

IUCN  
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Protected Areas

# Conservation on Private Lands: the Australian Experience

Penelope Figgis



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### **Note**

The publication is based on a paper prepared for the Privately Owned Protected Area Workshop in the Governance Stream at the Vth World Parks Congress in Durban, South Africa, September 8-17th 2003. The Congress is convened by the World Commission on Protected Areas (WCPA), a global network of protected area professionals and a Commission of IUCN, the World Conservation Union. It is held every ten years to debate the issues surrounding protected areas. This forum is the most prestigious and influential forum in the world in determining global directions for nature conservation through reserves.

### **Author Profile**

Penelope Figgis has contributed to the protection of the Australian environment for over 25 years through full time advocacy, holding many offices in environment organisations, board membership of statutory authorities as well as writing, lecturing, public speaking and media commentary.

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She is the author of many articles, chapters and papers. Her publications include Rainforests of Australia (ed.) 1985 and Australia's Wilderness Heritage: World Heritage Areas 1988 (co-author with J.G. Mosley) and Australia's National Parks and Protected Areas: Future Directions, 1999.

On Australia Day 1994 she was made a Member of the Order of Australia (AM) for her services to conservation and the environment and in 2003 was awarded the Centenary Medal for outstanding contribution to the environment.

# **Conservation on Private Lands: the Australian Experience**

**Penelope Figgis**



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**Large left:** Australian Bustard (Carvarvon Station Reserve, QLD) Wayne Lawyer /Ecopix. **Small upper left:** Golden Rulinga (Charles Darwin Reserve, WA) Jiri and Marie Lochman, Lochman Transparencies. **Upper right:** Diamond Firetail (Tarcutta Reserve, NSW) Wayne Lawler/Ecopix. **Lower left:** Prickly gecko (Charles Darwin Reserve, WA) Jiri and Marie Lochman, Lochman Transparencies. **Lower right:** Poverty bush (Charles Darwin Reserve, WA) Jiri and Marie Lochman, Lochman Transparencies.

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## IUCN – The World Conservation Union

Founded in 1948, The World Conservation Union brings together States, government agencies and a diverse range of non-governmental organizations in a unique world partnership: over 1000 members in all, spread across some 140 countries.

As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

The World Conservation Union builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

In recent years Australia has made progress in understanding its ecological diversity and advancing towards a more representative national system of protected areas. However, this has not stemmed a serious decline in Australia's biodiversity. As a consequence, both environmental decision-makers and NGO advocates are searching for additional tools to encourage biodiversity conservation on all lands. The 70% of Australia's landmass under private freehold, leasehold or indigenous title has therefore become a focus of attention. This focus on private lands and the involvement of private landholders, is a marked shift from the past when nature conservation was essentially a matter for the public sector. This paper looks at some of the key drivers of the change before outlining a variety of models – ecosystem networks, indigenous protected areas, private protected areas, binding and non-binding voluntary agreements, financial and other incentive mechanisms. The importance of such mechanisms is underscored by the fact that science tells us that protecting intact ecosystems is seven times more cost effective than trying to reestablish them after damage. The paper concludes that while the extension of models is essential these efforts should support, not replace or erode public protected areas. There must also be sustained political and community support and financial backing if real progress is to be sustained.

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## 1.0 INTRODUCTION

In 2002 Australia released the *Australian Terrestrial Biodiversity Assessment*, the biggest audit of the country's wildlife and natural areas ever conducted (Commonwealth 2002). It paints a disturbing picture of this island continent's rich and globally significant biodiversity. The report's analysis divided Australia into natural bioregions and subregions and found that '...2891 threatened ecosystems and other ecological communities are identified across Australia...with the greatest numbers in the highly cleared regions of southern and eastern Australia'. It also identified 1595 threatened species.

The *Assessment* confirmed the 2001 *State of the Environment Report* which had also found that Australia's rich and distinct biodiversity is under multiple threats and still in decline (CSIRO Publishing 2001). Major threats are numerous including the loss of habitat to human settlement, agriculture and grazing, introduction and spread of alien species, pollution and altered fire regimes. However, one of the greatest is habitat destruction from landclearing. 2003 deforestation figures from the United Nations and latest Australian figures revealed that Australia's land clearing rate of approximately 500,000 hectares per annum is comparable to the worst African, South American and Asian de-forestation rates (ACF 2003). The vast majority of clearing has been occurring on private leasehold or freehold lands. Increasingly this steady loss of natural capital is understood as not just a scientific loss or an ethical failure, but a serious threat to the basis of our economic system. Fortunately recent shifts in policy and legislation especially in New South Wales and Queensland should finally slow the rate of decline from broad acre land clearing ([www.wilderness.org](http://www.wilderness.org)). However, the task of biodiversity conservation and management across frequently fragmented landscapes remains.

Twentieth century environmentalists generally thought that the answer to declining vegetation and wildlife was to declare protected area status over areas. The call was generally for a national park. Nature was 'safest' in an area formally declared under legislation and managed by a government nature conservation authority. After declaration the task has been to defend this sanctuary from any human impact which would undermine its natural values (Prineas 1998). This was not a uniquely Australian approach, but a deeply held view around the world (Phillips 2003).

However, both an increasing knowledge base on biodiversity and an awareness of proliferating threats, have confronted environmental advocates and policy makers with a stark reality. Despite recent expansions, the last official figures had only 10.08% of the Australian landmass in any kind of formal protected area (Commonwealth of Australia 2003). With nearly 90% of the continent outside the system, it is clear that the conservation tools of the twentieth century, particularly legislated public national parks, while critically important, are inadequate to meet the scale of the challenge. Numerous government and scientific reports have now reiterated this point. Consequently there has been a major shift of understanding in the government, scientific and the non-government (NGO) sector over the last decade. There is now a broad consensus that, while we must continue to add to the formal national reserve network, we must also turn to other lands, especially private lands and produce workable mechanisms which will stem the decline and result in long term biodiversity gains. This will involve new communities and constituencies, often excluded from the classic paradigm described previously. In doing so a much broader concept of protected area is emerging, one which has been called 'a revolution in our approach to protected areas' (Phillips 2003).

The author in a 1999 monograph, *Australia's National Parks and Protected Areas: Future Directions* (Figgis 1999) has further described these important shifts in thinking especially as they affect Australia. However, the paper added an important caveat, which remains valid. These additional tools must *build on* a comprehensive, adequate and representative formal reserve system. The Ecological Society of Australia has stated 'that protected areas are the primary mechanism for biodiversity conservation in Australia and that the primary function of protected areas is to promote the persistence of biodiversity' (Ecological Society 2000). Legislated protected areas are, and should remain the *core* lands of biodiversity conservation. The initiatives described in this paper are therefore not an alternative, but a

critical augmentation of the formal parks system. They are the mechanisms required to build the networks, corridors and other initiatives to expand conservation across the landscape.

Furthermore, while respecting the rights and knowledge of indigenous people is a critical requirement of Australian biodiversity protection, there are no compelling reasons to move away from strict protection as the core of nature conservation. A sustainable future requires conservation to *move out* from core lands, rather than multiple, extractive human use to *move in*.

This paper gives a brief survey of the ecological and social factors driving the increasing emphasis on private lands in the national biodiversity effort and reviews some of the key mechanisms being explored in Australia. With a huge range of programs and mechanisms being trialed, this paper is by necessity an overview.

## 2.0 ECOLOGICAL DRIVERS OF CHANGE

### 2.1 Lack Of Representativeness

Australia's earliest efforts to conserve biodiversity or 'nature' emerged in the late 19<sup>th</sup> century (Goldstein 1979). In the 20<sup>th</sup> century Australia increasingly followed the western model of declaring public formal reserves with defined boundaries and legislative status, which were generally managed to exclude human commerce and extraction. Australian national parks were influenced by a political culture which had few population pressures and little appreciation of indigenous rights or interests. NSW ecologist Bob Pressey played a major role in highlighting the issue of poor representation (Pressey 1993, 1994). He often made the point that the selection of reserves was driven more by the aesthetic love of grandeur and beauty than by ecological knowledge or criteria.

As mapping of vegetation improved in the seventies and eighties it became increasingly apparent that the reserve system fell well short of representing the nation's variety of natural environments. Clearly the major gaps were in those landscapes most desirable for cropping or pastoralism and reserves were more likely to be in steep, unproductive land unsuited to commercial land use. Pressey, writing of NSW, made a point more generally applicable - 'Reservation - the most effective and secure conservation action available in the State - has been restricted largely to areas least threatened by outright loss of native vegetation' (Pressey et.al. n.d.). The clear implication was that a truly representative system would have to engage with the areas most threatened, which in turn meant the most productive and largely privately owned areas.

Pressey's critique was echoed by Richard Thackway, the key architect of the Interim Bioregional Regionalisation of Australia (see 2.3), who argued that while reserves have been added to the conservation estate in the post war decades, there was inadequate attention given to reserving a comprehensive system of Australia's ecosystems and their biodiversity. He asserted that areas were selected for their proximity to population centres and their aesthetic and recreational values, resulting in a high bias toward the 'taller, greener, and wetter' end of the spectrum (Thackway 1996a). The author has been a close participant in this period of the environment movement and can agree that, with a few exceptions, the charismatic landscapes of the coasts, forests and mountain wildernesses received more priority than the less known and less dramatic inland environments. However, by the late eighties the message of Pressey and others had been heard and the environment movement became strong advocates of representativeness as a critical component of a national reserve system.

### 2.2 'Islands To Networks'

The impetus to look beyond the formal reserve system also came from developments in ecological science. Since the mid sixties there has been an increasing scientific consensus that isolated 'islands' of nature will not adequately protect biodiversity over time. The theory of island biogeography was

expounded in 1967 in *The Theory of Island Biogeography*, by ecologist Robert MacArthur and biologist Edward O. Wilson. They argued that as islands shrink, species become vulnerable to inbreeding and accidents, and start to decline. This thinking was further developed by US ecologist Michael Soule into the concept of 'conservation biology'. Conservation biology identifies the need for large *networks* of well protected areas connected by buffers, corridors and linkages of sympathetically managed adjacent lands (Soule & Simberloff 1986). Biodiversity conservation would in this way be integrated into many land uses and tenures. This approach has subsequently been called the 'whole of landscape' or the bioregional approach (see 4.1).

