and nesting. The ANU *WildCountry* Research

and Policy Hub has compiled a national list of species recognised as threatened by governments and authoritative expert groups.

d. Species and ecological communities are also of conservation interest if they are:

- Naturally rare
- Endemic - i.e., only found within a specified geographic area
- Dispersive – animals that are not necessarily resident in a single landscape and capable of large scale movements, perhaps being dependent on different landscapes from season to season and year to year
- Highly interactive – i.e., play a dominant role in the ecosystem such that they affect many other species, for example, they are top-of-food-chain predators

The vegetation cover is a component of biodiversity in its own right. However, in addition, vegetation provides habitat resources directly for many animal species (food, nesting, shelter) and indirectly for all animals (as plants are the basis of the food chain). While each animal species has its unique niche, all species utilise the habitat template represented by the vegetation resources in a landscape. The vegetation cover also plays an important role in regulating water and nutrient cycles. Environmental assessment therefore requires information about a property's vegetation cover, especially the: (a) dominant floristic composition, (b) structure (i.e., the height, density and layering of the dominant plants), (c) gross primary productivity (i.e., the rate of plant growth), and (c) condition.

Conventional vegetation survey methods provide information about vegetation composition and structure. Remotely sensed data can now be used to estimate the primary productivity of the vegetation cover, i.e., the rate at which plants produce new biomass. Sites can contain similar plant species and vegetation structure but vary considerably in terms of primary productivity due to different weather, soil and terrain conditions.

3. Condition

Various schemes have been developed to determine the condition of the vegetation cover with respect to the impact of land use activity (technically, referred to as "anthropogenic impacts on vegetation"). As the impact of modern land use activity increases, there is increasing conservation significance placed on land with vegetation cover in highly intact condition. Field based approaches include the Victorian government's 'habitat hectares' system which is an objective approach to assessing the condition or quality of vegetation relative to 'natural' conditions. VAST (Vegetation Assets, States and Transitions), developed by the Australian Government Bureau of Rural Sciences, is an approach to classifying vegetation cover by the degree of anthropogenic modification. In the VAST system, vegetation is classified as a series of states, from a base-line condition through to total removal (Thackway and Lesslie, 2005). The VAST classification is used to help describe, map and account for changes in the status and condition of vegetation, and make explicit the links between land management and vegetation condition.

4. Connectivity

Increasingly, conservation scientists are drawing attention to the importance of how conservation networks are spatially configured. Wherever possible (and all other things being equal), conservation areas should: be as large as possible; lack “doughnut holes” and other kinds of incursions into their boundaries; be connected to other protected areas (either directly through “corridors”, indirectly via habitat patches that serve as “stepping stones”, or through other connections such as stream and wetland systems); and have their boundaries buffered from threatening land uses.

It follows that a parcel of land may have conservation value because it contributes to the integrity of the regional conservation network. Assessment against this criterion requires comparing the location of the nominated land in the context of the existing protected areas and other conservation measures. A related concern is whether the target property is of sufficient size to sustain identified conservation values.

It is well appreciated that Australia is a dry continent subject to extreme variability in rainfall regimes. Consequently, the distribution and availability of water has been a significant selection force on the evolution of Australia’s plants and animal, and is a major determinant of life history strategies. The relationship between water, vegetation and animals is complex and various within and between eco-regions. For example, in high rainfall areas, landscapes can be important because they are in critical locations within the upper watershed. In arid zones, places of ground water discharge can maintain plant growth during climatic drought and function as wildlife refugia. To date, the hydroecological characteristics of land have not been systematically incorporated into conservation assessment. However, it is possible to draw upon available hydrological data and new terrain analysis methods in applying this criterion.

5. Restoration potential: (a) ecological; (b) eco-cultural

The vegetation cover may be in poor condition, but a nominated property may be important to biodiversity conservation because it is the best of what is left in a highly perturbed region. In such circumstances, investment in ecological restoration can be warranted and the landscape can thus have a high conservation value.

Similarly, a landscape may be ecologically degraded such that little of the pre-contact ecosystems persist, but the country may still hold significant eco-cultural value to an Indigenous community. Ecological restoration of the landscape ecosystem may be warranted on the basis it will assist in the renewal or persistence of associated cultural practices related to traditional human-nature interactions.

