Native Vegetation Protection in New South Wales

by

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Executive Summary

The clearing of native vegetation across Australia has resulted in numerous environmental problems. Land degradation, the salinisation of soils and waterways and biodiversity loss are all the result of clearing native vegetation (page 4). Land degradation costs Australia $2.5 billion per year in lost production.

With European settlement, by 1921 44 percent of the State was ringbarked and partially cleared (page 5). The Central Division of the State was extensively cleared for broadscale cropping - now only 10 percent of the original vegetation in that region is still standing (page 5). Today, it is estimated that up to 120,000 ha of land State wide are cleared annually (page 6).

The benefits of preserving native vegetation include:(page 7)

- shade and shelter for stock and plant production
- falling of tree litter which aids nutrient recycling, prevents water erosion and retains water
- vegetation acts as a windbreak and binds topsoil
- deep-rooted mature vegetation controls aquifer recharge
- controlling salinity
- reduces siltation of reservoirs and farm dams
- provision of emergency stock fodder in times of flood and drought
- wildlife habitat and the preservation of biodiversity.
- it is economically and ecologically disadvantageous to replant rather than to retain native vegetation.

Native vegetation can be protected under the Soil Conservation Act 1938 and the Western Lands Act 1901 (page 9). The use of these Acts has not prevented the broadscale clearing of land, but rather imposed conditions on the clearing of land (page 10). Conditions may include leaving a certain number of trees on edges of creeks.

In August 1995 the New South Wales Government introduced a new State Environmental Planning Policy (SEPP 46 - Protection and Management of Native Vegetation) to prevent inappropriate native vegetation clearance (page 12). Clearing will only be allowed with the development consent of the Department of Conservation and Land Management and the National Parks and Wildlife Service (page 12). This SEPP is not applicable in the Western Lands Division, but covers most other rural areas.

Vegetation will only be allowed to be cleared if: the vegetation type is adequately represented in a conservation reserve; it does not have a high biodiversity nor contain endangered plant species or habitat of endangered fauna. Clearing will not be permitted if it is likely to contribute to land degradation (page 12).

Exemptions to the Policy include minimal clearing (upto 2 ha per annum), minimal tree cutting for on farm purposes and regrowth areas up to ten years old (page 13).

Regulation of vegetation clearing can best be supported with incentives to positively manage native vegetation areas (page 13).
Introduction

Over two hundred years of European settlement in Australia has resulted in widespread changes to the environment. The practice of clearing native vegetation to make way for towns and agriculture has made its mark across the nation. In New South Wales, two-thirds of the State, or 52 million ha, was covered by forest or woodland prior to settlement. Now only 21 million ha remain.\(^1\) Up to the 1860's, the clearing of vegetation was restricted to land around settlements. With the turn of the century, the growth of agriculture and the development of broadscale crops such as wheat, together with advances in heavy machinery and herbicides led to the widespread clearing of the land. It is significant to note that, nationwide, in the last 50 years as much land has been cleared as in the 150 years before 1945.\(^2\) Across Australia, in 1990 an estimated 500,000 ha of native vegetation (including regrowth) was cleared for agriculture. This equates to over one million rugby football fields, or over two rugby fields being cleared every minute.\(^3\)

Native vegetation includes forests, woodlands, grasslands and shrub communities which have not been substantially altered by human activity as well as individual trees and other plants which survive as part of modified systems.\(^4\) The retention of native vegetation is important for many reasons. Land degradation, which costs Australia $2.5 billion per year\(^5\), has as its basis the removal of native vegetation. Native vegetation conserves important elements of biodiversity, maintains hydrological systems and maintains soil structure. The continued productivity of the land is dependent upon the maintenance of native vegetation cover. Land degradation across the country is now so severe, and the threats to biodiversity are increasing so rapidly, that States and the Commonwealth have introduced measures to protect native vegetation cover. The protection of biodiversity on private land introduces new policy and legal issues compared to the conservation of biodiversity on public land.

