

**Submission
No 257**

**INQUIRY INTO MANAGEMENT OF PUBLIC LAND IN
NEW SOUTH WALES**

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Submission to the Legislative council general purpose standing committee no. 5

Inquiry into the management of public land in New South Wales

By The Australian Wetlands Rivers & Landscapes Centre

Summary

- Australia's biodiversity influences social, economic and cultural spheres and provides ecosystems services. One of the more important ways of protecting this biodiversity is through the creation of conservation areas or National Parks. Australia and New South Wales has international, national and state responsibilities for the conservation of biodiversity.
- Highly sophisticated scientific techniques (systematic conservation planning) exist for selection of conservation areas underpinned by *CARE* (Comprehensiveness, Adequacy, Representativeness and Efficiency) principles.
- River Red Gum State Forests in the southern riverina were converted from timber harvesting forests to land for conservation in 2010, following a rigorous assessment by the Natural Resources Commission in partnership with Forests NSW. Yanga Station was converted from agricultural land to National Park in 2006 to improve its long-term ecological health and ecosystem services. Toorale Station was acquired by the government in 2008, after considerable concern that the Warrego River, one of the major tributaries to the Darling, was being intercepted by large irrigation water storages affecting the ecological health of the Darling River.
- Management of the new River Red Gum National parks in New South Wales' southern riverina is being undertaken using an adaptive management framework with the goal is to restore forests to the best structure for biodiversity persistence. For Yanga National Park, tourism, and its flow-on effects to the surrounding communities is building as well as increased ecological health with the management of environmental flows. The conversion of Toorale Station to a national park and subsequent withdrawal of working irrigation and livestock has had positive outcomes for floodplain graziers downstream of Toorale, as well as benefits to river water quality, environmental health and ecosystem services within the Darling River.
- Management of all land in New South Wales is controlled by legal requirements relating to fire hazard reduction, control of declared animal pest species and control of declared noxious weeds. National parks also protect and conserve biodiversity. Management of land for biodiversity conservation, in particular within National parks, should be guided by the principles of Strategic Adaptive Management (SAM). This approach involves 'learning by doing' and provides transparency, rigour and accountability to land management practices.

Terms of Reference

1) The conversion of Crown Land, State Forests and agricultural land into National Park estate or other types of conservation areas, including the:

a. Process of conversion and the assessment of potential operational, economic, social & environmental impacts

For its biodiversity, Australia is considered 'mega diverse', one of only 17 countries in the world and the only developed nation, and has 10 of the world's 14 internationally recognised biomes¹. Australia's biodiversity is a defining feature of its social, economic and cultural spheres and is intertwined with our everyday life, supporting life's processes. These 'ecosystem services' range from direct use of materials from biodiversity (e.g. manufacture of pharmaceuticals using natural products) to indirect influences on output, quality and costs of production industries (e.g. crop pollination, pest control, water quality and nutrient cycling)²⁻⁴ to less tangible benefits such as mental health, cultural integrity and family activity. With the threat of climate change, ecosystem services are becoming increasingly important for understanding of carbon cycles, and recent research shows that high biodiversity is related to high levels carbon storage^{5,6}. Most of the continent's flora and fauna is endemic (only found in Australia) but it is also declining in range and distribution from a range of threats, including ongoing habitat loss and degradation, invasive species and climate change. Without some protection through National Parks, much of it will continue to be lost.

Australia is committed to the protection of biodiversity through international, national and state processes. Australia is party to the Convention on Biological Diversity (CBD), signed by 150 world government leaders at the 1992 Rio Earth Summit. At the most recent meeting of the CBD in Nagoya Japan, Australia committed to conserving 17% of terrestrial and inland water areas, to at least halving the loss of natural habitats and to restoring at least 15% of degraded areas by 2020⁷. Without such targets, countries will fail to meet obligations for the protection of biodiversity. In addition, Australia is also a signatory to over 30 international policies and agreements relating to biodiversity; over 50 policies, frameworks and legislation at the national level; and 17 at the state level⁸. Locally, many catchment management areas and local councils within New South Wales have developed biodiversity strategies and action plans to ensure biodiversity planning and conservation is implemented on the ground. Conservation areas, including national parks, are an essential element of these locally driven strategies.

