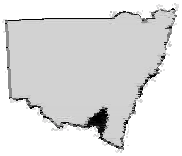
Riverina Highlands
Regional Vegetation Management Strategy and Plan



Developed for the Riverina Highlands Native Vegetation Region by the Regional Vegetation Management Committee under the *Native Vegetation Conservation Act 1997.*

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Chairperson's Foreword

This process has been about changes and challenge. The majority of our community dislike change. On the other hand most of our community enjoy and accept a good challenge. Our native vegetation is disappearing at an unsustainable rate, hence changes must be made if we are to save this precious resource.

The Riverina Highlands Regional Vegetation Committee (RHRVC) was formed to bring about change and issue new challenges by way of incentives. A large region was selected covering all or part of six Local Governement Areas and the RHRVC was charged with drawing up a draft regional vegetation management plan, and a strategy for its implementation, to regionalise the *Native Vegetation Conservation Act 1997* for this area. The plan and the strategy cover a 10-year period, with provision for updating as required. The committee is made up of 11 different stakeholders, totalling 15 members in all. Two-day meetings have been rotated around the six LGAsnearly every month

We have tried to be as communicative as possible by way of public forums, a newsletter – *Highland Cover* - and committee members informing their respective stakeholder groups of progress. We completed our task within two years, and are pleased to have this plan and supporting documents finalised. We as a Committee cannot expect to get it 100% correct; if we are to get it 90-95% correct we have achieved our goal of developing a plan and a strategy for implementation.

We applied for, and were granted, NHT funding in 2001 for a pilot project to put our plan and strategy to the test on 60 properties over two years. Kylie Durant, the Project Coordinator, has over 60 properties participating in property vegetation planning and works projects across the region.

We have been very thorough and careful to cost our plan through this strategy in order to achieve our aims and objectives. Incentives are the key if it is to work. Stakeholders who accept the community challenge to preserve, improve and increase native vegetation cover must be rewarded.

I think it is fair to say that each stakeholder group on the Committee would have liked a larger piece of the cake; having said that I feel that each stakeholder group has been given a balanced slice. Consensus was achieved throughout the planning process, which must echo a good and strong message to the community. The committee has addressed the hard issues, they have tried to be both fair and positive in all decision making, and above all they encourage both preservation and further plantings of native vegetation.

When reading our plan and strategy, I urge you to be fair, constructive and positive. It is very easy to criticise, but bear in mind that the whole community is involved. I have enjoyed working with this committee; there has been an enormous commitment by all. I am indeed proud of their achievements and grateful for the patience and good humour shown throughout the drafting process.

Bryan Ward

Acknowledgments

The Riverina Highlands Regional Vegetation Committee would like to thank the many individuals and organisations who assisted in the preparation of the Strategy and Plan. These documents would not have come to fruition without their valuable knowledge and support.

Special thanks also to landholders from the region who gave up their valuable time to be involved in the community information forums and field trips held throughout the region during the development of the plan and the strategy. The value of the Landcare movement and the individuals dutifully employed or volunteering in it is inestimable.

The Committee would like to acknowledge members of the scientific community for their contribution, including the Sustainable Ecosystems of CSIRO, the Centre for Resource and Environmental Studies and Department of Geography at Australian National University, and Charles Sturt University.

Special thanks also to Ecosurveys Pty Ltd, the Murray Nature Conservation Working Group, the NSW Roadside Environment Committee, Greening Australia (South West Slopes and Riverina), the Murray Wetlands Working Group, the Wiradjuri Council of Elders, Albury Wodonga Aboriginal Corporation, Snowy Mountains Indigenous Elders Council, Hume RLPB, and the Rural Fire Service.

The Committee would also like to thank the Department of Natural Resources and Environment (North East Victoria), Resource and Conservation Assessment Council of the Department of Urban Affairs and Planning, Australian Forest Growers and the Institute of Foresters.

Finally, thanks to the various organisations and agencies for their commitment to a partnership approach. This includes the NSW Farmers Association, Landcare, Local Government, Wiradjuri Council of Elders, NSW Nature Conservation Council, Murray and Murrumbidgee Catchment Management Boards, the Ecological Society of Australia, Department of Sustainable Natural Resources, NSW National Parks and Wildlife Service, NSW Agriculture, and State Forests.

Executive Summary

The Riverina Highlands Regional Vegetation Committee (RHRVC) was established early in 1999 under the *Native Vegetation Conservation Act 1997* (*NVC ACT*) to develop the Regional Vegetation Management Plan 2003 (RVMP) for the Riverina Highlands region. An RVMP and a Regional Vegetation Management Strategy (RVMS) have been drafted with the goal of stemming, and reversing, the decline of native vegetation, so that there will be 'no net loss' in its quality and quantity.

The Committee's vision for the region is to *empower people to ensure healthy native vegetation is integrated into a vibrant regional community*.

In order to achieve their vision, the Committee has set out targets for the retention, protection and restoration of native vegetation in priority areas.

There are five parts to achieving the targets, and ultimately the vision. These include:
1. Identifying priority areas and actions for conservation and management;
2. Incentive payments for landholders and land managers;
3. The management of land clearing;
4. Encouraging property vegetation planning; and
5. Improved public land management.

The Strategy identifies priority actions that should be undertaken in strategic areas across the landscape over the next 10 years. In addition, it proposes incentives to enable landholders to undertake these actions, provides a detailed Action Plan for Implementation, and identifies review and reporting mechanisms.

The ten-year Plan sets out targets for the retention, protection and restoration of native vegetation in priority areas, including high conservation value areas, Regional Protected Lands, and recharge areas. The targets aim to maintain the current quality and quantity of native vegetation in the region. In order to achieve this an increase, or 'net gain', is required in the quality and quantity of some broad vegetation types that have been extensively cleared within the region.

The targets complement catchment-wide targets that have been developed for the Murray and Murrumbidgee catchments and contained in the respective Catchment Blueprints.

The Plan identifies four management areas or categories. These are referred to as:
- Regional Protected Lands – Steep and Erodible;
- Regional Protected Lands – Streamsides;
- Land within a Regional Linear Reserve; and
- Unclassified Lands ie all other lands to which the Plan applies that is neither Regional Protected Land nor Regional Linear Reserve.

For each of these management areas the Plan lists and defines the activities that are:
- allowed without development consent;
- allowed after development consent is obtained; and
- not allowed by this Plan.

In addition the Plan outlines the information required to be submitted with a clearing application, including Property Vegetation Plans.

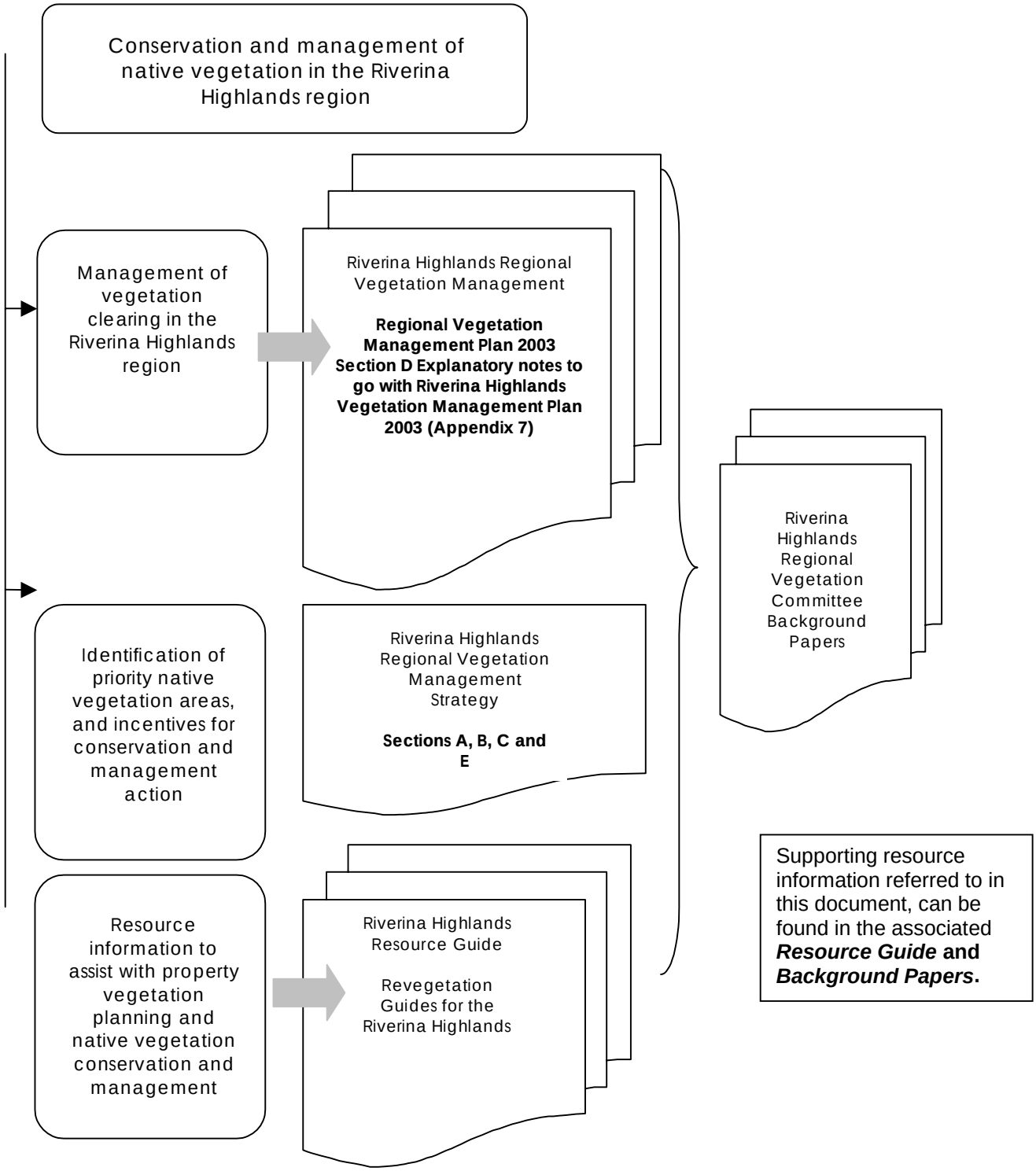
The Plan aims for improved conservation and management of native vegetation within the region by integrating native vegetation management into land management practices.

The Plan was exhibited to the public from December 2001 to March 2002 a summary of which appears in Appendix D.

The regulatory component of the The Riverina Highlands Regional Vegetation Management Plan 2003 is reproduced in Section D.

How to use this document

Sections A, B, C and **E** contain ***advisory materials***. The ***regulatory component***.is found in *Appendix 7*. **Section D** contains explainitory notes relating to the ***regulatory component*** The diagram below explains each of the Riverina Highlands regional native vegetation planning documents and their role.



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Acronyms

AA	Australian Alps Bioregion
BF	Bushcare Facilitator
BMP	Best management practices
BRMP	Bushfire Risk Management Plan
BVT	Broad Vegetation Type
CAMBA	China-Australia Migratory Bird Agreement
CMB	Catchment Management Board
CNR	Centre for Natural Resources (Research arm of DSNR)
CO	Compliance Officer
CRA	Comprehensive Regional Assessment
CSU	Charles Sturt University
DBHOB	diameter at breast height over bark (130 cm above the ground)
DSNR	Department of Sustainable Natural Resources
DUAP	Department of Urban Affairs and Planning
EA	Environment Australia
EO	Executive Officer
EOI	Expression of Interest
EPAA	*Environmental Planning and Assessment Act 1979*
EPBCA	*Environmental Protection and Biodiversity Conservation Act 1999*
EPI	Environmental Planning Instrument (under *Environmental Planning and Assessment Act*)
ESD	Ecologically Sustainable Development
ESIF	Environmental Services Investment Fund
FCO	Fire Control Officer
FFF	Farming for the Future
GIS	Geographic Information System
GWBW	Grassy White Box Woodland
GYBW	Grassy Yellow Box Woodland
HCV	High conservation value
IPMP	Integrated Property Management Planning
IUCN	International Union Conservation Network
ISM	Investment Services Manager
JAMBA	Japan-Australia Migratory Bird Agreement
LEP	Local Environmental Plan
LG	Local Government
LGA	Local Government Area
LWMP	Land and Water Management Plan
MLDCRC	Murray Lower Darling Community Reference Committee
MLDRING	Murray Lower Darling Rivers Indigenous Nations Group
MURMC	Murray Unregulated River Management Committee
MWWG	Murray Wetlands Working Group
NCWG	Nature Conservation Working Group
NGO	Non Government Organisation
NHT	Natural Heritage Trust
NPWS	NSW National Parks & Wildlife Service
NRPO: CS	Natural Resource Project Officer – Committee Services
NRPO: CL	Natural Resource Project Officer – Crown Land
NRPO: NV	Natural Resource Project Officer – Native Vegetation
NRPO: W	Natural Resource Project Officer – Wetlands
NSW	New South Wales

NSWCT	NSW Conservation Trust
NVAC	Native Vegetation Advisory Council
NVMF	Native Vegetation Management Fund
NVC ACT	*Native Vegetation Conservation Act 1997*
NWAC	National Weeds Advisory Council
PEAA	*Protection of the Environment Administration Act 1991*
PO	Plantations Officer
PRA	*Plantations and Reafforestation Act 2000*
PVP	Property Vegetation Plan
RA	Roads Authorities
REP	Regional Environmental Plan
RHNVR	Riverina Highlands Native Vegetation Region
RHRVC	Riverina Highlands Regional Vegetation Committee
Plan	Riverina Highlands Regional Vegetation Management Plan
RLPB	Rural Lands Protection Board
ROTAP	Rare or Threatened Australian Plants
RPL	Regional Protected Lands
RTA	Roads and Traffic Authority
RVC	Regional Vegetation Committee
RVG	Regional VegGuide
RVMP	Regional Vegetation Management Plan
RVMS	Regional Vegetation Management Strategy
SEH	South Eastern Highlands Bioregion
SEPP	State Environmental Planning Policy
SESU	Socio-economic Services Unit, DSNR
SF	State Forests
SOE	State of the Environment
SR	State Rail
SWS	South West Slopes Bioregion
TCM	Total Catchment Management
TSCA	*Threatened Species Conservation Act 1995*
TSR	Travelling Stock Route or Reserve
VMO	Vegetation Management Officer
WCoE	Wiradjuri Council of Elders
WRRVC	Western Riverina RVC

Definitions

active management means 'actively' managing native vegetation to maximise ***biodiversity*** values and minimise land degradation on a site. It can include pest animal and plant control, periodic grazing for grassland management, control grazing to allow natural regeneration, enhancement of existing remnants (eg. reintroducing shrubs and other understorey plants that once occurred on a site), experimental burning on a site. Active management of a site often requires ***monitoring*** to trigger changes in and consequently a need to adapt a particular management regime.

adjoining landholders are those who share at least one ***property*** boundary with the ***property*** being assessed or those who share a common ***linear reserve***.

bank means 20 m from the mean water level as defined in the *Soil Conservation Act 1938.*

biodiversity (also biological diversity) means the variety of life forms: the different plants, animals and micro-organisms, the genes they contain and the ***ecosystems*** they may form. It is usually considered at three levels:

- genetic diversity—the variety of genes (or units of heredity) in any ***population***;
- species diversity—the variety of species; and
- ecosystem diversity—the variety of communities or ***ecosystems***; or ***community*** diversity-the variety of communities in an area.

biolink (also corridor or regional biolink) means a link of vegetation, in a largely cleared landscape critical for ***ecosystem*** function including the movement of flora and fauna for the maintenance of viable ***populations***. An area of habitat, or habitat corridor, that enables migration, colonisation and interbreeding of plants and animals between two or more larger areas of habitat. ***Corridors*** may consist of a sequence of discontinuous areas of habitat (such as feeding trees, caves, ***wetlands*** and roadside vegetation). ***Biolinks*** are necessary at both a local and regional scale, to minimise remnant vegetation ***patch*** isolation and to link important ***habitats***.

clearing native vegetation, as defined under the *Native Vegetation Conservation Act 1997*, means any one or more of the following:

a. cutting down, felling, thinning, logging or removing native vegetation,
b. killing, destroying, poisoning, ringbarking, uprooting or burning native vegetation,
c. severing, topping or lopping branches, limbs, stems or trunks of native vegetation,
d. substantially damaging or injuring native vegetation in any other way.

Clearing native vegetation, does not include ***sustainable grazing***.

community means all the living parts of an ***ecosystem***.