This way of thinking about conservation was high on the agenda at the IVth World Congress on National Parks and Protected Areas, in Caracas, Venezuela in 1992 (IUCN 1993). Organised by IUCN every ten years, the Parks Congresses have become vital international fora where trends emerge and are taken back to the participant countries by key decision-makers. Between Congresses, the World Commission on Protected Areas (WCPA), an informal network of protected area professionals, promulgates its approaches through publications, committees and meetings worldwide. The Action Plan (CAP), which emerged from the conference, identified the need to 'integrate protected areas into larger planning frameworks' which meant supporting protected areas with more sympathetic land uses and promoting conservation across broader ecological landscapes.

This approach is clearly applicable to Australia where many protected areas are isolated. A reserve like the Stirling Ranges NP in south west Western Australia looks quite literally like an island, as its vegetated slopes rise above a vast 'sea' of wheat fields. Increasing research has found that many species and ecological communities only occur outside reserves, often scattered and separated. Some of the remaining islands are on public land such as local government roadsides and reserves, cemeteries, travelling stock routes as well as on private land. Therefore, while remaining committed to the priority of securing legislatively protected and publicly managed parks, the Australian environment movement has increasingly adopted the implications of science and acknowledged that protected areas must be complemented and connected with 'off reserve' conservation management (Krockenburger 1997). In the last few years a major NGO, the Wilderness Society, has made the bioregional framework a central campaign priority through its WildLands approach (see 4.1).

### **2.3 The Developing Knowledge Base**

The international concern over the dramatic 20<sup>th</sup> century decline in species, ecosystems and genetic diversity culminated in 1992 with the Rio Earth Summit and the development of the Convention on Biological Diversity (CBD). Australia signed the Convention and developed the National Strategy for the Conservation of Australia's Biodiversity, which was formally adopted in 1996 (Commonwealth of Australia 1996). The strategy itself and the prolific documents generated by the Commonwealth Biodiversity Series Papers, have all helped to broaden understanding of the very severe problems faced by Australia's biodiversity. The last decade has seen a much deeper understanding of the roles of land degradation and clearance, habitat fragmentation, pollution, weed species, feral animals, inappropriate fire regimes and the other threatening processes. The strategy also gave great impetus to the development of research, policy, programs and legislation. All processes emphasised the need for comprehensive environmental data as a prerequisite for effective action.

The most important addition to knowledge in the context of extending protected areas in Australia, has been the development of a major framework called the Interim Biogeographic Regionalisation for Australia (IBRA). IBRA divided the continent into bioregions based on complex overlays of data 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, which was part of the National Forest Policy, contained a core aim of

identifying forests for inclusion in protected areas (Figgis 1999). All these processes, IBRA, IMCRA and the RFA process have had a major data collection component, which has added dramatically to the knowledge and understanding of terrestrial and marine ecology in Australia ([www.deh.gov.au](http://www.deh.gov.au)).

A critical component in this rapid development of knowledge was the availability of unprecedented funding. 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 described as 'the largest effort towards environmental rescue and agricultural sustainability ever undertaken by any Australian Government ([www.nht.gov.au](http://www.nht.gov.au)). Additional funds of some \$1.4 billion are also available through the current National Action Plan for Salinity and Water Quality (NAPSWQ).

The NHT funded the National Land and Water Resources Audit which produced a 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). The cumulative data from these assessments is overlaid in the Australian Natural Resource Atlas (<http://audit.ea.gov.au>). Finally the recently released *Australian Terrestrial Biodiversity Assessment* has provided the most comprehensive assessment to date (Commonwealth of Australia 2002).

At state level there have also been major improvements in the information base which act to both highlight problems and facilitate and inform programs. There has also been a significant development in community access to information on the state of the environment. To take just one example in NSW, there is Community Access to Natural Resource Information (CANRI) which provides information on air quality, biodiversity, plants and animals, geological information and information on Landcare groups and their activities and location.

So increasingly, there is better science to inform biodiversity initiatives and efforts to standardise approaches to data collection and management have improved information accessibility. This has provided much better guidance for reserve selection and gone part of the way to addressing the key problem in reserve selection, the lack of consistent, detailed data on biophysical variation. However, this major national effort has also underscored the reality that much of the land of high biodiversity in poorly represented areas, lies on the 70%, or 500 million hectares, of private non urban land outside the reserve system. In this way it has become a major driver of conservation on private lands.

## **3.0 SOCIAL DRIVERS**

Land allocation and use is strongly affected by the social circumstances of any society, and prevailing cultural and ethical attitudes. Globally, protected area policy is strongly influenced by different views about why and how we conserve nature and who are appropriate stewards of nature. Developments in science and an increasing public knowledge of the scale of environmental problems have been paralleled by changes in social attitudes on these issues. Over the last few decades Australia has changed from a position where conservation was seen principally as an issue for the government agencies and the environment movement, to a position which recognises many different governance models involving a much wider spectrum of society.

### **3.1 Constituency Building**

In part, this commitment to involve the broader society in conservation stems from the concept of 'constituency building'. 'Constituency building' is the global trend to search beyond government for other players and partnerships to further conservation; indigenous people, local government, private trusts, landowners and resource-based industries. The concept derives from the received wisdom that parks 'islands' will not survive in either 'seas' of ruined ecology or 'seas' of social hostility. The idea is to build widespread support for parks and conservation initiatives through building different

constituencies with an interest in the success of these efforts. This theme, of 'expanding support for protected areas', was strongly put at the IVth World Parks Congress in Caracas in 1992 (IUCN 1993) and has become an increasing theme at subsequent Congresses (Phillips 2003). IUCN has further developed these ideas into the concept of 'social sustainability'. Their 1997 publication, *Beyond Fences: Seeking Social Sustainability in Conservation*, proposed achieving conservation outcomes in concert with people, rather than imposed over them (Stevens 1997).

In Australia this way of thinking has gained a great deal of impetus from the writings of research economists, Carl Binning and Mike Young. Their papers and reports, although often built around an economic analysis, have constantly emphasised the policy advantages of governments and landholders working cooperatively for biodiversity. One of their most influential papers, *Motivating People* (1997), looked at socio-economic factors that influence landholders' decisions on vegetation. It has been said that these two economists 'set the national agenda' and influenced at least \$100 million of Commonwealth expenditure (Mussared 2002). Through the work of Binning and Young and many others, the adoption of this philosophy has led all three levels of government to involve more stakeholders in protected area planning. It has also stimulated the development of very wide range of initiatives from the private protected area or wildlife sanctuary to a myriad of instruments aimed at vegetation retention and restoration on both public and private lands.

The attitudinal receptivity of the rural sector to conservation initiatives has been greatly enhanced by the *Landcare* movement. *Landcare* is a distinctively Australian initiative that arose in the late eighties from an alliance of the leading national environment NGO, the Australian Conservation Foundation and the National Farmers Federation, an unusual and therefore powerful alliance. *Landcare* has promoted a more sustainable approach to the land over a decade with remarkable success. The 2001-2 Annual Report states that there are now 4000 *Landcare* groups and 2000 *Coastcare* groups nationwide. Although originally established to address the prevention of land degradation, the movement has focussed a great deal of attention on the broader issues of sustainability, including biodiversity loss ([www.landcareaustralia.com.au](http://www.landcareaustralia.com.au)).

This 'partnership approach' as it is often called also derives to some degree from a wider global trend which the author has previously described as 'the retreat of government' (Figgis 1999 p.21). This refers to the tendency for modern governments to shed or share responsibilities they believe others in the community can manage, in the interest of smaller and more efficient government.

### **3.2 Recognition of the Rights of Indigenous People**

A key aspect of social sustainability, and a further driver of private land protection, is the recognition of the rights of indigenous people. The late eighties saw a major worldwide shift in the recognition of indigenous people as vital players in conservation programs and sustainable development (Stevens 1997). Smyth and Sutherland (1996) in *Indigenous Protected Areas*, trace the evolution of this recognition in international treaties, law and policy. Common themes of these processes are: the imperative to recognise the morality of prior ownership; the value of the intimate ecological knowledge of indigenous people; the rights and the importance of indigenous people continuing to practice their culture; and the need for indigenous people to share the benefits of any use of their traditional resources.

Australia has reflected this fundamental shift and increasingly indigenous rights are factored into biodiversity conservation by both governments and non-government organisations (Figgis 1999 p.11, p55). Initially this recognition was evidenced in greater efforts to acknowledge indigenous rights within existing protected areas, including title hand back and co-management. However the IBRA process and the commitment to achieve representativeness identified the land owned by indigenous people as containing important areas which were essential to a comprehensive protected area estate. Currently with land purchase and various statutory land rights schemes in the states and territories, over 15 per cent of Australia is owned or controlled by indigenous Australians. This includes almost half of the

Northern Territory returned to traditional owners under the Commonwealth Aboriginal Land Rights (Northern Territory) Act and significant areas of north-west South Australia returned under South Australian legislation. Much of this land is in areas less modified by European settlement and therefore retains high conservation value ([www.atsia.gov.au](http://www.atsia.gov.au)). The Indigenous Protected Area (IPA) program described in 4.2 was developed to achieve a culturally acceptable means of bringing increased conservation management to these lands. However, there will need to be an ongoing effort to negotiate additional culturally appropriate models.

## 4.0 EXPANDING THE TOOLBOX

The drivers outlined above culminated in Australia's *National Strategy for the Conservation of Biological Diversity* (1996). It stressed bioregional planning, the need to strengthen conservation outside traditional protected areas, and the need to respect, use and enhance the role of indigenous Australians in conservation (Commonwealth of Australia 1996). Objective 7.1 (c) states that by 2005 Australia will have 'established a system of voluntary or cooperative reserves, or both, and other management schemes on private lands to complement the protection provided by the public estate in protected areas'.

This objective was embodied in the National Reserve System Program (NRS), a key element of the Strategy. The Program, which has been operating since 1996, aims to produce a comprehensive, adequate and representative (CAR) reserve system across Australia. Through the funding source of the NHT, it has injected some \$84 million dollars into this goal (ANZECC 2001). In addition, considerable additions to the reserve system have been made at state and territory level. The NRS program also supports both the Indigenous Protected Areas program (see 4.2) and funding for the establishment of Private Protected Areas (see 4.3). The NRS currently provides 2:1 funding for private land purchases or covenanting for conservation.

