



IUCN WORLD COMMISSION ON PROTECTED AREAS,
AUSTRALIA AND NEW ZEALAND

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SENATE INQUIRY INTO THE FUNDING AND RESOURCES AVAILABLE TO MEET
THE OBJECTIVES OF AUSTRALIA'S NATIONAL PARKS, OTHER CONSERVATION
RESERVES AND MARINE PROTECTED AREAS.



Litchfield National Park, Northern Territory

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1.0 Introduction

The IUCN World Commission on Protected Areas (WCPA) commends the Australian Senate for its instigation of this important inquiry. WCPA believes that Australia's Protected Areas (PAs) constitute a vital and irreplaceable national and international asset. Protected areas remain the most cost effective way of conserving biodiversity. In addition they currently contribute a broad range of important benefits to all Australians, not least being the main attraction of Australia's 70 billion dollar tourism industry. WCPA believes the value of these areas of land, sea and freshwater will only increase in importance in the future. To sustain and enhance these values the protected area system must be completed and must be managed effectively. This will require a very substantial increase of national commitment, resources and funding from both governments at all levels and other sectors and should have parity with the financial and political stature of the National Action Plan for Salinity and the National Water Initiative.

WCPA specifically advocates Australian Government leadership and commitment to increase program funding for both the establishment and management of protected areas, as part of an enhanced national biodiversity program and as part of Australia's investment in our continued first-world economic and community health and wellbeing.

This submission has been prepared by Australian Members of the IUCN World Commission on Protected Areas. The Commission is the world's leading global network of protected area specialists and one of six Commissions of the leading conservation body in the world, the International Union for the Conservation of Nature (IUCN) (www.iucn.org).

The **WCPA mission** is:

'To promote the establishment and effective management of a world-wide representative network of terrestrial and marine protected areas, as an integral contribution to the IUCN mission'.

While the members of the IUCN are bodies - governments, organisation and institutions, the Commissions are composed of individuals appointed for their expertise and their willingness to contribute that expertise to global conservation goals. The Australian and New Zealand region currently has 200 members from government, academia and the non government sectors. The Commission's perspective is science-based and entirely apolitical. Virtually all members are senior in their respective fields.

Traditional government owned and legislated protected areas remain a core focus of the WCPA, however we are committed through the key international outcomes: the IUCN program, the outcomes of the Durban World Parks Congress (2003), the Convention on Biological Diversity Programme of Works on Protected Areas (CBD-POW) and the WCPA Strategic Plan, to the broad agenda of modern conservation. This agenda includes:

- **Conserving Biodiversity** through first, the completion of the systems of PAs with particular emphasis on the marine environment and second, complementing traditional protected areas

with ecological networks (also called 'corridors' or biospheres) on all jurisdictions, land tenures and marine environments.

- **Science, Knowledge and Management** are all critical to planning, declaration and management of PAs. WCPA supports the use of science and other forms of knowledge, including the knowledge of local and indigenous people.
- **Capacity Development and Awareness** covers both building the capacity of land and sea managers and the wider area of building knowledge, understanding and support for protected areas in the wider community.
- **Governance, equity and livelihoods** recognise that conservation is essentially about managing relationships between humans and natural systems so that both thrive and support each other. WCPA supports both good governance principles in all conservation decisions and the diversification of governance models to embrace innovation in conservation.

2.0 Approach to Submission

The WCPA recognises that the principal focus of the inquiry is the adequacy of resources and funding to protect the values and fulfil the responsibilities of Australian Governments. Our submission will cover each of the reference topics in turn and draw out the implications for resources and funding. The submission interprets 'resources' as covering knowledge, capacity and political commitment, as these factors are as critical to the implementation of any program as funding.

The submission will use the term 'protected areas', abbreviated to 'PAs' as the generic term for all categories of terrestrial and marine reserves but will use more specific designations as appropriate. This Submission uses the definition of protected area adopted by the International Union for Conservation of Nature (IUCN):

An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means (IUCN 1994).

Therefore WCPA accepts as 'protected areas' areas which are non-legislated such as private protected areas and indigenous protected areas. However, IUCN has made clear the term refers to lands and waters 'especially dedicated to the protection and maintenance of biodiversity'. Adrian Phillips, Past Chair of the World Commission on Protected Areas stated:

There have recently been attempts to argue that land within IUCN category V and VI protected areas can be used for large scale industrial projects. This is a serious misunderstanding of the concept of protected areas. All categories of protected areas are intended to be permanent designations which provide long term protection to biodiversity and other values. To use such categories, which envision a degree of human presence and sustainable resource use, does not mean abandoning protection in these areas. (Phillips 1998)

As indicated by the above statement WCPA values protected areas for the full range of values beyond the central value of the diversity of wildlife and plants. This includes geodiversity and geomorphology of the Australian land and seascape and both quantifiable and non quantifiable economic, cultural, social, health, aesthetic/spiritual and ethical values (see 4.0).

WCPA includes Antarctica in speaking of Australian Protected areas as the Australian Antarctic Territory meets the definition of Category VI of IUCN's Category system for PAs.

3.0 SUMMARY OF KEY MESSAGES

3.1 Australian Biodiversity is globally significant

- All nations on earth have a fundamental duty to sustain the 'living planet', the great biosphere composed of the surface on which we live, the atmosphere we breath and the interconnected web of life, the evolution of billions of years whose health sustains life.
- Global ecosystems and resources are under extreme pressure from both growing human populations and resource use. It is imperative that every effort is made to sustain healthy land and sea areas and to protect them from threatening processes.
- Australia is the only developed nation which is described as megadiverse, meaning one of the richest areas of earth for biodiversity and consequently has a high responsibility to protect its natural environment (McNeeley et al. 1992).

'I think this country is in a very special situation. You are one of the 12 countries with major repositories of biological diversity. You are a highly sophisticated industrialised nation, which the other 11 are not. The potential leadership role is very large indeed...I think there is a very special role in history for Australia with respect to the biological diversity crisis.'

Dr Thomas Lovejoy, Chief Biodiversity Adviser to the President of the World Bank
(Now President of the H. John Heinz III Centre for Science, Economics & the Environment, Washington DC)

- As a nation with democracy and good governance Australia has one of best global possibilities for modelling the integration of sustainable development and conservation embodied in the Convention on Biological Diversity (CBD).
- Australia has an emerging role for leadership and excellence in PA management. Australia is setting new global benchmarks in aspects of protected area management. The adaptive management system developed for the Tasmanian Wilderness World Heritage Area has been acclaimed internationally for demonstrating how evaluation can be integrated into the management planning cycle (Tasmanian Parks and Wildlife Service, 2004) and the NSW State of the Parks report was similarly acclaimed.

3.2 Protected Areas are rich in values and benefits to Australian society

- PAs are the most cost effective tool for protecting and enhancing biodiversity values and protecting ecosystem benefits. The Australian Terrestrial Biodiversity Assessment said 'Australia's national parks and other protected areas are its premier investment in biodiversity conservation (Commonwealth of Australia 2002 p.125).
- The report, *Directions for the National Reserve System* (Commonwealth 2005) declared 'experience in Australia to date has generally demonstrated that it is seven times more cost effective to conserve intact ecosystems rather than attempting to re-establish them after they have been cleared or significantly degraded'.
- A report prepared for the Prime Minister's Science, Engineering and Innovation Council *Setting Biodiversity Priorities* (Possingham et al. 2002) found that efforts to consolidate Australia's National Reserve System is one of the most cost-effective investments that governments can make to secure the nation's biodiversity.

- Therefore WCPA believes that the PAs of Australia are the 'quiet achievers' of biodiversity conservation in Australia.
- However, beyond biodiversity they also contribute a broad range of ecosystem, economic, cultural, social benefits to all Australians. These include both tangible and intangible values equally crucial to quality of life.
- WCPA believes there are also emerging values which could be tapped such as the high value to physical and mental health programs and to addressing social issues such as the programs being developed under 'Healthy Parks Healthy People' in Victoria
- Australian protected areas are the key components and defining images of our nation for the world.
- Protected areas constitute the key attractions of Australia's 70 billion dollar tourism industry. To name the protected areas of Australia is to name the key icons and attractions of every state.
- Tourism in parks significantly contributes to regional and rural development and opportunities for indigenous employment.
- The community's appreciation of the values and benefits of PAs will increase in future especially in response to rapid urbanisation, coastal pressures and climate change.
- Therefore PAs are a vital and irreplaceable national and international asset and essential to Australia's future sustainable development.

3.3 Significant achievements have been made

- Much has been achieved in Australia to date by Commonwealth, State and Territory jurisdictions and in some cases local government.
- Australia has had a very important bipartisan commitment to the establishment of a comprehensive, adequate and representative (CAR) system of PAs covering both land and sea since the early 1990s.
- All jurisdictions have significantly added to their estates over the last decade to contribute to a national terrestrial figure of over 10%.
- Australia pioneered joint management with indigenous Australians in Kakadu Uluru and Gurig National Parks.
- There have been advances in marine conservation including the internationally significant model in the Great Barrier Reef MPA, which in 2003 significantly increased the 'no take' zones of the park to better protect a range of habitats and communities within the park.
- The greatest progress in MPA establishment over the past decade has been in Commonwealth waters, where between 1997-2002, the area of MPA reserved increased from 36,756,019 ha in 18 MPAs to 61,663,403 ha in 31 MPAs.
- Within State/Territory waters, Victoria in 2002 established a representative system of highly protected, Marine National Parks (13) and 11 Sanctuaries (11), reserving approximately 5.3% of its jurisdictional waters. While New South Wales has established 4 MPA's since December 1997 (Solitary Islands, Jervis Bay, Lord Howe Island, Cape Byron) totalling 162,298 ha.
- PAs have benefited from broad strategies, such as the National Biodiversity Strategy (NBS) and the development of planning frameworks, IBRA and IMCRA, and national audit information.
- The National Reserve System (NRS) and National Reserve System for Marine Protected Areas (NRSMMPA) are vital programs (www.deh.gov.au).

- The funding formulae under the NRS that provides 1 or 2:1 Commonwealth matching funds has been a very important catalyst in mobilising support from states and the private sector. Some states have only been able to progress their systems with the assistance of the NRS.
- The NRS has also played a vital catalyst role in expanding new governance models, especially private protected areas and Indigenous involvement in PAS through IPAs.
- Funding through the NRS has a major leverage factor and has brought major additional value to the program from both states and the private sector.

3.4 The policy directions of Australian protected area policy are sound.

- The policy directions of the NRS and also the states and territories are sound and generally consistent with international consensus directions as expressed in the World Parks Congress (WPC) and the Convention on Biological Diversity's Programme of Works on Protected Areas (CBD-POW).
- These key global directions are:
 - Completing systems through science based planning
 - Significantly increasing marine protected areas
 - Implementing management effectiveness
 - Diversifying governance models/partnership approaches – such as indigenous and community conserved protected areas, private protected areas and covenants on private lands, conservation agreements with large corporate land owners and the employment of economic instruments and incentives.
 - Seeking integration of parks with other sustainable land and sea uses through large multi jurisdiction 'ecological networks' or 'biospheres' and large multi zoned marine protected areas.
- However, all these positive strategic directions need significant funding and a lead from the national government but funding of the NRS has diminished from a low base to totally inadequate.
- Other sectors, indigenous Australians, local government, conservation NGOs, private trusts, individual land owners, mining and pastoral corporation are willing to engage in a 'partnership approach' to conservation, but this requires consistent political commitment and leadership at a national level and well supported programs by all governments.

3.5 The National Terrestrial and Marine Systems need to be completed

- While there have been important steps made towards the bipartisan goal of a comprehensive adequate and representative system of both marine and terrestrial systems, many national targets for a comprehensive protected area system have not been met and meeting international goals, such as the CBD targets, will require major additional effort.
- There are many areas which need to be brought under conservation management, especially in Northern Australia and in the freshwater and marine systems.
- Marine conservation in particular lags behind. Despite the national policy initiatives to establish a national representative system (NRSMPA) over the past decade - several jurisdictions, the Northern Territory, and to a lesser extent, Tasmania and South Australia, have not to date establish MPA systems (Edyvane 2005).
- Despite the agreed guidelines and actions there has been limited progress in implementing the NRSMPA largely been due to a lack of resources (Edyvane 2005).