The National Parks of New South Wales form part of Australia's National Reserve System, intended to meet the goal of long-term protection for Australia's biodiversity. As at March 2011, public lands

dedicated to the NPWS reserve estate (including both natural and cultural heritage) accounted for less than 9% of New South Wales, leaving 91% available for other uses. Modern approaches to selection of land for National Parks reserve utilise Systematic Conservation Planning, guided by the CARE principles of Comprehensiveness, Adequacy, Representativeness and Efficiency^{9,10}:

- *Comprehensiveness* refers to representing all of the full range of species, processes and ecosystems within the area and not biasing reserves to any particular bioregion;
- *Adequacy* refers to measurable conservation goals which inform managers whether the reserves are adequately protecting biodiversity;
- *Representativeness* refers to how well the regions chosen represent the full range of biodiversity, this is usually measured with *biodiversity surrogates*. Biodiversity surrogates may be species, communities or other properties of biodiversity chosen to reflect biodiversity more broadly and should be developed using real biotic data^{11,12};
- Finally, the *Efficiency* principle acknowledges that limited resources are available for conservation and seeks to optimise conservation outcomes while minimising cost and impact on stakeholders.

Modern conservation planning also integrates social and economic impacts as well as multifunctional landscapes into the planning process^{13,14}. The process of conservation planning integrates stakeholder consultation and adaptive management principles to ensure that selected reserves meet adequacy and efficiency goals. Systematic Conservation Planning was developed principally for terrestrial ecosystems, but more recently, new techniques are being developed to apply these principles to freshwater riverine and wetland ecosystems¹⁰. This is critical, as across the world, freshwater ecosystems are underrepresented in reserve networks¹⁵ and the last measurements in New South Wales found that conservation reserves protected only about 3% of the state's total wetland area¹⁶. Further allocation of land to National Park reserve is required because despite many successful conservation outcomes resulting from protected areas, biodiversity that is unrepresented within Australia's reserve system is still declining¹. Climate Change is likely to exacerbate our biodiversity loss, especially in freshwater areas¹⁵, further demonstrating the need to set aside more land for conservation.

Changing land use has an overwhelmingly positive impact on the environment through legal protection of the environment against habitat loss and damaging uses, specific allocation of resources to environmental management, public participation in management processes (through Advisory Committees and processes of public comment on statutory management plans) and

statutory obligations to meet objectives and standards of environmental management. Other forms of land tenure lack these guarantees.

Establishment of conservation areas may have positive and negative social and economic impacts on landholders, local workers and the local council. Potential negative impacts are dealt with effectively by rigorous processes for assessment. All government proposals for new conservation areas are referenced by the Office of Environment and Heritage to all other NSW Government departments that have responsibilities to ensure comprehensive assessment of potential socio-economic impacts, particularly through opportunity costs to alternative land uses, current and potential. Proposals that receive objections through the reference process cannot proceed unless resolved by negotiation or through Cabinet processes. Proposals involving significant major land use change decisions are referred to the Natural Resources Commission, which has expertise and capacity to carry out studies on the environmental, social and economic implications of land use change, and power to make recommendations to Government. Parliamentary processes offer a further safeguard involving elected representatives to ensure that environmental, social and economic factors are properly considered before decisions are taken to establish new conservation areas on public land. In many cases, land use changes to establish new conservation areas are accompanied by budget enhancements to establish visitor and management infrastructure and core management staff. Some reserve-establishment decisions have also been supported by industry assistance packages, including financial support and employment programs, to assist restructuring within local communities, economies and industries. Local economies can also gain from government investment in local goods and services for park management, as well as income from tourism¹⁷. Many factors influence the level of tourism within National Parks including location, and natural attractions^{18,19}, as well as the time taken for a National Park to become established as a tourist attraction. Costs to economies of gazetting national parks can overemphasise one particular industry and seldom capture public good benefits such as ecosystem services. For rivers, there is seldom adequate analysis of downstream benefits of protected areas or buyback of water, in terms of long-term sustainability and improved water quality (e.g. reduced salinity and risk of acidification).

Other socio-economic factors are also important and can be favoured by National Parks, such as cultural values (both Aboriginal and European historical cultural values) and recreational values that may be enhanced through protection.