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2. Ibid p 6

3. Ibid p 17


2.0 Land Degradation in New South Wales

Land degradation is the decline in the condition or quality of the land, as a consequence of misuse or overuse. Land degradation has many facets including changes to native flora and fauna, soil, water quantity and quality and visual quality. McTainsh and Boughton group land degradation into the following categories:

1) Soil erosion and deposition, which includes those processes which entrain soil material and deposit it elsewhere. Subtypes include:
   - water erosion
   - wind erosion
   - mass movement of soil
   - coastal erosion by marine processes

2) Soil degradation, which involves the alteration of soil characteristics in place. Subtypes include:
   - soil salinity
   - degradation of soil structure
   - soil fertility decline
   - soil acidification
   - water repellency
   - waterlogging
   - soil pollution

3) Ecosystem change, which includes changes to vegetation cover and composition, and the introduction of plant and animal pests. Subtypes include:
   - vegetation degradation
   - introduction of pest species.

Whilst the different forms of land degradation may be grouped like this, it is important to realise that the removal of native vegetation is the basis of many of the above types of degradation. On agricultural lands, degradation results in a loss of productive capacity, and land can become totally useless for rural production if degradation levels are extreme. Experimental farms in Wagga Wagga show that soil loss of 84 tonnes ha result in halved yields. A series of 'normal' rain events in 1987 on the experimental farm resulted in 13 tonnes ha being eroded away. Similarly, studies in the Western Division of New South

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8 Soil Conservation Service of New South Wales, 1989, op cit p.2
Wales show that soils are losing up to 209 tonnes of top soil a hectare annually - or 12 centimetres in thickness over ten years.\(^9\) It is now considered that soils are not a renewable resource, as estimated rates of formation are so slow as to be negligible in real terms or less than the rate of nutrient extraction from upper zones of the soil profile.\(^{10}\) Under these conditions it can be seen that land degradation is a serious problem. Not only can yields decline, but costs of maintaining production levels and rehabilitation of land becomes increasingly expensive. For instance, expenditure on soil conservation in New South Wales increased from $44.9 million in 1998-89 to $57.6 million in 1990-91.\(^{11}\) The Commonwealth One Billion Trees program, Save the Bush and the National Soil Conservation program are other examples of expenditure on land degradation. Clearly, it is cheaper to prevent land degradation by retaining native vegetation cover than attempting to rehabilitate lands by tree planting.

### 2.1 The State of Native Vegetation Clearance in New South Wales

In June this year the Commonwealth Department of the Environment, Sport and Territories released a major report on the state of native vegetation clearance across Australia.\(^{12}\) The following information is taken from this publication. It has been estimated that between 1788 and 1921, 35.3 million ha (44 percent of the State) were ringbarked and partially cleared in New South Wales.\(^{13}\) Most of this clearance occurred in the period 1893-1921 when about 25.7 million ha were ringbarked and partially cleared. Clearing was most intensive on the Western Slopes, Central Plains and Riverina. The Coastal area of New South Wales has also been extensively modified by vegetation clearance. All major river valleys or plains have been extensively cleared. These include the Bega, lower Shoalhaven, Hunter, Clarence, Richmond and Tweed Valleys and the Cumberland Plain.\(^{14}\)

Widespread vegetation clearance has continued in New South Wales, as summarised in Figure One. The areas most affected are a belt of land, 150 km wide, along the eastern and southern boundaries of the Western Division and the northern wheatbelt within the Central

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\(^{13}\) *Ibid* p 20

\(^{14}\) *Ibid* p 20
Division. Clearance is less extensive in the rest of the Central Division, the northern tablelands and along the coastal fringe but is threatening remnant vegetation.

Figure One: Native Vegetation Clearance in New South Wales

Western Division
80,000 ha cleared annually
SEPP 46 not applicable

Central Division
20,000 ha cleared annually
90% of native vegetation cleared

Eastern Division
20,000 ha cleared annually

In 1884 the division of New South Wales into Eastern, Central and Western Divisions was promulgated. These three Divisions comprise strips running parallel with the coast. The Eastern Division being a strip running about 150-200 miles from the coast, the Central Division from 100 to 250 miles back from the Eastern Division and the Western Division comprising the rest of the land to the South Australian border.