- The establishment of coordinated larger-scale multi-tenure reserves or 'ecological networks' is a consensus goal, both nationally and internationally. This should be promoted by Commonwealth programs and better integrated into NRM regional delivery frameworks.
- Such networks would assist in addressing threatening processes in lands and seas outside PAs. Threats such as feral animals, weed invasion, inappropriate fire regimes, loss of water to freshwater systems and pollution cannot be solved within the boundaries of parks alone.

3.6 There is an urgent need for a major national commitment

- It is therefore vital to invest in protected areas as a national priority and international obligation.
- It is a critical juncture - failure to commit will mean severe losses of the 'natural capital' of Australia, the continuation of species extinction and a deeper and more costly problem for future generations.
- Completion of systems cannot wait until all problems are solved with existing reserves. The *Australian Terrestrial Biodiversity Assessment* warned that many bioregions have little vegetation remaining or only scattered remnants and that 'The opportunity for developing a Comprehensive Adequate and Representative protected area system is rapidly diminishing' (Commonwealth 2002 p.viii).
- The emphasis on NRM in recent years, while vitally important, has led to less emphasis on these critically important national assets, despite the greater cost effectiveness of protecting extant systems. There should be no choice - both programs deserve major political and funding support and should be more closely aligned.

3.7 Effective Management is essential for conservation outcomes

- Effective management will be the key to sustaining and enhancing both existing and future values and addressing these challenges.
- For management of protected areas to be effective, protected area managers and the public need to know whether management is achieving its objectives. Evaluation of management effectiveness and adaptive management responses need to be core elements of the management systems for protected areas.
- However while ecological monitoring is critical to guide effective management it is seldom adequate.
- The institutional capacity of agencies to manage in an adaptive way based on good science is underdeveloped.
- In a few cases the lack of political priority given to protected areas has resulted in loss of focus, and a lowering of agency morale.
- Many threats exist which could undermine the key values PAs seek to protect and need intensive management.
- Major additional research effort is needed to assess major threats to biodiversity such as weeds, feral animals, pathogens, inappropriate fire regimes, water loss from freshwater systems, land degradation and climate change within specific types of ecosystems.
- Climate change is an overarching and complex issue which will present many challenges to retain values, for example increased bush fire events or altered bush fire regimes within PAs as a result of climate change will have major impacts.

A good network of protected areas free of other stresses is one of society's and nature's best adaptation to climate change.
(Welch in The George Wright Forum 2005 p.90)

- PAs will be of vital importance to building in some capacity for biodiversity resilience and adaptation in the face of climate change. In particular there is a need for increased connectivity of natural areas to allow maximum opportunity for plants and animals to adapt to shifting climate zones by migration.
- Some experts also identify the lack of integration of PAs and PA frameworks into Natural Resource Management (NRM) as a problem to be addressed. Improved NRM is essential and fully supported by WCPA. However, biodiversity conservation is the fundamental underpinning of NRM and therefore protected areas should be an integral component of all catchment management plans. An example of where integration is working is the cooperation between the Queensland government and federal agency GBRMPA to develop and implement a Reef Water Quality Protection Plan.
- Continued investment in bioregional planning at the catchment scale that links private lands and public PAs is fundamental. The commitment to regional organisations and to in-perpetuity biodiversity outcomes through funding both the NRM and NRS programs in the next tranche of NHT funding is essential.
- The argument of anti-conservation lobbies that 'no more PA should be declared until we manage the ones we have', ignores the closing window of opportunity to conserve and the fact that opportunities for acquisition often come only once. It also ignores the importance of these sites as buffer zones, essential to integrated NRM and ecosystem protection.

3.8 Funding and Resources are seriously inadequate

- While WCPA accepts that considerable investment has been made by all governments, the current funding at both state and Commonwealth levels simply does not match the importance and centrality of the tasks of completing a CAR protected area system, good management and building capacity and partnerships.
- The amount available for the NRS has fallen dramatically from a modest \$20.6m in 2001-2002 to only \$6m funding in 2005-2006 (Department of Environment and Heritage). In 2003/04 expenditure fell as low as \$2.99m. Just one high conservation value property in the Northern Territory is estimated to cost \$14 million dollars, in productive southern areas a good sized property could reach over \$30m. (NT Parks and Wildlife/DEC).
- While it is recognised that other elements of NHT funding contribute to protected areas, the NRS remains the primary acquisition fund and the \$6 million figure needs to be contrasted with the overall figure for Natural Resource Management for the same period of \$478.4 million. (Department of Environment and Heritage, Environment Budget Overview 2005-6).
- Since 1997 in fact about 95% of NHT money has flowed into natural resource management leaving slightly over 5% for building the National Reserve System.
- \$9.4 million is being invested in regional marine planning; however the identification of areas for marine protected areas is only one component of a larger process.

- Paradoxically the increasing recognition of the importance of protected areas has been matched with decreasing dollars and a lowering of protected areas as a policy and political priority in some cases.
- There has also been a loss of funding to World Heritage areas which are either entirely or partly protected areas.
- Some state agencies have increased their budgets, but most experts consulted doubt that this increase has kept pace with demands on management and challenges. The inaugural NSW *State of the Parks* report, 2005 indicates the total inadequacy of funding to meet the demands of these issues (DEC 2005).
- A few states have committed major resources to the task of building new constituencies of support through community outreach and extension programs designed to deliver social benefits - an outstanding model is the Victorian 'Healthy Parks Healthy People'.
- Similarly while there is agreement that Partnerships need to be formed and a diversity of governance models is crucial to achieve future conservation, few states allocate significant funding to developing this area.
- To retain the rich benefits and achieve other essential societal goals through protected areas requires a very substantially increased investment of national commitment, resources and funding. Such support needs to come from all levels of government and other sectors like the tourist industry, NGOs and private land owners.
- A failure to invest will lead to major costs and irreversible losses of values and benefits to Australian society.

THE SUBMISSION

4.0 The values and objectives of Australia's national parks, other conservation reserves and marine protected areas

4.1. VALUES

- The understanding of the values and objectives of protected areas is an evolving field. Comparatively recently parks were mainly valued for conserving natural and cultural heritage and outdoor recreation. Increasingly they are understood to be crucial to sustainable development and have many direct and indirect economic and development benefits. The understanding of their central role in Australia's tourism industry has only been fully recognised since the early nineties, the term 'ecosystems services' - the profound benefits which derive from intact systems is similarly new. An emerging area of great importance is the social value of parks to physical, mental and spiritual health.
- There is however a lack of community education on values of PAs. Very few parks agencies have an adequate budget to promote their parks and to advocate greater community understanding of their values. Parks Victoria is an exception with 'Healthy Parks Healthy People' successfully communicating an important range of values. This lack of advocacy can mean the voice of anti parks forces goes unanswered or inadequately answered.
- It would seem certain that the range of values that PAs provide will increase with time as the natural world faces the pressures of an increasingly population, urbanisation and industrialisation in an era of climate change.
- Worboys et al. (2005 p. 78) state a useful caveat on values '...trying to express the full range of protected area values in a simple typology is a hazardous undertaking. Many values are multifaceted and could be located within several categories. Some of our most treasured and important values are difficult to conceptualise and express.'

4.1.1 Biodiversity/Science

- In Australia national parks and other protected areas are the backbone of Australia's effort to protect its full range of ecosystems and therefore central to the conservation of Australia's unique and globally important biodiversity.
- The steady global decline in biodiversity over all has made these sanctuaries of nature even more important.
- PAs will form the critical core lands for both mitigating the effects of climate change and severe weather events and in providing greater resilience for ecosystems and species to cope with climate change stresses, and greater capacity to adapt to the unprecedented rate of change.
- As climate zones shift over the next few decades, many species currently protected within national parks and reserves may need to shift their geographic range in order to stay within a climate they can tolerate. Maintaining and improving connectivity between areas of natural habitat will be crucial to maximise the opportunity for such movements.
- [0]Connectivity and the health of the protected area system is therefore critical to meeting the objectives of the *National Biodiversity and Climate Change Action Plan (2003-2007)*, (Commonwealth 2004).

Strategy 5.2 Reviewing reserve acquisitions to strengthen the capacity of the reserve system to act as refuges for vulnerable terrestrial species and integrate reserve planning and management with broader landscape protected area networks to allow the movement of species across bioclimatic gradients.

National Biodiversity and Climate Change Action Plan (2003-2007) p.27.

- PAs provide critical “outside laboratories” for scientific research into the functioning of ecological systems and processes. For example, in 2003-2004, Queensland issued 215 permits for scientific research in national parks. Parks Victoria has established an active research partners program with formal links to the major universities and research institutions in that state. Parks agencies around Australia participate in many Cooperative Research Centres such as the Cooperative Research Centre for the Great Barrier Reef and the Sustainable Tourism CRC (Marc Hockings pers comm.).

4.1.2 Geodiversity

- Australian protected areas also protect the abiotic fabric of the land and sea – the mountains, cliffs, valleys, pinnacles, caves, coral reefs, dunes and other geological features, as well as their contemporary geomorphic processes. Geo features are formed by processes spanning millions of years, and some features such as glacial deposits, soils, inland dunes etc are not renewable.
- Features of geodiversity are often the key scenic attractions for international and domestic visitors to a protected area, for example the monoliths of Uluru and Kata Tjuta, the golden walls of the Blue Mountain valleys, the coastal erosion stacks of the 12 Apostles, the ‘pinnacles’ Western Australia’s Nambung National Park, the great dunes and perched lakes of Fraser Island and the glaciated landscapes of Cradle Mountain, Dove Lake and Lake St Clair.
- Some of Australia’s existing World Heritage Areas such as the fossil sites at Riversleigh and Naracoorte, Fraser Island, Macquarie Island and Purnululu were principally listed for their geodiversity/geomorphologic importance. Australia also protects substantial karst landscapes including the World Heritage listed Naracoorte Caves along with Jenolan Caves in NSW and Koonalda Cave in the Nullarbor SA. The Nullarbor itself is the largest semi-arid karst area in the Southern Hemisphere and its extensive subterranean features alone are widely recognised both nationally and internationally.
- Geodiversity not only contributes to the beauty, interest and tourism value of the area, but invariably has powerful meaning to indigenous Australians and an intrinsic part of their cultural landscape.
- These elements also hold much of our knowledge of the earth’s history and on going processes of change, which will have special importance as research repositories for climate change.

4.1.2 Economic Values

- Australia’s national parks and protected areas yield real and quantifiable economic values, although the methodologies for measuring these values is still an evolving area (Worboys et al. 2005, pp. 237-249)
- ‘**Ecosystem benefits**’ are provided by protected areas. Many of which are economically significant to the community and specific sectors such as agriculture and fisheries. These include

their role in water quality and quantity, soil stability and the prevention of costly environmental problems such as erosion, siltation and salinity.

'A recent report by the World Resources Institute values the 'free' ecosystem services at over \$30 trillion to the global economy each year. Conservation of biodiversity, on economic grounds alone, needs to become core business in the management of our natural resources'.

National Objectives and Targets for Biodiversity Conservation 2001 – 2005 (2001) Environment Australia, Canberra).

- PAs in Tasmania are recognised for their value as drinking water catchments. For instance, Wellington Park and Mt Field National Park together provide nearly 50% of the drinking water for Hobart. The water from these PAs is particularly valued because it is high quality and low cost. Transport costs are low due to gravity feed from the highlands and treatment costs are low due to the purity of the water (Parks Tasmania).
- One example of an ecosystem service is the contribution that wildlife populations can make to the sustainability of agricultural lands. Many native species are insectivorous and may play an important role in maintaining a balance in insect populations in farmland. For example, Australian Magpies feed in paddocks on the larvae of scarab beetles (e.g. cockchafers); ibis take large numbers of crickets and grasshoppers from pastures; honeyeaters, thornbills and pardalotes feed on insects that live on the foliage of trees, especially sap-sucking lerp and scale insects; Sugar Gliders take Christmas beetles and other invertebrates from tree foliage; and bats flying at night through farm woodlands consume moths, beetles and bugs. Research has shown that woodland suffering severe defoliation and dieback has only 10% of the birds of healthy woodland (Ford and Bell 1981).
- Marine Protected Areas sustain marine biodiversity and have proven to be a vital element in sustainable fisheries and ocean productivity.

An 11 year study by the CRC Reef into the effects of line fishing in Queensland's north-east coast showed an increase in fish size and number in protected area, compared with nearby areas open to fishing. This underscores the key role 'no take' zones have in increasing fish stocks.

SeaRead, GBRMPA, Issue 8 January/February 2006 p.1.