Consent Authority means, in the case of administering the provisions of the *Native Vegetation Conservation Act 1997* and any ***Regional Vegetation Management Plans*** within NSW, the Minister for Sustainable Natural Resources , who in the case of issuing consent, delegates power to the Department of Sustainable Natural Resources.

conservation means all the processes and actions of looking after a ***place*** so as to retain its natural significance and always includes protection, maintenance and ***monitoring***.

conservation area means an area of land managed to conserve and enhance its conservation value, in accordance with a Property Vegetation Plan.

conservation reserves include National Parks, nature reserves and other formal reserves, Travelling Stock Routes/Reserves and roadsides managed for conservation.

core koala habitat means an area of land with a resident ***population*** of koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a ***population***.

critical habitat means the whole or any part or parts of the area or areas of land comprising the ***habitat*** of an ***threatened species, population or ecological community*** that is critical to the

survival of the ***species, population or ecological community***. The *Threatened Species Conservation Act* makes provision for the declaration of ***critical habitat*** by the Minister for the Environment. Once ***critical habitat*** is declared, relevant planning instruments must be noted and any proposal under Part 4 or 5 of the *Environmental Planning and Assessment Act 1979* that is likely to affect threatened species requires the preparation of a species impact statement.

crown separation is calculated using the crown diameter of each individual woody native plant. In determining whether a woody native plant lies within the required ***crown separation*** of the nearest woody native plant (and so it is included in the ***patch***), the crown diameter of the most outlying of those 2 plants (that is, outlying in relation to the native ***woody plant*** that is used a s a starting point) is used. The boundary of the ***patch*** is the line that:

a) contains the projected crowns of all the woody native plants within the ***patch***, and
b) joins the outer ***drip line*** of each outermost crown of the ***patch*** with that of the nearest outermost crown of the ***patch***.

development consent means development consent under Part 4 of *the Environmental Planning and Assessment Act 1979*.

diameter at breast height over bark means the diameter of a tree at breast height over bark (ie. the diameter of a tree at 130 cm above the ground over the top of the bark).

disturbance means accelerated change caused by human activity, or extreme natural events.

ecosystem means a dynamic complex of plant, animal, fungal, and micro-organism communities and the associated non-living environment interacting as an ecological unit.

exotic vegetation means vegetation that is not native to Australia.

farm dams means dams less than or equal to 0.15 ha.

forb means a non-***woody plant*** other than a ***grass***, ***sedge*** or ***rush***.

good condition means relatively few weeds (including pasture grasses); mostly native ground flora (including palatable, succulent plants); contains large (standing and fallen, living and dead) hollow bearing trees (not applicable in grasslands). That is, a ***community*** which is basically self maintaining with minimal inputs (see Table 12).

grassland means vegetation dominated by grasses and forbs, with less than 10% tree and ***shrub*** cover.

grassy white box woodland in good condition means a remnant ***patch*** (or evidence of its previous presence) with an over-storey of mostly mature White Box trees, and their associates (Yellow Box, Blakely's Red Gum, Apple Box, Red Stringybark), where maximum ***crown separation*** is less than two crown widths; the ***groundcover*** mainly is a rich ***flora*** of native grasses and ***forbs*** with at least 4 of the indicator high conservation value grassland species being present (ie. See *Rapid Appraisal Process for identifying HCV Grasslands* in the *Draft Riverina Highlands Regional Vegetation Management Strategy*). NB: If White Box is absent, there must be species present that are strong evidence of its original presence.

grassy woodland (or native grassland is a ground layer in woodland or forests) means ***grasslands*** present as a ground layer in woodlands or forests where shrubs occupy less than 10% cover and tree canopy is less than 10% cover.

grassy yellow box woodland in good condition means a remnant ***patch*** with an over-storey of mostly mature Yellow Box trees and their associates (White Box, Blakely's Red Gum, Apple Box, Red Stringybark, Candlebark, Snow Gum) where maximum ***crown separation*** is less than two crown widths; the ***groundcover*** mainly is a rich ***flora*** of ***native grasses*** and ***forbs*** with at least 4 HCV ***grassland*** indicator species being present (see *Rapid Appraisal Process for identifying HCV Grasslands* in *Resource Guide*).

groundcover means any type of herbaceous vegetation, but it is only to be regarded as ***native vegetation*** for the purposes of the *Native Vegetation Conservation Act 1997* if it occurs in an area where not less than 50% of the herbaceous vegetation covering the area comprises ***indigenous species***. In determining that percentage, not less than 10% of the area concerned must be covered with herbaceous vegetation, whether dead or alive.

habitat means the structural environments where an organism lives for all or parts of its life.

hectare means an area on the ground which is represented by a one hundred by one hundred metre grid.

High Conservation Value areas are defined in full in Table 8 of this Plan and include:

1. vegetation significance: listed sites; vegetation ***community*** rarity; ***threatened species, populations or ecological communities*** and ***critical*** or identified ***habitat*** for these species or ***populations***; and landscape values and function;
2. vegetation quality;
3. vegetation viability; and
4. vegetation with cultural heritage significance.

indigenous species as defined in the *Native Vegetation Conservation Act 1997* means species that existed in New South Wales prior to European settlement.

landholder means a person who owns land or who, whether by reason of ownership or otherwise, is in lawful occupation or possession, or has lawful management or control, of land.

land manager means a person who either owns land or who, whether by reason of ownership or otherwise, is in lawful occupation or possession, or has lawful management or control, of land.

linear reserve means non-operational rail lines, travelling stock routes/reserves, crown and public roads, crown roads and commons.

local environmental plan means a plan made under section 70 of the *Environmental Planning and Assessment Act 1979* that is in force.

modified means vegetation which exhibits the characteristics of ***modified*** vegetation as set out in *Regional VegGuide 1.3,* included in the *Resource Guide*.

monitoring means ongoing review, evaluation and assessment to detect changes in condition of the natural integrity of a ***place***, with reference to a baseline. See also *Regional VegGuide 1.6* in the *Resource Guide*.

national environmental significance means World Heritage Properties; Ramsar Wetlands of international significance; nationally listed threatened species and ecological communities; listed migratory species; Commonwealth marine areas; and Nuclear Actions (including uranium areas) as defined by the *Environmental Protection and Biodiversity Conservation Act 1999.*

native grassland see ***native vegetation***

native vegetation, as defined in the *Native Vegetation Conservation Act 1997,* means any of the following types of indigenous vegetation:

- trees;
- understorey plants;
- ***groundcover***; and
- plants occurring in a ***wetland***.

Native vegetation does not include any mangroves, seagrasses or any other type of marine vegetation within the meaning of the *Fisheries Management Act 1994.*

near natural means vegetation which exhibits the characteristics of near natural vegetation as set out in *Regional VegGuide 1.3,* included in the *Resource Guide*.

net gain of native vegetation will be achieved enhancing both the quality and quantity of native vegetation.

no net loss means to maintain the quality and quantity of native vegetation in an area. In other words, over a specified area and period of time, losses of native and habitat are reduced, minimised and equally offset by areas of an equivalent biodiversity (ie. equivalent to the loss) with vegetation of the same or higher quality and quantity).

Notification *means the notification of stakeholders by the Consent Authority as set out in the Environmental Planning and Assessment Act 1979.*

on-farm use means used on ***properties*** under the same ownership within the Riverina Highlands region.

opportunity costs: loss of financial opportunity to landholder for undertaking revegation works – eg loss of grazing

patch (or clump) means a group of 2* or more woody native plants, with each of those plants lying within 2 ***crown separations*** of the nearest native ***woody plant***.

population means a group of organisms, all of the same species, occupying a particular area.

potential koala habitat means areas of ***native vegetation*** where *Eucalyptus viminalis*, *E. albens* or *E. camaldulensis* trees constitute at least 15% of the total number of trees in the upper or lower strata of the tree component.

progressive clearing means the direct or indirect ***clearing*** of ***native vegetation*** over time.

property means a land holding in the same contiguous ***property*** and in the same ownership. A road reserve which divides a ***property*** in the same ownership does not constitute a discontinuous land holding.

Property Agreement means an agreement entered into under Part 5 of the *Native Vegetation Conservation Act 1997*.

Property Vegetation Plan means a property planning tool intended to be developed by those seeking incentives or attached to a clearing application where applying for consent to clear areas of ***native vegetation*** greater than 1 ha.

protection means taking care of ***place*** by ***maintenance*** and by managing impacts to ensure that natural significance is retained.

recharge means the portion of rainfall or river flow that percolates down through soil and rock formations to reach the groundwater system.

Recovery Plan means a plan prepared and approved under Part 4 of the *Threatened Species Conservation Act 1995.* See also ***Threat Abatement Plans.***

The *Threatened Species Conservation Act 1995* requires that the NSW National Parks and Wildlife Service prepare ***recovery plans*** for all threatened species, endangered populations and endangered ecological ***community*** listed under Schedules 1 & 2 of the *Threatened Species Conservation Act.*

regeneration means the recovery of ***natural integrity*** following ***disturbance*** or ***degradation***.

regional biolink (see ***biolink***).

regional vegetation management plan , also referred to as the ***"Plan"*** for the purposes of this document, means a ***regional vegetation management plan*** in force under Part 3 of the *Native Vegetation Conservation Act 1997*.

rehabilitation means the repair of a degraded ecosystem or systems. This may take several forms including regeneration or ***restoration***.

Reinstatement means to introduce to a place one or more species or elements of habitat that are known to exist there naturally at a previous time but that can no longer be found at that place

Reserved, for the purposes of this Plan, means, in the context of offsets for clearing, protected under any of the following:

- Management Contracts (DSNR and Greening Australia);
- binding or non-binding ***Property Agreements*** (DSNR); or
- Voluntary Conservation Agreements (NSW NPWS).

resilient means native vegetation which is in ***good condition*** and able to naturally regenerate.

restoration means returning existing ***habitats*** to a known past state or to an approximation of the natural condition by repairing degradation, by removing introduced species, or by ***reinstatement***.

retention area means an area of land where native vegetation will be retained in accordance with a ***Property Vegetation Plan***.

revegetation means reintroducing indigenous native vegetation species to an area that has been previously cleared.

revegetation area means an area of land which will be revegetated with local native species in accordance with a ***Property Vegetation Plan***.

riparian vegetation means vegetation that lies within the ***riparian zone***.

riparian zone means any land which adjoins, directly influences, or is influenced by a body of water, including land immediately alongside small creeks, and rivers including banks, gullies and dips which sometimes run with surface water, areas surrounding lakes, and ***wetlands*** which interact with the river in times of flood.

River Red Gum communities Remnant ***patches*** with an over-storey of mostly mature River Red Gum trees where the average maximum ***crown separation*** is less than one crown width; the ***groundcover*** mainly native ***grasses*** and ***forbs***.

Roads Authority means a person or body that is, by or under the *Roads Act 1993*, declared to be a ***roads authority*** and, in relation to a particular public road, means the ***roads authority*** for that road (*Roads Act 1993*).

1. The Roads and Traffic Authority is the ***roads authority*** for all freeways.
2. The Minister is the ***roads authority*** for all Crown roads.
3. The regulations may declare that a specified public authority is the ***roads authority*** for a specified public road, or for all public roads within a specified area, other than any freeway or Crown road.
4. The council of a local government area is the ***roads authority*** for all public roads within the area, other than:
   a) any freeway or Crown road, and
   b) any public road for which some other public authority is declared by the regulations

to be the ***roads authority***.

5. A ***roads authority*** has such functions as are conferred on it by or under this or any other Act or law.

rural structures on streamsides means rural structures that include ramp sites, bridges and pumps.

rural structures (general) means ***farm dams***, tracks, bores, windmills, fences, fence lines, stockyards, loading ramps, dwellings and sheds.

stem means trees with a diameter at breast height over bark (DBHOB) of equal to or greater than 20 cm.

State environmental planning policy means a policy made by the Governor under section 39 of the *Environmental Planning and Assessment Act 1979* that is in force.

strategy means Riverina Highlands Regional Vegetation Management Strategy and Plan whichsupports the Regulatory component of the Riverina Highlands Regional Vegetation Management Plan 2003

Sustainable grazing is the level of grazing that, in the opinion of the Director-General DSNR, the vegetation concerned is capable of supporting without resulting in a substantial long-term modification of the structure and composition of the vegetation *(Native Vegetation Conservation Act 1997)*

threat abatement plan means a plan prepared and approved under Part 5 of the *Threatened Species Conservation Act 1995* to address threatening processes.

threatened species, populations and ecological communities means:

a) those species, populations and ecological communities that are specified in Schedules 1 and 2 to the *Threatened Species Conservation Act 1995*, or
b) those species, populations and ecological communities that are specified in Schedules 4 and 5 to the *Fisheries Management Act 1994*.

The term 'threatened species' may refer to either endangered species or to ***vulnerable species***. ***Threatened species, populations or ecological community*** means a species, population or ecological ***community*** specified in any of those Schedules.

unacceptable environmental impact means that the undertaking of a proposed clearing activity will be inconsistent with:

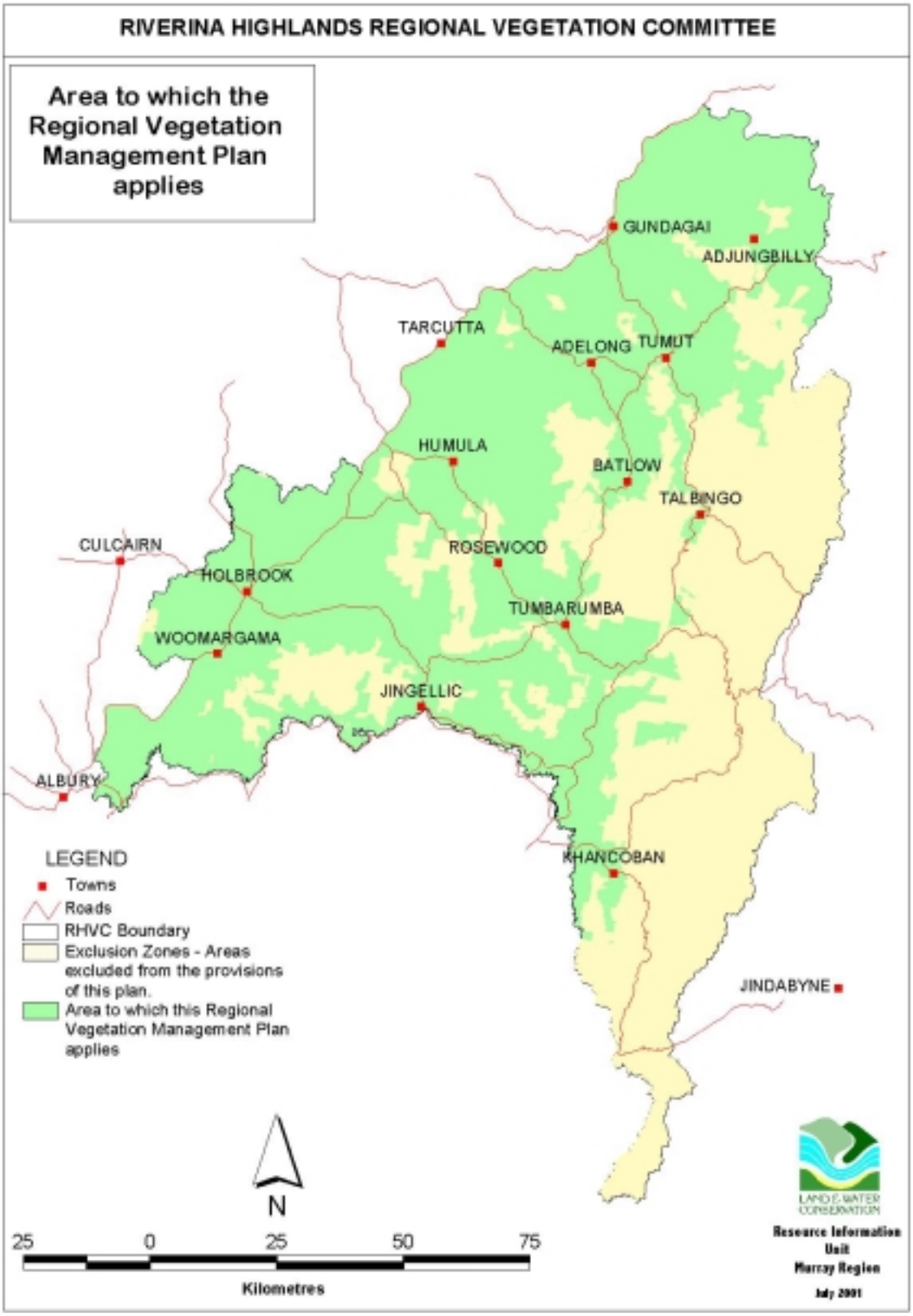
a) the aims and objectives contained within this Plan;
b) the guiding principles contained within this Plan;
c) any additional matters deemed necessary for consideration by the ***Consent Authority***; and
d) offsets for clearing contained within this Plan.

vulnerable species means a species specified in Schedule 2 of the *Threatened Species Conservation Act.*

wetland includes any shallow body of water (such as a marsh, billabong, swamp or sedge-land) that is:

- inundated cyclically, intermittently or permanently with water, and
- vegetated with ***wetland*** plant communities.

Figure 1: Area to which the Plan applies



Section A – Overview of the Region

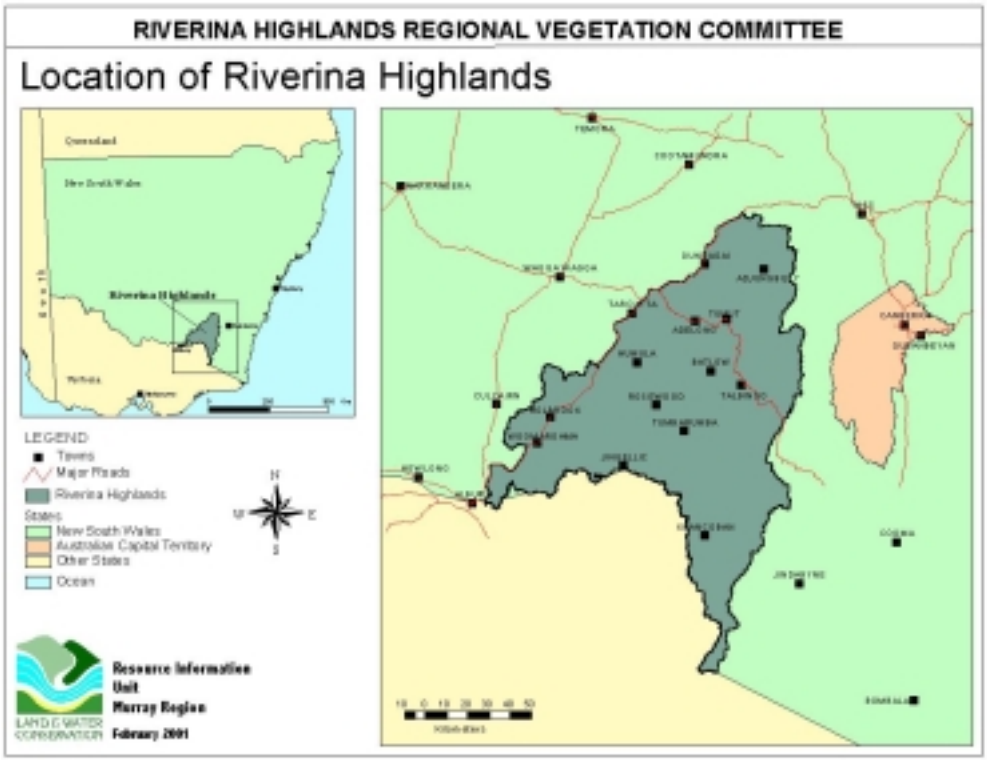
A1 Plan area

This Plan applies to the area shown in Figure 1 - the Riverina Highlands Native Vegetation Region. It includes land within the New South Wales local government areas of Tumut, Tumbarumba and Holbrook LGAsand those parts of Hume and Gundagai LGAsand Wagga Wagga City that lie east of the Hume Highway.

The Riverina Highlands region is bordered by the Hume Highway in the west, Kosciuszko National Park in the east, the Murrumbidgee River to the north and the Murray River to the south.

The Riverina Highlands Native Vegetation Region is an area of 1 366 200 ha. Almost 60% (802 600 ha) of this area is subject to the provisions of this Regional Vegetation Management Strategy (RVMS). The remaining 40% (563 600 ha) of the region is excluded under Section 9 of the *NVC ACT* (see Figure 1).