From: Western Lands Commission, 1982, Submission to the Joint Parliamentary Select Committee Enquiry on the Western Division, p1913.

Commonwealth of Australia, 1995, op cit p.21
Currently, no State-wide records exist to monitor the extent of clearing. Coarse estimations for clearance rates are 150,000 ha/year based on regional studies and observation. The Resource Assessment Commission estimated that rates of deforestation since 1986 have been approximately 20,000 ha/yr in the Eastern and Central Divisions and about 80,000 ha/yr in the Western Division.\textsuperscript{17}

Clearance rates in the 1970's have been considerably higher. Between 1972 and 1986, in five separate years it was calculated that on average 430,000 ha were cleared each year. During the same period, 168,826 ha of wetlands were modified through drainage.

The Western Lands Division has attracted considerable interest over the last few years due to its fragile state. The majority of clearing in this area occurs in the higher rainfall parts within a 150 km wide band along its eastern boundary. In the six years from 1984 to 1990, the former Western Lands Commission granted clearing licences for 640,000 ha. Over the period 1978 to 1990, approximately another 650,000 ha of natural grasslands, scrublands and previously cleared land were approved for intensive cropping activities.\textsuperscript{18}

In the Central Division, which is the wheatbelt area of the State, about 90 percent of the native vegetation has been cleared, and remnant vegetation continues to be cleared at a rapid rate. The Eastern Division is also subject to significant clearance, particularly in the Northern Tablelands area and the coastal zone.

3.0 Native Vegetation - Why do we want to keep it?

The effects of clearing native vegetation are not just local, but ultimately affect the whole community. Problems such as wind blown dust, siltation of rivers and salinisation of land and waterways are problems for the nation. Cameron and Elix surveyed the literature for the benefits of preserving native vegetation and discussed the following benefits:\textsuperscript{19}

- shade and shelter for stock and plant production, eg, decreasing lamb losses, increase in cattle meat and milk production and improvement in crop productivity
- falling of tree litter which aids nutrient recycling, prevents water erosion and retains water
- vegetation acts as a windbreak and binds topsoil

\textsuperscript{17} Ibid p.21

\textsuperscript{18} Ibid p.22

deep-rooted mature vegetation controls aquifer recharge both by limiting the amount of water that reaches the surface and by transpiring water in the root zone

controlling salinity

reduces siltation of reservoirs and improves water quality in farm dams and storage

provision of emergency stock fodder in times of flood and drought

timber reserves

provision of food for indigenous communities and the emerging ‘bush tucker’ industry

wildlife habitat and the preservation of biodiversity

it is economically and ecologically disadvantageous to replant rather than to retain native vegetation. It takes decades to replace the values lost by clearing native vegetation and successful replanting is difficult and expensive.

The relationship between native vegetation loss / fragmentation and biodiversity decline is being increasingly understood. Habitat modification and fragmentation pose the greatest threat to biodiversity. The New South Wales State of the Environment report concludes that the major cause of habitat loss is the clearance of native vegetation. The State of the Environment report identifies 29 natural regions across the State. The biodiversity of 25 of these regions is threatened by clearing. Some of the most threatened vegetation communities include the temperate grasslands of the Western and Central Divisions, box woodlands in the wheatbelt, montane forests and woodlands on high nutrient soils, tall, especially Red Gum, forests in valleys on agricultural land and freshwater wetlands in the Eastern Division. The clearance of vegetation results in the creation of remnant patches or islands of native habitat. Fragmentation of habitat often results in the local extinction of species. This occurs where habitat remnants are too small to sustain populations, or when a local event such as fire means that the species cannot recolonise across farmland or other human created barriers. Islands of bush are also prone to weed invasion and feral animals.