Cumulatively these programs are leading to millions of additional hectares of land and sea in protected areas. Environment Australia estimates it has added 6.766 million hectares as formally declared areas and 13.785 million hectares through the Indigenous Protected Areas Program (Forsyth pers.com 2003). Overall this has meant there has been substantial growth in the last decade from the 1991 figure of 6.4% for terrestrial reserves (Hooy and Shaughnessy 1992) to the most recent official figures of 10.08% of the Australian landmass in any kind of protected area (Commonwealth of Australia 2003).

However, largely due to the social and ecological factors described above, the NRS and other policy initiatives have produced a very different conservation landscape to the sixties and seventies. New entities, which were quite unknown – bioregional models, the indigenous protected area, large private reserves, fenced wildlife sanctuaries and multiple initiatives to encourage biodiversity conservation on private lands, have emerged. The following section of the paper gives an overview of some of these models.

### 4.1 The Bioregional Model

The bioregional model is one of reconciling communities and nature conservation through involvement in conservation across the landscape, on and off reserves. It envisages a network of public and private lands with protected areas linked by ecological 'corridors' and areas of sustainable land management. The proponents of the concept see it as a prototype of genuine ecologically sustainable development. An IUCN publication (Davey 1998) outlined the concept.

This approach (bio-regional planning) looks beyond the boundaries of strictly protected areas, to include the establishment of buffer and support zones around them, the creation of corridors of ecologically - friendly land use between them and the restoration of areas which have lost their ecological value.

It is a term used frequently in IUCN networks but is a somewhat confusing term in Australia, as it does not relate directly to the ecological bioregional divisions of Australia (IBRA) described in 2.3. Other terms frequently used for the same concept are 'whole of landscape' approaches, 'landscape conservation' (Stevens 2001) and 'ecological networks' (Phillips 2003) while other people use the term 'biosphere'. To add to the confusion over terminology, most natural resource managers use catchments as their unit of planning rather than bioregions (Briggs 2001). The model has gained great momentum from both the science of conservation biology described in 2.2 and the need to build broader constituencies 3.1. The paradigm of bioregional or biosphere networks is now broadly endorsed as a direction in international conservation circles. The theme of the 2003 World Parks Congress in Durban, South Africa 'Benefits beyond Boundaries', reflects this approach and was the central debate of the Congress ([www.iucn.org/themes/wcpa/wpc2003](http://www.iucn.org/themes/wcpa/wpc2003)). In Australia the public debate has been somewhat muted with some elements of the environment movement embracing the new direction while others remain steadfastly committed to the classic view of government owned and managed strict protection parks (Prineas 1998). The author has supported the powerful imperatives for fresh approaches, but also the need and cost effectiveness of the 'classic' park values for core lands (Figgis 1999).

The bioregional planning concept owes a great deal to an earlier model, the UNESCO Man and the Biosphere Reserve (MAB). The MAB Program began in 1971 and advocated the establishment of reserves which would have core areas of minimal disturbance surrounded by buffer and transition zones (Brunckhorst 1999). Indeed modern protected area specialists tend to merge the two concepts (Miller and Hamilton 1999). Australia established 12 biosphere reserves under MAB between 1977 and 1982 in all States except Queensland, although few were actually true to the concept.

It is significant however, that a decade of discussion on the desirability of such integrated bioregional approaches has brought forward few working examples. The best known is Bookmark Biosphere Reserve in South Australia's Riverland Region (Brunckhorst 1999). Bookmark is composed of some 47 properties totalling almost 862,000 hectares, which includes formal protected areas, private lands and land owned by private conservation organisations. However, the reserve is not only composed of de facto nature reserves but also game and forestry lands as well as working properties and pastoral leases. It includes substantial areas of the floodplains of the River Murray, which are listed wetlands under the Wetlands of International Importance (Ramsar Convention) for migratory species and waterfowl. It also helps protect the largest area of mallee in Eastern Australia. The reserve is managed by a community trust ([www.ccsa.asn.au/esa/bookmark/](http://www.ccsa.asn.au/esa/bookmark/)). The properties include former pastoral leases *Calperum*, *Taylorville*, *Danggali Conservation Park* and a 50,000 hectare property, *Gluepot*, which Birds Australia, Australia's major ornithological organisation, purchased to be a major sanctuary for endangered bird species ([www.riverland.net.au/gluepot/](http://www.riverland.net.au/gluepot/)).

The Biosphere Reserve is also pioneering work on new sustainable industries such as horticulture based on native species, oil production from mallee, aquaculture and tourism based around a new \$1.1 million environment centre at Renmark and the development of community-based Bookmark guides. These are all at pilot or research level. A diversified meat industry based on feral goats and kangaroo culling has also been discussed.

The Fitzgerald River Biosphere Reserve in south west Western Australia, one of the original biosphere reserves, is evolving into a more complex model. The region is internationally acknowledged as a biodiversity 'hotspot' for its high floristic diversity and endemism. Natural remnants are often isolated in heavily modified agricultural lands (Watson and Wilkins 1999). Efforts are being made to link existing protected areas and vegetation remnants into corridors of diverse land tenures. Proponents seek:

The establishment and community ownership of a strategic macro corridor network across the entire South Coast Region of Western Australia. This will comprise major macro corridors, especially along the coast and running inland along the river valleys, but also narrower corridors, good quality remnant vegetation, and a graduation down to 'micro' corridors establishment or protection at the individual farm or property level.

There are also efforts to go beyond linking vegetation, to promoting sustainable industries that can buffer the reserve areas and benefit from the green branding of the biosphere. The local communities have formed the Fitzgerald Biosphere Marketing Association and are branding existing products, as well as developing products which are compatible with sustainable land management, for example wild flowers, yabbies (a form of freshwater crayfish), mallee oils, ecotourism and other products (Louise Duxbury pers.comm).

The south west region of Western Australia is also the site for the *Gondwana Link Project*. This project aims to restore ecological connectivity 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. Gondwana Link is a cooperative effort involving the Australian Bush Heritage Fund, Greening Australia, the Fitzgerald Biosphere Group, Friends of the Fitzgerald, Mallee Fowl Preservation Group and The Wilderness Society, community and non-government organisations representing local, regional, state and national interests ([www.gondwanalink.org](http://www.gondwanalink.org)).

The bioregional concept has also shaped The Wilderness Society's *WildCountry* vision, which is advocating 'an Australia-wide, comprehensive system of inter-connected core protected areas, each surrounded and linked by lands managed under conservation objectives'. Inspired by the lessons of conservation biology the core of this system is to be established by identifying and protecting 'the best of what's left' of Australia's wilderness and other natural areas of high conservation value ([www.tws.org.au](http://www.tws.org.au)). The most ambitious WildCountry goal is to apply the concept to Cape York Peninsula, a vast landscape of 14 million hectares. The Cape is already subject to a complex process where graziers, indigenous groups, conservation groups and the Queensland Government are endeavouring to develop a future based on reconciling their various needs while protecting the Cape.

In 2003 the South Australian government has taken up the vision and has launched *NatureLinks*, a broad landscape scale conservation effort aimed at involving different elements of the community. Its particular significance is that it is being developed to eventually key into South Australia's new Integrated Natural Resources Management (INRM) regional structure under a new Natural Resources Management Act to provide the biodiversity component of INRM on the ground. A pilot program is being set up on Eyre Peninsula (David Moyle, pers. comm., August 2003).

While the Wilderness Society has embraced the concept, some major environmental non government organisations (NGOs) have been somewhat wary about the biosphere model in the past. Although theoretically built around strictly protected cores, with the other tenures supporting or linking the core lands, some feared it would encourage the trend towards 'multiple use' reserves with little or no emphasis on strict protection (Figgis 1999, 2.2, 2.5 & 4.2). It is seen as part of the increasing 'people-based conservation approach' which has come to dominate international forums (Phillips 2003). Traditionally NGOs have been opposed to the concept of 'multiple use' within protected areas as defeating the sanctuary model and inevitably compromising conservation. Environmentalists have not accepted the assertion that many extractive industries are compatible with effective conservation. However, in Australia the primary application of the concept has been towards linking existing protected areas and support appears to be growing. This is less true in the case of marine protected areas where the debate between large multiple use parks with zones of strict protection versus a view that a protected area must be strictly 'no take', is still a live issue (Chris Smythe pers.comm).

The model appears to offer an important way forward for both biodiversity and sustainable natural resource management. It is at the core of the recently released discussion paper on the future of the National Reserve System, *Directions for the National Reserve system – a Partnership Approach* (NRMMC 2004). The primary impediment remains the complexity in a three level federal system of government of putting together different land tenures and gaining the cooperation of the many public departments and agencies, as well as coordinating the private and community input. Substantial

funding is also needed to give effect to the concept and the funding for the NRS has been steadily declining (ACF 2004).

## 4.2 Indigenous Protected Areas

Indigenous owned lands are private lands, and communities, not governments, are the decision-makers. Title is usually inalienable freehold title held by a community trust or organisation under state, territory or Commonwealth law and under the Commonwealth Native Title Act 1993.

The Indigenous Protected Areas Program is a part of the NRS and funded through the Natural Heritage Trust by the Department of Environment and Heritage (previously Environment Australia). The Program is a mechanism to increase the representativeness of the National Reserve System through the voluntary inclusion of indigenous estates and by supporting the development of cooperative management arrangements. By mid 2003, 17 Indigenous Protected Areas have been declared over Aboriginal land, covering more than 13.8 million hectares and adding significantly to the National Reserve System ([www.deh.gov.au/indigenous/ipa](http://www.deh.gov.au/indigenous/ipa)).

Indigenous Protected Areas (IPAs) operate in accordance with the internationally recognised IUCN Protected Areas Guidelines and are managed in accordance with a plan of management which is developed prior to declaration to protect natural and cultural features and to contribute to conserving biological diversity. The Plan includes mapping the flora and fauna of the area and other significant values, identifying threats to biodiversity eg feral animals and weed infestation and determining management zones and prescriptions for each zone. IPA funds are allocated to implement aspects of the management plan.