Figure 2: Riverina Highlands Native Vegetation Region within New South Wales



A2 Description of the region

The extent and health of the native vegetation in the Riverina Highlands region is vital to the health of the whole of the Murray and Murrumbidgee catchments. The current state of native vegetation in the region is a product of past landscape utilisation patterns and land management

practices. Fundamental to the maintenance of the extent and health of the region's native vegetation is the integration of native vegetation conservation and management best practice into sustainable farm and property management.

Under Section 27 (1) of the *NVC ACT*, there are several matters that must be considered in any RVMP. These are listed in Section B3 of this plan. The following Sections outline in more detail the regional setting and the way in which the plan has considered these matters.

A2.1 Historical perspective

The Wiradjuri and Walgalu people were and continue to be the custodians of their Country. The Wiradjuri inhabited the major part of the Riverina Highlands region; the Walgalu people inhabited the Country to the south-east. They harvested local plants and animals, were highly skilled at fire-stick farming[1], digging-stick farming and the construction of dams and fish traps in the region between the Murray and Murrumbidgee Rivers and their tributaries (C Grant, pers. comm.).

The use of the term "Country" is intended to reflect the Wiradjuri and Walgalu peoples' relationship with country that is an integral part of the way they perceive themselves. The capital "C" is intended to mean that country to the Wiradjuri and Walgalu people includes Wiradjuri Country, rather than the whole of Australia.

Traditional people see themselves as an integral part of the whole order of things. This perspective is reflected in the following Wiradjuri statement, "*Ngangaana-gu karrai billa's, dya karrai billa's durai, ngangaana ngindu*" or "look after the land and the rivers and the land and the rivers will look after you" (C Grant, pers. comm.). The Wiradjuri people regard themselves and all animals, plants and landscape features as belonging to the land[2]. Their survival depends on their relationship to, and knowledge of, their whole environment, and as custodians they are responsible for maintaining the health and balance of their lands, rivers, vegetation and all of their components (C Grant, pers. comm.).

The above section has been developed in consultation with, and endorsed by, both Wiradjuri Elders and non-Elders.

Hume and Hovell traversed the region in the spring and summer of 1824-25 and described the landscape as it was prior to European settlement. Hovell, on reaching the upper Murrumbidgee on 19 October, recounted "hills … covered with a beautiful coat of grass of an excellent quality" … "the timber [on the western] …side of the plain [is] better than … on the other [side]" made up of "…stringy bark, and a sort of box tree, together with Gum and Manna trees"[3]. "…grass superior to any… seen in the Colony [that looks like it is]…cultivated for grasses… [which] gives it a grand appearance…[as they]…not only contain a fine grass like English rye grass, but also wild clover".[4] Near the present Wee Jasper, he noted on 28 October , "…water in every direction

Table 1: Key events affecting native vegetation in the Riverina Highlands since 1800

Year	Event	Impact on Region
1824	Hume and Hovell traversed the region	First European presence in the region. Explorers saw opportunities for grazing and settlement due to the high quality timber and grasslands in the region [8].
1830s	Graziers arrive from Yass, Gunning and Limestone Plains districts	Pioneer graziers penetrated the mountains and forests to reach what was to become Tumbarumba. A slow influx of settlers saw the establishment of villages at Gundagai, Tumut, Adelong, Batlow (Reedy Flat), Holbrook and Tumbarumba.
1840s	Further exploration, occupation and settlement of the region	Vegetation clearing undertaken by teams of labourers until the second world war [9]. Major sheep and cattle stations were established. Emergence of cultivation to service established towns and smaller settlements.
1850s	Emergence of the Goldfields	Decade of rapid growth resulting from record land sales and marketing of produce (from cultivation and grazing) for miners and inter-colonial traffic. Towns like Tumbarumba were developed to service the mining community. The social, legal and administrative aspects of the region were established [10]. Native vegetation was cleared for crops and pastures and to obtain timber for fuel, and structural timber for housing, stabilising of mine shafts and fence posts [11]. Impacts on riparian vegetation. Gangs of Chinese were used to undertake clearing until the early 1900s after they finished in the mines [12].
1880s	Expansion of agriculture and rabbit plagues	Significant growth in the area's population and expansion of the agriculture industry. Rabbits had made it across the border from Victoria into NSW by 1884.
1890s - 1930s	Economic depression and drought	The depression of the 1930s had a similar impact to that of the late 1800s, including population decline. Record drought caused widespread devastation to the agriculture sector. Heavy infestations of rabbits, particularly on the rocky hills which caused extensive sheet erosion [13]. The timber industry continued to develop to provide materials for public utilities construction.
Early 1940s	War, boom in wool and manufacturing	Expansion of sheep grazing enterprises. Accelerated broad scale land clearing took place. Soldier settler scheme established to provide closer settlement leases to returned soldiers. The Government of the day promoted the use of exotic pastures and other species, changing the face of native vegetation as well as grazing enterprises. Rabbits became a major problem, primarily due to the lack of manpower during the war. 1930s and 1940s are termed the "erosion decades" which contributed to the emergence of the first wide-spread community concern about land degradation and the establishment of soil conservation agencies by State governments [14].
Late 1940s	Post war development of mechanisation	Fertilisers such as superphosphate first started to be applied and clover was used, increasing exotic pasture growth [15].
Early 1950s	Fire and reduced rabbit threat	Appearance of regrowth from clearing and particularly the 1952 fire in the hilly Stringybark country [16]. Introduction of myxomatosis virus controlled rabbits, and subsequently the use of poisons like 1080 have reduced the threat of the pest [17].
Mid 1950s – 1970s	NRM legislation, infrastructure and tourism development	Introduction of the EPAA in 1979 brought with it objectives relating to natural resource management and was a major initiator of environmental controls. Improvements to various towns' amenities and road systems. Tourism established and developed in Mt Koscuiszko area. Establishment of extensive pine plantations in higher rainfall areas such as Tumut and Tumbarumba districts [18]. The Softwoods Agreement was introduced in 1966, which marked an expansion in State Government pine plantations to provide a core resource for future industry expansion. Private pine plantations expanded in the late 1970s to early 1980s [19].
1980s	Economic recession, increase in tourism, environmental degradation	Drought and low commodity prices resulted in severe economic downturn in early 1980s. The wool price plummeted. Tourism emerged in the Mt Koscuiszko area. Overgrazing and over-clearing had led to fragmentation, loss of understorey species, soil erosion, and the spread of weeds, livestock disease and vermin. Increased interest in pine plantations as an alternative land use to sheep and cattle grazing, but these were mainly established on areas cleared of native vegetation [20].
Early 1990s	Further land use diversification, increased awareness about environmental issues and landscape impacts	Effects of over-clearing and over-grazing became evident in landscapes, with species loss (particularly woodland birds in the Lower Slopes), remnant vegetation declining in condition, soil erosion and salinity. Diversification into other more intensive land uses prevalent in the Lower Slopes and Plateau and Tablelands Sub-regions. Plantations were increasingly established on cleared land, and the clearing rate declined [21]. The decade of Landcare assisted in raising awareness about and involvement in sustainable natural resource management.
1995	Introduction of environmental legislation to reduce vegetation clearing	For the first time, comprehensive controls on the clearance of native vegetation on private land were introduced. SEPP 46 was introduced as an interim measure pending the *NVC ACT*. Further decline in the clearing rate [22].
1997	Native vegetation planning	*NVC ACT* was developed with substantial community consultation. A RVC for the Riverina Highlands was formed to develop a RVMP.
2000	Southern Regional Forest Agreement	Protection and management of forest ecosystems within National Parks and State Forests and associated reserves.

of the very best quality…[5], and after travelling for two days south-west "…timber laying upon the ground, and a sort of wild scrub, and the flats are a perfect quagmire occasioned by springs from the hills around, and which are the sources of the creeks which run so very strong…"[6].

An ecological survey of the vegetation of the south-eastern Riverina was completed by Moore in 1952. He found that , "many changes in the flora and in the composition and structure of the plant communities have been induced as a result of settlement of the region, which proceeded rapidly between 1829 and 1845 following the favourable reports of the early explorers. Unfortunately there are very few, if any, relict areas in which the original conditions have been preserved. Even in communities which do not provide useful timber, and in which there is not a sufficient depth of soil to warrant clearing for grazing or cultivation, the original shrub and herbaceous strata have been modified by fire and rabbits"[7].

Key events affecting native vegetation in the Riverina Highlands since 1800, are listed in **Table 1**

A2.2 Biophysical profile

A2.2.1 Bioregions that cover the Riverina Highlands region

A bioregion is defined as "a complex land area composed of a cluster of interacting ecosystems that are repeated in similar form throughout" [23]. The region is dissected by three bioregions - the South West Slopes (SWS), the South Eastern Highlands (SEH) and the Australian Alps (AA).

Australian Alps
The Australian Alps (AA) Bioregion (see Figure 3) covers 1% of NSW, is contained wholly within Koscuiszko National Park and includes alpine herb-fields, bogs, heath and woodlands [24]. Although the Australian Alps Bioregion is adequately reserved, it does represent a significant portion of the Riverina Highlands region. The bioregion supports the bulk of the sub-alpine vegetation in NSW [25]. Although grazing ceased in 1969 in the sub-alpine areas, the vegetation, consisting of woodland, grassland and shrublands, is still recovering from past grazing and soil erosion [26].

The main threats to the vegetation in this bioregion are increased visitation by tourists, expanding ski developments, the management of fire, [27] and climate change over the next century [28].

The provisions of the RHRVMP 2003 outlined in this Strategy do not cover National Parks (or State Forests and associated reserves) and therefore do not affect the Australian Alps Bioregion. However, the native vegetation of the Australian Alps Bioregion was considered in determining the status of broad vegetation types within the region as a whole.

South Eastern Highlands
The South Eastern Highlands (SEH) Bioregion (see Figure 3) covers approximately 8% of NSW. It extends along the Great Dividing Range from Bathurst in the north to near Melbourne in Victoria in the south. It includes undulating plateaus and steep dissected ranges [29].

Forty percent of the original pre-European vegetation cover remains in this bioregion. The native vegetation that has been cleared was mainly on the plateau for grazing [30]. The vegetation consists of eucalypt forests and woodlands, native grasslands and montane swamps [31]. Blakely's Red Gum, Yellow Box and other woodland species eg Apple Box and Long-leafed Box, are

widespread on areas with clay soils in valleys. However, little vegetation that occurred on this landform has been retained and isolated trees are affected by dieback and are not regenerating [32]. Forests of Stringybark, White Gum and Scribbly Gum grow on the less fertile siliceous ridges [33].

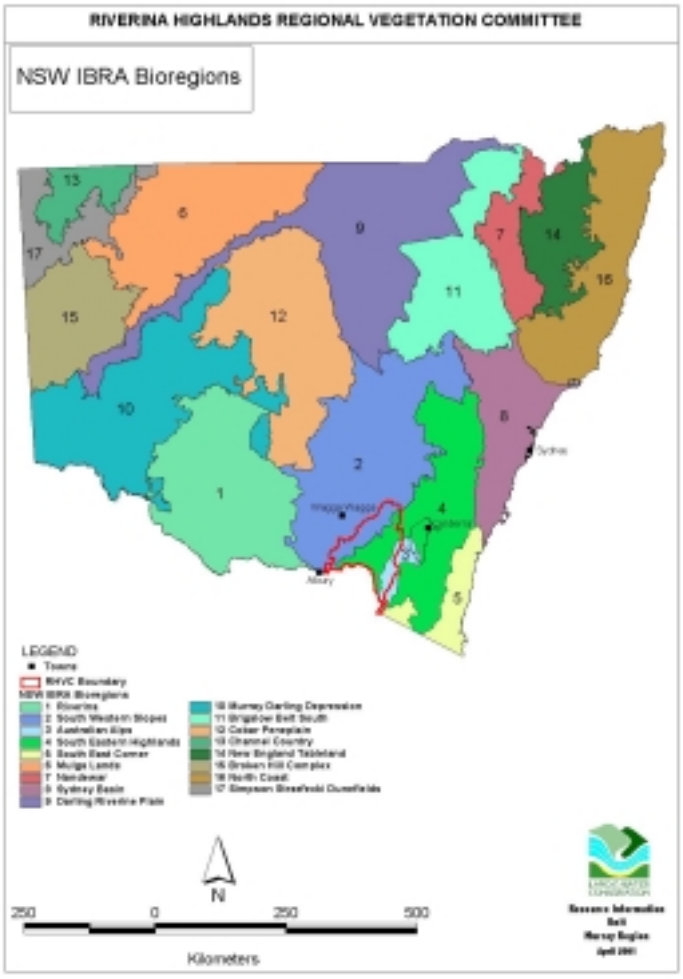
Total grazing pressure, invasive weeds, pasture improvement, acidification, salinity and peat mining are impacting on the health of the remaining ecosystems in this bioregion [34].

South West Slopes

The South West Slopes (SWS) Bioregion (see Figure 3) covers approximately one tenth of NSW and is among the most highly modified regions in Australia [35]. Of the 17 bioregions identified in NSW, the SWS Bioregion is the most extensively cleared, and only 1.25% is contained within conservation reserves. Between 85 and 90% of the vegetation has been removed, particularly the box-ironbark woodlands, much having been replaced with introduced pasture or crops [36]. Consequently, a recent study has found that the SWS contain the highest proportion of natural landscapes considered a priority for conservation in NSW [37].

The impacts of clearing have been further exacerbated by firewood cutting, total grazing pressure, and land degradation such as acidification and mobilised salts [38]. This bioregion contains the majority of incidents of dryland salinity in NSW (P Gibbons, pers. comm.).

Figure 3: NSW Bioregions and the Riverina Highlands region

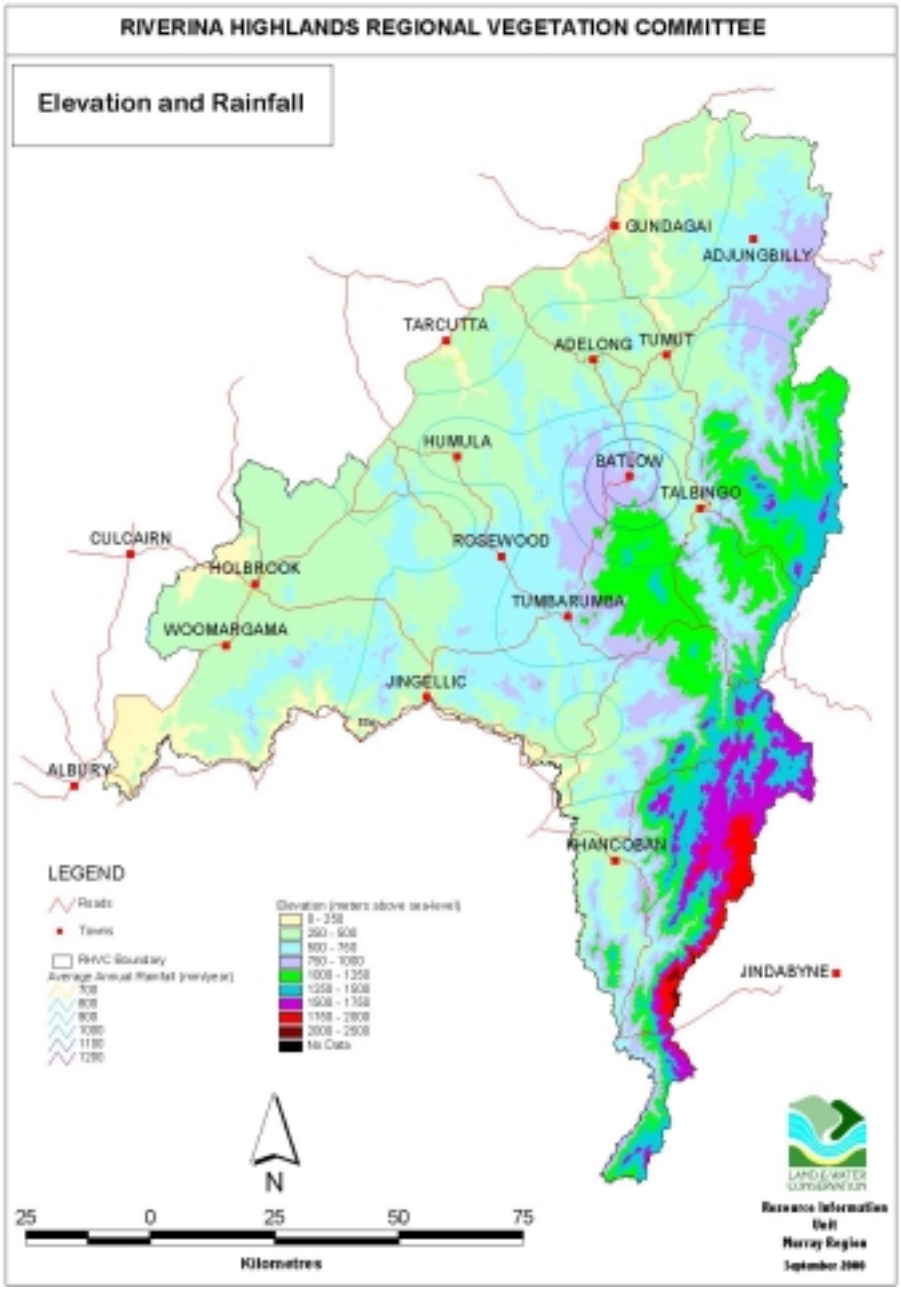


A2.2.2 Elevation and rainfall in the Riverina Highlands region

The Riverina Highlands region ranges in elevation between 150 metres (just east of Albury) and 2227 metres above sea level (the tallest peak, Mount Kosciuszko) (Figure 4).

The region's relatively high rainfall contributes to the catchment of both the Murray and Murrumbidgee Rivers and ranges from 700 mm in the west to 1200 mm in the east. Although the Riverina Highlands region is only approximately 2% of the entire Murray-Darling Basin, it contributes up to 25% of the water entering the Murray and Murrumbidgee Rivers.

Figure 4: Elevation and rainfall in the Riverina Highlands



It has been predicted that in the south-central region of NSW (which includes Dubbo, Griffith, Wagga and Albury) the effects of greenhouse gasses and global warming will be a reduction of inflows to the Murray-Darling River system, resulting in a reduction of economic output of agriculture in this region by up to 30%. Also predicted is a doubling of extremely wet autumns, and that winter days below zero degrees will decrease by 14-50% by 2050[39].

A2.2.3 Land-use in the Riverina Highlands region

The region has a range of land uses including agriculture, horticulture, viticulture, forestry and tourism and contains a diverse range of natural systems. The more traditional agricultural enterprises include a range of grazing and dry-land cropping enterprises.

The majority of sheep enterprises in the region are aimed at wool production or breeding programs for the production of prime lambs.