- **Australia's 70 billion dollar tourism industry** is based on Australia's protected areas. To name the protected areas of Australia is to name the key icons and attractions of every state.

Of the 16 areas listed as being part of the World's Heritage, 15 are protected areas: Heard and McDonald Islands; Macquarie Island; Tasmanian Wilderness; Australian Fossil Mammal Sites of Naracoorte- Riversleigh; Lord Howe Island; Central Eastern Rainforests; Willandra Lakes Region; Shark Bay; Uluru Kata Tjuta National Park; Kakadu National Park; Fraser Island; Wet Tropics of Queensland; Great Barrier Reef; Greater Blue Mountains Area; Purnululu National Park.

www.deh.gov.au/heritage/worldheritage/

- The Tourism and Transport Forum, The Australian tourist industry's peak body in a report, *A Natural Partnership: Making National Parks a Tourism Priority*(TTF 2004) believes that there is great potential for parks to play an even greater role in the industry. TTF has nominated national parks and protected areas as a key strategic priority for 2006 (Chris Brown pers. comm.).

- There is high potential for improved constructive liaison between the parks agencies and the tourism industry. The Tasmanian government for example recognised the importance of protected areas to its core 'brand' – the 'natural state' - and in 2003 established a new *Department of Tourism, Parks, Heritage and the Arts* to better integrate management of the related elements underpinning the tourism industry which is now one of the state's major industries.

A 1998 Kinhill's study in Queensland on the Value of Protected areas found that expenditure on visits to protected areas, and accommodation associated with visits to protected areas, was estimated using several options for some of the relevant variables, giving a range of results. The mid range results are:

- \$6.02-\$8.58 million in total direct expenditure
- \$1,023-\$1,458 million for total output effects.

The commercial tour sector in protected areas consists of at least 176 active operators. The majority of these operators depend on protected areas for over 75% of their business. These operators employ 2,249 people. Gross visitor expenditure on tours is around \$138 million per annum a figure included in the above expenditure on visits estimate

Queensland Department of the Environment 1998

- In **rural and remote communities** park tourism is particularly important, as other economic options are limited. In the Northern Territory, for example, park tourism is the largest employer and second highest income generator.

An Assessment of the contribution of Sturt National Park Kinchega and Mutawintji National Parks to the regional economic development of far western NSW found that the three parks generated over 5.5million per year to the far west gross regional product; provide 3.9 million in income to local households and support the equivalent of 163 full time jobs.

Conner, N., 1999, *The contribution of national parks to sustainable rural and regional development*, NSW National Parks & Wildlife Service, Sydney.

- The capacity of parks to generate employment is particularly significant in the case of **indigenous communities**. PAs provide an opportunity for new enterprises, indigenous employment, cultural expressions and which are culturally reinforcing in remote communities where options are very limited.

Guluyambi Aboriginal Cruises who operate on the East Alligator River in Kakadu National Park is wholly staffed by indigenous people. Gagudju Lodge and Yellow water cruises in Kakadu are owned by the Gagudju Association representing traditional owners.

Pursuing Common Goals: opportunities for Tourism and Conservation 2003, pp.72-74.

- Parks provide protection of highly important cultural sites such as the rock art galleries of Kakadu and the monoliths of Uluru and Kata Tjuta. Their interpretation by indigenous people constitutes a highly attractive element of Australia's overall international image and attraction in the international tourism market.
- Parks managed jointly with indigenous people also generate income for indigenous communities through rental payments, share of entry fees and employment possibilities (See Table 1). Joint Management provides not only the social benefit of income in remote areas but adds considerably to the attraction of such areas. Both Uluru and Kakadu, which earn hundreds of millions of dollars for the Australian economy, owe much of their attraction to joint management.

Table 1. Direct Parks Australia payments to Indigenous people

	Kakadu	Uluru	Booderie
Indigenous employees			
03/04	32	19	19
04/05	39	26	16
05/06	38	27	24
Salary expenditure			
03/04	1,359,000	847,000	847,000
04/05	1,858,000	1,069,000	819,000
05/06 - to Jan06	1,175,000	622,000	468,000
Rent and Revenue Share			
03/04	1,265,000	1,646,000	403,000
04/05	1,362,000	2,217,000	468,000
05/Jan 06	864,000	1,282,000	292,000
Day Labour			
03/04	\$140,000	\$205,000	n/a
04/05	\$114,000	\$213,000	n/a
05/Jan 06	\$107,000	\$213,000	n/a
		Figgis with data from DEH 2006	

- Marine Protected Areas also provide for dive, whale and dolphin watching and boat based tourism.
- Australia's Great Barrier Reef Marine Park is a global icon, a key part of Australia's international image and an asset of great economic importance (see box). Its protected status is integral to its appeal.

In a report on the *Economic Values of the Great Barrier Reef*, Access Economics found : "The total (direct plus indirect) economic contribution of tourism, commercial fishing, and cultural and recreational activity to the GBR Catchment Area in 2004-05 is as follows:

- Total tourism (including local, interstate, international) - \$3.06 billion
- Commercial fishing - \$104 million
- Recreational activity (net of tourism) - \$409 million."

There can be no doubt that the return from these activities would be progressively greatly reduced if the natural qualities of the Great Barrier Reef were not protected by effective management of the Marine Park.

http://www.gbrmpa.gov.au/economic_values_report.pdf.

4.1.3 Cultural/Social

- PAs protect sites of great social, cultural and spiritual value to the Australian community.
- For all Australians they represent many of our most loved and defining landscapes. They frequently take on great meaning, as witnessed when the Olympic torch commenced its journey at Uluru NP or when thousands of people defended Wilson's Promontory NP from over development in a great outpouring of public affection.
- Indigenous Australians do not differentiate between the natural and spiritual world, hence the health of landscape and plants and animals is integral to cultural wellbeing and in some areas livelihood.
- Most indigenous people have cultural obligations to 'care for country' (including sea country) and to safeguard sacred places. PA status, including non-legislated models, like Indigenous Protected Areas (IPAs) and Community Conserved Areas (CCAs), can help protect particular sites of high cultural value to indigenous people, such as sacred places like Uluru and Kata Tjuta and the rock art galleries of Kakadu.
- In addition to protecting cultural values, PAs can provide interpretation of indigenous culture to the non indigenous world which raises understanding and respect towards indigenous people.

- PAs also protect many sites of cultural value to non indigenous cultures such as historical areas like Hillend gold fields, lighthouses, pioneer settlements and artefacts.
- One of the key social values of PAs is beauty. They protect mountains, waterfalls, gorges, forests, reefs, islands, desert and wetlands while creating sanctuaries for the unique wildlife of Australia. Their tranquillity and beauty are increasingly sought by both Australians and international visitors in an ever more urbanised world.

A major survey of visitors to the Tasmanian Wilderness World Heritage Area (Hocking, 1995) revealed that the majority of visitors were 'overwhelmingly positive' about their visit to the area, and identified many personal benefits from their visit. The main personal benefits identified by visitors centred on the opportunity to visit or be active in a natural, beautiful and peaceful setting away from their normal lifestyles. On a personal level, the main things that visitors felt they were 'getting out of their visit' to the Tasmanian Wilderness World Heritage Area were: beauty (44%); getting close to nature (27%); getting away from the rat-race (24%); relaxation (22%); solitude, peace and quiet (21%); exercise (18%); new experiences of places (15%).

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- Seeking out experiences in beautiful places remains a key motivation of travel and the basis of the domestic and international tourism industry(see 4.1.2)
- Human pleasure and refreshment in the beauty of nature landscapes and wildlife is also the basis of the outdoor recreation industry which not only has a significant economic value but also contributes to community health and well being. A considerable industry exists on supplying camping, kayaking, mountaineering and bushwalking equipment and information.
- Adventure and wilderness recreation bring substantial benefits to regional and rural economies (*Pursuing Common Goals* p. iii).
- Wildlife and wilderness inspire the creative community and generate expressions in art, music, publishing and filmmaking.
- PAs in close proximity to urban areas provide psychological well being, healthy outdoor activity and venues for gatherings and events of importance to families and communities.
- An emerging social value of protected areas is associated with support for positive ageing, where parks provide settings for healthy exercise and relaxation and where voluntary "care" groups can provide social opportunities for active retirees.

An extensive international literary review conducted by Deakin University's Faculty of Health & Behavioural Science in 2002 concluded that there was significant evidence of the health value of contact with nature. Significantly the benefits particularly relate to cardio-vascular disease and mental health (the two largest contributors to disease in Australia) and appeared beneficial for both remedial and preventive situations. The substance of this research and a number of subsequent specific research projects have identified great value to individual well-being as well as social capital in a range of social and cultural groupings, through volunteering and park type experiences, and also reflected in actual comments from people surveyed.

www.deakin.edu.au/hbs/hsd/research/niche/current_projects.php

- Increasingly other benefits, such as the role of PAs in mental and physical health and well being is being acknowledged and understood in programs such as the Victorian 'Healthy Parks Healthy People' (HPPH) program and those run by the People and Parks Foundation (www.peopleandparks.org.au). The HPPH program has been taken up by agencies in WA, SA, NSW as well as Victoria.

The outstanding successful program of Parks Victoria 'Healthy Parks, Healthy People' which promoted the links between national and urban parks and physical mental health and wellbeing has been endorsed by Royal Australian College of General Practitioners, Arthritis Victoria, Asthma Victoria, Osteoporosis Victoria, National Heart Foundation, Department of Human Services, Maternal and Child Health Nurses, Australian Breast Feeding Association and Southern Health Care Network.

www.parksvic.gov.au

- Urban and near urban PAs also provide an important venue for environmental education and self reliance training through school camps and such programs as Outward Bound, Scouts and Duke of Edinburgh Awards.

4.1.4 Spiritual /Ethical

- For many in the community there are deep values in the natural world and its cultural and spiritual role in our lives.
- Some religions see the natural world as God's creation and therefore worthy of respect. Many speak of being spiritually fulfilled by contact with the natural world.
- One ethical position holds that each species is the product of millions of years of evolution and our particular species has no moral or ethical right to ignore their right to exist. Similarly no one group has the right to deprive another of access to nature or to usurp the rights of future generations.

'There is in the community a view that the conservation of biological diversity also has an ethical basis. We share the earth with many other life forms that warrant our respect, whether or not they are of benefit to us. Earth belongs to the future as well as the present: no single species or generation can claim it as its own'.

The 1996 *National Strategy for the Conservation of Australia's Biological Diversity* (Commonwealth Government 1996)

- Worboys summarises these values and concludes 'acceptance of an intrinsic value in nature and the obligations that such a belief imposes on humans is widely acknowledged in international fora' (Worboys et al. p. 80).
- The importance placed on the values identified above will increase over time with the increased pressures of population, urbanisation and climate change.

4.2 OBJECTIVES

4.2.1 Completion of the CAR Protected Area Systems

- The key objective of the national reserve systems is to produce a 'comprehensive adequate and representative 'national system of terrestrial and marine protected areas. Australian governments at state and federal level have committed themselves in various documents to this goal. The most important are:
 - The National Strategy for the Conservation of Australia's Biological Diversity (Commonwealth of Australia 1996) and the recent Directions for the National Reserve System (Commonwealth of Australia 2005).
 - Australia is committed to other objectives as a signatory to the Convention on Biological Diversity (CBD). In particular its goal to achieve conservation of biological diversity, particularly the overarching goal of significantly reducing biodiversity loss by 2010. Article 8

of the Convention requires signatories to establish protected area systems as a major part of in situ conservation.

- In 2004 the Convention on Biological Diversity COP 7 in Kuala Lumpur adopted a Programme of Work on Protected Areas (CBD-POW) which sets specific, measurable targets and timetables for expanded protected area work. The key goals are for comprehensive, effectively managed and ecologically representative national and regional systems of protected areas to be established by 2010 for the terrestrial environment and 2012 for the marine environment.
- The National Reserve System (NRS) is the appropriate vehicle for meeting Australia's obligations under the Convention on Biological Diversity (CBD). All jurisdictions should commit to meeting CBD targets and align all policy objectives to those targets.
- There are currently three processes aimed at achieving a fully CAR national reserve system: The NRS, the NRS for Marine Protected Areas (NRSMPA) and the Regional Forest Agreement processes. These programs should be fully integrated and elevated as a major governmental priority
- The completion of the system through NRS and NRSMPA will be essential to conserve the values outlined above and managing the system effectively over the long term to retain the values.
- Funding and resources including knowledge, capacity and political commitment will be the most critical element in whether these objectives are met. While it is not the federal government's responsibility alone, its core funding is highly significant to most States and Territories in completing their systems and essential to both the private conservation sector and conservation on indigenous lands.
- As discussed throughout the submission the current funding is entirely inadequate to meet this most fundamental and agreed objective.