The concept involves combining a strong respect for traditional ecological knowledge together with the use of modern science and land management skills. Aboriginal land management, such as patch burning and maintenance of water holes, is increasingly understood as integral to maintaining biodiversity. The social sustainability issues are to enhance the ability of indigenous Australians to live on their country and to pass on their ancient knowledge of the land and concepts of responsibilities to the next generation.

Some examples are:

- *Nantawarrina*, an Aboriginal owned property in the Northern Flinders Ranges. It was declared Australia's first Indigenous Protected Area at a formal launch ceremony in August 1998. The property covers 58,000 hectares, which was previously used for pastoral and mining activities. The area had a history of over-grazing and was further degraded by the impact of feral goats, rabbits and donkeys. *Nantawarrina* is located immediately adjacent to the Gammon Ranges National Park. The Nepabunna community, with the support of the SA Aboriginal Lands Trust and the National Park staff, are investing considerable time and resources into addressing the significant environmental problems affecting the natural and cultural values of the area. The community is committed to managing the area for biodiversity conservation and cultural values. Due to its location this will considerably enhance the size and effectiveness of the existing protected areas in the region.
  
- The vast *Ngaanyatjarra* IPA is part of the Western Desert region, which contains all of the Western Australian Central Ranges bioregion, bordered by the Gibson Desert to the north and west, and the Great Victoria Desert to the south. At 9,812,900 hectares, it covers an area larger than Tasmania and is of great ecological significance. Prior to IPA declaration, this region was one of only two of Australia's 80 bio-geographic regions with no conservation reserves or areas. The western boundary is contiguous with the existing Gibson Desert Nature Reserve adding to the overall conservation significance of the declaration. At least five endangered or vulnerable animal species are known to occur in the *Ngaanyatjarra* IPA: mulgara (*Dasycercus cristicauda*); marsupial mole (*Notoryctes typhlops*); greater bilby (*Marcrotis lagotis*); black-footed rock wallaby (*Petrogale*

*lateralis*) and ghost bat (*Macroderma gigas*). Management activities such as fox-baiting work have already shown positive results with an increase in rock wallaby numbers.

- *Yalata* IPA was declared in October 1999. The 456,300 ha property at the head of the Great Australian Bight in South Australia is managed by Yalata Community Inc. *Yalata* is adjacent to other large reserves, which together form one of the world's largest contiguous areas of land and sea managed for biodiversity conservation. The cliffs on the Bight are best known as outstanding vantage points for watching whales migrate to mate and calve in the sheltered waters. The semi arid ecological zone on the edge of the Nullarbor Plain is rich in native birds, mammals and reptiles. The region is also of great cultural importance, with dreaming tracks which cross continental Australia converging in this region.
- *Watarru and Walalkara* IPAs were declared in June 2000. Both areas lie in the Great Victorian Desert, the traditional lands of the Pitjantjatjara, Ngaanyatjarra and Yankunytjatjara Aboriginal peoples (locally known as Anangu) who have maintained a connection with the land for thousands of years. *Watarru* IPA covers 1.28 million hectares, including part of the magnificent Birksgate Ranges. *Walalkara* IPA covers 700,000 hectares. Both areas are biologically significant, containing one of the highest diversities of reptile species found anywhere in the world and supporting populations of rare and endangered species, including mallee fowl and the great desert skink.

Their large scale and relative lack of disturbance enhance the ecological importance of IPAs. However, in Australia, remoteness alone will not protect biodiversity from the threats of inappropriate fire regimes and the impacts of feral animals and plants. Therefore the long-term management effectiveness of their protected area status will depend on continuing government commitment and in particular, funding, to enable indigenous people to use their traditional skills, develop modern land management skills and have the capacity for management with all its challenges. The budget for 2003-4 is a very modest \$2.5 million (Bruce Rose, pers.comm.). Given the high potential of these areas to contribute to biodiversity goals and also to have social benefits to indigenous owners, greatly increased funding would be a sound investment.

### 4.3 Private Protected Area Model

Australia has not, until very recently, had a tradition of privately owned parks on the South African game park model. Nor has it had private philanthropic trusts set up specifically to purchase and manage conservation lands. This picture has rapidly changed over the last decade with several groups now involved and being given a stimulus by government assistance under the National Reserve System. The current Commonwealth government supports private conservation as a cost-effective way to meet biodiversity conservation targets. The National Reserve System Program (NRS) assists in funding the establishment of Private Protected Areas which are defined as:

A private protected area is a protected area other than a formally gazetted status protected area, managed for nature conservation and protected by legal or other effective means. ([www.deh.gov.au](http://www.deh.gov.au))

Under the program, incorporated private community groups and non-government organisations (NGOs) are able to put in bids for 2:1 funding for land acquisition and short term management costs to alleviate immediate threats. Ongoing management costs must be borne by the landholder. A requirement of the funding is that the property is secured for conservation through a covenant or other legal means. The program envisages that the private protected areas will be managed principally as IUCN categories I-IV. A proponent must enter into a Private Protected Area Establishment Agreement with the Commonwealth.

One organisation that has been able to use the NRS funds to enhance its charter is the Australian Bush Heritage Fund (Bush Heritage). Bush Heritage is Australia's most prominent example of the independent trust model. Established in 1990 by well known environmentalist and now leader of the Green Party, Senator Bob Brown, the Fund buys land to hold and manage as part of the conservation

estate. It is an independent non-government organisation, which seeks donations from supporters to buy and manage lands for conservation. The Fund has clearly filled an important place in the conservation spectrum and has built a strong supporter base. At August 2003 the Fund owned fifteen properties around Australia from tropical lowland rainforest in the Daintree region of North Queensland to coastal heathland and estuaries at Freycinet Peninsula in Tasmania. The Fund has just announced its largest purchase to date *Ethabuka Station*, 214,000 hectares of south west Queensland with abundant wildlife thriving in both desert and wetland zones ([www.bushheritage.org](http://www.bushheritage.org)).

Bush Heritage gives priority to purchasing highly threatened and ecologically significant examples of Australia's wildlife habitats and plant communities using the IBRA framework. It endeavours to choose land that might not otherwise be protected. Professional land managers manage the reserves under detailed plans of management, often with the support of volunteers and local community members. The larger properties have on site managers. The Fund fences particular areas for management purposes, however their concept is not the fenced, feral animal-proof sanctuary provided by the model discussed later. Two examples of Bush Heritage properties are:

- *Carnarvon Station Reserve* in central Queensland is a private protected area purchased by Bush Heritage using NRS assistance. The reserve covers 59,000 hectares. It is a vast and beautiful woodland/grassland landscape representing 17 regional ecosystems, of which seven are endangered. Its importance is increased by its location adjacent to the 298,000 hectares Carnarvon National Park. *Carnarvon Station Reserve* is of high conservation value for plants as it is located in a region where many plant species have been threatened by large scale land clearance. Between 76 and 100 plant species from the area are now considered rare or threatened. *Carnarvon* is also significant for many species of fauna, particularly woodlands birds. Vulnerable or near threatened species include the Australian bustard, bush stone-curlew, barking owl (southern), squatter pigeon (southern), grey-crowned babbler, black-breasted buzzard, and the red-tailed black cockatoo. Preliminary fauna surveys have found 19 native mammal species in addition to 93 bird species, 6 frog species and 8 reptile species. Vulnerable or near threatened species at the Reserve include the koala, greater glider, rufous bettong, and the black-striped wallaby.
- *Charles Darwin Reserve* (formerly *White Wells*) lies on the northern edge of the Western Australian wheat belt. It is the largest Bush Heritage land purchase so far at 68,600 hectares. The new reserve is located in one of the great centres of plant species on earth. With some 4000 species it is only moderately rich in numbers but the special biodiversity feature is the fact that some 83% of these species are endemic to the region, that is they exist nowhere else as wild species. An additional characteristic of Western Australian flora adds value: there is a particularly high species to genus ratio, for example there are 300 species of acacia alone (Figgis & Mosley 1988). Some of the most significant threatened plant species at the Reserve are the 16,000 hectares of york gum and mixed salmon gum and gimlet woodlands. With only 6% of these vegetation types remaining and less than 3% in conservation reserves, the purchase of Charles Darwin Reserve represents one of the last chances to protect them on a significant scale ([www.bushheritage.org](http://www.bushheritage.org)).

Birds Australia, the national ornithological society, has also purchased two properties which are managed as private protected areas without feral exclusion fences. Both properties have high conservation values.

- *Gluepot Reserve*, purchased in 1997, is part of the Bookmark Biosphere Reserve (see 4.1). It covers 50,000 hectares of virgin mallee, which added to mallee on surrounding reserves, creates a large intact region of high viability for threatened flora and fauna. The reserve is rich in old growth species, which have not been ravaged by frequent fire, and waterless regions that have not suffered from grazing pressure. The reserve helps protect six nationally threatened species of bird and 17 species of regionally threatened bird live there including the magnificent Major Mitchell Cockatoo.

- *Newhaven Station*, in remote central Australia, covers 262,600 hectares of Australia's vast arid zone. The area contains ten vegetation communities and a wide variety of landforms, poorly represented elsewhere. *Newhaven* provides habitat to at least 15 nationally threatened species of animals and plants.

Beyond these national organisations there are state-based groups, such as the Wildlife Land Trust in Queensland ([www.wildfund.org](http://www.wildfund.org)), who are purchasing and holding private property for conservation management.

#### 4.4 The Private Wildlife Sanctuary

Vulnerability to the rising costs of management is more pressing for private protected models, which involve high cost fencing. The fenced sanctuary model was pioneered in Australia by Earth Sanctuaries, an organisation set up by John Wamsley, a colourful character from South Australia with a passion for Australian wildlife. In 1969 Wamsley developed a privately owned substantial sanctuary, *Warrawong* in the Adelaide Hills. He believes feral animals are the cause of Australia's dramatic species decline and extinction and condemns government managed parks as having failed to protect Australian species. Wamsley believes that the only hope for conservation is the private sector. Earth Sanctuaries fences large areas within their properties or the entire property, against cats, foxes and rabbits, eradicates all feral animals and reintroduces mammal species from elsewhere (Wamsley 1996).