The majority of the region's grazing enterprises run cattle for meat production. Although historically the region was used for breeding premium quality store cattle, in recent years many producers have opted to fatten stock prior to sale [40]. Beef producers rely on good autumn and spring rain for necessary pasture growth.

A small dairy industry, located mainly on the Murray and Murrumbidgee Rivers and some of the creek systems, uses spray irrigation for crop and pasture production and supplies dairy processing factories located at Wagga Wagga and in northern Victoria [41].

Horticultural enterprises occur along the central to eastern belts of the region. They include orchards (blueberries, stone-fruit, apples, and pears), wine-grapes and, to a lesser extent, vegetables.

Batlow is one of the most important apple growing areas in Australia. The majority of apple plantings are found within 15 km of Batlow, with a smaller number around Tumbarumba [42]. Microjet or trickle irrigation systems irrigate mainly Red Delicious, Gala, Blackburn, Jonathon Gold and Pink Lady. The region now has the largest area of dessert peaches and nectarines in NSW [43]. In addition, the region supports several dryland orchards.

Lucerne and pasture hay is a major industry on the alluvial river and creek flats throughout the region [44]. Wheat is sometimes grown in rotation with pastures and occasionally other crops like canola, oats, barley and triticale.

Sown pastures account for nearly 15% of the pasture area, annual pasture 35%, improved pasture 45% and unimproved pasture 5%. Nearly half of the area of pasture established each year in the region is by direct drilling [45]. Improved perennial pasture has a role in reducing the impacts of land degradation, including the amelioration of soil acidification, erosion and dryland salinity [46].

Viticulture is another rapidly developing industry, especially in the Tumbarumba area. The cool climate favours the production of grapes for premium table and sparkling wines. It is estimated that 800 ha is currently under wine-grapes (V Ranken, pers. comm.).

Plantation forestry is the fastest growing land-use in the region, particularly in the Tumut and Tumbarumba areas. The Riverina Highlands region supports approximately 40% of NSW's softwood plantations and is amongst the fastest growing plantation forestry development regions in Australia. Softwood timber grown in the Tumut and Tumbarumba district increased from

10 000 ha of predominantly *Pinus radiata* plantations in 1960 to 132 500 ha in 2000 (91 000 ha in State Forests and 41 500 ha on private property) (B Gay, pers. comm.). This figure is expected to rise significantly by the year 2020 as a result of government initiatives. A further 30 000 ha is scheduled for establishment over the next ten years under an agreement between the NSW Government and Visy Industries, and further private establishment uptake is expected (D Cromarty, pers. comm.).

Large softwood processing facilities are located at Tumut, Tumbarumba and Holbrook, with a smaller facility at Humula. Paper mills are located in Albury and Tumut.

Private native forestry is also a significant land-use within the Riverina Highlands region, although variable in terms of output and the area it covers. Between 500 and 2000 cubic metres, covering an area of between 100 and 400 ha, is selectively thinned in the region each year (B Gay, pers. comm.).

The region also supports a range of tourism enterprises based on it's outstanding scenic attractions, including the Australian Alps. The Murray, Tumut and Murrumbidgee Rivers support a range of recreational industries and activities.

In order to better understand the interactions between land-use (modified systems) and native vegetation (natural systems), planning sub-regions have been identified by the RHRVC, which are detailed in the section below.

A2.2.4 Planning Sub-regions

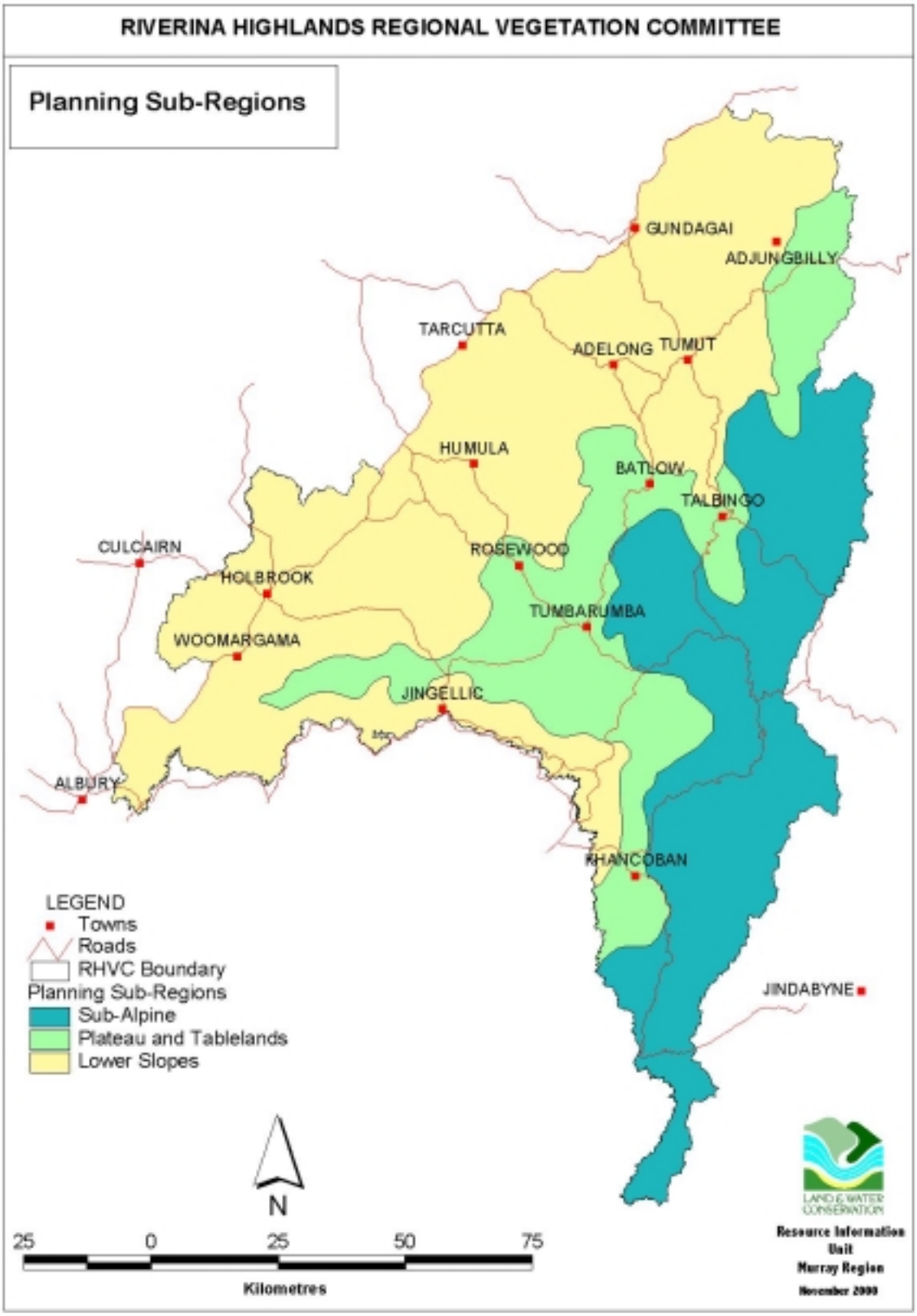
For the purpose of identifying areas with common land-uses, native vegetation and topography, the region has been broken down into three planning sub-regions by the RHRVC – the Sub-Alpine, Plateau and Tablelands, and Lower Slopes Sub-regions (see Figure 5). These divisions assist in gaining a better understanding of the threats and trends associated with native vegetation and its current condition throughout the whole region, and provided a basis for discussion and decision making in relation to the development of the Plan's provisions by the RHRVC.

Sub-Alpine Sub-region

The Sub-Alpine Sub-region comprises the eastern-most ranges, including Kosciuszko National Park. It covers 368 550 ha and represents 28 % of the region (Figure 5). Ninety percent is managed within National Parks and State Forest and associated reserves, and less than 10 % is affected by the provisions of this Plan.

The Sub-Alpine Sub-region lies between 1200 m and 2227 m elevation and the rainfall ranges between 850 mm and over 1200 mm (Figure 4). The soils are dominated by uniform-textured loamy soils, with other duplex soils commonly occurring [47]. The sub-region represents a significant portion of the upper catchment for the Murray-Darling Basin.

Figure 5: Planning Sub-regions in the Riverina Highlands



Broad vegetation types that characterise this sub-region include Snow Gum and Mountain Gum Communities, Narrow-leaved Peppermint and Mountain Gum Communities, and Alpine Ash Communities. Table 2 briefly describes the communities present in the subregion and highlights their status.

Table 2: Broad vegetation types in the Sub Alpine Sub-region -

Broad Vegetation Type	Description	Status in the Riverina Highlands
1. Snow Gum/ Mountain Gum Communities	Ranging from low Snow Gum Woodlands to tall open mixed forests in the valleys	Pre-1750 extent 179 922 ha; existing extent 150 036 ha (145 920 ha or 97 % managed within State Forest/National Park); 83 % retained.
2. Narrow-leaved Peppermint / Mountain Gum Communities	Medium to tall open forests, generally on the more well drained sites	Pre-1750 extent 217 584 ha; existing extent 136 557 ha (123 819 ha or 90% managed within State Forests/National Park); 63 % retained.
3. Alpine Ash Communities	Alpine Ash tall open forests sometimes associated with Mountain Gum or Peppermint Communities	Pre-1750 extent 68 458 ha; existing extent 63 519 ha (63 157 ha or 99% managed within State Forests/National Park); 93 % retained.

See Appendix 6 for the scientific names associated with each broad vegetation type in the region, and the ***Resource Guide*** for a more detailed breakdown of the forest ecosystems that occur within each broad vegetation type.

Much of the native vegetation that exists in this sub-region occurs in large contiguous tracts, rather than isolated remnants. The Sub-Alpine Sub-region has the only periglacial (region adjoining a glacier) areas left in Australia, a number of endemic flora and fauna, vegetation adapted to snowfall, and many significant wetlands and sphagnum bogs (B Gay, pers. comm).

The majority of the vegetation communities in this sub-region are adequately represented in National Parks and State Forests and associated reserves [48]. For example, over 90% of the Sub-alpine Sub-region is reserved within Kosciszko National Park. This sub-region also supports a biosphere reserve established under the IUCN (M Boak, pers. comm.).

The main factors influencing vegetation extent and quality in the Sub-Alpine Sub-region are fire, grazing and isolated clearing regimes [49]. With low temperatures (including frost and snow) and often highly dissected country, these areas were not cleared extensively for agriculture. Ninety percent is now managed by NPWS in National Parks, which excludes grazing and clearance practices (M Boak, pers. comm.).

Plateau and Tablelands Sub-region

This planning sub-region covers 282 160 ha or 21% of the Riverina Highlands region, and includes the Tumbarumba-Rosewood Plateau, Tooma Valley, and the townships of Batlow, Rosewood, Talbingo, Tumbarumba, and Khancoban (Figure 5).

Rainfall in the Plateau and Tablelands Sub-region reflects the altitudinal gradient, with precipitation ranging from 750 to 1200 mm, and elevation ranging from 500 m to 1200 m (Figure 4). Topography is generally undulating and includes steep and dissected lands. Soils are dominated by loamy uniform-textured soils, gradational textured red earths, and hard-setting red duplex soils [50].

This sub-region has some highly productive soils and landscapes supporting many high-value horticultural and agricultural enterprises. Forestry (softwood and hardwood) and associated wood products, is the major industry, particularly in mountainous country that is generally unsuitable for most grazing and cropping purposes[51]. It is also a major wool growing and cattle breeding area, and supports high value horticultural crops including stone fruit, blueberry and apple orchards, as well as a growing wine-grape industry.

A substantial proportion of native vegetation is retained on private property. The broad vegetation types in this sub-region are briefly described in table 3.

Table 3: Broad Vegetation Types in the Plateau and Tablelands Sub-region

Broad Vegetation Type	Description	Status in the Riverina Highlands
4. Peppermint / Stringybark/ Apple Box Communities	Includes medium open forests with generally high quality Stringybark associations	Pre-1750 extent 315 155 ha; existing extent 121 723 ha (71 475 ha or 59% managed within State Forest/National Park); 39% retained.
5. Dry Stringybark / Broad-leaved Peppermint Communities	Includes medium woodlands on drier ridges and slopes	Pre-1750 extent 170 502 ha; existing extent 85 007 ha (37 905 ha or 45% managed within State Forests/National Park); 50 % remaining.
6. Yellow Box / Blakely's Red Gum Woodlands NB: Mainly occurs in Lower Slopes Sub-region.	Includes medium woodland or forest associated with a number of other eucalypts eg Apple Box, Red Box or Stringybark. Generally on the more fertile flats or gentle slopes and on deep well drained soils	Pre-1750 extent 232 438 ha; existing extent 17210 ha (2 139 ha or 12% managed within State Forests/National Park); 7 % remaining.

Riparian vegetation types such as Mountain Swamp Gum/Black Sallee have not been mapped separately but are common in the region.

The broad vegetation types in this sub-region are generally well represented in reserves, with over 20% of the sub-region reserved within National Parks and State Forests. However, in the north and eastern range limits, clearing, land-use change and inappropriate management practices could be contributing to vegetation decline.

Lower Slopes Sub-region

The Lower Slopes sub-region covers 672 560 ha or 51% of the region, and includes the townships of Adelong, Gundagai, Holbrook, Humula, Jingellic, Tarcutta and Tumut (Figure 5).

This sub-region ranges in elevation from 150 m to 500 m and the average rainfall ranges from 675 mm to 1125 mm, gradually increasing along the west to east gradient (Figure 4). It covers an extensive area of foothills and isolated ranges of the lower inland slopes of the Great Dividing Range and extends through southern New South Wales to north-east Victoria [52]. It is characterised by the complex geology of the Lachlan Fold Belt and, in the west, by red-brown earths.

This sub-region has some of the most modified and degraded landscapes in the Riverina Highlands, due to extensive clearing of native vegetation and intensive agriculture over the past 100 years. The areas of low relief contain highly productive soils and landscapes; many of the hillslope areas have fragile, skeletal soils. Remnant vegetation exists in a fragmented landscape and, unlike the other planning sub-regions, the majority of native vegetation exists on private lands.

Today the Lower Slopes Sub-region supports predominantly traditional farming enterprises producing cereals, oil seeds, wool, prime lamb and beef. Although less than a third of the softwood plantations are located in this sub-region, it is of increasing importance. Future plantations will continue to be concentrated on substantially cleared lands.

Reserved areas include several new National Parks, Nature Reserves and sections of State Forests established as part of the Regional Forest Agreement (covering about 10% of the sub-region). The remainder of the native vegetation exists only as small remnant patches along roadsides, in travelling stock reserves and on steeper slopes of stony ridges on private land.

The broad vegetation types that characterise this sub-region are described in table 4.

Table 4: Broad Vegetation Types in the Lower Slopes Sub-region

Broad Vegetation Type	Description	Status in the Riverina Highlands
4. Peppermint / Stringybark/ Apple Box Communities NB: Mainly occurs in Plateau and Tablelands Sub-region	Includes medium open forests with generally high quality Stringybark associations	Pre-1750 extent 315 155 ha; existing extent 121 723 ha (71 475 ha or 59% managed within State Forest/National Park); 39 % retained.
5. Dry Stringybark / Broad-leaved Peppermint Communities	Includes medium woodlands on drier ridges and slopes	Pre-1750 extent 170 502 ha; existing extent 85 007 ha (37 905 ha or 45% managed within State Forests/National Park); 50 % remaining.
6. Yellow Box / Blakely's Red Gum Woodlands	Includes medium woodland or forest associated with a number of other eucalypts like Apple Box, Red Box or Stringybark generally on the more fertile flats or gentle slopes and generally on deep well drained soils	Pre-1750 extent 232 438 ha; existing extent 17 210 ha (2 139 ha or 12% managed within State Forests/National Park); 7 % remaining.
7. Ironbark / Stringybark / Red Box Communities	Includes medium woodland or forest on skeletal soils with varying proportions of Ironbark in the canopy	Pre-1750 extent 70 921 ha; existing extent 20 921 ha (3 941 ha or 19% managed within State Forests/National Park); 29 % remaining.
8. White Box / Stringybark Woodlands	Woodlands varying from White Box and occasional Blakely's Red Gum to mixed stands with Stringybark, Ironbark and Red Box, with grassy groundcover	Pre-1750 extent 142 105 ha; existing extent 11 889 ha (834 ha or 7% managed within State Forest/National Park); 8 % remaining.
9. Riparian Communities (River Red Gum and River Oak)**	Vegetation on the banks of the major streams and rivers that consists of River Red Gum and River Oak	Pre-1750 extent 33 203 ha; existing extent 2 309 ha (none present or managed within State Forest/National Park); 7 % remaining.

** Narrow or more isolated associations like Swamp Gum and/or Black Sallee have not been mapped separately.

Approximately 9% of native vegetation cover in this part of the region is contained within clumps of 1-5 trees on areas up to 0.1 ha, while a further 39% occurs in patches of up to 1ha [53].

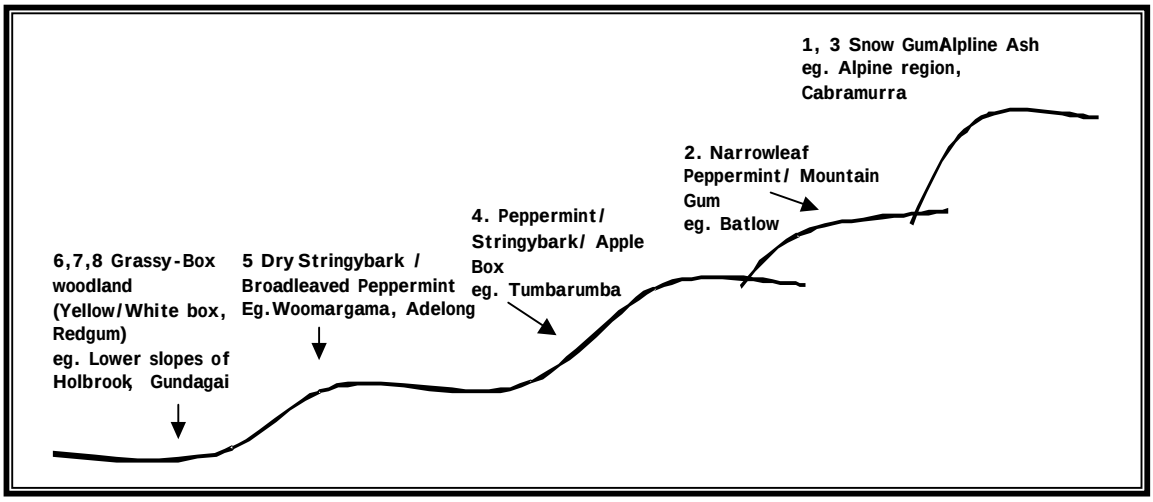
Where remnants do occur they are characterised by canopy species only, with little recruitment of young trees and no understorey. Native grasses and herbs are highly palatable and thus grazing and fertiliser use has resulted in the dominance of exotic understorey species. The impacts of pests, soil erosion, acidity, compaction, dry-land salinity and other factors continue to stress many of the trees that remain in the landscape [54].