Specific comments in relation to Wetlands Protected Areas: River Red Gum State Forests in the Southern Riverina, Yanga Station and Toorale Station.

i. River Red Gum State Forests in the Southern Riverina

Thirty six River Red Gum State Forests in the Southern Riverina (65,922 hectares), previously tenure of Forests NSW and used for timber harvesting, were reserved for conservation in 2010²⁰.

The transfer of the land to conservation followed a rigorous assessment by the Natural Resources Commission which addressed economic, social, cultural and natural values of the landscape, as well as advice on long-term sustainable wood yields²¹⁻²³. This assessment was conducted in partnership with Forests NSW. The initiative included a significant industry assistance package, agreed to by local timber industry stakeholders, as well as a substantial local employment program with priority for displaced timber industry workers. The decision came after a prolonged period of severe degradation of the river red gum ecosystems in the southern Murray-Darling Basin, that resulted in 79% of the forest area experiencing tree dieback by 2010, up from 44% in 1990²⁴. The change in forest tenure and management was urgently needed and essential to halt and reverse the decline of this internationally important environmental asset.

ii. Yanga National Park

Yanga National Park (previously Yanga Station) was purchased by the NSW government in 2006. The area is considered important within the Murray-Darling system and is along one of the more regulated rivers in Australia, the Murrumbidgee. The many biodiversity values of Yanga National Park, include the stronghold of an endangered inland frog species²⁵ and important waterbird breeding areas²⁶, both of which have experienced long-term decline. As well, river red gum forests have been particularly affected by water regulation, with the death of many trees. The previous owner of Yanga Station was concerned for the property's long-term future, particularly its biodiversity and cultural values, because of ongoing reductions in flows. There was a strong argument that the NSW Government was best placed to influence water management from upstream, where flows are altered by water resource development²⁶. This has proven true with water management operations and new infrastructure well established within the new reserve and resulting in considerable ecological outcomes for vegetation health, waterbird, frog and fish breeding events³². These initiatives were essential to restore the health of river red gum communities which were in significant decline. The park also contains important Aboriginal cultural heritage sites and significant pastoral heritage sites. The values of the new park are promoted strongly, with related economic benefits of increased tourist visitation to Balranald and associated communities.

iii. Toorale National Park

Toorale National Park (previously Toorale Station) and 20,000 ML of water licences were purchased by the New South Wales and Federal government in 2008. The purchase had the potential to ensure that the Warrego River would flow naturally into the Darling River. Prior to this initiative, there was considerable criticism from Queensland that one of the major tributaries into the Darling River ended in a large storage on an irrigation property (Toorale Station). The storage allowed for water to move through to the Darling River via a series of pipes but this still did alter the fact that the dam controlled most flows from the Warrego River into the Darling River. There were also few accurate gauges identifying the use of water on floodplain areas and restrictions of floods to the Darling River.

Environmental flows purchased were allocated to the Darling River, enhancing the function of a river that was severely degraded from upstream water resource development. Many floodplain eucalypts were affected or have died on the floodplain downstream. Furthermore, the increased water flowing down the Darling restores beneficial flows to downstream grazing communities, reliant on flooding for livestock foraging. The strategic purchase of this property and its water continues to return an average of 20 gigalitres of water to the Darling River each year, peaking at 80 gigalitres in flood years²⁷. Inundation mapping is currently being completed by the NSW Office of Environment and Heritage (OEH) to better understand the relationship between hydrology and ecosystems for environmental water.

b. Operational, economic, social and environmental impacts after conversion and in particular, impacts upon neighbours of public land and upon local government

Since the reservation of the forests in the Southern Riverina, OEH, National Parks and Wildlife Service (NPWS), Victoria's Department of Sustainability and Environment (DSE) and Parks Victoria have been working together to deliver best practice management to the new parks. The chosen framework is an Adaptive Management approach, which has begun in the Barmah-Millewa sections of the new National Parks, as well as Yanga National Park. The adaptive management program includes a trial of different ecological thinning techniques to help restore the forests to the best structure for biodiversity persistence, as after over 100 years of logging, forest structure has been altered considerably. Evidence indicates that ecological thinning – which may not be economically viable to undertake from a forestry perspective – can promote the rate of hollow formation in dense, post-logging regrowth stands²⁸. There is considerable scientific evidence that mature trees are critical for wildlife, largely due to their development of hollows and lateral branches which supply habitat for many threatened species²⁹⁻³¹. For example, the Riverina forests are important breeding habitat for Superb Parrots (*Polytelis swainsonii*), currently listed as Vulnerable both nationally (*Environment*

Protection and Biodiversity Conservation Act 1999 (EPBC Act)) and at the state level (*Threatened Species Conservation Act 1995 (TSC Act)*)³².