4.2.2 Partnership Approach

- The *Directions Statement for the NRS* adds as an objective 'a partnership approach' which involves extending the PA system on private lands and involving non government groups, especially indigenous Australians, in planning and joint management.
- This is an internationally endorsed direction adopted by the IUCN World Commission on Protected Areas at the World Parks Congress in Durban in 2003 and implied by many of the goals of the CBD-POW.
- Many successful partnerships are developing with the indigenous community, private land holders, land trusts, local governments, conservation NGOs and the tourism industry. This sector has great potential for advancing Australian conservation and is worthy of very substantial investment by governments.
- Cooperation with the tourist industry is particularly important. The report *Successful Tourism to Heritage Places* (Australian Heritage Commission 2001, pp. 32-33) identified that tourism not only generates funds for park management but can contribute through research programs, donations towards conservation projects; monitoring programs; revegetation and regeneration of degraded areas and minimal impact practices.
- Natural Resource Management programs also have the potential to deliver a good deal of the biodiversity outcomes complementary to protected areas. However, in general NRM has lacked direction for biodiversity conservation. Many regional bodies recognise the need and want to

invest wisely but the bioregional strategies and co-operative frameworks are generally not in place for them. Hence, the call by the National Biodiversity Alliance, a group convened by the World Wide Fund for Nature, to systematically develop bioregional strategies for each of Australia's 85 bioregions and to identify the tailored mix of measures required for each; of which NRS is one vital component (Andreas Glanznig pers.comm.).

4.2.3 Integration with surrounding lands and seas

- Most strategies and *Directions for the NRS* identify the need for an integrated approach to PAs and the surrounding areas of land or sea. Various called the 'whole of landscape', bioregional or ecosystem networks approach, the concept reflects the fundamental thinking of the Man and the Biosphere concept and the science of conservation biology (www.unesco.org/mab) and (Figgis 1999).
- Arguably the concept of 'ecological networks' is the single most important consensus direction in global conservation. It has been strongly endorsed at an international level. The Durban Action Plan, Target 5 reads 'All protected areas are linked into wider ecological /environmental systems or resource management and protection on land and sea by the time of the next World Parks Congress' (WCPA 2003).
- The concept has strong backing in Australia and is being actively promoted by all national NGOs, especially Greening Australia and the Wilderness Society under the name Wildcountry (Figgis 2004).
- This direction recognises connectivity and 'turning islands to networks' is the way to achieve the international goal of 'benefits beyond boundaries and is essential to management effectiveness and a key component for building resilience in the face of rapid change, especially climate change, into the system.

The South Coast Macro Corridor Network (Watson & Wilkins, 1999) and Gondwana Link projects are landscape scale visions involving State, individuals and local, regional and national groups cooperating to reconnect fragmented natural vegetation country across over a distance of almost 1,000 kilometres between the ecosystems of inland Western Australia and the unique tall karri and jarrah forests of the south west corner. This region is one of the world's biodiversity hotspots where exceptional concentrations of endemic species are suffering extensive loss of habitat through fragmentation and other threatening processes. The projects seek to restore ecological connectivity and maintain ecosystems. Major government, community and non government players are involved with the projects, but a crucial element of the Gondwana Link project is the purchase of key properties by private land trusts, including the Australian Bush Heritage Fund, one of the key players in private conservation in Australia and Greening Australia (WA).

(www.gondwanalink.org)

- The marine equivalent of the 'whole of landscape' approach is the zoned marine protected area. The Great Barrier Reef Marine Park World Heritage Area pioneered the idea of cooperation and coordination across a large area between user groups and zoning for a spectrum of conservation management regimes.
- While there is high consensus on the desirability of such multiple tenure models based around core conservation lands, only a few working examples have emerged to date. The primary impediment remains the cost and complexity of putting together different land tenures and sea uses, gaining the cooperation of the many government departments and agencies in a federal system, as well as coordinating the private and community input. This will only occur with real and sustained commitment of policy and funding by both national and state /territory/local governments.

- However, as indicated in the Gondwana Link example above, the emergence of a vibrant and innovative private conservation sector will be vital component in pursuing the goal of large ecological networks. The sector can compliment and add value to public PAs. The NRS has been important to the development of a strong private land trust sector in Australia with trusts like the Australian Bush Heritage Fund and Australian Wildlife Conservancy gaining major leverage on private funds through their access to the programs 2:1 funding.
- A forthcoming edition of the WCPA's journal *Parks* will highlight the importance of this sector (Figgis, Humann & Looker, 2006). The principal private land trusts are Australian Bush Heritage Fund which has to date 23 properties covering 670,000 ha and the Australian Wildlife Conservancy which has 14 properties covering 917, 000 ha.
- There is a broad range of instruments which governments can use to compliment their protected area strategies and to work towards the vision of land and seascape level conservation. Figgis (2004) has published a national overview of terrestrial instruments which range from voluntary programs for retaining vegetation and wildlife, to contractual agreements to protect ecologically important sectors of a property, to binding covenants on land title. Incentive methods and market based instruments are also emerging to encourage land holders to conserve particular areas of native vegetation on their lands.

Two private land covenanting programs supported by the Tasmanian Regional Forest Agreement (Private Forest Reserves Program) and by the NRS (Protected Areas on Private Land Program) have been very successful in enrolling private land owners into protecting areas of conservation value on their properties under perpetual covenants. These reserves complement the public reserve system and provide a very high level of security as well as a large pool of on-ground managers. As of March 2005, 207 covenants had been registered covering an area of 25,490 hectares.

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- All these tools are being promoted in the context of the regional delivery of NRM. The further investment in market based instruments including Environmental Management Systems to achieve biodiversity outcomes is essential. Continued investment in bioregional planning at the catchment scale that links private lands and public PAs is fundamental. The advent of investment in Property Management Systems must be matched by catchment scale planning to provide the integration between enterprise level planning and catchment scale outcomes.
- Such efforts mobilise considerable energy, resources and funding from the broader community and are worthy of investment by all levels of government.

A Nature Refuge in Queensland is a voluntary conservation agreement between a landholder and the state Government that leads to the establishment of a nature refuge on the whole or part of a property. A nature refuge is a category of protected area under the Nature Conservation Act 1992. Each agreement is tailored to suit the management needs of the particular area and the needs of the landholder. In most cases, the agreement allows for the ecologically sustainable use of natural resources to continue. The Nature Refuge program has established 182 refuges protecting a substantial 412,700 hectares of important habitat.

www.epa.qld.gov.au/nature_conservation/nature_refuges/

4.2.4 Effective Management

- Protected areas require effective management to sustain and enhance both existing and future values; hence it is a fundamental objective of the system.

- A survey of 479 delegates from the Vth World Parks Congress in 2003 listed inadequate funding and inadequate training as two of the most significant barriers to effective management (M. Hockings unpublished data).
- Assessments of the effectiveness of protected area management in Australia and overseas (e.g. DEC, 2005; WWF, 2004) have commonly reported that monitoring and evaluation are amongst the areas of park management where performance most needs to be improved.
- **Values-based planning** provides a decision-making framework for the future as well as providing a response to the issues of the present. It acknowledges that each protected area has different qualities and some values, eg recreational use may be more important in one than the other.
- Values should be the fundamental basis for decisions about the management of a protected area. Values are natural, social, cultural and economic and can relate to many things including a species, a community, an ecosystem, the land and seascape, a place, a story or an event.
- Values-based management means that any decision regarding a protected area is to be based on the protection of the values which that area represents, or at least in the knowledge of the impact on those values.
- A values-based approach to management is likely to be more effective than an issues-oriented approach in the long-term because it is better linked to the goals of conservation policy and legislation and more consistent with the outcomes focus of modern public sector management.
- **Evaluation.** An understanding of the key factors that affect performance is an important key to enhancing management effectiveness. Positive factors need to continue to be supported, while negative factors need to be actively addressed. For example, a comprehensive evaluation of management effectiveness for the Tasmanian Wilderness World Heritage Area (Parks and Wildlife Service, 2004) identified the key factors that had contributed positively to and those that had limited or threatened management performance over the term of the first management plan (1992-1999). Inevitably these processes, while productive, require resourcing.
- Ecological monitoring is critical to guide effective management but is seldom adequate. Most jurisdictions lack a structured approach to ecological integrity assessment.

The model developed by Parks Canada provides a useful guide to how this could be achieved but the scale of investment required is considerable. In Canada, the renewed focus on ecological integrity that resulted from ecological integrity assessment process led to the government allocating an additional \$60 million over five years, followed by \$15 million in new annual ongoing funding, to enhance and maintain the ecological integrity of Canada's national parks.

Information supplied by M. Hockings

- **Scientific research and monitoring** programs have a vital role to play in measuring the effectiveness of management strategies for protected areas. Management without measurement leads to management decisions being made on the basis of educated guesses rather than sound documented evidence.
- Effective management of protected areas must include robust, well-targeted scientific programs to support effectiveness evaluation and to inform sound adaptive management.
- Key stakeholders in management of the Tasmanian Wilderness World Heritage Area identified "good science" as one of the key factors that had positively contributed to management

performance for the area over the term of the first management plan (1992-1999). (Parks and Wildlife Service, 2004).

- To support good management major additional research is needed in representative biodiversity, weeds, feral animals, climate change responses and other ecological factors relating to specific types of ecosystems. The research allocations currently are very low compared to other priority areas (see 6.4).
- However, the point has been made that the institutional capacity of agencies to take good science and translate it into adaptive management is underdeveloped and capacity would need to be enhanced (G. Worboys pers. comm.).
- **The cost of effective management** is likely to increase as reserve systems strive to become comprehensive, adequate and representative. Many bioregions and sub-bioregions have little intact habitat remaining and so new acquisitions in these areas are often small and isolated. Management effectiveness studies in Australia and globally have demonstrated that small, isolated reserves are harder and therefore more costly to manage effectively (Balmford et al. 2003; DEC 2005).
- The *Directions for the National Reserves System* contains a commitment for all Agencies to implement State of the Parks assessment and reporting systems. While a small number of Agencies, most notably New South Wales and Victoria, have already commenced this work, most have yet to implement such systems. Significant additional funding and staff resources will need to be found to achieve this commitment.

4.2.5 Sustainable visitation

- All park agencies have sustainable visitation of the PA estate as an objective. Most legislation allocates a responsibility for 'providing opportunities for public appreciation and enjoyment' (NSW National Parks and Wildlife Act 1974).
- In the case of World Heritage Areas, 'presentation' is part of Australia's obligations under the World Heritage Convention.
- Management of both the quality of the natural and cultural assets and visitation impacts are essential to sustainable tourism and outdoor recreation. It is increasingly acknowledged that the health of the ecosystem or the appropriate management of a cultural asset is vital to the delivery of a satisfying tourism experience.

The tourist industry of Australia is increasingly acknowledging its reliance on a strong parks system. A Tourism and Transport Forum report said:
'For Australia's tourist industry to reach its full potential it is vital that Protected Areas are adequately funded and managed; that they provide high quality visitor experiences; and that they are promoted effectively, while ensuring the protection of their conservation values'.

A Natural Partnership: Making National Parks a Tourism Priority, TTF 2004, p.4)

- While sustainable visitation is one of the major objectives of a protected area system, increasing visitor numbers and tourism development interests can in some cases pose significant threats and impacts to protected areas and their values.
- Tourism can increase the cost of effective management because of the funds required to erect and maintain the associated infrastructure (Balmford et al. 2003) and because visitation pressures can contribute to a decrease in the overall condition of parks (DEC 2005).

Systematic monitoring of the walking track network in the Tasmanian Wilderness World Heritage Area demonstrated that some levels and types of visitor use were causing unsustainable environmental impacts. In particular, walker impacts were shown to be causing ongoing erosion and deterioration of tracks and backcountry campsites, and the formation of unplanned new tracks. In some areas, sensitive alpine plant communities were also being damaged. Although a science-based major Walking Track Management Strategy was developed to manage the physical and environmental sustainability of the entire walking track network, significant opposition from park users to the proposed regulation of walker numbers precluded the full implementation of the strategy. Alternative management approaches are currently being trialled. However, until such time as an effective and acceptable mechanism is implemented for limiting walker impacts, there is likely to be ongoing degradation of the park and its values.