Summary

This plan provides for the retention, protection/management and enhancement of native vegetation through both **advisory (Section A,B,C and E) and regulatory components. (*RHRVMP 2003* and Section D and appendix 7)**. Although the regulatory provisions of the Plan relate to specific management areas, the provisions for each reflect the characteristics and status and ultimately the conservation needs for each sub-region.

Figure 6 provides an east-west cross-section of the region in its entirety and illustrates the relative extent of the BVTs that occur in each sub-region.

Figure 6: West to east cross-section of the Riverina Highlands region



See Appendix 6 for the scientific names associated with each broad vegetation type in the region. A full list of the Comprehensive Regional Assessment (CRA) forest ecosystems that make up each of the broad vegetation types discussed above, which includes their relative 1800 and 2000 extent, and the types and levels of reservation for each, are contained in the ***Resource Guide*.** It provides detail on the percentage of retained vegetation, percentage in State Forests and National Parks and percent retained on private land for each forest ecosystem in the region.

Grasslands and grassy ecosystems and wetlands have not been included separately, but may occur in any of the broad vegetation types. Riparian communities other than River Red Gum / River Oak may also occur in the other broad vegetation types.

The next section details the species and communities that rely on the protection, management and enhancement of native vegetation in the region.

A2.2.5 Biodiversity in the Riverina Highlands

Wildlife habitat

The region supports a diverse range of native plants and animals reflecting the broad range of habitat types present. The distribution and abundance of fauna in the region has been extensively described elsewhere [55, 56, 57, 58].

Native wildlife is mostly dependent on the retained native vegetation for its habitat and therefore its survival. The type, condition and extent of remnant vegetation will determine the wildlife present in an area.

The larger, more intact, tracts of native vegetation usually contain more species and, generally, healthier populations of each species. Small, isolated remnants tend to contain fewer species, and those species' populations can suffer reduced fitness as a result of lack of breeding between populations.

Ecosystem function can also be affected by isolation and fragmentation. The problem of dieback in eucalypts is often used as an example of this. Dieback is the slow decline and death of large, old eucalypts in the farm landscape. It is thought that this is due in part to a lack of insect predators within paddock systems, thereby allowing the leaf and bark feeding insects to thrive on the high-nutrient value foliage that the tree produces in response to the high fertility of the soil[59] .

Small birds are a major controller of insects in woodlands [60] (up to 60%) and many species do not survive in remnants of less than 5 ha and without shrub cover. Small remnants are often dominated by large, aggressive species of bird eg Magpies, Eastern Rosellas and Grey Butcherbirds. The aggressive native honeyeater, the Noisy Miner, may be more abundant and will drive any small birds out. The larger bird species are unable to keep insect populations at low enough levels.

Some of the actions that can help retain healthy wildlife populations through appropriate habitat management include:

- Fence remnant vegetation and manage grazing to allow tree and shrub regrowth;
- Re-introduce local shrubs for farm woodlots;
- Retain sticks and logs under trees, where possible;
- Retain all large trees, where possible, alive or dead;
- Widen narrow habitats, eg green lanes and roadsides (most wildlife are more likely to utilise wide habitats; some honeyeaters for instance are seldom seen in roadsides less than 40 m wide);
- Maintain natural wetting and drying of wetlands;
- Minimise weeds, especially aggressive pasture species eg phalaris, barley grass, in remnants;
- Undertake regular fox, rabbit and feral cat control in remnants;
- Reduce superphosphate and chemical spray drift into remnants;
- Maintain existing vegetated strips or copses between remnants by fencing and managing grazing to allow regeneration; and
- Better understand wildlife, by watching and enjoying them [61].

Threatened Species and Communities

In December 2000, 46 species (28 animals and 18 plants) in the Riverina Highlands region were listed as threatened under the *Threatened Species Conservation Act 1995* [62]. Of these, 13 are found only in Kosciuszko National Park.

The *RHRVMP 2003* does not apply to National Parks, Nature Reserves or State Forests or areas declared as critical habitat under *the Threatened Species Conservation Act 1995*. Table 5 lists the threatened species considered in the RVMP.

Schedule 1 of the *RHRVMP 2003* lists the management requirements for these and other threatened species (recommended in Recovery Plans) in the Riverina Highlands region, and aims to guide the assessment of clearing applications undertaken by the Consent Authority. DSNR must not grant approval to the carrying out of any activity unless satisfied that it is consistent with these recommendations.

'Clearing of native vegetation' has recently been listed on Schedule 3 of the NSW *Threatened Species Conservation Act 1995* as a key threatening process, provided for under Part 2 of the Act.

Similarly, White Box/Yellow Box/Blakely's Red Gum Woodland has been listed as an endangered ecological community in Part 3 of Schedule 1 of the Act.

The population of Squirrel Gliders in the Wagga Wagga Local Government Area is listed as an endangered population, also in Schedule 1 of the TSC Act.

There is no critical habitat within the Riverina Highlands region at present.

The plant, Hoary Sunray (*Leucochrysum albicans* var. *tricolor)* and the ecological community, Grassy White Box Woodlands, are listed as threatened under the *Environmental Protection and Biodiversity Conservation Act 2000 (EPBCA)*.

In addition, a recommendation to list the *Aquatic Community of the lower Murray River Drainage* as an endangered ecological community (under the *Fisheries Management Act 1994*) is currently being considered by the Fisheries Scientific Committee.

The NSW NPWS booklet titled *Threatened Species of South-Eastern NSW: Riverina Highlands* provides more information on each of these species and the conservation actions necessary for their recovery[63] .

The Riverina Highlands RVC addresses the needs of these species in the advisory sections of this Strategy (**Section A, B, C and E)** and regulatory mechanisms (***RHRVMP 2003*** **and Section D** of the document).

The next section details the soil and water resources that must be conserved, managed and enhanced in order to ameliorate the effects of land degradation.

Table 5: Threatened species in the Riverina Highlands

Common Name	Scientific Name	Status	Subregion		
			Sub-Alpine	Plateau & Tablelands	Lower Slopes
Birds					
Barking Owl	*Ninox connivens*	V			✔
Black-chinned Honeyeater	*Melithreptus gularis gularis*	V			✔
Blue-billed Duck	*Oxyura australis*	V			✔
Brown Treecreeper	*Climacteris picumnus vitoriae*	V			✔
Bush Stone-curlew	*Burhinus grallarius*	E			✔
Diamond Firetail	*Stagonopleura guttata*	V			✔
Grey-crowned Babbler	*Pomatostomus temporalis temp.*	V*			✔
Hooded Robin	*Melanodryas cucullate cucullate*	V			✔
Olive Whistler	*Pachycephala olivacea*	V	✔	✔	
Painted Honeyeater	*Grantiella picta*	V			✔
Pink Robin	*Petroica rodingaster*	V	✔	✔	
Powerful Owl	*Ninox strenua*	V	✔	✔	
Regent Honeyeater	*Xanthomyza phrygia*	E		✔	✔
Speckled Warbler	*Pyrrholaemus sagittate*	V			✔
Square-tailed Kite	*Lophoictinia isura*	V		✔	✔
Superb Parrot	*Polytelis swainsonii*	V*		✔	✔
Swift Parrot	*Lathamus discolor*	E*		✔	✔
Turquoise Parrot	*Neophema pulchella*	V		✔	✔
Mammals					
Broad-tooth Rat	*Mastacomys fuscus*	V	✔		
Brush-tailed Phascogale	*Phascogale tapoatafa*	V		✔	✔
Greater Broad-nosed Bat	*Scoteanax ruppelli*	V			✔
Koala	*Phascolarctos cinereus*	V			✔
Common Bent-wing Bat	*Miniopterus schreibersii*	V	✔	✔	
Squirrel Glider	*Petaurus norfolcensis*	V		✔	✔
Tiger Quoll	*Dasyurus maculatus*	V	✔	✔	
Yellow-bellied Glider	*Petaurus australis*	V	✔		
Reptiles					
Little Whip Snake	*Suta flagellum*	V		✔	✔
Pink-tailed Worm Lizard	*Aprasia parapulchella*	V*		✔	✔
Striped Legless Lizard	*Delma impar*	V*		✔	✔
Amphibians					
Booroolong Frog	*Litoria booroolongensis*	E*	✔	✔	✔
Northern Corroboree Frog	*Pseudophryne pengilleyi*	V*	✔		
Southern Bell Frog	*Litoria raniformis*	E			✔
Insects					
Golden Sun Moth	*Synemon planas*	E			✔
Forbs					
Yass Daisy	*Ammobium craspedioides*	V*		✔	✔
Austral Pillwort	*Pilularia novae- hollandiae*	E			✔
Shrubs					
Cotoneaster Pomaderris	*Pomaderris cotoneaster*	E*	✔		
Phantom Wattle	*Acacia phasmoides*	V*		✔	✔
Woolly Ragwort	*Senecio garlandii*	V*			✔
Tumut Grevillea	*Grevillea wilkinsonii*	E*		✔	

E- endangered species under the Threatened Species Conservation Act 1995
V- vulnerable species under the Threatened Species Conservation Act 1995
*Also endangered or vulnerable nationally under Commonwealth listings

A2.2.6 Soil and water resources

Many land degradation problems in the region have arisen from the clearing and subsequent decline of native vegetation. These problems include decreased agricultural production from dry-land salinity and rising water tables, degraded and depleted riparian areas, soil acidification and erosion, and increased infestations of pest plants and animals.

The Murray and Murrumbidgee Catchment Management Blueprints have specific targets that relate to water quality and soil health, and for native vegetation (biodiversity). It must be emphasised that the targets are inter-related and that retaining and restoring native vegetation can result in significant gains for soil health and water quality.

Salinity

Salinity is the presence of salt in the land surface, in soil or rocks, or dissolved in water in rivers or groundwater [64]. Salinity can develop naturally as there is salt in many parts of the landscape. As rocks containing salts are weathered, salt is released into the environment.

Salinity often occurs with other soil and water resource problems such as soil degradation, soil erosion and dieback of native vegetation [65]. Dryland salinity occurs where removal of deep rooted native vegetation, and its subsequent replacement with crops and pastures that have shallower root systems and different water use requirements, result in more water, or 'recharge', than usual reaching the groundwater system [66].

Recharge is the proportion of rainfall or river flow that percolates down through the soil and rock formations to reach the groundwater system [67]. Recharge areas are the zones in which this percolation takes place. The Lower Slopes and Plateau and Tablelands are thought to be the areas most affected by dryland salinity. These areas also contribute significantly to recharge [68].

The impacts of waterlogging and salinisation include reduced plant vigour, changes in native vegetation composition, death of salt intolerant native plants and crops, and the development of bare patches of earth known as salt scalds [69]. These problems are further exacerbated by erosion and the wash of salt into rivers. Salinity has the potential to contribute to the degradation of natural habitats and create further risk to the viability of plant and animal communities and vulnerable species [70].

Degraded and depleted riparian and wetland areas

The ***riparian zone*** includes any land that adjoins, directly influences, or is influenced by a body of water, including land immediately alongside small creeks and rivers. These include banks, gullies and dips that sometimes run with surface water, areas surrounding lakes, and wetlands that interact with a river in times of flood. Riparian vegetation minimises soil losses to waterways. It provides habitat for native fish, and important habitat corridors through which wildlife moves and disperses.

River Red Gum / River Oak are the only riparian communities separately mapped in the CRA Assessment, and are therefore listed as a separate broad vegetation type. In each of the other broad vegetation types it should be recognised that there is a component of riparian vegetation.

Riparian areas are often highly productive due to the rich alluvial soils and higher moisture availability. This is reflected in the types of native vegetation that grows there, and the level of clearing for agriculture that has taken place.

This significant reduction in vegetation cover in the riparian zone and wetlands has broad-reaching implications for biodiversity, the spread of weeds, water quality, soil erosion, river flows, stock management and fish stocks throughout the Murray and Murrumbidgee catchments.

Soil acidification

Increasing soil acidity is having a significant and detrimental impact on agricultural production in the region. In NSW alone, production losses due to acid soils are estimated at $90 million per year [71]. Soil acidity is a useful measure of general soil health. As soils become more acidic growth of sensitive species deteriorates. In sensitive species, root development will be reduced, minimising the potential for water utilisation and increasing the opportunity for nitrate leaching and also salinisation. Where acid soils are present the availability of some nutrients to deep-rooted perennial species such as lucerne is restricted, thereby reducing the potential of perennial pastures to lower the groundwater level.

Clearing of native vegetation and its replacement with crops and pastures has accelerated topsoil acidification over the past 200 years [72]. In the past 50 years we have seen a significant change in soil pH (the measure of soil acidity) due to a greater use of legumes. Most of the agriculturally productive land in the Murray Catchment is affected or at risk of being affected by the acidification process. In the higher rainfall zone many soils are naturally acidic, and this has negatively impacted on agricultural production and plant water-use in these areas [73].

Extension agencies have made significant efforts to demonstrate the benefits of perennial native vegetation, perennial pasture species, appropriate timing of application and selection of fertilisers, and the use of ameliorants such as lime. The combination of these and other management strategies will contribute to at least maintaining current pH levels, and over time the improvement of topsoil acidity (B Upjohn, pers. comm.). The long term soil health targets for the Murray and Murrumbidgee Blueprints aim at increasing topsoil pH and preventing subsoil pH from declining. In soils where topsoil pH is becoming increasingly acidic, there is considerable risk that subsoil pH will also fall, with very few viable management options available to reverse it (B Upjohn, pers. comm.).

Plant and animal pests

A number of plant and animal pests in the region pose a significant threat to native vegetation. The ***Resource Guide*** provides further information on these.

Blackberry is common in higher rainfall areas (700 mm +). Plants infest the understorey of remnant native vegetation and out-compete native species, particularly in disturbed areas. St John's Wort poses a serious threat to native vegetation, especially in grassy areas. Phalaris is also a common roadside weed, aggressively competing with native grasses and forbs.

Woody weeds such as Pine wildlings, Willows, Cotoneaster, Tree-of-Heaven and Hawthorn are an increasing problem, especially in grassy woodland remnants.

Despite the introduction of myxomatosis in the early 1950s and the subsequent use of 1080, rabbits continue to infest grazing areas as well as remnant native vegetation. Foxes, wild dogs and feral cats are a threat to small animals and birds, especially ground dwelling birds such as the Bush-stone Curlew. Other significant pest animals such as pigs, brumbies, deer and goats pose a direct threat to native vegetation in the region.

Pest animals and plants are all difficult to control and such impediments are a major problem to native vegetation management in the region.

A2.2.7 Cultural resources

The management of native vegetation, soil and water resources includes consideration of archaeologically, geologically and anthropologically sensitive or significant areas of land (to both Indigenous and non-Indigenous people) as they relate to native vegetation.

Indigenous cultural resources

Disturbance to native vegetation has impacted on the numerous Wiradjuri and Walgalu cultural heritage sites that exist throughout their respective Countries. The range of cultural sites and places that occur within the region include (but are not limited to):

- Story sites (natural features including mountains and waterholes);
- Native species of plant and/or animal used as weapons, tools, shelter, toys, implements, food, fibre, medicine, and/or other economic purposes;
- Scarred and carved ceremonial trees;
- Habitation or "living" (*murranginga* – living in Wiradjuri language) sites (shell middens, rock shelters, open campsites);
- Scarred trees (for canoes, coolamons and artefacts);
- Art sites (rock art, carved trees);
- Quarries and axe grinding grooves;
- Ceremonial grounds (bora grounds);
- Stone arrangements (weirs, fish traps, eel traps);
- Engravings on stone;
- Burial sites;
- Missions, reserves and gathering places; and
- Special places of high significance.

The majority of these sites that do remain intact have done so due to the protection of native vegetation from clearing, fire, over-grazing and/or changed management regimes.

Wiradjuri Site Profiles contained within the ***Resource Guide*** describe each of these kinds of sites.

This plan provides for the conservation, management and enhancement of native vegetation associated with plants, places and sites of significance to both the Wiradjuri and Walgalu people in the following ways:

- It aims to raise awareness of the cultural heritage of all people involved in native vegetation management including the knowledge and importance of Wiradjuri and Walgalu people, their values, and their role in natural resource management.

- The regulatory provisions of this plan permit for the collection of native plant species by Indigenous people to allow the continuation of cultural practices for tools, implements, food, fibre, medicine and/or other non-commercial purposes, in all management areas.

- The regulatory provisions also highlight matters that the Consent Authority must consider for all clearing applications. They outline specific requirements for appropriate consultation where places, plants and/or sites of cultural heritage significance have been or have the potential to be identified.

- This plan recommends extra financial incentives to landholders and land managers for the protection, management and enhancement of sites of cultural heritage significance across all management areas.

Both the ***RHRVMP 2003, RHRVMS*** and the ***Resource Guide*** have been prepared in consultation and cooperation with the region's Indigenous custodians – the Wiradjuri and Walgalu people. It is hoped that this plan will both clarify and strengthen their role in native vegetation conservation management in the Riverina Highlands region.

Non-Indigenous cultural resources

Since the early 1820s the major impact on the vegetation of the Riverina Highlands has been a process of modifying the landscape to give a European appearance. Buildings, gardens, avenues and exotic trees represent elements of a European cultural heritage that are part of a significant time in the history of the region (G Martin, pers. comm.).

Strong links exist between families and communities, homestead sites, avenues and single exotic and native trees that exist both as remnants and townscapes. The cultural significance of these sites, as they relate to native vegetation, should be considered when applications for clearing are examined.

A2.3 Social and economic profile

This plan recognises that the conservation and management of native vegetation must meet the economic and social needs of the region. Increasingly, land and natural resource management must contribute to a 'triple bottom line' of favourable environmental, social and economic outcomes. This profile provides a context for planning and assessment of clearing applications and Property Vegetation Plans on a regional basis.

The total population for the Riverina Highlands region in 1996 was approximately 70 000 persons [74]. Over 60% of the regional population live in urban centres. The region has experienced population growth over the last decade, however, this has been driven by population increases in the regional centres, particularly Albury (outside the region to the south-west), and to a lesser degree Tumut and Holbrook. Tumbarumba has experienced a continued decline in population over the last decade. Most communities in the region are characterised by a significant ageing population [75].