For Yanga National Park, there was considerable initial concern by neighbours initially, but there is growing local pride for the park's natural values, exemplified by the frog sculptures throughout the neighbouring town, Balranald. Tourism within Yanga National Park is within its early stages, but flooding of the area and high quality visitor services provided by local NPWS staff and Balranald Shire Council have seen increasing numbers of visitors to the area.

For Toorale station, there was considerable concern about the impact of withdrawal of a working irrigation and livestock station and the resources removed from the neighbouring town of Bourke. However, the full extent of the broader economic benefits has yet to be quantified. There are likely to be long-term visitation benefits although these will not be realised in the short-term. Further, the river flows will improve water quality, environmental health and ecosystem services downstream. In particular, it will assist the floodplains on which many river landholders derive their livelihood through inundation of floodplain, providing productive grazing areas. The value of all of the protected areas is also increasing for recreation and tourism.

c. That the following cases be considered in relation to Terms of Reference 1 (a) and 1 (b):

- **River Red Gum State Forests in the Southern Riverina (see comments above and below),**
- **Native Hardwood State Forests in Northern NSW (no comment apart from broad values of National Parks for biodiversity and ecosystem services),**
- **Yanga Station in the Balranald Shire (see comments above and below), and**
- **Toorale Station in Bourke Shire (see comments above and below).**

2) The adherence to management practices on all public land that are mandated for private property holders, including fire, weed and pest management practices.

Management of all public land in New South Wales is controlled by legal requirements as well as by specific objectives of different landholders and land managers, relevant to their land. Landholders and land managers are required by:

- The *Rural Fires Act 1997* to carry out hazard reduction to protect existing dwellings and buildings;
- The *Rural Lands Protection Act 1998* to control declared pest animal species (rabbits, wild dogs, feral pigs and some locusts) on their property; and,
- The *Noxious Weeds Act 1993* to control any declared noxious weeds (66 in NSW).

These responsibilities are common to both private landholders, such as farmers, and public land managers such as NPWS. In most cases, the NPWS provides a vital support network to its private neighbours and local governments to carry out fire management and control of weeds and pest animals. The agency provides expertise and resources, as well as leadership to co-ordinate management activities across multiple tenures. In particular, the NPWS partners other public and private land managers, and community organisations such as the Rural Fire Service brigades, in training and management activities, exploiting synergies to achieve more effective management outcomes than would otherwise be possible. Without this support, many local communities would be ill-equipped to implement effective land management to meet their own needs, let alone broader regional imperatives for sustainable land management.

In addition to these generic legislative responsibilities, which are specifically oriented to fire management and control of invasive species, the responsibilities of National Parks managers also include:

- Conservation of natural and cultural heritage within National Parks and the broader landscape according to the NSW *National Parks and Wildlife Act 1974*;
- Conservation of threatened species, populations and ecological communities under the NSW TSC Act, or where nationally protected species and areas are concerned, the Commonwealth EPBC Act; and,
- Broader conservation goals as defined by *Australia's Strategy for the National Reserve System 2009-2030*¹, *The Australian Pest Animal Strategy*³³, *The Australian Weeds Strategy*³⁴ and other overarching documents.

At the date of this submission there were thirty-six Key Threatening Processes identified in New South Wales by the TSC Act and a further nineteen are listed in the EPBC Act. These include many threats which impact on biodiversity and require management, but impose no responsibilities for management on landholders primarily responsible for agricultural or forestry production. Conservation of biodiversity and management of threats within National Parks is a complex process and means prioritising and balancing multiple management actions to result in the best possible outcome.