In 2000 Wamsley surprised the business world by floating his company on the stock exchange. Earth Sanctuaries Ltd. became a public company, funding acquisition and management with shareholder capital and tourism revenues. Earth Sanctuaries developed several much larger sanctuaries and by 2001 was managing ten properties, covering 92,000 hectares. However, in late 2001 the company announced that it was selling many of its assets. The modest tourism revenues could not sustain the high cost of purchase and fencing. By August 2003 Earth Sanctuaries had, according to its website, cleared its debts and retained the original *Warrawong* Earth Sanctuary, Adelaide Hills and *Hanson Bay* on Kangaroo Island, both in South Australia and purchased two further properties, *Little River*, You Yang Ranges, Victoria and *Waratah Park*, Duffy's Forest, Sydney.

The strength of the concept of private land conservation was demonstrated by the strong interest in purchasing Earth Sanctuaries properties. Six of the ten properties sold in six months and others are under negotiation. Four properties – *Scotia*, *Yookamurra*, *Buckaringa* and *Dalantha* have been sold to another strong new group, the Australian Wildlife Conservancy (AWC), an independent non-profit organisation with a Perth base, set up by business figures Martin and Lorraine Copley ([www.australianwildlife.org](http://www.australianwildlife.org)).

The Australian Wildlife Conservancy is principally orientated to saving Australia's native wildlife from the very real threat of extinction. They acquire land with high habitat values and protect threatened species or establish new populations where threatened species have become locally extinct. AWC owns or leases 590,000 hectares across 12 sanctuaries, not all of which are fenced. Fencing is used for management only where necessary to protect species from feral predators. Although predominantly in the west of Australia, AWC is aiming for a national network. Two examples are:

- AWC's largest property is *Mornington Station*, a remote pastoral lease of 312,000 hectares in the tropical region of the Central Kimberley. It includes two river gorges, four major river systems, and the Fitzroy River. The property includes the spectacular Dimond Gorge, which environmental groups fought over for years to prevent plans to dam the site. The land has rich and diverse mammal species which are fairly intact, probably due to lack of foxes.
- *Faure Island* in Western Australia's World Heritage Shark Bay. Native mammals had become extinct on the arid island. However, two other islands on the outer fringe of Shark Bay, Bernier and

Dorre, are the last refuge of no less than five native mammals, now extinct on the mainland. AWC's plan is to establish additional secure populations of those animals on *Faure Island*. They have eradicated feral cats and goats and are commencing to reintroduce mammals. When this project is successfully completed it will provide stock for other places (Wilson 2001).

Despite the high cost of fence building and establishment, individual landowners are also establishing sanctuaries. There are examples in most states of Australia. One example is *Calga Springs*, a fenced wildlife sanctuary north of Sydney, opened in early 2001. It is owned by the former Commonwealth Minister for the Environment in the 1980s, Barry Cohen ([www.calgasanctuary.com](http://www.calgasanctuary.com))

Government through the tax system also supports the trend for private lands and private interests in conservation. The taxation regime has been improved and has created more tax effective incentives for gifts of land and more recently for any loss of land value created by entering into a conservation covenants (Kemp 2003).

At this stage the policy implications of private protected areas are not clear (also see 6.0). Both models are resulting in important ecological gains, bringing important environments under planned management which could be lost to other land uses. The challenge for such organisations is that their responsibilities for management steadily accumulate with new purchases, but their income is largely dependent on philanthropy, which has not had a deep tradition in Australia.

Another concern if private land holdings become a major component of a future reserve system is that, while mining cannot occur on most publicly owned reserves, private lands would not be protected. Lack of long term security is also an issue. Degazettal of a legislated national park is a complex process; the long term security of private lands is less certain, particularly if expensive management is dependent on tourism revenues.

A further issue is the conflict between leasehold regulations, which were drawn up with primary production as the land goal, and the use of leasehold lands for conservation. For example many leaseholds actually require land clearing, or the elimination of particular native species, as a condition of the lease. In substantial parts of Australia leasehold as opposed to freehold is the norm; for example the Bush Heritage property *Carnarvon* is leasehold (Doug Humann pers.comm).

Fitzsimons and Wescott (2002) have also raised the policy implication of NRS funding being used to support the wildlife sanctuary model. They highlight the blurring of the Private Protected Area model and Wildlife Sanctuary model with the recent decision of the Commonwealth government (through the National Reserve System Program) to provide funding for the private purchase of *Scotia* Sanctuary in NSW. As a result of NRS funding, *Scotia* officially becomes a 'protected area' under the IUCN definition'.

There is also a possibility that the development of private models may strengthen the push for privatisation of public protected areas. Wamsley was a vitriolic critic of public sector national parks and the environment movement (Wamsley 1999). He maintained that the private sector could manage land and achieve more for biodiversity, especially species conservation, than the public sector. This possibility remains anathema to most environmental organisations who equate private management of national parks with management for profit, not conservation priorities (Prineas 1998).

However, in the main, conservation agencies and conservation NGOs have welcomed the addition of this sector as providing valuable additional funds and capacity in an era of over stretched governments. The decline of Australia's unique mammals has been particularly dire and such means are seen as potentially important. There is also a fundamental recognition that governments alone simply cannot cover the vast task of conservation. Certainly leading international conservation analyst Jim McNeeley (1996) in a sweeping assessment of the future of conservation predicted that:

Protected areas will be managed increasingly by a wide range of different kind of institutions, including private landowners, non-governmental organisations, and even private sector institutions such as tourist agencies.

## 5.0 LANDSCAPE MECHANISMS

Indigenous protected areas, private reserves and sanctuaries will generally produce an entity resembling a traditional protected area, but the future will also see a proliferation of other nature conservation mechanisms generally on smaller parcels of land or areas of significant vegetation within properties. Some of these may be critical connective components of the great conservation mosaics of the future.

The last decade has seen all states and territories produce a vast range of initiatives available to encourage biodiversity conservation on private land. It is a rapidly developing policy area and information is constantly changing. Hence this paper can only give an overview. The suite of tools usually cascades from voluntary, non-binding schemes, through to binding management agreements over time, to permanent covenants on title. Many programs offer compensation and incentives to encourage landholders to conserve particular areas of native vegetation on their lands.

A great deal of this activity was stimulated by an important two volume publication on economic instruments and incentives to achieve biodiversity conservation, *Reimbursing the Future: An evaluation of motivational, voluntary, price-based, property-right, and regulatory incentives for the conservation of biodiversity* (Young et al. 1996). In turn this work was followed by some fifteen Research Reports for the National Research and Development Program on Rehabilitation, Management and Conservation of Remnant Vegetation, all principally aimed at different aspects of encouraging conservation on private lands. The reports are a major resource on the topic and are published by the Commonwealth R&D Corporation, Land and Water Australia, ([www.lwa.gov.au](http://www.lwa.gov.au)).

The development of various mechanisms was also given considerable impetus by the Commonwealth government's 1999 environment policy document '*Our Living Heritage*' which outlined an initiative, *Bush for Wildlife*. The program was funded under the NHT to facilitate nature conservation on private land across rural Australia. The program encouraged both the *Trust for Nature* revolving funds model and *Land for Wildlife* models discussed below. The program has facilitated the exchange of information, ideas and best practice examples and encouraged linkages between government and non-government, as well as networks and individuals involved in nature conservation on private land (Judy Lambert, pers. comm.).

The impetus is likely to be continued and further developed under the \$1.4 billion National Action Plan for Salinity and Water Quality (NAPSQW) and the five year extension of the Natural Heritage Trust to 2006-7 in a major commitment to address natural resource management issues. There will now be four programs under the Trust: the *Landcare Program* which will support activities that address land degradation and promoting sustainable agriculture; the *Bushcare Program* which will invest in activities that will contribute to conserving and restoring habitat; the *Rivercare Program* that will contribute to improved water quality and ecosystem health of river systems and wetlands; the *Coastcare Program* which will contribute to protecting coastal catchments, ecosystems and the marine environments.

The Commonwealth and states have agreed that the funds for these programs will mainly be directed through regional natural resource bodies. Under this agreement more than 60 'regions' have been identified covering all of Australia. In each region a natural resource management plan will be developed by local communities and supported by Government and the best available science. Plans will consider environmental, social and economic impacts of natural resource decisions on a regional basis under agreed national criteria. They will set both standards and targets. The concept envisages a

close integration of biodiversity conservation into land restoration and sustainable land management ([www.napswq.gov.au](http://www.napswq.gov.au)).

New South Wales began implementation of this new approach in late 2003 with a major overhaul to NRM legislation. Under the new framework a Natural Resources Commission and Advisory Board have been set up and the thirteen new regional NRM statutory bodies called Catchment Management Authorities (CMAs) are in the process of being established. The membership of these authorities will be merits based and replace the Catchment Management Boards which were stakeholder representative bodies. The CMAs will integrate regional vegetation plans, catchment blueprints and investment strategies into new Catchment Action Plans (CAPs). It is a significant attempt to deal with one of the most common criticisms of natural resource management which is the complexity for a landholder in trying to deal with multiple governmental jurisdictions, multiple government agencies and numerous other bodies and interests. Its success would be a major achievement for sustainable land management and private conservation.

The policy field is clearly likely to be dynamic over the next few years and the models discussed below are likely to be augmented by new measures. A major role of these new bodies around Australia will be to engage with the community to embrace existing mechanisms for conservation and to trial new and innovative ideas to encourage conservation on all lands ([www.dipnr.nsw.gov.au](http://www.dipnr.nsw.gov.au)). The approach should enhance the potential for the broad scale bioregional approaches discussed in 4.1. The models are arranged from voluntary through to more secure measures.

## **5.1 Conservation Agreements - Voluntary**

Around Australia a wide range of voluntary, non-binding programs are being developed to encourage landholders to conserve particular areas of native vegetation on their lands (Young et al. 1996). While such arrangements, commonly termed 'agreements', have a low degree of security without legal effect, they are seen as an 'entry level' into private conservation where landowners can try a scheme and perhaps move on to a more binding or permanent arrangement.

### **5.1.1 Land for Wildlife**

NSW has had a long running voluntary scheme, the National Parks and Wildlife Service *Wildlife Refuges* where the property itself is formally gazetted as a refuge and remains so with change of ownership. However, a wildlife refuge agreement is flexible, landholders can change the terms of the agreement and revoke the agreement. Since 1948, 600 wildlife refuges have been established covering 1,651,839 hectares. In recent years the Parks Service has devoted more attention to these areas and developed both proper mapping and a database of values (Lynn Webber, pers.com). The properties have potential to be part of bioregional or landscape scale initiatives.