Section 4.10.3, *State of the Tasmanian Wilderness World Heritage Area*.

- However, the Tourism and Transport Forum (TTF) report identified the unspoilt quality of the natural attraction as the most important factor in visitor satisfaction but also identified suitable directional signage and maps, clean toilets, well planned walking trails and campground facilities (TTF p.9).
- Clearly the provision of these components all require both capital expenditure and on going maintenance and replacement costs to be borne. However, as the TTF Report concluded: 'Most Australian park agencies have insufficient funds to adequately carry out natural resource management and visitor infrastructure management simultaneously' (TTF p. 12).
- The TTF Report (TTF p.15) canvassed an array of possible funding mechanisms to better integrate the needs of parks and tourism and to acknowledge that parks cannot bear all the costs of providing for tourism.
- The WCPA supports this greater cooperation, while maintaining that protection in perpetuity of Australia's natural and cultural heritage must remain the clear primary obligation of protected area management. This commitment needs to be reflected and supported by all levels of government.

4.2.6 Conclusion

- The WCPA supports the values and objectives outlined above as consistent with internationally recognised key directions. We contend that the defence of these values and the pursuit of these objectives are critically important strategic goals for Australia's sustainable future and worthy of a sustained investment.

5.0 Whether governments are providing sufficient resources to meet those objectives and their management requirements

5.1 Current Funding

- The importance of the values and objectives outlined in 4.0 is not reflected in current budget allocations at either state/territory or Commonwealth level.
- Globally, the estimated shortfall in funding to ensure an effectively managed, comprehensive, adequate and representative park system is between \$20 and \$28 billion US for terrestrial parks and \$23 billion US with an additional \$6 billion US annually for 30 years for marine parks (Balmford et al. 2002).
- For the Australian environment, James et al. (2001) estimate that funding for protected area management is currently half what is required to achieve effective management of these areas. A Local Government Association Inquiry into national park management in Queensland in 2000, concluded that 'The evidence presented to the Inquiry paints a clear picture of a chronic under-resourced National Parks system in the 1990s. The on-the-ground resources are not sufficient to effectively maintain the conservation values of the estate and maintain existing capital assets, let alone provide the visitor experiences, which are an integral part of the internationally recognised role of National Parks' (Beeton, 2000, p.ii).
- Funding and staffing have not kept pace with the expanding national park estate. For example, figures presented in the 2000 LGAQ Inquiry Report demonstrate that while the area of national park estate increased by 28% between 1993 and 1999, real funding only increased by 7.1% over this period and total ranger staff numbers only increased by 6.2%.
- Unfortunately up to date figures could not be sourced but the figure below from the late nineties illustrates that there are also very substantial discrepancies between states in terms of both funding and resources.

Table 2: Expenditure on National Parks (A\$) - 1997/98

	Qld	NSW	Vic	WA	Tas	SA	NT
per capita	9.73	18.01	7.82	17.35	43.93	10.34	72.68
per hectare	4.35	24.80	9.60	1.82	10.40	0.73	4.40
per visitor	2.59	5.38	2.70	3.85	10.40	4.10	4.90
staff/000 sq km	7.30	16.20	15.50	1.70	12.90	1.60	5.40

Source: Hockings, M., QPWS supplied data from ANZECC benchmarking on investment in protected area management

Table 3: Expenditure on National Parks (A\$) - 2004/05

	Qld	NSW	Vic	WA	Tas	SA	NT
per hectare	15.67	35.17	26.02	3.08	8.90	6.80	Not available

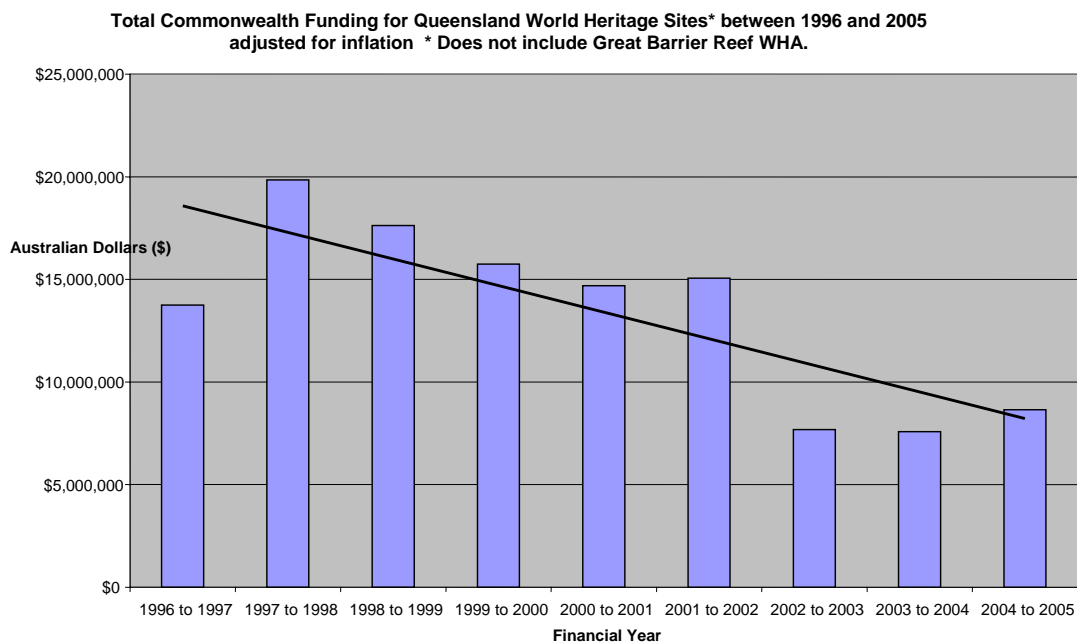
Sources: Hockings M., from Annual Reports 2004/05 of CALM, QLD EPA, Parks Victoria, SA DEH, TAS Parks and Wildlife. NSW SoP report and www.deh.gov.au/parks/nrs/capad/1997/data/type2.html

- In some states, the current levels of funding do enable best practice management to be carried out in some instances but does not enable the approach to be followed through. For example, in NSW Threat Abatement Plans are developed as the approach to target management of significant threats to where it is needed. Currently, a threat abatement plan (TAP) is being implemented for one threat, the European Fox (*Vulpes vulpes*) at a cost of approximately \$1.5 million per year for 5 years (NSW NPWS 2001). If the cost of this approach was extrapolated to all invasive species listed as Key Threatening Processes listed under the *Threatened Species Conservation Act 1995* the cost would be \$28.5 million per year - \$10 million more than the current funds allocated to the management of all invasive species in the NSW park system.
- Inadequate funding and the general pressure of modern government for agencies to generate income can mean agencies are pressured into revenue producing decisions which may distort conservation values.
- Many parks services are charged with the conservation and management of important heritage buildings and items. The very high cost of maintaining built heritage can also divert funds.

5.2 Funding of the National Reserve System Program

- The amount available for the NRS has fallen dramatically from \$20.6m in 2001-2002 to only \$6m funding in 2005-2006 (Department of Environment and Heritage). In 2003/04 it fell as low as \$2.99m. To give some idea of the inadequacy of this sum, just one high conservation value property in the Northern Territory is likely to cost \$14 million dollars (NT Parks and Wildlife).
- Despite the cost effectiveness of protecting intact systems which this submission has repeatedly emphasised, this \$6 million figure stands in contrast with the figure for land repair. The budgets for the National Action Plan for Salinity and Water Quality(NAPSWO) for 05/06 is \$168.4 million and NHT programs, largely directed at natural resource management are \$310 million (Department of Environment and Heritage , Environment Budget Overview 2005-6).
- NRM management is vital and there is no question that NHTIII should strongly support strong budget allocations but the protection of extant ecosystems, particularly large intact systems suitable for protected areas should be given a similar priority.
- A senior scientist has commented 'In many cases it is not the differential that matters but the fact that in many cases we cannot yet re-establish communities, for example the restoration of the Cumberland Plain – on which millions have been spent – where success seems to be elusive. We cannot rely on technological fixes to get us out of holes, however much we have to spend. Better not to get in a hole in the first place'.
- Since 1997 in fact about 95% of NHT funding has flowed into natural resource management, mostly on private lands through programs such as Landcare and regional NRM, leaving slightly over 5% for building the National Reserve System. There should be more analysis of the cost effectiveness of relative programs to justify this high allocation of funds to NRM and diminishing funds to NRS.
- Some close observers have claimed there is a need for better integration bioregional issues across adjoining NRM region strategies. Most NRM bodies cover at least several bioregional boundaries. This is being done to some extent in WA through cross-regional projects, or from strategic reserve projects at state wide or theme level eg the "Marine Futures" NHT project which involves State waters in 5 of the 6 WA NRM regions (John Watson pers. comm.)

- In the marine environment \$9.4 million is being invested in regional marine planning, however only one aspect of this is to progress the NRSMPA.
- Therefore WCPA concludes that the NRS is seriously under funded and has declined from an inadequate base.
- The current funding formula for State and Territories under the NRS has reverted to 1:1, which is generally regarded as inadequate. 2:1 was the funding formula originally presented to and accepted by the 1993 HORSCERA inquiry for acquisition. It accounted for the additional cost of establishment management costs that the States and Territories had to bear. However, it did not account for on-going management costs. Some scenarios developed in Queensland to achieve 80% representation of ecosystems and the cost of acquisition, establishment and on-going management identify 3:1 funding as necessary to balance the costs incurred by the States and Territories (Paul Sattler pers. comm.).
- Funding of World Heritage Areas which are either entirely protected areas, or substantially made up of protected areas, has also declined in recent years, see figure below.



Source: Marc Hockings pers. comm. data from Commonwealth Government Annual Reports and briefing provided to Fraser Island World Heritage Area Scientific Advisory Committee (with figures adjusted for inflation to 2004/5 A\$. Trend line fitted to data).

- The Commonwealth component of funding for the four World Heritage areas, wholly or partly in Queensland, the Wet Tropics, CERRA, Fraser Island and Riversleigh Fossil Site has fallen from \$7,066,000 in 1997-8 to \$3,366,600 for the 2004/5 financial year (Queensland EPA data).

5.3 The Importance of Funding

- Adequate funding is the most fundamental requirement to protect and enhance values and fulfil the objectives outlined in 4.0., and to meet the objectives of state/territory based initiatives and the NRS and NRSMPA. Australia therefore needs to seriously invest in the completion of the national system of protected areas and its ongoing management.

- Funding and resources are required for planning protected areas, acquisition costs in some cases, research into basic science and deriving effective management strategies to address threats, on ground management and developing partnerships with non government sectors.
- WCPA recognise that governments have many competing priorities. However, from an asset management and risk management point of view protected areas should rate more highly in all jurisdictions.
- WCPA repeats and endorses the Commonwealth's own statement in the NRS Directions paper 'it is seven times more cost effective to conserve intact native ecosystems rather than attempting to re-establish them after they have been cleared or significantly degraded'. Other studies have put this figure much higher. The report presented to PMSEIC, *Sustaining our Natural Systems and Biodiversity*, noted that maintaining ecosystems to secure natural assets was 10-100 times cheaper than repairing degraded ecosystems (PMSEIC 2002, p.11).
- It should be acknowledged that states have made very significant purchases of protected areas from state funds. For example the New South Wales government recently purchased the highly significant property 'Yanga' in the Riverina. The property which fronts some 160km of the Murrumbidgee River and contained the largest area of river red gum in private hands, will double the area if the highly unrepresented bioregion of Riverina to 2% (DEC).
- In the period 1998- 2005 Queensland allocated \$36,667,057 to acquisitions for conservation of which \$7,384,546 was derived from the Commonwealth (Queensland EPA).
- However, the NRS funding stream has been a very important addition to the states and territory acquisition budgets. Many contributors have commented on the important leverage factor when the NRS offered 2:1 funding. "It should not be underestimated the significance of a State or Territory jurisdiction being able to argue for extra funding from Treasuries when 2:1 funding is on offer". Some states, eg South Australia have had the majority of their recent acquisitions supported by the NRS. Unfortunately this provision has been cut back to 1:1.

The Northern Territory currently has in place a visionary *Northern Territory Parks and Conservation Masterplan* (2006). The plan proposes major expansion of both terrestrial and marine protected areas, a substantial expansion of joint management with indigenous people of both existing and proposed parks, and initiatives to encourage conservation on the extensive private rangelands of the Territory. These excellent initiatives, in one of the most intact regions left on earth, will require substantial support from the Commonwealth given the small population and low income of the Territory.