Assessment of the ecological restoration value of a landscape requires application of the above criteria (1-5) above and some idea of at least the pre-contact vegetation cover. Assessment of the eco-cultural value of a landscape would require the same information but in addition advice from the traditional custodians.

Reference 3

The Northern Kaanju homelands IEA case study

Location

Kaanju country / Kaanju *Ngaachi* - The homelands (*ngaachi*) of Northern Kaanju people located to the north of the Archer River occupy an area of approximately 470,000 hectares, stretching through the Lockhart Valley and westward from the headwaters of the Wenlock and Pascoe rivers across Cape York Peninsula. They include the Embley Range and run south to the Archer River and north along the Wenlock River to Schramm Creek. They also include the southern bank of the upper Olive River (see Maps. 8 and 9).

Governance – planning overlays

The northern Kaanju homelands refer to the traditional estate boundaries of the Kaanju people. The Chuulangun Aboriginal Corporation has developed a management plan for this area. One current proposal involves the creation of an Indigenous Protected Area under the National Reserve System on part of these lands. The plan is an assertion of the rights of primary management of the Traditional Owners of country.

The northern Kaanju homelands cover a range of tenures. The Kaanju estates overlap Reserve, Lands Lease, Freehold, National Park and State Land blocks. In addition, the Mangkuma Land Trust holds a significant section of the homelands as Aboriginal freehold under the Aboriginal Land Act 1991. Parks and reserves are subject to the Nature Conservation Act 1992. The Vegetation Management Act 1999 covers all northern Kaanju homelands. The Queensland Government has identified the Wenlock and Pascoe Rivers as potential 'wild rivers' under the Wild Rivers Act 2005.

There has been extensive research of the entire Cape York region through CYPLUS (Cape York Peninsula Land Use Study) a joint initiative between the Australian and Queensland Governments. Part of the northern Kaanju homelands fall within the proposed initial priority areas for Government support for management actions and protection of natural values (Map 10).

The Natural Heritage Significance of Cape York Peninsula (Mackey, Nix, and Hitchcock. 2001) was prepared for the Queensland Government as part its commitment to the Cape York Land Use Heads of Agreement. This, along with other studies, is helping to inform the CYTRIG (Cape York Tenure Resolution Group) charged with resolving the tenure and conservation management of approximately 1.5 million hectares over 20 eastern Cape York properties. The Batavia property on northern Kaanju homelands is one of these.

Evaluation against Criteria

Context

The Kaanju homelands are situated within the Cape York Peninsula IBRA region. The Kaanju lands encompass a variety of ecosystems including tropical woodland and open savanna; creek, river and lagoon systems with gallerine forest along the main river channels; and upland rainforest. The region is monsoonal, with the rivers reducing to a series of waterholes and only the main channels continuing to flow during the dry season, while the wet season sees the rivers swell hugely and seasonal creeks flood back into the rivers. The Kaanju homelands contain a huge diversity of flora and fauna. Although much of the region remains relatively undisturbed the impacts of recent land use, including mining and pastoralism and the introduction of feral species, present significant threats to the region's biodiversity.

The area is of high wilderness quality according to the National Wilderness Inventory. The area features open savannah in the west, riverine environments and extensive lagoon systems centred on the two rivers, and upland tropical and sub-tropical rainforest environments along the east. There are also pockets of open bushland, sand ridge country and areas that feature vine thickets and sink holes.

Further, the Wenlock and Pascoe Rivers feature vast nationally important wetland areas and riparian forests. These rivers have a rich biodiversity, and feed and support many creeks, springs and lagoons, which in turn support a myriad of fish, bird, amphibia, reptile, mammal, insect and plant species. Importantly, the Wenlock River contains the richest known freshwater fish fauna of any river in Australia (CYPLUS 1995).