A model which has proliferated in the last decade is *Land for Wildlife*, a scheme which encourages landowners to conserve their land and foster wildlife protection. *Land for Wildlife* originated in Victoria where it has been very successful and by 2003 over 5800 properties were involved, including agricultural lands, bush blocks, defence lands, local government lands, cemeteries and school grounds ([www.dse.vic.gov.au](http://www.dse.vic.gov.au)). Most states now have an equivalent program. It is strong in Western Australia and Queensland. NSW and Tasmania also have *Land for Wildlife* schemes with NSW trialing the program in three regions with third party delivery of the program.

The schemes are entirely voluntary. An agreement is negotiated between the conservation agency and the landholder for a specified time period; it needs to be renewed when the agreement expires or the land changes hands and relies on goodwill of the landowner and personal contact. Government simply provides a state wide coordinator and extension officers to provide technical advice and to help organise field days.

After registration, owners are assisted with technical advice and continued support through newsletters and technical notes. The personal contact with extension officers has been found to be crucial to *Land for Wildlife's* success, as has the ongoing support provided by the camaraderie of membership. As such it appears to be strongest in more densely settled regions where there is a higher proportion of hobby farmers and landholders with off farm incomes and a greater capacity for groups to get together.

There is also a range of voluntary education schemes which encourage landholder involvement in conservation such as the *Landcare* movement mentioned previously. An example is *Learning from Farmers*, an NHT funded program focussed on the Murray River Catchment for distributing the knowledge and experience of farmers who have successfully integrated the protection of native vegetation into their management ([www.greening.org.au](http://www.greening.org.au)).

These education initiatives are based on spreading the message of sustainable land management and encouraging biodiversity conservation in agriculture. They tend to be driven by the landholders themselves and encourage learning from each other. Most are highly dependent on some form of grant for implementing on ground change. In the past many of these have come from the *Bushcare Program*, a major NHT component which provides grants for fencing remnants, weed eradication, replanting land or feral animal control. All players regard financial assistance as the critical element in the success of encouraging such measures.

### **5.1.2 Conservation Management Networks**

The *Conservation Management Network* (CMN) is a relatively new model created to address one of Australia's critical conservation problems, the conservation of fragmented ecological communities (Higginson, Prober, Thiele 2001). In the national work to produce a CAR reserve system, the IBRA analysis soon highlighted that, not surprisingly, ecosystems on productive soils tended to be poorly represented in the reserve system. Despite the efforts being undertaken to identify and rectify this problem, it will be very difficult to redress this legacy. Agencies have limited acquisition budgets and lands in more productive areas have higher value. In many cases even if dollars could be found, it is simply the case that very little of a particular ecosystem remains and what remains is highly fragmented.

This is certainly the case for the productive grassy ecosystems of south-eastern Australia. From the millions of hectares that once existed, there are no substantial areas left suitable for reservation as a traditional protected area. Researchers have therefore developed a new model for conserving fragmented ecosystems, which they call the *Conservation Management Network* model.

The concept consists of incorporating scattered ecosystems remnants into a network defined as 'a network of remnants, their managers and other interested parties'. The networks have both a biological aim of enhancing biodiversity conservation and a social objective of enhancing community ownership and involvement in conservation (Higginson, Prober, Thiele 2001). While remnants may be widely dispersed and under different land tenures, cooperatively they can share scientific expertise and management advice, share extension efforts, apply for grants as a network, badge their remnant as something of broader importance and undertake a wide variety of actions more effectively than as isolated entities.

A related example is the Gippsland Plains CMN which was formed in 1999 when the Trust for Nature (Victoria) purchased a number of high priority Forest Red Gum Grassy Woodlands as part of the National Reserve System Program. The Gippsland model was inspired by the CMN model but is geographically based and not restricted to a vegetation type. As such, it is in effect a hybrid with the bioregional model. The new lands were combined with existing public reserves such as the Providence Ponds Flora and Fauna Reserve and private lands with conservation covenants. Its aim has been to create an 'entity' from all the protected remnants of vegetation on the Gippsland Plain, roughly between

Sale and Bairnsdale. Originally coordinated by the Trust for Nature, and then by the Victorian Department of Natural Resources & Environment, it has since become an incorporated body, with paid membership. A ranger has been employed to oversee environmental monitoring and restoration works (J. Fitzsimons, pers. comm. August 2003).

Membership of a CMN is voluntary and open to any site that is managed primarily or partly for conservation, and has been given some formal long-term protection by its manager. Ideally the high conservation remnants will move to have a legally binding covenant and a plan of management to guide day to day operations. Without the implementation of a plan of management the most detailed covenant may not allow a remnant to flourish in the longer term.

CMN networks offer a new way to tackle the difficult issue of conservation of human induced or natural fragmentation of ecosystems in Australia. Such programs tap into a reservoir of community spirit and willingness to contribute volunteer skills, time, materials and labour. However, like so many programs, the success often depends upon the willingness of governments to support the initial set up stage and for grant programs to be available for implementation of their extension activities and communication between partners (see 5.4).

## **5.2 Conservation Agreements - Binding**

Some instruments go beyond voluntary measures but are not permanent covenants on land title. Most states also have developed a similar tool for example Property Management Agreements apply over rural leasehold lands in the Australian Capital Territory. The agreements apply to new leases and seek to incorporate conservation and sustainable land management into the lease conditions (ANZECC 1997).

Another example is Regional Vegetation Management Plans (RVMPs) under the NSW Native Vegetation Conservation Act. The Act provides a system to prevent further inappropriate clearance through development of regional vegetation management plans, and the requirement for Development Consent for land clearing where the land is not otherwise exempt. Individual property plans can be negotiated with technical and management advice, which make the owner eligible for financial assistance under the Act. Although the agreements are binding they are limited to an agreed period ([www.dipnr.nsw.gov.au](http://www.dipnr.nsw.gov.au)).

A more recent development is the Property Vegetation Plan (PVP) which is a model developed under the recently announced New South Wales Natural Resources Management reforms discussed above ([www.dipnr.nsw.gov/nvrig/index](http://www.dipnr.nsw.gov/nvrig/index)). The plans will be incentive based but binding over a fifteen year time frame. They are based around identifying property level conservation outcomes and developing management action plans. Once certified by the Catchment Management Authorities the plans will allow access to financial grants for on farm conservation. This model is likely to be duplicated under the Commonwealth/State agreements for regional delivery of both the next stage of NHT and the National Plan for Salinity and Water Quality (NAPSQW) (see 5.0).

### **5.2.1 Covenants**

The NSW Native Vegetation Conservation Act 1997 followed a national trend to control land clearing and brought NSW into line with similar legislation introduced in South Australia in 1985, Victoria in 1989, and Western Australia in 1995. The South Australian legislation was the earliest and responded to then new satellite technology that dramatically brought home the loss of 75% of the state's native vegetation. *Heritage Agreements* were a new legal instrument under which, in return for leaving and managing native vegetation in perpetuity, landholders received financial assistance, advice and rate relief. By 2002 the scheme had involved 1000 landholders with 1266 agreements protecting 561,802 hectares of bushland (SA Department of Environment and Heritage 2002).

The mechanism of binding covenants or easements on title for conservation purposes has been widely adopted around Australia in the last decade. New South Wales has developed a covenanting model, rather confusingly called *Voluntary Conservation Agreements*. They can be entered over private land or leasehold land and can apply to all or part of a property. There are now 140 covenants covering 9,613 hectares (Lynn Webber pers. comm). The agreement is voluntary on both parties but once entered into is registered on the title of the land, is legally enforceable and binds all future owners of the land. The terms of each agreement are negotiated between the landholder and the NPWS acting on behalf of the Minister and may vary according to specific conservation requirements of the land and the wishes of the landholder. They may be restrictive, require the owner not to carry out certain activities or can include positive actions. A plan of management is negotiated that sets out an appropriate and more detailed management regime for the conservation area.

Enthusiasm from on ground agency staff and adequate funding are seen as the key ingredients in making such mechanisms successful. On the far south coast of New South Wales, a strong commitment from regional parks staff and \$2 million from the Regional Forest Agreement process has resulted in 49 Voluntary Conservation Agreements between landholders and the Government (Lynn Webber pers. comm).

The Tasmanian *Private Forest Reserves Program* is another program aimed at achieving long-term conservation security for targeted high priority conservation values on private land. The conservation status is secured through perpetual covenants on title, with associated property specific plans for management (Operations Plans) ([www.pfrp.tas.gov.au](http://www.pfrp.tas.gov.au)). The Program has so far secured 23,400 hectares of high priority forests on private land, involving 102 covenants, and purchase of 18 areas of extremely high priority. The program has also assessed and is finalising covenants over a further 13,100 hectares. If this area is added, the cost per hectare to date reduces to \$351 per hectare (Steven Smith, pers.comm).

Local governments are also offering innovative options. The Gold Coast Council in southeast Queensland offers landholders various programs to encourage vegetation protection. While they offer non-binding *Land for Wildlife* agreements, they also encourage *Voluntary Conservation Agreements*, which, like the NSW scheme, create a statutory covenant binding on future owners and involve the rezoning of the property from rural to Conservation Domain ([www.goldcoast.qld.gov.au](http://www.goldcoast.qld.gov.au)). The Council also has a ratepayer-funded levy, the Preservation Levy (OSPL) whereby the Council purchases land of high conservation significance with a view to covenanting and revolving the land to new owners. In the 2001/2 financial year the levy raised approximately \$5.6 m for both land acquisition and management (Corkhill 2003). These sorts of initiatives may be restricted to councils that have both a large rates paying population as well as sufficient remnant natural areas to protect (Darryl Larsen pers.comm).

The increasing availability of state based covenanting has resulted in an estimated 2000 landholders across Australia managing all or part of their land under a conservation covenant. The Commonwealth government is also encouraging covenants through allowing a tax deduction based on the decrease in value brought about by the adoption of the Covenant Agreement over the land ([www.avo.gov.au/AVOHome/Covenant\\_guide.htm](http://www.avo.gov.au/AVOHome/Covenant_guide.htm)).