Employment in the region covers a range of sectors including agriculture, horticulture, viticulture, retail trade and manufacturing. The majority of households in the region are on low (<$300) and middle ($300 - $999) weekly incomes [76]. Several industries contribute significantly to the regional economy including forestry, tourism, agriculture, viticulture, orchards and the manufacturing and retail sector.

Total employment is said to be growing steadily – particularly due to the multiplier effects associated with forestry. For example, over 1400 people are directly employed in the various forestry and forest products sectors. Those employed in forest-growing amount to 216, while those employed in harvesting and processing amount to 201 and 1133 respectively. Employment multipliers of between 2.0 and 2.5 are generally applied to figures of this type, which means that approximately 3357 full- time equivalent jobs are dependent on the forestry and forest products industries in the region. The total might be higher, as a multiplier of 3.0 is commonly used to estimate the number of people dependent on the industry, including unemployed dependants.

Forest products is the major industry in the Riverina Highlands with approximately $350 million worth of products being grown and processed in the region. This is likely to increase to approximately $540 million with the commissioning of the VISY Pulp and Paper Mill at Tumut (D Cromarty, pers. comm.).

Tourism is emerging as a significant industry in the Riverina Highlands region. The Hume Highway represents a major service corridor providing, together with adjacent areas a wide range of tourist facilities.

Total value of the agricultural industry from the Riverina Highlands region was approximately $68 million for the year 2000 (B Upjohn, pers. comm.). The beef cattle industry was worth about $37 million to the region in 2000; sheep and lambs slaughtered were valued at approximately $6 million. The wool industry in the Riverina Highlands is valued at $25 million. The dairy industry situated on the Murray River also contributes a significant amount to the region's economy.

Approximately 40 farms support viticulture in the region. These cover 800 ha and produced 5000 tonnes of wine-grapes in 2000 (V. Ranken, pers. comm.). Total value of the viticulture industry is estimated to be approximately $12 million (V Ranken, pers. comm.).

Two reports commissioned to analyse the impacts of the Riverina Highlands RVMP on socio-economic issues are available in the *Background Papers* [77, 78].

A3 Legislative profile

Under the *NVC ACT* the RVMP must make provision, consistent with the objects of this Act, for at least the same level of protection and conservation in relation to native vegetation as that provided by an ***environmental planning instrument*** or ***recovery plan***. The key issue in considering any of these documents is whether it has provisions with respect to native vegetation. Such provisions could include restrictions to clearing, management requirements, preservation orders or the like.

Table 6 outlines legislation considered by the Regional Vegetation Committee in the development of the *RHRVMP 2003*.

Table 6: Legislation, environmental planning instruments and other planning tools considered in plan development (as at October 2002).

What has been considered?	Purpose	How is it considered in the Plan/Strategy?
Legislation		
Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)	To intervene on "matters of ***National Environmental Significance***".	Plan refers proposals with potentially significant impacts on matters of ***national environmental significance*** to the Commonwealth Environment Minister for determination as to whether they require EPBC ACT approval. ***High conservation value*** criteria trigger all relevant EPBC ACT matters (including consideration of recovery plans, threat abatement plans, listing provisions).
Environmental Planning and Assessment Act 1979 (NSW)	Sets up a hierarchy for ***Environmental Planning Instruments*** across NSW	The Plan provides at least the same level of ***protection*** as the ***Environmental Planning Instruments.***
Native Vegetation Conservation Act 1997 (NSW)	Aims to protect ***native vegetation***	It sets up a ***Regional Vegetation Committee*** (RVC) and describes how to prepare a Plan.
Threatened Species Conservation Act 1995 (NSW)	To protect endangered species, populations, ecological communities and ***vulnerable species*** to promote their recovery Threatened Species ***Recovery Plans*** which aim to protect and recover threatened plant and animal species and populations	The Plan provides at least the same level of ***protection.***
Fisheries Management Act 1994 (NSW)	To protect endangered species, populations, ecological communities and ***vulnerable species*** to promote their recovery	The Plan provides at least the same level of ***protection*** and provides links to River Management Plans.
NSW National Parks and Wildlife Act 1974 (NSW)	It identifies and protects 'relics' of Indigenous cultural heritage significance	The Plan provides at least the same level of ***protection.***
Rural Fires Act 1997 (NSW) *State Emergency and Rescue Management Act 1989*	To protect Shire residents from bushfires Tumbarumba, Tumut, Gundagai, Holbrook, Hume and Wagga Wagga Bushfire Risk Management Plans which aim to protect Shire residents from bushfires	The Strategy provides guidance to Bushfire Management Committees.

Catchment Management Act 1989 (NSW) *- Catchment Management Regulation 1999*	To prepare Catchment Blueprints, undertake ***community*** education and consultation, and provide strategic investment advice. Murray and Murrumbidgee Catchment Blueprints	The RVC has worked with Catchment Management Boards to ensure the Plan/Strategy is consistent with the aims of Catchment Blueprints in relation to ***native vegetation*** and salinity issues and in achieving catchment and management targets.
Plantations and Reafforestation Act 2000 (NSW) *- Plantations and Reafforestation (Code) Regulation 2000*	To streamline plantation development.	The RVC has been consulted in the development of an Interim Regional Vegetation Schedule (RVS) to complement the provisions of the Plan.
Rural Lands Protection Act 1998 *- Rural Lands Protection Regulation 1995*	To provide guidelines for pest animal and stock disease control and management of reserves	The RVC considered the responsibilities of landholders to comply with this Act in the area of pest control and stock fodder.
Noxious Weeds Act 1993 *- Noxious Weeds Regulation 1993*	To declare noxious weeds, specify control measures and responsibilites for control	The RVC considered the responsibilities of landholders to comply with this Act.
Environmental planning instruments		
Alpine Region Strategy	To conserve and manage the natural environment, enhance the quality of life for residents and to stimulate and diversify the economy.	The Plan is consistent with the aims of this strategy.
State Environmental Planning Policy (SEPP) No. 44 – Koala Habitat Protection	To protect koala habitat	The Plan provides at least the same level of ***protection***.
Murray Regional Environmental Plan (REP)	To manage the development of the Murray Floodplain below Hume Dam	
Draft Hume Local Environmental Plan (LEP) 2000	Guides land-use within a local government area	
Wagga Wagga Urban / Rural LEP 1991		
Tumut, Draft Holbrook, Gundagai, Tumbarumba LEPs		
Other planning tools		
Wagga Wagga, Holbrook, Tumut Roadside Management Plan	To assess roadside vegetation for its ***conservation*** significance and to recommend appropriate management regimes.	The Plan gives recognition to the assessment ratings assigned to roadsides.
Hume, Gundagai, Wagga Wagga RLPB Assessment	To assess TSRs for their ***conservation*** significance and to recommend appropriate management regimes.	The Plan gives recognition to the assessment ratings assigned to TSRs.

A4 Values of native vegetation

Native vegetation is a natural resource that is essential to the maintenance of catchment and landscape health. In general, remnant vegetation and its associated fauna in the Riverina Highlands region is facing decline in quality and quantity due to past and present landscape utilisation practices and patterns (as described in Table 1). Remnant vegetation, however, is vital if the natural balance of functioning systems is to be revived and sustained across rural landscapes [79].

The economic problem in relation to native vegetation is how to best utilise the limited supply of land containing native vegetation to maximise community well-being [80]. Choices range from retaining and actively managing native vegetation for its conservation values at one end of the spectrum, to clearing it for agricultural production or some other form of development at the other [81]. Native vegetation generally confers economic values (or benefits) on other members of the community as well as the landholder, so decisions by landholders regarding the management of their native vegetation also have impacts (costs and benefits) on the community as a whole.

Native vegetation is a valuable asset at both a landscape and a property scale for many reasons. It may contribute to community well-being through direct physical uses such as forestry and recreation, and indirect uses such as the "common good" benefits derived from the ecological / life-support functions of the provision of clean air, water and other resources [82,83].

A study undertaken in the Walcha Tablelands, Moree Plains and Nymboida coastal slopes has revealed that if all the remaining native vegetation were retained by landholders, there would be no net costs to 65% of them [84].

Some of the values associated with the direct use of native vegetation of benefit to the landholder, adjoining property owners and in some instances the broader community include:

- Benefits for adjoining crops, adjoining pasture growth, and livestock production;
  - A study undertaken near Gunnedah, found that the gross value of pasture output was at its highest level when the proportion of tree area across the farm was around 34% [85].
  - Increased crop, pasture and livestock production by up to 30% due to shelter and shade provided by native vegetation which includes trees and an understorey of shrubs and/or groundcover [86].

- Increased agriculture production resulting from both on-site and off-site land degradation control;
  - A recent study has shown that for participants in the Murray Catchment, 82% were gaining a net economic benefit from retaining their remnant native vegetation on-farm [87].
  - In the southwest of NSW alone, salinity is estimated to cause $9 million of damage annually to roads and highways [88].

- Habitat for animals that help control pests;
  - The tree layer in native vegetation remnants provides shelter, nesting hollows and food. A 10 ha remnant with healthy shrubs and native grasses will contain 20-30 mostly small insect-eating bird species, whereas a remnant of similar size with no tree or shrub understorey, and mostly pasture grasses, will contain less than 10 larger aggressive bird species (such as the Magpie and the Noisy Miner) [89].
  - Native birds control around 60% of the insect predators on trees in healthy woodlands.
  - A sugar glider can eat 25 Christmas Beetles a day [90].
  - For every 10 % increase in tree cover, bird diversity increases by 7 %. At the same time, exotic birds decrease by 21 % [91].
  - Where more than 80 % of farm trees are local native species, the diversity of woodland-dependent birds is 43% greater [92].
  - Total bird diversity is greater in farm sites containing leaf litter, particularly when the litter is present in dense clumps [93].
  - Noisy Miners are 78% less likely to occur in sites where understorey shrubs are present [94].

Seed collection:

- Approximately 50 kg of seed is collected per year from native plants in the Riverina Highlands region by Greening Australia seedbank coordinators. The subsidised value of this seed is roughly $250 / kg or $12 500; the real value or costs of collecting, storing and making the seed available is estimated to be closer to $800 / kg or $40 000 (E Willinck, pers. comm.).

Other values include:

- Timber for firewood, fencing and brushwood;
- Forestry;
- Eucalyptus leaf cutting;
- Food;
  - Thirty species of native plants alone were a viable food source for the Wiradjuri people, the original custodians of the Riverina Highlands [97].
- Honey and beeswax production;
- Tourism and recreation;
- Research, education and monitoring;
- Aesthetics for landholder's property, adjoining properties and the region;
- Medicinal and perfume resources;
- Wildflowers and native plants; and
- Other, minor uses.

Indirect values include functional benefits derived from a reliance on natural ecosystems for life-support functions (or ecosystem services) through the provision of clean water, air (through carbon sequestration) and other natural resources and the conservation of biodiversity [95].

For example, although the Upper Murray area comprises approximately 1% of the entire Murray River Basin, it contributes up to 37% of the annual water load to the Murray River and thus has potential to contribute significant nutrient and sediment loads to the river [96].

After clearing, carbon is released from a site for a 20 year period, which results in around 180 tonnes of carbon dioxide being released from each cleared hectare of land [97]. Adopting the most conservative of the estimates reported by the Australian Greenhouse Office of $10 per tonne of carbon dioxide, the benefit value of not clearing is $1800 per hectare [98].

As a result of clearing, grazing and introduced weeds and pests, 28 animal species and 17 plant species are currently threatened with extinction in the region [99].

There are two parts to halting the decline of native vegetation. Firstly, the decline must be halted or 'no net loss' must be achieved, which involves conserving and managing what is left. Secondly, the decline must be reversed or a 'net gain' must be achieved which involves re-establishing native vegetation in priority areas.

A bibliography is included at the end of this document for further reading on native vegetation.

A5 Native vegetation in the Riverina Highlands: threats, trends and vision for 2050

A5.1 Threats and trends

Over half of the Riverina Highlands region has been cleared since European settlement. The modelled native vegetation of 1800 (shown in Figure 7) is intended to provide some baseline data that tells us how much of each vegetation type has been cleared and also what species can be recommended for revegetation in different parts of the region.

There are many continuing threats to the native vegetation in the region; these put at risk the landscape, ecological and economic benefits that the region provides. Figure 8 illustrates the extent of each broad vegetation type that occurs in the Riverina Highlands region today.

There remains some pressure to clear native vegetation, principally for the establishment of plantations, but also for a range of other land uses such as pasture, cropping and horticulture. Clearing approvals for the year 2000 were predominantly for willow removal and to a lesser extent for establishement of pine plantations (DSNR database of clearing reports available at http://www.dlwc.nsw.gov.au/care/veg/clearing.html).

Even without intentional clearing, many areas of native vegetation remnants, including scattered paddock trees, are declining in value due to gradual degradation caused by factors such as:

- inappropriate grazing regimes (overgrazing);
- senescence;
- elimination of palatable understorey species;
- application or drift of fertiliser favouring exotic species such as pasture plants and weeds ;
- spread of weeds and introduced plants;
- unsustainable logging that impacts on the availability of large habitat trees required by nesting birds and mammals;
- inappropriate fire regimes – too frequent burning or not enough burning – may also threaten the long-term sustainability of native vegetation.

Ultimately, many woodland remnants become ‘simplified’ ecosystems - a stand of trees with no native shrubs or understorey. The rise of saline water tables may threaten the health of ecosystems in the long term.

Threats to native vegetation can be reduced by:

- Preventing inappropriate clearing; and
- Retaining, protecting , managing and enhancing the native vegetation that remains.

Failure to address these issues in the long term will lead to escalations in biodiversity loss and land degradation issues, especially in the lower slopes. Studies have already confirmed the regional extinction of a number of woodland birds in the wheat/sheep belt that were thought to be common in relatively recent times [100].

Dieback and senescence of paddock trees, coupled with a lack of recruitment, will progressively diminish the ecosystem services provided by this resource, such as interception and use of water, recycling of nutrients leached beyond the pasture root zone, shelter for stock and habitat for a number of species [101].

Adoption of a 'do nothing'stance for native vegetation management in this region would impact on production and reduce the ability to compete in the market place in both the short and long term.

A5.2 A vision for a regional native vegetation network for 2050

Achieving the aims and objectives of the plan is very much dependent on maintaining or enhancing a vegetation network on a regional scale to a point where biodiversity and natural systems are sustainable. This requires working towards both short term eg 10 years, and long term eg 50 years, goals or targets. The principles of biodiversity conservation suggest that this can only be achieved by maintaining:

- the full range of vegetation types,
- the variability of vegetation types within each region, and
- enough of each vegetation community to protect fauna and flora populations, species and vegetation communities in the long term.

The government's "NSW Biodiversity Strategy" holds that the conservation of biological diversity and ecosystem integrity must involve the design and creation of a regional scale conservation network incorporating public and privately managed lands.

The implications of this vary for different sub-regions of the Riverina Highlands, which range from almost total native vegetation cover and reservation in the Sub-Alpine area to a cleared, and predominantly agricultural landscape, in the Lower Slopes. A sustainable vegetation network in the Lower Slopes would be dependent on no further clearing in this sub-region, and restoration on a large scale and over long time frames.

The NVAC Background paper on the "Ecological Role of Native Vegetation" emphasises the need to recognise, in regional vegetation planning, the critical thresholds beyond which there is an exponential acceleration of reduction in numbers of species and species diversity [102]. There is ample literature to suggest that in landscapes where less than 30% of the original vegetation and habitat remains, species loss is rapid[103, 104, 105].

Reductions in biodiversity from clearing is explained not only in terms of direct loss of habitat, but also in terms of fragmentation, reduction in connectivity, and an increase in remnant perimeter to area ratios. These all threaten the long-term viability of flora and fauna populations [106].

Long term goals for 2050 in the Riverina Highlands Native Vegetation Region as recommended by the RHRVC are:

- **to increase the native vegetation network from 10-15% native vegetation cover to at least 30% of the original extent for each broad vegetation type (ie net gain); and**

- **to maintain total native vegetation cover levels and current percentages of the original extent for all broad vegetation types that are currently at >30% (or no net loss).**

In 1999, as part of the Southern Regional Forest Agreement, vegetation types across the region were mapped in a process called the Comprehensive Regional Assessment (CRA) involving NPWS, State Forests and DSNR, among others. All data for maps used in the RHRVMP are held by DSNR Albury - Resource Information Unit. Although DSNR holds the data, not all are owned by the Department and are under license from other organisations.

In long term planning, restoration of native vegetation is a critical factor in the development of a functional network. There is increasing knowledge and research on the principles that relate to the way native vegetation remnants are configured spatially across the region. These principles, which consider geographic spread, size, condition and level of connectivity of areas can be used to guide restoration in relation to biodiversity, and mitigation of land degradation.

It is very important for revegetation activity to first occur on sites where success will be greatest. These are areas of greater natural resilience and include sites with native grass cover and lower levels of past fertiliser use.

New research on this evolving issue is becoming available. Long-term restoration guidelines are as dynamic as the systems to be restored and thus should be approached in the same way - to be able to respond as new scientific information and data come to hand.

In attempting to reach broader native vegetation goals for 2050, restoration actions must address multiple natural resource issues including habitat fragmentation, salinity, erosion and declining water quality. For remnant vegetation the following factors are important:

- connectivity (to ultimately improve the viability of plant and animal populations);
- regeneration;
- the maintenance and enhancement of vegetation structure ie ground, shrub and tree layer;
- provision of many examples of each vegetation type across the landscape (to buffer against catastrophic events);
- the need to meet habitat requirements for declining and threatened species; and
- the reversal of progressive degradation from introduced species.

A native vegetation network that allows for the maintenance of ecological processes is one that has the most potential to buffer both minor and major landscape and climatic changes into the future.