Composition

The broad vegetation groups of the Northern Kaanju homelands have been identified (Mackey, Brown. 2006.) to include -

- Closed forest communities
- Eastern sub-humid woodlands and open-woodlands dominated by Eucalyptus spp. (yellowjacket and ironbark)
- Eastern sub-humid woodlands dominated by Eucalyptus spp. (northern box and ironbark) on undulating low hills on metasediments and acid volcanics
- Open-forests dominated by Eucalyptus spp. and Corymbia spp.
- Low woodlands dominated by Melaleuca spp. on depositional plains or alluvium
- Monsoon mixed species woodlands to low open-woodlands
- Heathlands and closed-shrublands
- Communities of the littoral zone
- Open-forests and woodlands dominated by Eucalyptus spp. and Corymbia spp. on drainage lines and alluvial plains
- Monsoon woodlands and open-woodlands dominated by Eucalyptus tetrodonta and E. miniata

The area of the Wenlock and Pascoe Rivers support a number of rare, threatened, endangered and undescribed fauna species, including the North Eastern Tree Kangaroo, the Antillopine Wallaroo (*Maangkay)* and the Spotted Cuscus (*Kulaan*). These rivers provide habitat for a number of rare bird species, including the Eclectus Parrot (*Piimpa)*, (found only in the Iron and McIlwraith Ranges between the Pascoe and Rocky Rivers), the Magnificent Rifle Bird, the Cassowary (*Kutani*), the Palm Cockatoo (*Kila)* and the Wedge-Tailed Eagle.

Further, CYPLUS names the Wenlock River as important for the conservation of the endangered Red Goshawk (*Ka'aaka*), a woodland bird. The area of *Chuulangun* on the upper Wenlock has been identified as potential suitable habitat for an undescribed species, the Pseudophyrne frog, which was first recorded by Western science in 1948 when the Archbold Expedition sited the frog on the Wenlock River. From the Kaanju people's perspective this frog is an important story and totem. Further, Kaanju people have Stories of Albino crocodiles (*I'wai)* and rare species of 'Lightening' and 'Rainbow' fish (*Wapi)* found only in the spring fed lagoons and water systems in and around the Wenlock and Pascoe Rivers.

The Wenlock and Pascoe Rivers on Cape York Peninsula is an Aboriginal domain and hold significant natural and cultural value for the Kaanju people. The environment holds significant cultural value for Kaanju people, featuring many significant Story places as well as sacred ceremonial grounds (*Ngaachi Kuu'ul Kincha)*, totemic sites, and areas of rock carving and painting.

Condition

According to the VAST continental assessment of vegetation condition (Thackway and Lesslie 2005), the land cover of the *northern Kaanju homelands* is almost entirely covered in its native vegetation with only pockets of transformed areas. The majority of the homelands have high quality original (residual) vegetation. The vegetation on parts of the homeland has been modified by pastoral activity, mining and roads. This assessment is supported by figure 1 which shows the vegetation assets, states and transitions (VAST).

Traditional owners are particularly concerned about the deterioration of one of the core Kaanju story places on the Wenlock River, *Malandaji.* During the dry season uncontrolled third party use near this story place results in severe erosion and land degradation. During the wet season flood waters exacerbate the erosion problems, and silt builds up at the site of *Malandaji.* Kaanju people have observed these changes over the last thirty or so years. This degradation has severe consequences for the ability of the Story to carry out its role in the Kaanju cosmology and, ultimately, for the sustainability of the land.

Kaanju traditional owners ascribe the deterioration in the homelands to their forced removal to centralised communities and towns, and consequently their inability to undertake the management of their homelands.

During this period of absence other management regimes took over resulting in the deterioration of the natural and cultural landscape. Current management arrangements under the control of government (e.g. pastoral leases, mining leases, timber reserves, National Parks) are considered unsustainable, and this is evidenced in a number of areas by severe land degradation and erosion, weed and feral animal

infestation, a lack of proper fire management, and the deterioration of significant cultural sites due to prolific unregulated public access.

In order to restore the natural and cultural landscape to its sustainable state, Kaanju traditional owners consider proper Indigenous management needs to be restored and acknowledged as the primary method for the management of the Wenlock and Pascoe Rivers.

Connectivity

The northern Kaanju homelands provide an array of natural and cultural connections. It has intrinsically high values and as a part of the mosaic of cultural landscapes in the Cape York region has connections on all sides to other homeland estates. It is part of one of the largest, intact tropical savannahs left on the planet. The Wenlock and Pascoe rivers and their catchments provide an intricate set of hydro-ecological connections through-out the homelands (see map 15) and in the primary land-sea connections to the Gulf of Carpentaria to the west and the Great Barrier Reef to the east.