The maintenance of biodiversity can no longer only be the realm of reserved areas, such

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21 *Ibid* p 82
23 *Ibid* p.29.
as national parks. The distribution of national parks across the state has not adequately preserved the genetic diversity of the state. This is why the protection and sympathetic management of native vegetation on private land, and hence the cooperation of the farming community, is essential.24

4.0 Mechanisms to protect native vegetation

There is no historical tradition of vigorous land use regulation in New South Wales rural areas.25 Perhaps this is why the problems of land degradation today are so large. Ideally, vegetation protection mechanisms need to fulfill two functions, prevent clearing on land where it is inappropriate and to ensure that the remaining native vegetation is managed in a sustainable way, eg, fencing out stock and control of noxious weeds. This section details some of the mechanisms available to protect native vegetation.

Protected Lands

The Soil Conservation Act 1938 was originally designed to conserve soil resources and prevent erosion of the land. Amendments have strengthened provisions to retain native vegetation. The Commissioner may declare areas of protected land, which include:26

- any land within 20 metres of the bed or bank of any prescribed river or lake
- steep land with a slope greater than 18 degrees
- land that is environmentally sensitive or affected or liable to be affected by soil erosion, siltation or land degradation

Environmentally sensitive land may consist of or include:27

- land in arid, semi-arid, landslip or saline areas
- land containing rare or endangered fauna or flora
- land containing sites of archaeological or historical interest
- land containing bird breeding grounds
- wetlands

24 Ibid p.29
26 Section 21B
27 Section 21B(6)
• areas of scenic beauty.

It is an offence to ringbark, cut down, fell or otherwise to destroy or remove any tree on a protected area, unless an application to do so has been approved.28 A variety of conditions may be applied to clearing approvals, including the retention of a specified number of trees or any other action to eliminate or mitigate any adverse effects on the environment. Also, when granting conditions regard may also be had to any cumulative adverse effect on the environment when considered with existing or likely future activities.29 With the introduction of Part V of the Environmental Planning and Assessment Act in 1980, the Commissioner has a general duty to “take into account to the fullest extent possible all matters affecting or likely to affect the environment.”30

Considerable powers therefore exist under the Soil Conservation Act 1938 to control native vegetation clearance. These powers have generally not been used to prevent broadscale clearing of vegetation. Instead, the issuing of conditions on clearing applications is the norm. For instance, the Annual Report of the Department of Conservation and Land Management states that “Protected land controls are used to set standards for clearing on steep slopes - for example, when establishing banana plantations.”31 The effectiveness of the Soil Conservation Act in protecting native vegetation depends upon the extent of the declaration of protected areas, how often clearance control powers are used, and whether, when it comes to applications for clearing, approvals are given with the present system of conditions rather than outright refusals.32

**Western Lands**

The Western Division comprises 42 percent of the State and leased land is under the control of the Western Lands Act 1901.33 It is an offence to clear leased land over half a hectare without a licence issued by the Western Lands Commissioner.34 Breaches are punishable with a maximum fine of $10,000. It is not stated what factors must be taken

28 Section 21D
29 Section 21D(3)
30 Section 111. Where an activity is likely to significantly affect the environment, the Commission must require the landholder to submit an environmental impact statement: S112.
34 *Western Lands Act 1901*, Section 18DB(1-3)
into account when deciding on granting a clearing licence. Farrier states that the assumption is that the Commissioner is also bound by Part V of the Environmental Planning and Assessment Act and must “take into account to the fullest extent possible all matters affecting or likely to affect the environment”.

The Western Lands Commission has introduced several initiatives in response to the increasing effects of land degradation. The first is the maximum allowable area policy under which the area of each property that can be cleared is limited. The second relates to the increasing incidence of dryland salinity in the Murray Darling Basin, where the Commissioner has stated that it is “unlikely” that an application for clearing will be granted unless the application includes sufficient information showing that the proposal has no likely significant adverse impact on the groundwater or salinity problems of the Basin.