Northern Territory Parks and Conservation Masterplan(2006)

- The dramatic success of the private conservation sector in Australia in recent years owes a great deal to the 2:1 funding available under the NRS. Private land trusts have emphasised that their ability to attract philanthropic funding for land purchases was greatly enhanced by the fact that they could argue that a donation could be leveraged into a much greater sum (Australian Bush Heritage Fund).

5.4 Funding for Management

- Funding and resources are clearly required for implementing good management.
- Management effectiveness studies in Australia have indicated that planning is at the heart of effective management of protected areas. Parks that have a plan of management are generally achieving better outcomes for park management (DEC 2005).
- Significant resources are also necessary on an emergency basis to prevent potentially catastrophic impacts to protected areas (e.g. to prevent the potential establishment foxes in Tasmania).
- The *Australian Terrestrial Biodiversity Assessment (2002)* found that the standard of protected areas management was fair for 53% of the bioregions assessed in the report (p.116).
- A plan of management however, requires a basic knowledge of the values of the area. The competing priorities within park management often mean that there is not the time or the funds to carry out baseline assessments of values. One management effectiveness study in Australia found that 30% of parks did not consider they had enough information about important natural values to guide planning and decision-making. Likewise, 55% and 26% of parks respectively did not consider they had enough information about important Aboriginal and historic values to guide planning and decision-making (DEC 2005).
- As protected area systems move towards being comprehensive, adequate and representative, the costs of management are likely to become higher. The cost of acquiring land will increase as new reserves are acquired in good agricultural areas that are generally poorly represented in the park system. The costs of managing these areas will be higher too because the reserves will generally be small (Balmford et al. 2003) and the surrounding land use will be largely incompatible with park management. As the population grows and more property prices drive more people to rural and coastal areas, parks will also become more expensive to manage (see section 5.1). All of these influences will increase the cost of managing protected areas and should be accounted for in the future funding of protected areas in Australia.
- Effective management is often more expensive in the short-term, but is likely to prove more efficient in the long-term. One example of this is the approach to managing landscape-scale pressures such as invasive species. Most invasive species occur across land tenures and therefore managing only within park boundaries is not an effective option as new incursions will occur constantly. There are a number of examples across Australia where taking a 'tenure-blind' approach to management has resulted in marked reductions in the impacts of invasive species. Likewise, the management of landscape-scale pressures often requires a long-term commitment to management. An inability to commit funds for the required eradication period can result a program being unsuccessful and thus wasting the initial funds committed.
- Park management agencies have continued to evolve their role in protected areas management as the public have increased their expectations about what protected areas can offer. Many parks now offer protection for natural and cultural values and opportunities for public appreciation of these values simultaneously. This must necessarily increase the cost of management through the need to build and maintain visitor infrastructure and the need to manage the impacts of visitation on the natural and cultural values of the park. While public enjoyment of parks is a vital objective of protected areas, future funding should take into account the increased cost of managing these protected areas. The increased costs of park management can be compensated for by potential

increases in user-pays revenue from increased visitor use and greater involvement of the tourism sector in active management and contributions as outlined in the TTF report on national parks (TTF 2005).

- While effective management requires adequate funding, it should not be forgotten that there is a cost to inadequate funding. For example, it will always cost more to eradicate an invasive species once it has become established, than it does when the species first emerges. Where resources are stretched, park managers are making decisions about which infestations will have the greatest negative impact on park values and so emerging infestations will not be given priority. Similarly, it is more cost effective to carry out pre-emptive maintenance of park infrastructure, but if resources are limited then only the most urgent maintenance will be carried out leading to more significant cost in the future.

5.5 Funding for Expanding values

- As indicated in the introduction the area of parks values is not fixed. There are many additional values to our society which can be generated from protected areas. The People and Parks Foundation in Victoria has championed the generation of socially beneficial uses of parks. Founded on the concept that a healthy environment, a healthy community and a healthy lifestyle are inextricably linked, The People and Parks Foundation's programs encourage people to combine the benefits of physical and mental activity with the health benefits of interaction with nature. For example the Foundation has a *Feel Blue Touch Green* program to use parks and outdoor activity to help people with depression and programs to assist disadvantaged and seriously ill children (www.peopleandparks.org).
- Despite the very real social benefits few states have committed major resources to the task of building new constituencies of support through community outreach and extension programs designed to deliver social benefits - an outstanding model is the Victorian 'Healthy Parks Healthy People'.
- Similarly there is agreement that Partnerships need to be formed and a diversity of governance models, such as private protected areas and community conserved areas, is crucial to achieve future conservation, few states allocate significant funding to developing this area.
- There is also inadequate funding to adequately realise the potential of PAs for environmental education. For example A flagship location Minnamurra Rainforest Centre, set up specifically for the purpose of environmental education has had minimal funds to update the educational resources despite research findings of the urgent need (Staiff & Bushell, 2004) the support of park management and repeated submissions for grants.

5.6 Future Funding Requirements

- WCPA hopes we have established that there is a need for a major increase in both political commitment and funding dollars at all levels of government.
- The PMSEIC (see box) contention that \$300-400m directed to reserve systems would achieve 80% protection of the full range of regional ecosystems, is a powerful argument for such a national investment. It should be considered against the 2004/5 defence budget of \$16.65 billion dollars. WCPA would contend that defending the environmental health of Australia is a vital strategic issue.

The Prime Minister's Science, Engineering and Innovation Council (PMSEIC) *Setting Biodiversity Priorities* found that efforts to consolidate Australia's National Reserve System is one of the most cost-effective investments that governments can make to secure the nation's biodiversity. PMSEIC held that an investment of \$300-400m would achieve 80% protection of the full range of regional ecosystems, save 14,700 native species and result in collateral benefits of \$2,000m

Possingham et al. 2002.

- WCPA believes that \$400 million over 5 years should be allocated. This is based on the figure of \$350 million suggested by PMSEIC, plus an additional \$50m to expand the IPA program and to fund the complex task of bringing freshwater systems into the NRS.
- This would suggest \$80m per year of Commonwealth funds on a 2:1 funding formula with the states and territories is an appropriate budget for this critical and highly cost effective program.
- If Australia is to truly fulfil its obligations to complete a CAR marine and terrestrial system it is likely to involve higher costs as governments attempt to secure properties in the more highly productive regions which are frequently the least protected.
- WCPA also believes it would be appropriate to have an allocation of Commonwealth money available for the NRSMPA program. Some states/territories will struggle to find adequate funds to progress this important priority.
- In particular, consideration should be given for assistance to the Northern Territory, which not only has one of the most pristine coasts left anywhere in the world, but has particular challenges due to 85% of the coast being in indigenous ownership with a sparse population. Remote Queensland and Northern WA also need similar special consideration. Indigenous people have shown both willingness and enthusiasm for the task of management through the formation of the Northern Australia Indigenous Land and sea Management Alliance (NAISMA). Cooperative management of sea country is a costly yet very important area which deserves sustained support.
- Maintenance of the NRSP at the current very low level will not suffice, expansion and extension is needed. Targets continue to be missed. If a 2010 or even 2020 CAR target is to be met then major increases and a minimum of three years security must be the highest priority.
- While increased funding is essential there is also the issue of the long term reliability of funding. If government is genuinely committed to 'partnership' approaches it will need to commit to sustained funding. Variability in programs, 'stop/start' approaches wear out communities with 'grant application' fatigue, make planning difficult and undermine the community commitment so vital to the success of many programs.

The Northern Territory currently has some 300 indigenous land and sea rangers. Conservation management has high appeal to young indigenous people and anecdotally is generating social as well as environmental and economic benefits. However, the vast majority of these positions are dependent on welfare funding (CDP) or intermittent and variable programs. Consistent long term funding would greatly strengthen these efforts and embed related benefits in these often remote and disadvantaged communities.

NT Parks and Wildlife

- Many state/territory agencies are also under funded, not just for core jobs, but for preparing for the future. Increased resources are required for:

- Joint management arrangements on parks and community based initiatives with indigenous community.
- establishing stewardship models on private lands or developing market mechanisms to complement PAs with wide range of conservation initiatives across the landscape on lands of all jurisdictions.
- enhancing community engagement and involvement with parks and biodiversity programs. Such programs produce great benefits when done well, but they need consistent long term funding. A good example is Land for Wildlife in Victoria which has engaged the community to conserve their land and foster wildlife protection. The program has involved over 5940 properties in a sustained effort over 30 years (www.dse.vic.gov.au).
- mobilising alternative sources of management/governance eg. using conservation volunteers.

6.0 Threats to the objectives and management of our national parks, other conservation reserves and marine protected areas

6.1 Context

- All reports confirm that Australia's rich biodiversity continues to decline from multiple threats. The 2001 *State of the Environment Report* (Commonwealth 2001) summarised the issues:
The destruction of habitat by human activities remains the major cause of biodiversity loss. Land management issues such as the clearance of native vegetation, control of exotic weeds and pests, provision of environmental flows in rivers, geographical expansion of dryland salinity, changed fire regimes and intensification of resource use in sectors such as forestry, fisheries and agriculture are well known and widely reported. Many attempts to address these issues have been inadequate or have stalled. This situation must change if the future of Australia's biodiversity is to be safeguarded. Failure to reverse these trends will not only guarantee further loss of biodiversity, but also will diminish the quality of life enjoyed by Australians and ultimately undermine the Australian economy.
<http://www.deh.gov.au/soe/2001/biodiversity/summary.html#introduction>
- The submission will only make a summary of these threats as there are very thorough publications on the subject. The submission commends the Chapter 14 of Worboys, G., Lockwood, M., and De Lacy, T., 2005, *Protected Area Management: Principles and Practice*, Oxford University Press, Australia pp. 371-401) for generalised descriptions and for Australian threats, Chapter 4 of the *Australian Terrestrial Biodiversity Assessment*. Table 4 from Worboys summarises key threats in relation to protected areas.

Table 4. Types of threats to protected areas (Worboys et al. 2004)

Threat type	Examples of threats
Physical	Fire (arson), severe storm events, geological incidents
Biological	Introduced plants, introduced animals and organisms
Direct human threats	Habitat fragmentation, mining, poaching, hunting and disturbance to fauna, fishing, collecting, grazing and harvesting of flora, trampling, structure development, access development, utility corridors, communications structures, urbanisation, pollution, collecting, managerial damage, vandalism, emergency response damage, arson, squatting, drug cultivation and trafficking, terrorism and damage from violent conflict
Indirect human threats	Adjoining community and land use encroachments, impacts to climate, catchments, air and water quality and poor land use planning
Legal status threats	Absent or inadequate legal protection, lack of clarity of ownership, inadequate legislation
On-ground management threats	Absence of on-ground management, absence of law enforcement, difficulty of monitoring illegal activities
On-ground social threats	Conflict of cultural beliefs and practices with protected area objectives, presence of bribery and corruption, pressures placed on managers to exploit protected area resources, difficulty of recruitment and retention of employees
Socio-political-economic threats	Lack of political support, inadequate funding, inadequate staffing, inadequate resources, absent or unclear policies and community opposition
Design threats	Adequate geographic size, shape, location, connectivity and replication of an individual protected area and/or a system of protected areas to achieve effective conservation of biodiversity and other heritage
Managerial threats	Absence of strategic planning, human resource and budget systems, plans of management, effective operations and effectiveness evaluation systems

- Australia faces these challenges and threats against a profound global decline of ecosystems and multiple threats to the life support systems of the planet. As a functioning democracy of well educated people enjoying a sound economy it is incumbent upon Australia to be a world leader in both protection and restoration.
- Many publications including the *1996 State of the Environment* report have stressed the particular vulnerability of Australia to threats through its dryness, flatness, poor soils, climatic variability and particular vulnerability to invasive species (Commonwealth 1996 pp. ES10-ES11).
- Against this background of broad threats to biodiversity, it must be emphasised that protected areas are, in most cases, the strongholds of biodiversity. They are not subject to land clearing and urban development, usually not subject to pollution, have the strongest native plants and animal populations to deal with invasive species and are covered by a management regime specifically designed for the retention of their biodiversity. However, as Table 4 illustrates, they are still subject to multiple threats which can undermine this status.
- WCPA strongly supports the *Directions for the National Reserve System* that 'the next decade will be a critical period for biodiversity conservation planning in Australia and presents significant opportunities for progressing a comprehensive, adequate and representative NRS' (2004 p.8). Implicit in this comment is the fact that a major and sustained investment needs to be made in the near future to include at risk high conservation lands, suitable for inclusion in the NRS, *before* they are destroyed or degraded.
- WCPA shares this urgency that unless representative samples of threatened ecosystems are acquired in the next decade, or less in many cases, the opportunity to do so will be foreclosed.
- Some threats are not characterised by linear gradual degradation but can be accelerating, abrupt and potentially irreversible.