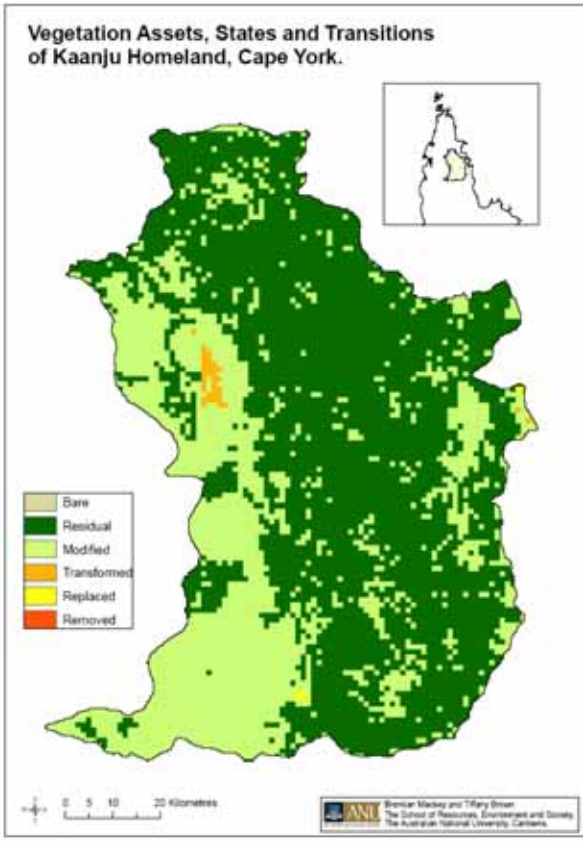


Figure 1 - VAST map of northern Kaanju homelands – B. Mackey & T. Brown. ANU School of Resources, Environment and Society

Restoration Potential

The available data on the vegetation cover and its condition suggests that the homeland, through proper management, could quickly restore high natural values to areas that have been modified.

Summary criteria rankings for the *Northern Kaanju homelands*

The rankings reflect the authors' professional judgement of the property's relative environmental significance in relation to each of the criteria, given available data.

Criteria	**Ranking** **1 = minimum*** **5 = maximum**				
	1	**2**	**3**	**4**	**5**
1. Context				x	
2. Composition+				x	
3. Condition+				x	
4. Connectivity					x
5. Restoration potential					
(a) Ecological restoration potential+					x
(b) Eco-cultural restoration potential+Δ					x

+ Assessment conditional on field inspection of property

Δ Assessment requires consultation with traditional custodians

* Min/Max ranking indicates relative environmental significance

Conservation economy

Principles of natural and cultural conservation should define the type and direction of economic activity associated with protected areas and landscape managed for their eco-cultural values. This is not to ignore the practical issues associated with meeting material needs and community development – it is about investing in opportunities to build a new economy - a 'conservation economy' - to achieve lasting environmental protection and economic inclusion, especially for those, predominantly Indigenous, peoples living in the remote and largely intact landscapes of the Country.

This is a challenge that Indigenous and local communities, environmentalists, Governments and natural resource-based industries must come to grips with. A conservation strategy at the landscape level "must include people, jobs, and communities, or it will fail". But it must also recognise that if "the health of ecosystems and communities is not integrated into economic activities then all three suffer - economic dependence on destructive activities creates apparent conflicts between work, nature, and community".[4]

The development of a conservation economy requires economic arrangements of all kinds to be gradually redesigned so that over the long-term they "decrease economic dependence on activities that deplete natural or social capital" and in the shorter-term they make investments with economic, social, and environmental returns. It is possible to harness market forces and changes in laws, taxes, and policies to favour a conservation economy.[5]

It will be important to identify systematically the current and future uses of the environment for economic activities, as either -

1. compatible with the ongoing maintenance and protection of ecological processes
2. compatible with some modification and reform to the economic activity
3. incompatible with the protection of ecological processes[6]

TWS has concluded that "this process of identification of compatible and incompatible uses will allow appropriate economic and community development strategies". These will "phase out or modify those economic activities incompatible with the maintenance and protection of natural heritage values and ecological processes. It will also support and encourage the development of new 'compatible' industries."[7]

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[4] *A Conservation Economy* – Ecotrust. Online references through http://www.conservationeconomy.net/ and http://www.ecotrust.org/index.html

[5] Ibid

[6] Reference here is made to outcomes of the Australian Conservation Foundation-convened "Appropriate Economics Roundtable", Cairns, 2003

[7] *The Conservation Economy and WildCountry*. Lyndon Schneiders. The Wilderness Society 2004