Figure 7: Modelled Native Vegetation – 1800

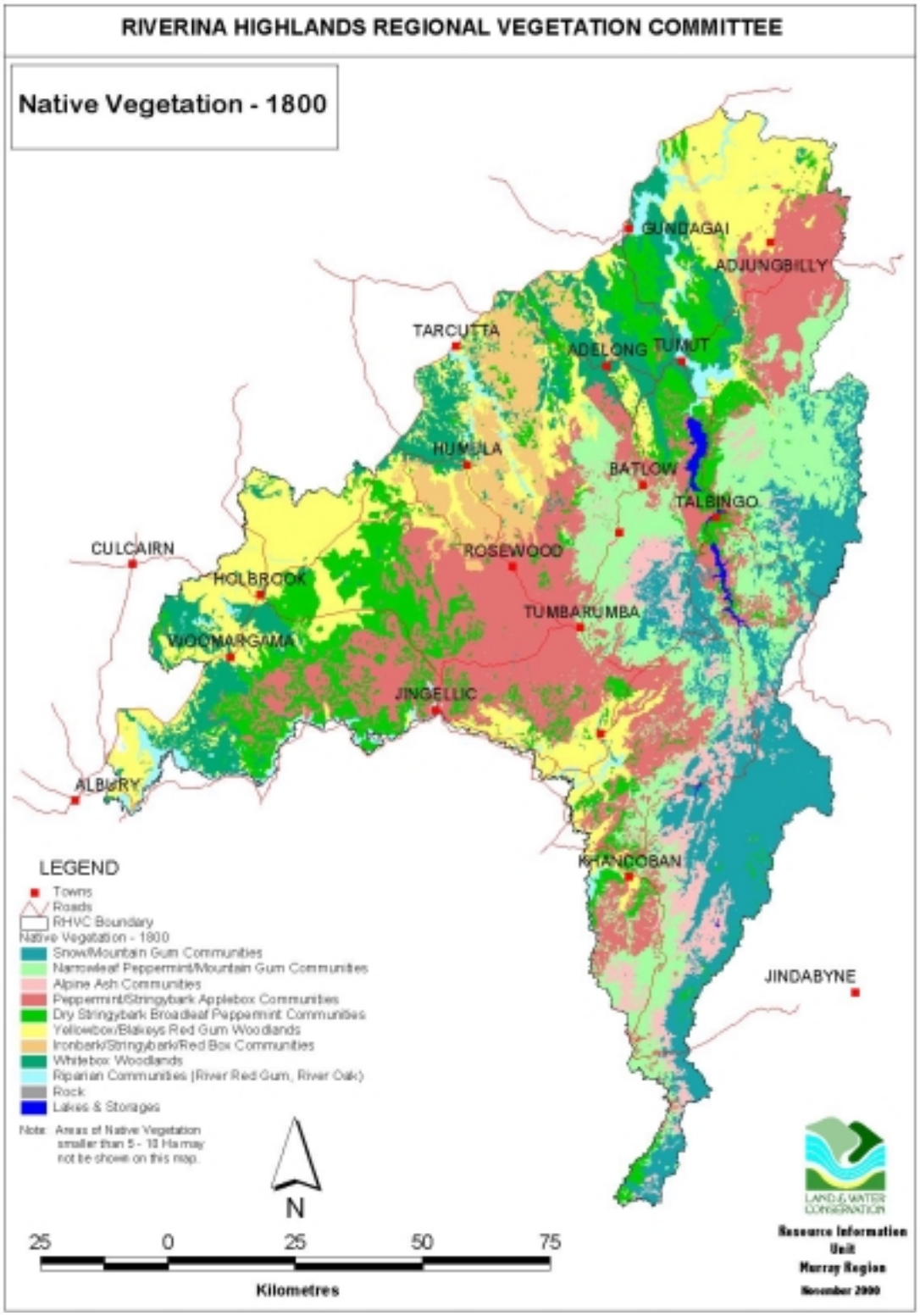
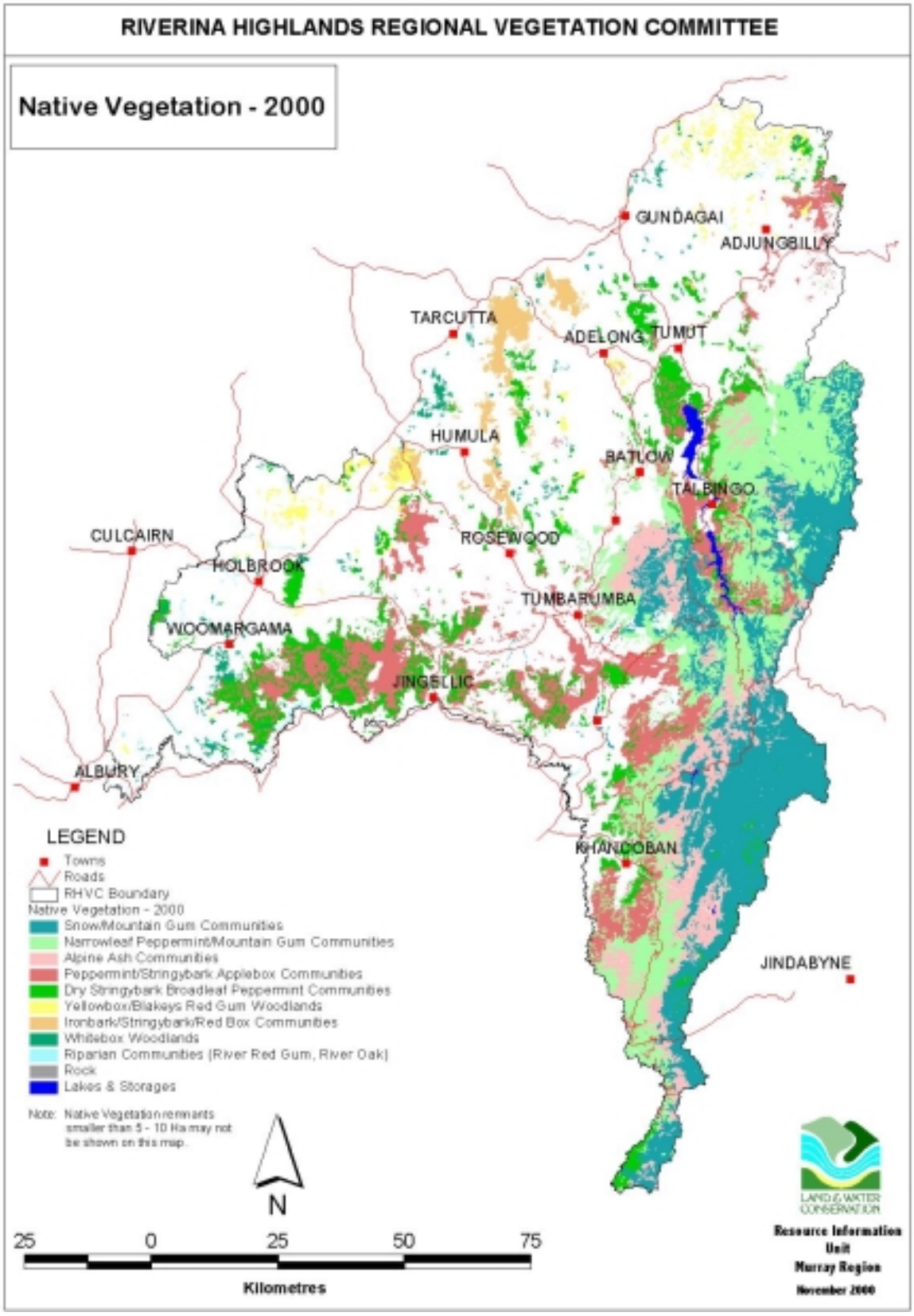


Figure 8: Native Vegetation – 2000



Section B – The Committee's task

B1 Establishment of the Regional Vegetation Committee

The Regional Vegetation Committee (RVC) was established for the Riverina Highlands region because native vegetation conservation and management was seen as a matter of significance for a number of reasons including:

- the extensive clearing that has already occurred in the region;
- the region's potential for timber plantation establishment;
- the significant amount of interest from the community in undertaking regional planning for native vegetation management and a desire for clear guidelines;
- the facilitation of the orderly development of sustainable agriculture, forestry and over-all land use management of the region; and
- the need for consistency between Local Environment Plans (LEPs) and to assist local government in carrying out its responsibilities in relation to native vegetation conservation and management.

The Committee met for the first time in March 1999 to begin preparation of a RVMP for the Riverina Highlands region.

B2 Objects of the *NVC Act*

The objects of the *NVC ACT* provided guidance to the Committee in the development of the RVMP, and they require RVCs:

- to provide for the conservation and management of native vegetation on a regional basis;
- to encourage and promote native vegetation management in the social, economic and environmental interests of the State;
- to protect native vegetation of high conservation value;
- to improve the condition of existing native vegetation;
- to encourage the revegetation of land with appropriate native vegetation;
- to prevent inappropriate clearing of vegetation; and
- to promote the significance of native vegetation in accordance with the principles of ecologically sustainable development.

B3 Matters for consideration in preparation of a Regional Vegetation Plan

Section 27 (1) sets out matters to be considered in the RVMP and they include:

- matters relating to the conservation of native vegetation and native species (particularly threatened species) and their habitats;
- matters relating to the conservation of soil and water resources, and of archaeologically, geologically or anthropologically sensitive or significant areas of land, as they relate to native vegetation management;
- matters relating to the social and economic aspects of land use as they relate to native vegetation management;

- any instrument made under an Act (including any environmental planning instrument and any catchment management strategy prepared in accordance with the *Catchment Management Act 1989*) that applies to the region or part of the region and makes provisions with respect to native vegetation; and
- any other aspects considered necessary or desirable by the Minister.

B4 Community consultation

A critical factor in successful regional vegetation management planning is community involvement and consultation for the development of a workable plan which has stakeholder endorsement. The Committee agreed early on in the planning process to maximise the benefits of consulting and involving the community and other stakeholder groups in the development of the Plan.

Prescribed community consultation under the *NVC ACT* includes the following:

- Stakeholder representation on the Committee under Section 51 of the *NVC ACT*. Each member of the Committee is responsible for liaising with their particular constituents, and for conveying the interests of these groups back to the Committee;
- Formal consultation with specified persons and bodies under Sections 26 and 28 of the *NVC ACT*. Before the preparation of a draft RVMP, the Director-General of NSW National Parks & Wildlife was consulted on matters relating to critical habitat, and threatened species and their habitats;
- Public exhibition and formal submission process under Sections 29 and 30 of the *NVC ACT*.

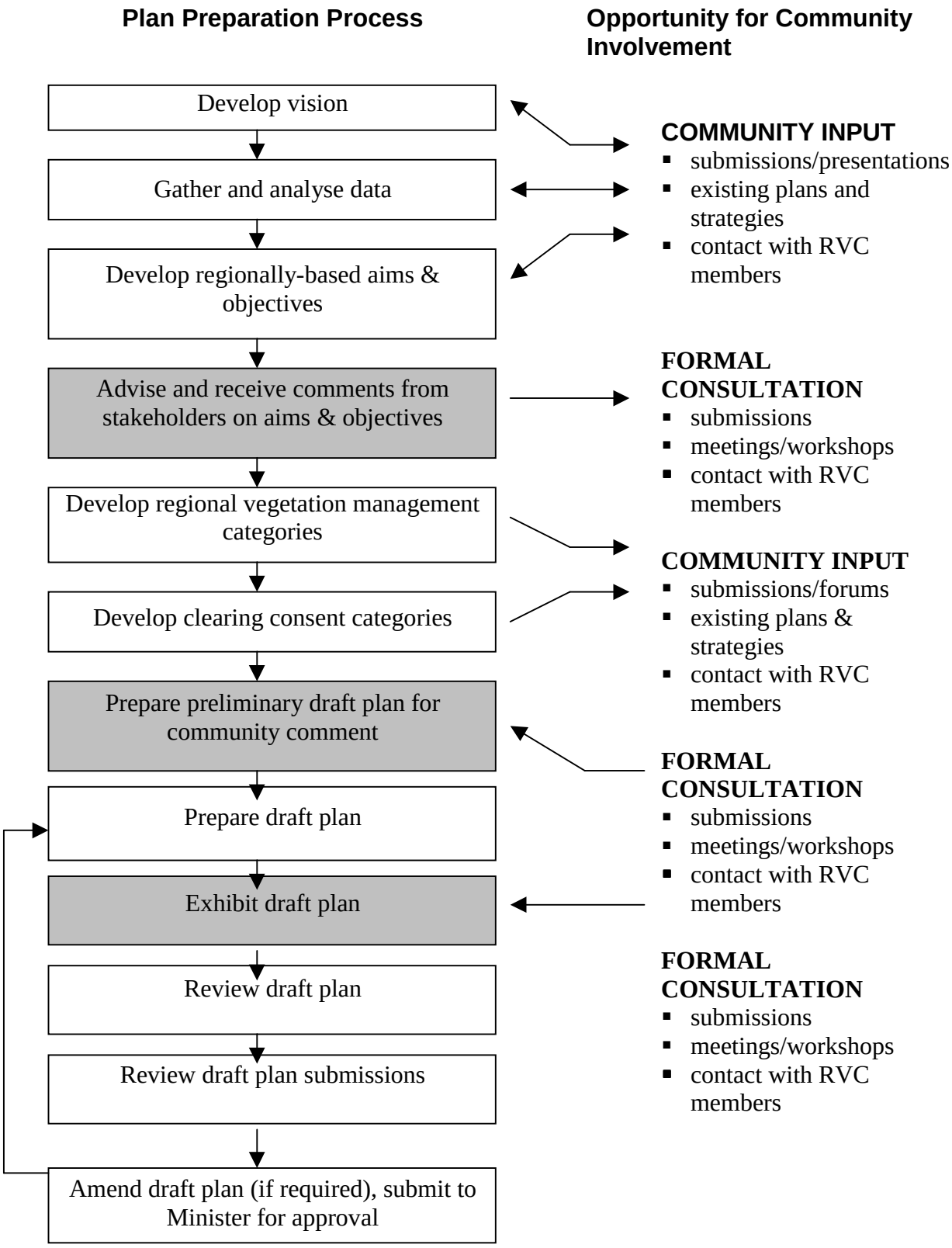
Community participation has been facilitated via public forums, community and stakeholder group workshops, a quarterly newsletter, and field days. A report on the submissions received during the exhibition period and a Consultation Report Summary are provided at *Appendix 4.*

The process that the Committee followed to develop the plan in consultation with, and involving, stakeholder groups is detailed in Figure 9.

The various Discussion Papers that were developed to contribute to aspects of the plan are available as a package from DSNR, Albury.

The planning framework outlined above starts with the development of a vision, aims and objectives that guide the direction and focus of the plan; these are described in the next section.

Figure 9: The planning process



B5 Development of the vision, aims and objectives

The Committee developed a vision for what members would like the region to look like in 10 years time. A vision articulates a collective goal for the community and must be challenging yet attainable. The RHRVC's vision provides a 'big picture' for long-term management of native vegetation in the Riverina Highlands and is as follows:

> *Empower people to ensure healthy native vegetation is integrated into a vibrant regional community*

Having drafted the vision, the Committee then sought to identify the broad range of social, cultural, economic and ecological issues that were evident in the region. An understanding of the issues, threats and trends relevant to the Riverina Highlands (highlighted in the previous chapter) contributed to the development of a series of aims and objectives upon which to base a RVMP for the Riverina Highlands region. The aims and objectives ensure that the Plan achieves its broader vision by guiding the outcomes of the Plan, and are as follows:

Aim 1

To protect and enhance the area of all native vegetation types across the Riverina Highlands region.

The summary objectives of this aim are:

- conserve areas of High Conservation Value;
- set vegetation targets to ensure adequate protection of all broad vegetation types;
- identify linkages between native vegetation remnants and develop native vegetation networks;
- manage and enhance wildlife habitat values;
- encourage active management of native vegetation to improve its health;
- promote regeneration and revegetation of native vegetation in the region; and
- monitor the quantity and quality of native vegetation in the region.

Aim 2

That native vegetation be included as an integral part of land-use management.

The summary objectives of this aim are:

- identify best management principles with respect to the integration of native vegetation into land-use management;
- educate and increase the knowledge of land managers about the value of integrating native vegetation with land management practices;
- encourage the use of property management planning as a tool at both the property and catchment scale; and
- encourage monitoring and feedback of knowledge relating to the interaction of land-use practices and natural ecosystems.

Aim 3

To promote and encourage partnerships between the community and governments through consultation and participation.

The summary objectives of this aim are:

- ensure quality involvement of stakeholders in the planning and implementation processes;
- increase appropriate communication between government and local communities about issues relating to each other's land;
- encourage discussion about realistic options for the alternative use of marginal grazing land; and
- increase awareness of the incentives available to the community for conservation and management of native vegetation.

Aim 4

To increase community knowledge and understanding of native vegetation, its values, history and management.

The summary objectives of this aim are:

- identify methods and priorities for the promotion of native vegetation;
- collate existing information on native vegetation values, history and management;
- identify information gaps (ie information relating to native vegetation values, history and management) and collect further information to fill the gaps;
- identify and map native vegetation at the property scale;
- undertake monitoring and review the Plan;
- communicate examples of best management practices in native vegetation management; and
- encourage community ownership of the Plan.

Aim 5

To prevent and reverse land degradation by maintaining the value of native vegetation.

The summary objectives of this aim are:

- identify and conserve areas with potential for soil erosion;
- identify and protect areas that impact positively on water tables;
- promote the use of land within its capability;
- encourage the management of riparian areas and wetlands to prevent erosion and limit nutrient inputs;
- encourage the management of native vegetation to minimise soil acidification;
- ensure that native vegetation is managed to reduce the incidence of noxious and environmental weeds and pests;
- promote codes of practice and best management practice guidelines that have been developed; and

- promote feedback of knowledge from experience through monitoring and new scientific research.

Aim 6

To raise awareness of the cultural heritage of all people involved in native vegetation management, recognising the importance of traditional knowledge of the indigenous Wiradjuri and Walgalu people of this region, as well as the substantial contribution of European culture.

The summary objectives of this aim are:

- identify the natural and cultural heritage values of native vegetation in the region; and
- recognise the importance and role of local people in conserving this heritage.

Aim 7

To support and encourage the involvement of Indigenous people.

The summary objectives of this aim are:

- reinforce scientific understanding with traditional knowledge of vegetation and landscape;
- foster a balanced dialogue among land managers, scientists and Indigenous people;
- educate Indigenous people in relevant methods of science and technology; and
- identify contemporary cultural issues, such as access to natural resources for educational, medical, nutritional and other economic purposes.

B6 Translating aims and objectives into a plan

The next step for the Committee was to consider how these aims and objectives were to be translated into a RVMP.

Part 3, Section 25 of the *NVC ACT* specifies the contents of a RVMP, which may include:

- provisions specifying whether or not development consent is required to clear native vegetation or regional protected land;
- provisions relating to the manner in which native vegetation or regional protected land may be cleared without development consent;
- a native vegetation code of practice as part of the plan;
- the identification of certain land to which the plan applies as regional protected land;
- include strategies that designed to achieve the objects of the *NVC ACT*; and
- include such other matters as may be authorised by the regulations.