6.2 Underlying Threats

- **Population pressures** will continue on a global scale with the UN forecasting 9.2 billion people by 2050. With each human addition the ecological strains on a finite planet increase.
- **Material consumption** shows no sign of diminishing and in fact the rise of the giant new economies of China and India will have massive resource/environmental impacts not only in those countries but in the countries who export to them. Australia is a major exporter of raw materials.
- **Climate Change** will exacerbate almost all threats to Australian environment and PAs. The term covers a very wide range of threats, which can only be touched upon in this submission.
- The rate of projected climatic change over the next decades to centuries is at least an order of magnitude faster than any experienced in the past. For most species, the rate of change will therefore be more rapid than the rate of natural adaptation and thus they will have to shift to new locations or face extinction. Healthy, interconnected PAs will be critical for such shifts.
- Average annual temperatures in Australia are projected to increase by 0.4-2.0°C by 2030 and 1-6°C by 2070 (CSIRO 2001). Along with the temperature increases, rainfall patterns are projected to alter, with increases in extreme rainfall events likely to increase. Recent drying trends in the east are projected to continue with a possible intensification of the El Nino part of the ENSO cycle.

- Together, warming and reduced rainfall will result in decreases in soil moisture in many parts of the continent. Fire intensity and frequency is expected to increase, as a result of temperature and precipitation changes, as well as a possible increase in fuel loads from CO₂ fertilization. Sea levels are expected to continue rising (currently rising at a rate of ~2mm per year). Tropical cyclones may increase in frequency and intensity. Ongoing declines in snow cover and duration in the Australian Alps are projected.
- All species and ecosystems will be affected by climate change but some will be more vulnerable in the short to medium term. The most vulnerable species will include those that are already rare, genetically impoverished, or restricted in range. The most vulnerable communities and ecosystems will include the alpine areas, montane regions in the Wet Tropics coral reefs, low lying coastal wetlands, and inland freshwater wetlands. Australia's great botanical province in South Western Australia is also profoundly vulnerable with critically endangered communities like the Stirling Range Montane Heath predicted to become even more precarious (John Watson pers.comm.).
- Many invasive species are expected to be advantaged as these species are generally those with opportunistic life styles, good dispersal ability and short generation times.
- Climate change is having a diverse range of implications for marine environments, with consequences including changed sea temperatures, changed ocean currents, sea level rises, and loss of marine and coastal habitat. Other impacts on ecosystem functioning, including changes to ocean chemistry, circulation patterns and upwellings, are either occurring or predicted. These are having (or in some cases are predicted to have) serious implications for a range of marine animals and plants including corals, seabirds, marine mammals, turtles, invertebrates, plankton and fish. The website of the Great Barrier Reef Marine Protected Area (www.gbrmpa.gov.au) has a good analysis of how climate change will affect the reef. Examples include:
 - Rising sea temperatures have already increased the frequency of major coral bleaching events; more recent research suggests that an increase in coral disease can also be attributed to rising sea temperatures.
 - Mass mortalities of seabirds and failures of nesting (death of all chicks) have been observed at several key seabird rookeries during anomalously warm summers;
 - Increased temperatures are likely to alter the gender ratio of turtle hatchlings, and sea level rise is also posing a threat, as nesting beaches become inundated.
 - Climate change threatens to alter the ecological value of habitat used by whales for migration, resting, calving and feeding, and has been identified as a key threat to humpback whales.
- Climate change is thus expected to exacerbate existing management stresses on species and ecosystems in all protected areas, particularly from invasive species in land and sea and coral bleaching in coral reef areas. Climate change is also most likely to result in increased intensity and frequency of extreme events, such as fires, droughts and floods.
- These impacts make it very important to ensure that resilience is built in to the park systems by improving connectivity between parks and through ecosystem networks involving many lands to enable species, populations and communities to adapt to changes in climates and recover from local extinction events.

- **Development pressures** in Australia show no sign of abating and in fact the popularity of the 'sea change/tree change' phenomena of people seeking non-urban lifestyles is putting even higher pressures on environments, particularly in the coastal zone. One only has to look at an area like the Sunshine Coast of Queensland which only decades ago was a region of coastal wetlands, heaths, forest and rainforest, which now has most of these habitats destroyed and is blighted by a particularly insensitive and intensive urban/tourist development.
- **Pressures in the North.** Ecological sustainability is now the goal of many industries but has been achieved by very few. Many potential developments such as cotton growing and expanded uranium mining in the north of Australia have embedded serious threats to the natural environment through clearing and impoundment of waters.
- **The economic system** has failed to value ecosystem benefits and to adequately factor environmental degradation costs into decision making.
- **A shift in political priorities** away from protected areas to natural resource management has been seen over the last decade. This is reflected in the disproportionate budget allocations referred to in 5.2.1. WCPA supports all efforts to bring sustainability to NRM but has argued on a cost effectiveness basis for at least parity for protected areas.

6.3 Direct Threats

Chapter 4 of the *Australian Terrestrial Biodiversity Assessment* gives a thorough description of threats to Australia's biodiversity.

Key issues remain:

- **Habitat Destruction.** The Terrestrial Biodiversity Assessment (pvii) still found that 'vegetation clearing is the most significant threat to species and ecosystems in eastern Australia. Although PAs are not directly cleared they can often be impacted by related problems such as salination and loss of water quality.
- **Invasives,** pest animal and weed species are estimated to cost the Australian economy a total of \$720 million and \$4 billion (WWF 2003) annually. Invasive species are an issue for all land holders, including parks managers and are acknowledged as one of the greatest threats to biodiversity within Australia.
- **Land degradation,** for example salinity is having serious impacts on large areas.
- **Pathogens,** for example the fungal pathogen *Phytophthora cinnamomi* - wildflower fungal dieback disease - is a serious threat especially in South Western Australia.
- **Inappropriate Fire,** like invasive species, inappropriate fire frequencies is one of greatest threats to biodiversity in Australia (DEC 2005). Excessive frequency and high intensity can transform and degrade the structure and composition of vegetation. Massive wild fires like the one which burnt most of the Kosciuszko National Park in January 2003 not only severely impact the ecology but devastate the scenic amenity of the protected area. Fire management is complex and we cannot simply remove the understorey of Australian forests and woodlands to prevent fire.
- **Altered hydrology,** especially loss of flow to freshwater systems has devastated Australia's rivers and wetlands, especially in the Murray Darling Basin. The Assessment states that about 50% of wetlands have been destroyed since European settlement (p.25).

- **Pollution** impacts include littering, toxic runoff and sewage pollution. The latter has been an issue in the Great Barrier Reef WHA, Fraser Island and Kosciuszko (Worboys et al. 2005)
- **Visitation impacts:** Management effectiveness studies in Australia have indicated that the condition of natural values decreases with increasing levels of visitation (DEC 2005). However visitation impacts can often be ameliorated or eliminated with good infrastructure and other management tools. This requires that parks be properly resourced to counter the potential impacts on the condition of natural values.
- These types of threats require an integrated approach to management which may initially require a high level of funding but will prove to be more cost effective in the long-term.

6.4 Capacity to manage threats

- One of key threats is the inability to address a threat due to inadequate funding and resources. An IUCN survey of World Commission on Protected Areas (WCPA) members including Australia (IUCN 1994) found that two of the top three threats to protected areas globally were inadequate staff numbers and training, and inadequate funds.
- Most management threats require substantial funds over sustained periods particularly systemic decline issues like weed infestation. In 2003/4 NSW spent 17million on weed and pest management alone (DEC 2005, p82).
- Managing threats requires adequate information from research. However, a search of the website of the Department of Education, Science and Training (www.dest.gov.au) suggests only 6.9% of research funding goes to Agriculture, Veterinary and Environmental Science areas combined, which suggests a very small figure for biodiversity and protected areas. This is despite environmental sustainability being one of the four national research priorities.
- Managing threats also requires stable on going governance. Changing government structures, amalgamations into new departments, reviews of agencies and programs can all undermine the capacity and commitment of staff to manage well.
- Comprehensive cross jurisdictional cooperation is needed to address key threatening processes. For example marine invasives require fisheries, shipping and conservation agencies to work together.
- Managing threats also requires resources dedicated to supportive partnerships and community understanding so that the community supports adequate funding and sensitive management. For example road closures, cessation of grazing can be opposed by traditional users, but if a good relationship is established and the science well explained, controversy can be avoided.
- The perception of anti parks interests needs to be addressed by communication resources. Most parks are sinks for land/sea management problems, rather than sources of weeds, feral animals, fire and pollution. Parks need to be able to communicate good science to combat the campaigns of vested interests.

7.0 The responsibilities of governments with regard to the creation and management of national parks, other conservation reserves and marine protected areas, with particular reference to long-term plans

- There is an overarching global moral and ethical obligation for all nations to contribute to protect the diversity of life on earth with all the benefits and services that natural systems and species bestow, and to stem the severe losses of systems and species.
- Australia is the only developed nation which is described as megadiverse, meaning one of the richest areas of earth for biodiversity, and consequently has a high responsibility to protect its natural environment (McNeeley et al. 1992).
- Australia is obliged by the following international and national targets to protect its biodiversity:
 - The WSSD Plan of Implementation: Achieving by 2010 a significant reduction in the current rate of loss of biological diversity and by 2012 a global, representative network of marine protected areas.
 - The Convention on Biological Diversity: Australia is committed to achieving conservation of biological diversity, and particularly to the overarching goal of significantly reducing biodiversity loss by 2010.
 - In 2004 the Convention on Biological Diversity COP 7 in Kuala Lumpur adopted a Programme of Work on Protected Areas which sets specific, measurable targets and timetables for expanded protected area work. The key goals are for comprehensive, effectively managed and ecologically representative national and regional systems of protected areas to be established by 2010 for the terrestrial environment and 2012 for the marine environment.
- Australia is also obliged as a signatory to protect areas covered by other treaties such as the Convention on Wetlands (Ramsar) and World Heritage Convention. Many of these areas are either wholly or partly protected areas.
- Australia is well positioned to advance internationally developed consensus directions such as those developed at the World Parks Congress and IUCN World Conservation. These are summarized in 1.0.
- Australian governments also have a responsibility to fulfil their own policy undertakings. As summarized earlier in 4.2.1 Australia has repeatedly committed to a goal of a fully comprehensive, adequate and representative system of terrestrial and marine protected areas.
- The National Strategy for the Conservation of Australia's Biological Diversity (Commonwealth of Australia 1996) adopted the following principle:

Central to the conservation of Australia's biological diversity is the establishment of a comprehensive, representative and adequate system of ecologically viable protected areas integrated with the sympathetic management of all other areas, including agricultural and other resource producing systems.
- However, the responsibility of Australian governments to pursue conservation will not be fulfilled by a narrow interpretation of 'protected area'. Like their counterparts in other parts of the world, government and non government conservation policy makers are now aware that traditional protected areas alone will not achieve the formidable task of biodiversity conservation on a continental scale. Several aspects of the 'island continent' reinforce this reality. First, an estimated 70% of Australia is in private hands, either freehold, leasehold or Aboriginal owned. Second, many

of the most threatened ecosystems exist only on private lands and third, the threatening processes, which are propelling the biodiversity crisis, are not confined to protected areas and cannot be addressed in parks alone. Therefore, there is a need for major continuing effort to find innovative ways to protect biodiversity across all land tenures.

- A further obligation of government is to act in a timely manner. There is a repeated argument from anti-conservation lobbies that no more parks should be declared until we can manage the ones we've got. This position ignores the closing window of opportunity to conserve and the fact that opportunities for acquisition often come only once. It also ignores the economics of risk management; if we ignore major management threats outlined in 6.0 the cost to the nation will be much greater and the chances of success smaller.

8.0 The record of governments with regard to the creation and management of national parks, other conservation reserves and marine protected areas.