National Parks are also required to consider multifunctional landscapes outside their park boundaries, especially in the case of connected river and wetland systems, if they are to be successful. Within multifunctional landscapes, NPWS prioritises pest management in areas where pests are having an unacceptable impact on neighbouring properties, including farmland³⁵. In this way, the NPWS work cooperatively with other agencies, private landholders and community groups

to best manage threats (including agricultural and forestry pests) at the landscape level. These networks of cooperation, established around National Parks, can result in more efficient, co-ordinated responses to fire management and pest control (e.g. aerial shooting of animal pests) than would otherwise be possible. There is a clear need to identify the key drivers or threats to biodiversity and manage these appropriately. This requires a management approach that will inevitably differ to that of a National Park's neighbours whose objectives are commercially based. This requires resources and skilled, experienced, National Parks staff to effectively conserve Australia's biodiversity and cultural resources.

Despite the many challenges associated with managing land for biodiversity conservation, National Parks' staff are performing well. As of 2006, in 91% of National Parks in New South Wales, weeds are being managed effectively to reduce their impacts on native flora and fauna and in 92% of parks pest animals are being effectively managed to reduce or contain their impacts³⁵. Within regional communities, National Parks' staff also provide many essential services over and above their role as natural resource managers. Their ability to partner with NSW Rural Fire Service in order to protect communities from bushfires is particularly important.

Public land managers other than national parks are also required to manage land for the environment (e.g. Department of Education - Endangered Ecological Community; Department of Planning - where a major economic development or infrastructure project contains an environmentally sensitive area). While the primary objectives of these government departments do not involve conservation of biodiversity, they are still bound to manage their land according to environmental legislation but this is often not effectively done. Private landholders may also elect to preserve high conservation value land by entering into a Conservation Agreement with the NSW government³⁶. As only 9% of New South Wales is currently reserved for conservation, participation of other public and private landholders in biodiversity conservation should be strongly supported.

3) Examination of models for the management of public land, including models that provide for conservation outcomes which utilise the principles of "sustainable use".

Firstly, it should be emphasised that national parks, in Australia and elsewhere, constitute an important "sustainable use" of land. Through conserving ecosystem processes and services, reserves are essential for sustainability at a landscape scale. This includes the maintenance of hydrological processes, protection of native species responsible for pollination and pest control of agriculture. Further, responsible tourism is another sustainable use of national parks land. In addition, integration of conservation into land otherwise used for commercial purposes, for example through entering into Conservation Agreements, is another way to increase sustainable use. To maximise the

efficacy of national parks land for biodiversity conservation and resulting ecosystem services, it is important to select the correct model for land management.

The process of adaptive management to ensure that management techniques are scientifically tested and improved is critical to ensuring desired conservation outcomes are achieved with transparency. Such management can be described as Strategic Adaptive Management (SAM)^{15,37,38}. SAM is a 'learning by doing' approach to sustainable resource management which involves identifying a desired environmental condition for an area; specifying specific goals and then testing a suite of management options. These are then monitored and evaluated to determine the outcomes, sustainability and effectiveness of management. The SAM approach is being implemented into the management of the Barmah-Millewa Forest, examining options for water management and ecological thinning. There is a rigorous framework for evaluation of management outcomes including an independent scientific advisory committee. Alternative management techniques are being tested using an experimental design which integrates current knowledge of the area's ecology with the ability to learn from monitoring of the management outcomes. SAM principles are essential for sustainable management and use of public lands, offering transparency, rigour and accountability. Unfortunately, at present, this advanced management is only implemented on some reserve tenures, due primarily to limited resourcing and expertise available to other landholders and land managers. It is important to note that appreciable areas of virtually all NSW ecosystems, including north coast forests and river red gum forests, remain on other public and private tenures that permit a wider range of land uses and management, yet these areas currently lack the benefit of a suitably rigorous management framework to inform and support sustainable use. This requires essential resources that will build world class management supported by effective science. There is a need for more widespread use of such a management framework throughout the management of land for conservation as well as sustainable resource use.

4) Any other related matters

As biodiversity encompasses such a broad range of properties including genetics, species, populations, communities and ecosystems which are linked by processes; its role in maintaining environmental integrity and socio-economic contributions, both to local communities and at broader national and global levels, are often poorly appreciated and under-valued. Biodiversity is critical for many ecosystem services including mitigating climate change impacts^{5,6} and even alleviating global poverty^{39,40}. Conservation areas make an essential contribution to the maintenance of biodiversity and other environmental values. With only 9% of NSW dedicated to this purpose, this contribution is a highly cost effective investment. Therefore, it remains a critical part of public policy to identify and protect areas of significant biodiversity.

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