However, there is still work to be done to ensure all signals are positive and that the process is both clear, efficient and timely. A 2002 national survey found that many landholders felt that the government's commitment to support them financially and with other assistance was inadequate. They also noted that the time taken to establish covenants and the degree of bureaucracy was excessive (Stephens 2002).

### 5.2.2 Revolving Funds

Revolving funds are a mechanism which builds on covenanting. Land is first purchased, then a legally binding conservation covenant is placed on the land title, and then the property is sold on to conservation minded buyers who accept the constraints of the covenant so that the capital can be used again. This model is a conservation tool on the rise. It has been dramatically successful elsewhere in the world where it is one of the key tools of the US based Nature Conservancy which claims to have protected 117 million acres worldwide since 1951 (<http://nature.org/aboutus/>). The pioneer in Australia was *The Trust for Nature (Victoria)*. It is a statutory authority of the Victorian Government which has a three pronged approach to conservation. It buys and holds or gifts lands, it assists property owners in the process of covenanting and it manages a revolving fund to purchase, covenant and then on-sell private property ([www.tfn.org.au](http://www.tfn.org.au)). On 2003 figures, 53 properties covering 35,492 hectares have been purchased and are managed as conservation areas by local community groups, individuals and councils and a further 51 properties covering 4300 hectares have been purchased and gifted to the Crown. They have achieved 511 covenants protecting over 22,280 hectares of private land and had 34 properties through the revolving fund covering 2638 hectares (Natalie Woodward, Trust for Nature, pers.comm). The Trust fosters a stewardship program of regular contact, advice and support for landowners who accept covenants.

The Trust was established under the *Victorian Conservation Trust Act, 1972* and receives a grant from the State Government, as well as donations and bequests. The Trust's main strength is that it is perceived as an independent body from Government and therefore the public is more likely to donate funds or negotiate with the Trust on land purchase. It has financial flexibility compared with government departments in that it can conduct appeals, offer tax deductibility for donations, receive bequests, donations and gifts, hold and invest funds, have access to philanthropic sources and broker land purchases (Whelan, pers.com. 1996). The Trust also maintains a register of properties it holds and interested purchasers can register their names with the Trust.

This model is gaining in popularity and is being encouraged by both state and the federal governments. Western Australia and South Australia (*Bushbank*) have equivalent bodies and Queensland is moving in the same direction. In 2001 NSW introduced its scheme by legislating for a *Nature Conservation Trust*. The scheme started operation in 2002 and will follow the combined emphasis on covenanting under the purchase/covenant/on-sell model. In April 2003 the Commonwealth announced a grant of \$1 million matching the NSW Government's funding to promote the Trust. Overall the Commonwealth is allocating \$5 million Australia wide to promote revolving funds (Kemp 2003).

### 5.3 Financial Incentives and Market Mechanisms

Natural resource management including the retention of native vegetation has been a burgeoning policy field for the last decade. A major attitudinal change is critical as Australia's land management was set up within a different mindset, which saw natural land as 'wasted' and valueless with land only acquiring value through utilisation. Land valuation, to give but one example, still tends to act as a disincentive to conservation and sustainable land management (Skitch 2000). The removal of such 'perverse incentives' will be as important as the establishment of positive incentives.

Land and Water Australia ([www.lwa.gov.au](http://www.lwa.gov.au)) have produced a substantial series of publications which give details of incentives to encourage landholders to take up biodiversity conservation in all jurisdictions. This area is also seen as an important component of the future of regional delivery of natural resource management funded under the extension of NHT and the NAPSWQ. In the main previous funding sources like the Bushcare program will no longer deliver direct grants to community groups, but the Commonwealth, under bilateral agreements with the states, will channel funds to the state-based regional NRM body (Sally Stephens pers.comm).

A detailed discussion of the myriad small grant programs is beyond the scope of this paper; students are referred to the websites of Land and Water and state natural resource agencies for details. Incentives usually take the form of grant programs and/or cost sharing to fund on ground fencing of remnants, weed clearance, tree planting etc delivered to the individual landholder or via Landcare and other community groups. One typical example is the program of the NGO Greening Australia which has developed a project in Queensland that provides a financial incentive and professional extension assistance to landholders who agree to fence and manage remnant native vegetation on their property. The project called *Advancing On Ground Nature Conservation Project* followed an earlier program, *Accelerated On Farm Nature Conservation*, which was extremely popular with landholders. It has become the model for other on-ground nature conservation projects in other parts of Australia. The incentive program has achieved 226,479 hectares of vegetation protected; 1,197 kilometres of riparian zone being fenced and stock excluded and/or managed from stock; 2,239 kilometres of fencing erected to protect remnants and riparian zones; 363 landholders assisted on private land; and 381 off stream stock watering points provided ([www.greeningaustralia.org.au](http://www.greeningaustralia.org.au)).

There is also a variety of incentives that involve rate rebates or land tax reimbursement. For example in Queensland landholders who enter a covenant are entitled to reimbursement of any land tax liability ([www.osr.qld.gov.au/taxes/duties/transfer.htm](http://www.osr.qld.gov.au/taxes/duties/transfer.htm)).

Taxation incentives have long been identified as an important component in encouraging conservation on private lands. In 1999 Binning and Young (1999) argued:

Conservation on land not used for commercial purposes is among the most highly taxed land uses in Australia. There are tax incentives to encourage people to conserve biodiversity on land used for commercial purposes, but there are no tax incentives for people who manage land solely for nature conservation.

As indicated earlier, tax incentives are improving from this situation. The Commonwealth has created a more tax effective incentive for gifts of land. With changes to the *Income Tax Assessment Act 1997*, taxpayers now benefit from donations of property valued at more than \$5000 to relevant organisations. Changes to the capital gains tax (CGT) treatment of payments for entering into conservation covenants, and the conservation covenant deduction measure legislated in October 2001, provide further complementary incentives for conservation. More recently landholders can claim for any loss of land value created by entering into conservation covenants (Kemp 2003).

Despite this substantial area of activity there are still few actual payments available for maintaining an ecosystem. In 2001 Victoria launched a three year trial of stewardship payments called *Bush Tender* where farmers are paid to help protect the one million hectares of native vegetation on private land in Victoria (Garbutt Press Release June 22, 2001). *Bush Tender* offers landholders the opportunity to receive payment for entering into an agreement to provide management services, which improve the quality or extent of native vegetation on their land. The price requested would constitute a 'bid', which would be compared with the bids from all other landholders participating in the trial. Successful bids would be those which offer the best value for money to the community. All bids would be assessed objectively on the basis of the current conservation value of the site, the amount of service offered and the cost involved. Only actions by the landholder that are over and above those required by current responsibilities under existing arrangements and legislation will be eligible for payment. A similar program is being trialed in the Liverpool Plains region of NSW where landholders put in bids for financial assistance for actions which will benefit both improvements in salinity levels and biodiversity ([www.wwf.org.au](http://www.wwf.org.au)).

An innovative use of the market which would appear to have great potential to be expanded is *Bush Brokers*, a partnership between conservation groups, the Real Estate Institute and the government in Western Australia to actively broker the sales of bushland to conservation buyers. It cleverly taps into

two developments: that many properties are constrained by law from further clearing and that the number of organisational and private buyers of bush is increasing. In addition to providing a site for buyers and sellers of 'bush blocks', the partnership offers a print and website resource *Buying Bush: a how-to guide* which contains expert information on buying, selling and managing bushland including options for including their properties in Land for Wildlife and other conservation covenants. It outlines strategies for cost reduction, fire management, community involvement and advice on property rates and taxes ([www.wwf.org.au/content/bushbrokers.htm](http://www.wwf.org.au/content/bushbrokers.htm)).

The brave new world of creating markets, property rights, trading water, product certification, biodiversity credits and 'green' agriculture and pastoralism is a vigorous area of discussion. It will certainly be a key area of policy and program development over the next decade and will be given impetus from the establishment of a *National Market-based Instruments Pilots Program* by the Commonwealth to investigate and improve Australia's capacity to use market-based instruments.

This area of 'improving market signals and paying farmers for environmental services' was identified as a high priority by a group of scientists, called the Wentworth Group, organised by the World Wide Fund for Nature in 2002. Their influential document *Blueprint for a Living Continent* (WWF 2002) strongly emphasised improving taxation and price signals as well as eliminating perverse subsidies and supporting ecosystem services. Another Report commissioned by the Australian Conservation Foundation and National Farmers Federation also suggested that if some of these impediments could be overcome there was a considerable capacity to leverage major private funding of the land repair effort, including biodiversity conservation (Allen Consulting Group 2001).

Carl Binning, previously mentioned as a leading researcher from the Commonwealth Scientific and Industrial Research Organisation (CSIRO), is now CEO of Greening Australia. He sees a major future for biodiversity credits where beneficiaries pay the manager or owner of a natural area for the ecosystem services provided by protected nature (Binning 2000). He says: 'If we want to conserve nature, someone has to pay. National Parks and reserves are not able to achieve all of our conservation objectives'.

Examples of possible models include the CSIRO's *Ecosystem Services Project*. The project is seeking to identify markets for ecosystem services which might include groundwater management, water quality markets and biodiversity. They are trialing pilot market opportunities in the three case study catchments in NSW, Victoria and Western Australia. The pilots will identify market requirements, buyers and sellers and identify the public policy necessary to facilitate markets ([www.ecosystemservicesproject.org](http://www.ecosystemservicesproject.org)). In NSW there is discussion of the possibility of a "green offsets" trading scheme which looks at offsetting actions which require destruction of native vegetation, with actions which would result in an overall positive gain for the environment ([www.nsw.gov.au/care/salinity/offsets](http://www.nsw.gov.au/care/salinity/offsets)). This is similar to the concept of environmental banking, which is used extensively in the United States. Environmental banking is the management of substantial areas of land for their environmental resource values in compensation for damage elsewhere (Dwyer 2002). New South Wales is also trialing both carbon credits by creating new forests and biodiversity credits by restoring an endangered woodland, in both cases to offset carbon production by energy companies (Salvin 2000).

Binning's commitment to this policy area is also behind a new kind of bank which will make funds available for landholder, community and agribusiness projects that deliver economic plus environmental returns. Greening Australia has set up the Fund with assistance from the CSIRO and The Allen Consulting Group. The scheme has attracted \$1.5 million seed funding from the Commonwealth, state and territory Governments under the first round of the National Market Based Instruments (MBI) Pilots Program. Greening Australia see the Fund supporting projects like innovative farm forestry; purchase, restructuring and sale of existing non-viable businesses; and engagement in

water markets to improve irrigation practices and donate or sell water entitlements to environmental flows ([www.greening.org.au](http://www.greening.org.au)).