8.1 Achievements

- Over the past 100 years Australia has developed a significant protected area system in the terrestrial environment, but a less representative and developed marine system, although the Great Barrier Reef Marine Park is regarded internationally as a leading model of marine protected areas.
- Unusually for a federal country, Australia has a history of cooperation between the states and between the states and the Commonwealth government in the field of protected areas. This has led to a significant bipartisan commitment to the establishment of one of the most comprehensive, representative system of protected areas in the developed world, covering both land and sea.
- Since the initial commitment to this goal in the early 90s, and its confirmation in the 1996 *National Biodiversity Strategy* (Commonwealth 1996 b), a significant allocation of funding and resources has taken this objective forward.
- In the context of extending protected areas in Australia the most important addition to knowledge has been the development of a major framework called the Interim Biogeographic Regionalisation for Australia (IBRA), which has divided the continent into bioregions and evaluated the adequacy of their representation in conservation reserves. In the marine area, the Interim Marine and Coastal Regionalisation for Australia (IMCRA) has been used to identify and establish the National Representative System of Marine Protected Areas (NRSMPA). In addition, the Regional Forest Agreement (RFA) process also contains a key component of identifying forests for inclusion in protected areas.
- We pioneered internationally acknowledged models of joint management with indigenous people.

8.2 Terrestrial Systems

- In 1997 the Australian federal government, using the proceeds of a part sale of the national telecommunications network, established a \$2.5 billion dollar Natural Heritage Trust (NHT). This was extended in the 2001 budget for a further five years. The fund has been important in progressing the NRS, but as stated elsewhere the bulk of the funding has gone to land repair and agricultural sustainability, rather than securing extant systems. Although it is acknowledged that many general programs such as the audits mentioned below and the biodiversity hotspots program have contributed to conservation goals.
- The NHT has greatly improved the knowledge base for biodiversity planning through funding the National Land and Water Resources Audit which produced a very comprehensive range of natural resource assessments. To date there have been National Assessments on Water (2000), Dryland Salinity (2000), Native Vegetation (2001), Rangelands (2001) Agriculture (2001) and Catchment, River and Estuary (2002). Finally the 2002 *Australian Terrestrial Biodiversity Assessment* which provided the most comprehensive assessment to date (Commonwealth 2002).

- Among the goals stated for the extended NHT program is an explicit commitment to expand the NRS:

A substantial increase in the area and quality of the national reserve system; enhanced engagement with indigenous communities, leading to an expansion of the Indigenous Protected Area network; integration of biodiversity conservation as part of the core business of regional/catchment organisations; development and application of appropriate economic and market-based measures to support the conservation of terrestrial native biodiversity; (<http://www.nht.gov.au/extension/index.html>).
- All states and territories have increased their PA estates over the last decade to a national figure for the terrestrial environment of over 10%. The submission will not itemise the details of parks estates as they are readily available through the Collaborative Australian Protected Area Database (CAPAD) www.deh.gov.au/parks/nrs/capad/index.html. Also the World Wide Fund for Nature will bring out a comprehensive national audit of the terrestrial protected area system against objectives within the life of the Senate Inquiry, (Andreas Glanznig pers. comm.)
- Most states and territories in Australia recognise the importance of understanding how well parks are being managed and being able to adapt management accordingly, however some state are further along in the development of systems for measuring management effectiveness. New South Wales, Victoria and the Commonwealth have all adopted the 'State of the Parks' approach to measuring and reporting on management effectiveness.

8.3 Marine Systems

- Progress in the marine environment has also been significant with the declaration by the Commonwealth of 13 multiple use marine protected areas covering 27,244,080 ha <http://www.deh.gov.au/coasts/mpa/commonwealth/manage/estate.html>
- The 2004 rezoning of the Great Barrier Reef Marine Park ensured that at least 20% of each of its 70 bioregions was included in a highly protected (no take) zone. This has been regarded as a globally significant decision and was commended as such at the World Conservation Congress of the International Union for the Conservation of Nature in Bangkok in November 2004.
- In 1991 the Commonwealth Government announced a 10-year marine conservation program (Ocean Rescue 2000). A key component of this was expansion of the existing marine reserve system through development of a National Representative System of Marine Protected Areas (NRSMPA). In 2005 with the release of the Commonwealth's South-east MPA proposal, the Commonwealth Minister for Environment, Senator Ian Campbell, committed the Australian Government to the achievement of a comprehensive network of MPAs by 2012 through regional marine planning (Press release 13th October 2005).
- The NRSMPA aims to satisfy the commitments made by the Commonwealth government when it signed the international Convention on Biological Diversity in 1992 (ratified in 1993), which requires all member nations to establish a system of protected areas (on land and sea).
- The primary goal of the NRSMPA is:

'...to provide for the protection, conservation, wise use, understanding and enjoyment of marine heritage in perpetuity through the creation of a national representative system of marine protected areas and through management in accordance with the principles of the World Conservation Strategy and the

National Strategy for Ecological Sustainable Development of human activities that use or affect the marine environment.

- The Commonwealth's has pursued MPA planning in Commonwealth waters through regional marine planning for 'integrated ocean management' (IOM). This approach ensures that MPAs identification is integrated with resource management. It is largely an approach driven by stakeholders such as the fishing and mining industries. As a result Edyvane (2005) identifies the following issues:
 - the degree to which the goal of biodiversity conservation has been subsumed by the broader goals of regional planning, particularly resource security.
 - the lower level of protection afforded MPAs delivered under regional planning.
 - the delays in progressing MPAs within these regional planning
- Despite the agreed guidelines and actions under the 'Guidelines for Establishing the National Representative System of Marine Protected Areas' and a 'Strategic Plan of Action for the NRSMPA' (www.deh.gov.au/coasts/mpa/nrsmpa/index.html). Edyvane and Smyth both argue there has been limited progress in implementing the NRSMPA, mainly due to a lack of resources and the approach by the Commonwealth to implement the NRSMPA through regional marine planning (Edyvane 2005).
- At the state level there is also a mixed record to date. There is currently no marine equivalent of the funding stream available to states/territories under the NRS. This could be of major assistance particularly regions like the Northern Territory. As a result a recent report of the Australian Conservation Foundation, *Out of the Blue* (Smyth 2006) has argued that 'the system [is] evolving with inconsistent processes outcomes for marine protection, and different targets, timelines, consultation processes, zonings and levels and types of protection'.
- In 2002, after ten years of investigation and consultation, Victoria established a major highly protected system of 13 Marine National Parks and 11 smaller Marine Sanctuaries. These parks and sanctuaries now protect 5.3% of Victoria's coastal waters, safeguarding important marine habitats and species, significant natural features, cultural heritage and aesthetic values, www.parkweb.vic.gov.au/1park_marine.cfm.
- The Commonwealth and the other states have opted for multi-zoned parks with small percentages of high-level protection. Tasmania established two new MPAs in 2004 to add to four small areas proclaimed in 1991 and the relatively larger Macquarie Island Marine Reserve in 2000, which extended the island's terrestrial nature reserve to the three-nautical-mile limit.
- South Australia has just one MPA, which covers state waters abutting the Great Australian Bight Marine Park in Commonwealth waters. The South Australian government has established a process to develop a South Australian Representative System of MPAs (SARSMPA) by 2010.
- New South Wales has established six MPAs, two of which are yet to have zoning plans prepared. Western Australia has ten while Queensland is currently establishing marine parks that protect new areas but also merge existing marine parks. The largest is the Great Barrier Reef Coast Marine Park abutting the Great Barrier Reef Marine Park in Commonwealth waters. High-level protection proposed for the Great Sandy Marine Park – Northern Section, which will merge Hervey Bay and Wongarra marine parks, is proposed to be 3.8 per cent of the park's total area of 590,000 hectares (Smyth p.36).
- Levels of protection for MPAs within the NRSMPA vary significantly between jurisdictions. Within Commonwealth waters, MPAs in temperate waters have typically been zoned for

multiple-use (Category VI or IV). In contrast, 'no-take' MPAs are relatively well established in State/Territory waters in temperate waters eg. Aquatic Reserves in South Australia, Marine Reserves in Tasmania, and Marine National Parks and Marine Sanctuaries in Victoria.

- Levels of protection for MPAs within the NRSMPA vary significantly between ecosystems. Within Commonwealth waters, MPAs in tropical ecosystems and subantarctic ecosystems have generally been afforded high levels of protection (IUCN Category 1A or II) (where tourism and sovereignty issues have been major conservation drivers). In contrast, MPAs in Commonwealth temperate waters have typically been zoned for multiple-use (Category VI or IV) (where petroleum, mining and fisheries interests have been major impediments to conservation) (Edyvane 2005).
- Although Australia's Oceans Policy includes commitments to the ongoing establishment of the NRSMPA, there were no targets or timetable for its completion included. The WCPA World Parks Congress meeting in Durban, South Africa in 2003 strongly stressed the need to enhance global marine conservation. The Congress recommended that at least 20-30 per cent of each marine habitat in the world's oceans be strictly protected (in no-take areas) by 2012 (World Parks Congress: Recommendations 5.21 and 5.22).
- Despite progress being made Australia is well short of these World Parks Congress target. About 7.5% of Australia's EEZ (8.6 million km²) is contained within MPAs. When no-take percentages are considered, the percentage of Australia's EEZ with this strict level of protection is barely over 3% (Smyth 2006).

8.4 The Remaining Task

- Therefore despite significant progress in both terrestrial and marine systems, it is clear, much remains to be done.
- In the case of terrestrial systems, the *Australian Terrestrial Biodiversity Assessment* concluded, 'a major commitment is required to consolidate the reserve system' (p.126) Key findings from the Assessment were:
 - 67% of Australia's ecosystems diversity was captured by national parks and formal reserves, with a further 5% included in other protected areas and covenants on private lands.
 - 42 bioregions (approximately half of the total) are a high priority for further reservation actions to ensure Australia has a Comprehensive, Adequate and Representative system of protected areas.
 - An identified 1500 ecosystems that are poorly conserved and in many cases threatened should be the focus of further reservation.
 - With 57 of the subregions (31%) in the intensive land use zone having less than 30% vegetation remaining and 88 sub regions (48%) now showing little connectivity between remnants the opportunity for a CAR protected area system is rapidly diminishing.
- Within the marine environment there is even more to be achieved with CAR marine systems yet to be established in most states and territories.
- Edyvane (2005) stresses that there is a critical need for complementary MPA planning and consistency, due to the greater connectivity of marine ecosystems, processes and biota.

- One of the major challenges facing the NRSMPA is the lack of a nationally, consistent science-based, approach to MPA planning. The development of sound, ecosystem-based, operational planning criteria should be the basis of a national approach to science-based MPA planning. Within the GBRMP, the MPA biophysical operating principles developed by scientific experts were highly prescriptive, in terms of: the minimum replication of MPAs in each bioregion (3-4); the number, distribution and minimum area of habitats (reefs, non-reefs) (20%) for each bioregion for reservation: and also, total area of reservation for the park (25-30%). Issues of cross-shelf representation, latitudinal diversity, special and unique places, adjacent coastal uses and connectivity were also addressed.
- This rigorous approach resulted in a system of 'no take' zones within the wider GBRMPA which has been applauded throughout the world and should be employed elsewhere.
- The ACF also believes the national processes for achieving marine protected areas should be improved and identifies the following steps:
 - Basing identification of candidate marine national parks on science, with the mapped options designed by marine scientists.
 - Ensuring community consultation and comment before the final park boundaries were proclaimed.
 - Establishing marine national parks as the core protection for marine biodiversity in the regional marine plan with other zones providing for habitat, biodiversity and ecological process protection in the context of ecologically sustainable use of the oceans.
 - Integrating the identification and selection process for marine national parks within the ecosystem-based process for each regional marine plan.
 - Formalising cooperative joint processes park management arrangements within and between Commonwealth and state department and agencies.
- Overall the record of Australian governments shows reasonable progress. We have established sound directions, good frameworks and many good models. However, is this progress satisfactory for a developed nation of high biodiversity, where a critically important, high employment industry relies on protected areas? WCPA has argued that it is not. We note that Australia ranks well behind many other nations with less rich biodiversity and needs to lift its achievements. The goal of a national system of protected areas, that is fully representative of major ecological communities in each bioregion, is far from complete. Degradation and declining status marks many communities and species, against a background of declining funding and in some cases low political and policy priority. WCPA believes that it is essential that as a nation we do much better and seeks a dramatic increase in the national investment, backed by political will to both complete *and* effectively manage Australia's protected areas. NHTIII needs to have an expanded NRS as a central component in a broader National Biodiversity Initiative. Without such a commitment we shall fall well short of our own national goals and international targets and in doing so diminish the nation, its heritage and its economy for all time.

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