Environmental Planning Instruments

The Environmental Planning and Assessment Act 1979 includes a range of environmental planning instruments available to control vegetation clearance. These include State Environmental Planning Policies (SEPPs), Regional Environmental Plans (REPs) and Local Environmental Plans (LEPs). Environmental planning instruments may make provisions to protect, improve or utilise to the best advantage the environment (Section 26(a)) and amongst other things, protect or preserve trees or vegetation (Section 26(e)). Farrier reports that since the 1980's, there has been an increasing tendency to use environment planning instruments to regulate land clearing in zones designated for environmental protection purposes. For instance, LEP’s may contain tree preservation orders or general provisions to prevent vegetation clearance.

To change an environment planning instrument is relatively easy, as an Act of Parliament is not required. The Minister may amend an Instrument, at the initiative of local councils in the case of an LEP. This means that planning instruments provide for greater flexibility if they need to be “fine tuned”. However, this flexibility also means that the protection of environmentally sensitive areas under a planning instrument may be reduced due to changing political and economic circumstances in the longer term.

35 Farrier, D. (1990) op cit p.110

36 ibid p.110.

37 For a description of the Environmental Planning and Assessment Act 1979, see; Swain, M. 1995, Urban Consolidation and Dual Occupancy Development. New South Wales Parliamentary Library Briefing Paper No 012/95.

38 Farrier, D. (1990) op cit p.111

39 ibid p. 111
The criminal law may be applied to those who breach provisions of environment planning instruments, eg, failing to secure prior consent where required, (with fines up to $20,000), this is largely symbolic and civil proceedings are more likely. The aim of civil proceedings is to restrain the damaging activity and to remedy the situation. Civil proceedings under s.123 can be brought by any member of the public, which means that enforcement agencies are no longer in total control of the enforcement strategy pursued. For instance, community groups, if adequately funded, could take civil action to remedy a breach against the Act. In the case of clearing vegetation, s.126(3) allows the court to direct the offender to plant new trees and vegetation, maintain these to a mature growth, and to provide security for the performance of this remediation.

5.0 Recent Initiatives - State Environmental Planning Policy No 46: Protection and Management of Native Vegetation

In early August 1995 the New South Wales Government announced that a new SEPP would be introduced to protect native vegetation across the State. This SEPP is included as an Appendix to this Paper. The aim of SEPP 46 is to prevent inappropriate native vegetation clearance in New South Wales (this includes the clearing of native grasses in certain areas - see Schedule 2 of the Appendix). Clearing of vegetation will only be allowed with the development consent of the Director-General of the Department of Land and Water Conservation with the concurrence of the Director-General of the National Parks and Wildlife.

The Policy applies to mostly rural areas of the State except the following:

- land zone residential, township or village
- land dedicated under the National Parks and Wildlife Act 1974
- land which is State forest...under the Forestry Act 1916
- land subject to a clearing licence under the Forestry Act 1916
- protected land within the meaning of section 21AB of the Soil Conservation Act 1938 (see discussion above)
- land administered under the Western Lands Act 1901(see discussion above)

As stated, vegetation cannot be cleared on land to which this Policy applies except with development consent of the two departments. Consent can only be given to the clearing of vegetation if the consent authority is satisfied that 12 conditions have been met

40 Ibid p. 112
41 Woodford, J and Beale, B. "Crack-down on land clearing" in The Sydney Morning Herald, Tuesday 8 August 1995, p.1
(Section 7). These include:

- the vegetation is not remnant vegetation in a region which has been extensively cleared
- the area does not have a high biological diversity
- the area does not contain-endangered plant species, habitat for endangered fauna, disjunct populations of native species, riparian vegetation or vegetation associated with wetlands
- the area is adequately represented in a conservation reserve system
- the area is not a significant wildlife habitat area
- clearance would not be likely to contribute significantly to any of the following problems-soil erosion, salinisation of soil and water, acidification of soil, land slip, deterioration in quality of surface or ground water and increased flooding.