Many agree that such incentives and market mechanisms will be a major feature of future conservation. David Farrier (1996), Professor of Law at Wollongong University has long argued the need for an attitudinal shift to encourage biodiversity conservation on private lands.

Instead of telling landholders that they are being compensated to keep their destructive hands off the land, the message is that they have a vital role to play, a role which the community regards as being sufficiently important that it is prepared to pay for it.

Dr. Judy Lambert, a consultant who has had a major role in this policy area, agrees 'credible landholders' are in effect 'extension officers' for the whole off-reserve conservation ethic and practice. They should be supported and encouraged by government' (Judy Lambert pers.comm.). The NSW Farmers Association (2003) has also backed incentive programs such as those used in the United States.

Farmers won't admit to having threatened plant or animal species on their properties, or make improvements that might encourage them to move in, if they know it will result in their land being locked up. Contrast this to the US, where farmers are falling over themselves to participate in a voluntary scheme that recognises the financial impact of setting aside land for conservation through tax credits and government discounts.

Lambert is one of many people who emphasise the importance of social and cultural factors in bringing about real change. The last decade has seen the goals of sustainable land management and conservation of biodiversity increasingly accepted across both conservation and rural communities. However, there are still pockets of resistance where some rural landowners see 'conservation' as a threat to their autonomy, and on the other hand conservationists who balk at the idea of the private sector contributing to conservation. This need to address social attitudinal change was recognised by Land and Water by setting up a Social and Institutional Research Program. The work of the unit is built around the view that 'social, economic and cultural factors are at the heart of sustainable resource and environmental management - and it is people who make the difference' (SIRP 2003).

## 6.0 ISSUES FOR RESOLUTION

Despite significant progress in incorporating private lands into the national conservation effort, inevitably there are some areas which remain issues for debate. The author has previously questioned whether the expansion of approaches may inadvertently create a 'Trojan horse' for the forces in society, particularly the resource extraction industries like mining and forestry, to build opposition to strictly protected areas, like national parks. These industries have long opposed strict protection as 'locking up' land or the marine environment (Figgis 1999). The concept of what is a 'reserve' or protected area has expanded in recent years into non-legislative forms like the IPA and 'multiple use' concepts like the bioregional model. This is blurring the previously well understood notion that a protected area is set aside by legislation for nature conservation without extractive industry.

The risk that 'strict protection' reserves (IUCN Protected Areas Categories I-IV) could be undermined is exacerbated by the rhetoric of some advocates of *additional* conservation tools. They have, at times, come perilously close to dismissing existing protected areas, especially national parks (Archer quoted in Beale 1999 and Bridgewater 1997). A slide away from these core lands would defy good science, as the effective management of healthy systems is repeatedly endorsed as the most cost efficient means to protect biodiversity (Possingham 2002). As the Ecological Society of Australia has stated in its policy on protected areas (ESA 2003) 'The ESA considers that protected areas are the primary mechanism for biodiversity conservation in Australia and that the primary function of protected areas is to promote the persistence of biodiversity'. The entry of private interests into conservation may also be used to promote privatisation of the management of national parks. Such a development is still strongly

opposed by environmentalists based on the belief that privatisation would inevitably mean the domination of commercial imperatives over those of conservation.

A major issue is the dependence of many of the mechanisms on government funding. In researching the topic one is struck by the plethora of publicly funded programs and initiatives which have already come and gone. Community conservation programs, grant based incentives and IPAs are especially dependent on public funding and if government priorities change, it is doubtful they could generate their own funds. The private land trusts seem less vulnerable as they have demonstrated a sound ability to tap into philanthropy and possibly have the potential to generate an income stream from some properties. This vulnerability is confirmed by Sally Stephens in a 2002 article. Stephens, then National Coordinator for *Bush for Wildlife*, highlighted the findings of a national survey of landholders involved with conservation agreements. The survey identified considerable shortfalls in many programs between the assistance rated as important to landholders and the actual assistance available. Stevens concluded that 'Closing these and other gaps in support is important if conservation is to be considered an attractive and viable land use by a wide variety of landholders' (Stephens 2002).

Funding would appear more certain with the extension of the Natural Heritage Trust for a further five years to 2006-07 as well as funds which will flow from the NAPSWQ and matching state and territory funds. Among the goals stated for the extended NHT program is an explicit commitment to the sector:

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; ([www.nht.gov.au/extension/index.html](http://www.nht.gov.au/extension/index.html))

However, despite these commitments the current funding for the protected area end of the spectrum is not encouraging. In 2002-03, the National Reserve System Program (NRSP) funding only totalled \$11.45m while funding for the Indigenous Protected Areas Program totalled \$1.99m. This is less than half of the \$23.6m spent in 2001-02 (DEH 2002). There is recent information which suggests that the funding for the current year has fallen dramatically to a mere \$2.33million (Senator Andrew Bartlett: Press release 26/3/2004).

To address this issue the Australian Conservation Foundation has stressed the need for large scale on-going funding and argued for a national environment levy to overcome the vagaries of variable government priorities ([www.acfonline.org.au](http://www.acfonline.org.au)). The funds needed are substantial, but various bodies have underscored that dollars spent on conserving intact ecosystems are much more cost efficient than trying to repair them after damage. For example a report prepared for 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. They found 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 2002).

Security is another issue. The great strength of the public national park is security of tenure and strict protection management. Some mechanisms like covenants are fairly secure while many others are purely voluntary or for an agreed period. While a spectrum of mechanisms is desirable, it means that 'gains' for biodiversity may well change over time particularly if the supporting roles of the public agencies diminish, or the funding sources dry up. On the other hand too much emphasis on legal security may 'scare off' potential private landholders from taking on conservation management. Given the somewhat chequered history of nature conservation and indigenous lands, it may be particularly important for indigenous people to have forms which retain their autonomy and a sense of ownership and choice.

There is also the issue of management effectiveness. While this is a serious issue for all lands managed for conservation, it may be a particular issue for the private sector. The private trusts are dependent on philanthropy which is often most generous when new purchases are promoted. However, with each new purchase comes a major on-going cost in perpetuity, especially for the fenced sanctuary model. Organisations like Bush Heritage are factoring these needs into their fundraising, but it is still inevitable that with the growth of their estates the costs of effective management will rise. The monitoring of effectiveness and quality of science is also less transparent, although the major funds have instituted rigorous plans of management. It could also be argued that the private organisations can be *more* focussed on ecological management as they are not diverted by the often large scale visitation managements needs and infrastructure costs of public parks. Private trusts also have a greater capacity to generate volunteers to assist in management. Birds Australia have used volunteers for management of *Gluepot* for many years and the Bush Heritage property *Carnarvon Station* has welcomed many volunteers to assist in management and totalled nearly 700 voluntary days work since 2001 (Doug Humann pers.comm.).

Other policy questions and governance issues arise from the ability of private entities to access public funds. Is this the best use of public monies? How accountable are the recipients? How is success measured and compared (Fitzsimons & Wescott 2002)? There will need to be clear policy development in this area to establish standards and monitoring to ensure that the positive benefits associated with the developments described in the paper are realised. This was recognised in a recently released discussion paper on the future of the National Reserve System, which stressed the needs for standards and monitoring (Commonwealth 2004).

## **7.0 AN INNOVATIVE FUTURE**

Biodiversity conservation is going through a major transformation. Despite a need to draw a 'line in the sand' to ensure a continued political and financial commitment to public protected areas, there is now broad acceptance, indeed enthusiasm in Australia, for a future where innovative and inclusive governance models bring private lands under conservation management. Overall this is a rational and positive response to the depth and complexity of threats facing our natural world. Hopefully success will breed success and further creative models will be produced to add to the 'toolbox'.

The new directions described in this paper will bring a much broader cross section of society to the conservation table: indigenous communities, small businesses, corporations, private trusts, farmers, pastoralists, tourism operators, community groups and many others can contribute lands under their control or land management capacity to the national terrestrial conservation effort. In some cases these lands will contribute major new protected areas covering large areas. Other mechanisms will cover smaller parcels of land to provide the connective tissue, the means to join up the 'islands' of nature reserves, restore wildlife habitat and contribute ecosystem services to sustainable agriculture. Over the next decades all these lands will contribute components of endangered ecosystems, habitats of threatened species and refugia to strengthen the resilience of species to adapt to climate change. The hilltops, valleys, plains and riversides with their forests, woodlands, grasslands, deserts and wetlands ecosystems will be critical components of the great sustainable landscapes of a biodiverse future.

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**NOTE**

The policy field covered in the paper is rapidly developing, reflecting the importance of extending conservation across all lands. The paper was initially written for the World Parks Congress in Durban in September 2003. It has been subsequently updated to deal with a large number of changes to natural resource management and other relevant developments in late 2003 and 2004. The author has made considerable effort to be accurate and to check facts with a wide variety of people. However, it is recommended that students and other users of the paper check recent developments on the relevant websites.

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**PERSONAL COMMUNICATION**

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Doug Humann, Executive Director, Australian Bush Heritage Fund, July 2003.

Louise Duxbury, Projects Manger Green Skills Inc., WA November 2003

Dr. Judy Lambert, Director Community Solutions, July 2003.

Darryl Larsen, Conservation Project Officer, Strategic and Environmental Planning  
Gold Coast City Council, July 2003.

Margi Prideaux, Marine Biodiversity Campaigner, Australian Conservation Foundation, July 1998.

David Moyle, Environmental Management, Flinders University, Chair of the SA Reserve Planning and Management Advisory Committee, August 2003.

Bruce Rose, Head, Indigenous Protected Areas, Environment Australia, August 2003.

Dr Steven Smith, Manager, Private Forest Reserves Program, Tasmania, July 2003.

Sally Stephens, Natural Resource Management Policy Branch, Department of Environment and Heritage

Chris Smythe, ACF Marine Campaigner, March 2004

Dr. Lynn Webber, Manager Education and community Involvement, Department of Environment and Conservation NSW, October 2003

Natalie Woodward, Trust for Nature, Victoria, October 2003

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