The following exemptions (not a full list see Schedule 3 in Appendix) apply to the policy:

- Minimal clearing - up to two hectares per annum
- Minimal tree cutting - no more than seven trees per hectare in period of one year including farm uses such as firewood and fence posts
- Stock fodder - during declared drought
- Regrowth - the removal of native vegetation of less than 10 years of age if the land has been previously cleared for cultivation, pastures or forestry.

The question of compensation for property holders who are prevented from clearing land for agricultural production is a contentious one. Industry organisations such as the National Farmers Federation believe that farmers should be compensated for the loss of potential income from uncleared land on their properties. The Australian Conservation Foundation believes that providing compensation overlooks the more significant long-term loss of income, both to the individual landholder and wider community, incurred as a result of over clearing. The State Environmental Planning Policy 46 as described above does not include any provisions for compensation for landholders affected by it. Similarly, neither the Soil Conservation Act 1938 or the Western Lands Act 1901 provide compensation provisions for those affected.

South Australia has protected native vegetation by a variety of voluntary and legislative

\[42 \text{ MacDonald, M (1991) op cit p 28.}\]
mechanisms for the last fifteen years. Introduced in 1980, under the *Heritage Act*, land owners could enter into a voluntary heritage agreement with the government to protect native vegetation. The government established a Heritage Fund to help pay for positive management measures such as fencing. In 1980/81, $58,000 was paid out of this fund, rising to over $700,000 in 1986/87.\(^{43}\) Under the *Heritage Act*, there is no provision for compensation for loss of value or productivity of the land due to the retention of native vegetation. It was soon considered that not enough native vegetation was being protected under voluntary agreements, so in 1985 the *Native Vegetation Management Act* was introduced. This introduced criminal provisions for those clearing without prior consent. If consent to clear was refused, the landholder could insist on the Minister entering into a heritage agreement. These agreements included positive vegetation management measures such as fencing and stock control. Once an agreement was finalised, the land holder was entitled to payment of money based on the diminution (if any) in the value market of the land resulting from the refusal to clear. In 1991/92, over $14.5 million dollars was paid out under this Act, although this has dropped to $4 million in 1994/95.

Due to the expense of the *Native Vegetation Management Act* 1985, it was replaced by the *Native Vegetation Act* 1991. Under this Act clearing native vegetation still requires consent, but there is no provision to insist on a heritage agreement with the Crown. The Minister may still, however, enter into such an agreement with the owner of land on which native vegetation is growing.

The heritage agreement may contain the following provisions:\(^{44}\)

- restrict the use of the land to which it applies
- require works to be carried out
- provide for remission of taxes or rates in respect of the land
- Minister may pay an amount in respect of the decrease in the value of the land resulting from the heritage agreement
- Minister may pay the land owner an incentive to enter into a heritage agreement.

With the combination of legislative and positive vegetation management mechanisms, over 450,000 ha of native vegetation are preserved in heritage agreements in South Australia. The State has paid out $81 million as a result of the three native vegetation

\(^{43}\) No money has been paid out of the Heritage fund for voluntary heritage agreements since 1987/88.

\(^{44}\) Section 23A
retention schemes as described above.\textsuperscript{45}

6.0 Conclusion

The clearance of native vegetation is one of the biggest environmental issues facing Australia. Resultant degradation of land and waterways is just one of the many problems caused by over clearing of the land. Rural communities do not have a strong experience of familiarity with governments regulating their land use. Some confusion and opposition is therefore to be expected with the introduction of new vegetation clearance controls. The new SEPP 46 is designed to prevent the inappropriate clearing of native vegetation. However, this regulatory regime will not provide incentives for the positive management for native vegetation. The provision of fences to keep out stock, control of noxious pests and weeds may also all be needed to adequately protect an area. The introduction of incentives such as taxation concessions and heritage agreements incorporating financial contributions with landholders will assist in the positive management of native vegetation on freehold land.

\textsuperscript{45} By far the largest amount ($75 million) was paid out of the 1985 \textit{Native Vegetation Management Act Fund}