The Committee was presented with a series of Discussion Papers on the above aspects and related issues. These papers put forward background information, relevant issues for discussion and options to reach decisions on each component of the plan.

In order to achieve its aims and objectives the Committee considered how much native vegetation in the Riverina Highlands region should be retained, how much should be protected (managed for conservation), and how much restoration was required.

The Committee agreed that landholders should not be the only group to bear the costs of conservation, so advice was received from a number of sources as to the amount of incentive needed to protect native vegetation in an equitable way. These are discussed in Section C2 of this Strategy.

It is estimated that approximately $1.2 million per year is invested directly by government and other organisations in the region. This estimate does not factor in landholders' contributions in the provision of labour for works.

Much work has been undertaken to estimate the value of environmental benefits or services provided by native vegetation retention and restoration. For example, the environmental services provided by planted native vegetation, based on the commercial value of the trees, is approximately $374 per hectare per year [107].

B7 Native vegetation targets

In order to direct action to where it is most needed the RHRVC has developed area-based targets for each broad vegetation type that occurs in the region. Separate targets are identified for "protection and management" and "restoration" in order to achieve the overall aim of "no net loss" of native vegetation in the Riverina Highlands region. Table 7 lists the targets developed by the Committee.

Scientific evidence is telling us that once a vegetation type is cleared below a threshold of 30% of its original pre-clearing extent, genetic and species diversity (and therefore its ability to sustain ecosystem services) starts to decline exponentially [108]. Therefore, broad vegetation types in the Riverina Highlands region should be retained, protected and managed over and above this 30% threshold. In addition, broad vegetation types that have been cleared to a level below 30% (ie depleted vegetation types) should be restored in strategic areas to improve and sustain the ecosystem services it provides

On the basis of environmental, social and economic objectives the Committee agreed on a long-term target (50 years) of achieving 30% of each broad vegetation type across the landscape.

The Committee then looked at targets for vegetation management that were considered achievable over the 10-year life of the plan.

The Riverina Highlands Native Vegetation Targets are consistent with the catchment targets developed by Murray and Murrumbidgee Catchment Management Boards for biodiversity using native vegetation as a surrogate. They are based on similar principles to those being developed at a State-wide (DSNR) level as well as those already developed at a catchment level in order to achieve 'no net loss' over time.

Table 7: Summary table of native vegetation targets for the Riverina Highlands region

Broad Vegetation Type (BVT)	Extent / Retention	Protection & Management 2010	Restoration 2010
1. Snow Gum/ Mountain Gum Communities	No net loss	500 ha	No additional restoration required
2. Narrow-leaved Peppermint/ Mountain Gum Communities	No net loss	500 ha	No additional restoration required
3. Alpine Ash Communities	No net loss	No additional protection required	No additional restoration required
4. Peppermint/ Stringybark/ Apple Box Communities	No net loss	500 ha targeted at biolinks 150 ha riparian protection	1560 ha targeted at biolinks 500 ha riparian protection
5. Dry Stringybark / Broad leaved Peppermint Communities	No net loss	1640 ha targeted at biolinks 30 ha riparian protection	520 ha targeted at biolinks 100 ha riparian protection
6. Yellow Box / Blakely's Red Gum Woodlands	Net gain	1700 ha 80 ha riparian protection	2578 ha 250 ha riparian protection
7. Ironbark/ Stringybark/ Red Box Communities	Net gain	2425 ha 20 ha riparian protection	360 ha 25 ha riparian protection
8. White Box / Stringybark Woodlands	Net gain	1200 ha 40 ha riparian protection	1512 ha 125 ha riparian protection
9. Riparian Communities (River Red Gum and River Oak)	Net gain	640 ha riparian protection	2000 ha riparian protection

Some underlying principles and assumptions of the Riverina Highlands native vegetation targets include:

- There should be 'no net loss' of the quality and extent of these existing remnants. 'No net loss' means to maintain the quality and quantity of native vegetation in an area.

- The 'no net loss' aim assumes that the current area of native vegetation will not change ie the quality and quantity will be maintained or enhanced, and that active management for conservation will take place in order for this to occur.

- Action will be focused in strategic parts of the landscape including:
  - High Conservation Value (HCV) native vegetation;
  - Regional Protected Lands– Steep and Erodible;
  - Regional Protected Lands – Streamsides;
  - Recharge areas.

- Actions will include protection and management of existing remnants and the restoration of vegetation in areas that have a high resilience and that are important for landscape function, such as connectivity.

- Catchment Blueprint Targets are interrelated, and existing remnants should be protected, managed and enhanced in strategic areas to minimise recharge, mitigate against soil erosion and streambank degradation, protect and maintain ecological services and protect threatened species, their habitats and communities.

- Landscape design principles relating to the location and shape of a vegetation network have been considered [109, 110, 112, 113, 114].

- Although the target areas (past, present and future) of native vegetation have been quantified using baseline data that maps native vegetation remnants greater than 5 ha, the importance of isolated paddock trees, clumps and patches for regional conservation in agricultural landscapes is recognised. This is provided for by the RHRVC in both the advisory and regulatory components of this Plan.

- For all threatened species, populations and communities, more research is required on conservation status, basic biology, life history, habitat requirements, distribution and threatening processes. The need to adopt a precautionary approach (or the precautionary principle) has been a major consideration in the development of the targets.

- The 10-year targets for the depleted vegetation types are based on achieving 10% of the 30% target in the first 10 years.

To achieve these targets, there are a number of steps necessary, of both an advisory (**Section A, B, C and E** of the **Strategy**) and regulatory (Appendix 7 ***RHRVMP 2003***) nature. The implementation of each part is detailed in the ***Action Plan for Implementation*** (E 2) contained in this document.

B8 How do we achieve the targets?

The RHRVC agreed on a range of mechanisms necessary to achieve the native vegetation targets within the region. These mechanisms include:

- Identifying priority areas for conservation and management;
- Providing incentives for landholders and land managers;
- Management of land clearing;
- Encouraging property vegetation planning; and
- Management of public land.

Section C – How will the targets be achieved?

C1 Identifying priority areas and actions for conservation and management

A number of priority areas have been identified throughout the region and which will require special management in order to maintain and enhance biodiversity and ensure catchment protection from land degradation issues such as erosion and salinity. These priority areas are:

- High Conservation Value Areas;
- Regional Protected Lands; and
- Recharge Areas.

C1.1 Identifying High Conservation Value Areas

From the HCV areas it is intended to identify a number of criteria or essential elements of the landscape that, when managed appropriately, maintain the majority of ecosystem functions and biodiversity. Therefore the intent of the high conservation value criteria was to provide a tool to assist landholders and managers and the Consent Authority to prioritise remnant native vegetation at both a property and regional scale for retention, protection and management, and restoration. Ultimately, the criteria help to determine the location of valuable areas of native vegetation in the landscape for landscape and property planning purposes.

The RHRVC looked at existing models for identifying high conservation value native vegetation in order to develop a regionally appropriate system for the Riverina Highlands. The preferred model [124] proved to have a common purpose to that desired by the RHRVC and therefore, this and a range of well documented principles and priorities [115, 116, 117, 118, 119, 120] were used as the starting point.

Table 8 details the criteria for identifying high, medium and low conservation value areas. The high conservation criteria are outlined in Schedule 3 of the *RHRVMP 2003*. These criteria should be considered holistically; they are not intended to be used as a 'tick-a-box' system. In order to clearly articulate the definition of high conservation value areas, the RHRVC has identified medium and low conservation value criteria to indicate general 'thresholds' for relative conservation value.

The intent of the Committee was to make determination of high conservation value site specific, rather than identify general zones or mappable areas. This allowed for flexibility of management recommendations and conditions of consent to be tailored to the site and based on the true consideration of social, economic and ecological factors.

Table 8 High Conservation Value Criteria

	High	Medium	Low
1. Vegetation Significance a. Listed Sites	Declared sites eg. Ramsar Wetlands of International Significance, Peatland Bogs, Stressed/Significant Rivers, Rare or Threatened Australian Plants (ROTAP) sites.	Not a declared site or special site	
b. Vegetation ***Community*** Rarity	Depleted vegetation types (including BVTs, ***grasslands***, ***wetlands*** and sphagnum bogs) of which less than or equal to 30% of the original pre-1750 range has been retained. Naturally rare or restricted vegetation types. See also attribute 2 - Vegetation Quality. Poorly ***reserved*** vegetation types of which <15% are protected in ***conservation reserves*** or vegetation types not well represented in the Riverina Highlands Native Vegetation Region.	More common / widespread vegetation types (ie. >30% remaining) in ***good condition*** or rarer vegetation types not in ***good condition***. Vegetation types not well represented in ***conservation reserves*** but largely protected across its distribution by management prescriptions aimed at ***conservation***.	Well ***reserved*** vegetation types of which >15% is protected in ***conservation reserves***.
c. ***Threatened species, populations or ecological communities*** and critical or identified ***habitat*** for these species or populations (also refer to Table 5)	Presence of, or identified ***habitat*** for, threatened species identified as a priority species in the Plan (ie. includes known sites for key ***population/s*** breeding sites, important localised ***population/s***, key part/s of range, ***core koala habitat***, endangered populations), for which ***conservation* is mainly dependent on private land.** Identified key vegetation ***community*** (for listed threatened species) in ***good condition.*** Also refer to Schedule/s attached to the Plan, State *Threatened Species Conservation Act 1995*, Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999*, the State *Fisheries Management Act 1994*, and JAMBA (Japan-Australia Migratory Bird Agreement) and CAMBA (China-Australia Migratory Bird Agreement) species.	***Population/s*** of species which appear to be expanding. Where there is a high degree of scientific certainty that mitigating conditions are appropriate for threatened species. Species for which ***conservation*** is mainly dependent on public land management. No threatened species known or presumed to be present.	***Habitat*** for common native ***fauna*** and ***flora*** not under threat.

d. Landscape values and functions	***Biolinks*** that are a critical link or corridor at a regional level), or an important link between large areas that are >40-60 hectares of different ***habitats*** /vegetation types, or a large block of vegetation (>40 hectares) in a largely cleared landscape. Riparian corridors and ***wetlands***, including sphagnum bogs. ***Grasslands*** in ***good condition*** as identified using the rapid appraisal process **(Table 13).**	Other ***Biolinks*** or other narrow corridor or reasonably continuous link, or a block of vegetation in a largely cleared landscape (>10 but < 40 hectares). Includes minor riparian systems.	Isolated small or narrow ***patches***, very remote from other vegetation / ***habitat*** (eg. in predominantly cleared riparian zones).
2. Vegetation Quality	Sites in ***good condition*** (ie. few weeds, mostly native ground ***flora***, presence of large living/dead hollow bearing trees) where a range of quality and the best known remaining sites are the most desirable to protect (relates back to conservation status for depleted vegetation types), but any good quality sites to be considered. Special consideration should be given to ***communities*** in ***good condition*** (including) ***grasslands***.	Generally medium quality sites with basic elements present, but may be regrowth or sites with little ***regeneration*** (for communities between 30-50% retained, therefore relates back to conservation status).	Site is highly ***modified***.
3. Vegetation Viability	Resilient sites or sites with high potential for ***restoration***. Sites which do not meet the above landscape value or vegetation quality criteria, but where minor changes to management would allow them to satisfy the criteria (eg. changes to grazing regimes).	Sites which are subject to a threatening process which can be removed/controlled or a site with moderate potential for ***restoration***.	Well managed sites not imminently threatened or sites with little potential for *restoration* and irreversibly threatened.
4. Vegetation with cultural heritage significance	Sites of Wiradjuri/Walgalu and/or non-Indigenous cultural heritage significance (NPWS Sites Register, Geological Heritage of NSW, Significant Geological Features) and/or those with the potential for listing. Native vegetation species that are threatened and/or naturally restricted (see Attributes 1b and 1c) and of high cultural heritage significance to Wiradjuri and Walgalu people.	Other cultural heritage sites of significance (ie. not officially listed). Native vegetation species that are not threatened and/or naturally restricted, but are species of cultural heritage significance.	N/A

For example, where isolated trees occur in a degraded landscape it might be that the larger, hollow-bearing trees are of high conservation value because they are habitat for threatened species, but this does not mean that the land is of high conservation value and all clearing is prohibited. The 'assessor' must consider and weigh up the relative values (looking at the full range of criteria) including factors like connectivity (proximity to biolinks or larger remnants), significance of the tree species (is it White Box or Yellow Box ?), as well as the resilience of the site.

RHRVC developed a list of essential attributes and indicators of high, medium and low conservation value. The attributes that the RHRVC felt were essential to the prioritisation process include:

- **Vegetation Significance**

Determining vegetation significance relies on a number of interrelated factors. Firstly it requires the recognition of sites already declared as being significant by existing conventions and processes.

Vegetation significance must take account of the relative level of rarity of a community. This involves the identification of depleted vegetation types of which less than 30% of their original extent remains. It also involves the identification of naturally rare or restricted vegetation types.

For example, one of the forest ecosystems that falls into BVT 1 – Snow Gum / Mountain Gum Communities is Montane Wet Heath / Bog – *Baeckea utilis* (CRA Forest Ecosystem 123), which covered 33 ha in 1800 and 33 ha today. This suggests that the forest ecosystem was naturally restricted in its range.

The relative percentage of original vegetation in conservation reserves is also a relevant consideration. In the Riverina Highlands case however, the Regional Forest Agreement reflects an increasing dependence on private lands for conservation.

Habitat of threatened species populations and communities is another consideration of vegetation significance, particularly where the conservation of particular species and communities is dependent on private land, where it may be the best example of habitat for a particular species.

Lastly, but no less important to vegetation significance, are the critical links in the landscape that are important for ecosystem function. A number of studies have been undertaken [121, 122, 123] that identify appropriate shapes and sizes of these links, habitat corridors or biolinks, as they are variously known.

- **Vegetation Quality**

Native vegetation is not only lost in the landscape through clearing (direct loss), it is also lost through gradual decline in quality or condition due to inappropriate management (indirect loss). This is especially relevant in grasslands and grassy ecosystems that are used extensively for grazing.

The condition of native vegetation relates to both vegetation community structure (the variety of strata and life forms within a community ie trees, shrubs, groundcovers etc) and floristics (the

variety of species within each strata). Because native vegetation condition is something that is difficult to measure at a landscape scale, a value judgement is made at a local scale. This judgement is generally made with assistance of technical staff during a site assessment. Generally, a range of quality within the best known remaining sites are the most desirable to retain, protect and manage.

- **Vegetation Viability**

The 'viability' of native vegetation means its ability to respond to different methods of restoration. Resilient vegetation, or vegetation with a high potential for restoration, requires only minor changes to management to allow it to function as a viable ecosystem. The RHRVC wants to ensure that restoration efforts are targeted towards the most 'resilient' areas. The attributes relevant to determination of viability/resilience include location, size and shape of remnant connectedness of remnant, and adjacent or surrounding land use.

Although the remnant vegetation mapping (Figure 8) allows assessment of the first two groups of these attributes, it is difficult to analyse surrounding land-use.

Viability is largely dependent on the magnitude and severity of threatening processes acting on a site, such as:

- Clearing (reduction in total area of habitat: wholesale, understorey, individual trees);
- Fragmentation (change in pattern of remnants);
- Grazing eg introduced species- rabbits, domestic stock, goats, deer; overpopulation of kangaroos;
- Altered hydrological regime eg changed flows, drainage;
- Salinity (water, high saline water tables, induced saline groundwater discharge);
- Weed invasion eg Blackberries, St Johns Wort, Phalaris, annual grasses, woody shrubs/ trees - willows, creepers;
- Introduced predators eg foxes, cats, dogs;
- Extraction eg timber, firewood, mining, native plants, eucalyptus oil production;
- Loss of hollow-bearing trees;
- Removal of fallen dead timber eg firewood collection, "tidying-up" under trees;
- Changed fire regime (too frequent or too infrequent; inappropriate intensity and timing);
- Soil disturbance (cultivation, grading roadsides, associated with extraction, feral animals);
- Human disturbance eg recreation activities;
- Pathogens eg fungus;
- Pollution;
- Fertilizer application/run-off;
- Soil acidification; and
- Herbicide/ pesticide application.

- **Vegetation with Cultural Significance**

Native vegetation that is significant to the cultural heritage of both Indigenous and non-Indigenous people also contributes to the identification of HCV vegetation. A limited number of sites are recorded on the NPWS sites register, due to the fact that most surveys are directed to areas where development is occurring. The Wiradjuri Sites Profiles contained within the *Resource Guide* assist in identifying the sites and native vegetation that were, and continue to be, of significance to the original custodians of the region – the Wiradjuri people. The continuation of traditional cultural practices is important to the existence and continuation of living Wiradjuri culture and is important to the restoration of native vegetation in the region.

C1.1.2 Threatened species requirements

The criteria for identifying high conservation value areas refer to threatened species, populations (and their habitats) or communities in the region, each of which possess special requirements for their conservation.

Under the *NVC ACT*, RVMPs must consider threatened species and/or populations and their habitats within the region. Schedule 1 of the *RHRVMP 2003* provides a summary of recommendations for each of these species/populations that occur within the Riverina Highlands region (see distribution listed in Table 5) that are outlined in Recovery Plans and other conservation recommendations where Recovery Plans are yet to be drafted. This table can assist landholders and land managers to identify priority actions to ensure improved status ie stable and viable populations, and ultimately their de-listing as threatened species, populations, communities or critical habitats.

For all species more research is required on conservation status, basic biology, life history, habitat requirements, distribution and threatening processes. The consequent need to adopt a precautionary approach has been a major factor in the drafting of the Plan's advisory, incentive, statutory and monitoring mechanisms to address the needs of these and other species.

Identified sites for flora listed in threatened species recovery plans (including draft and gazetted plans) are referred to in the regulatory section of this plan. Recovery Plans are available from NPWS. Schedule 1 of the Threatened Species Conservation Act lists the threatened species referred to. Schedule 1 of the *RHRVMP 2003* lists the species present in the region and the management recommendations for them.

State Environmental Planning Policy No. 44 - Koala Habitat Protection
SEPP 44 involves a state-wide approach to the issue of declining koala populations and their long term survival over their present range. It requires the consideration of any potential impacts on koala populations in development assessment and planning processes under the *Environmental Planning and Assessment Act 1979.*

The policy applies to all LGAswithin the Riverina Highlands region except Holbrook and Gundagai Shires.

In recent times koalas have been positively identified as being present in the Riverina Highlands region only from a single animal recorded in what is now Woomargama National Park.

Several sightings from the period 1945 – 1980s have been recorded on the NPWS Wildlife Atlas for the Hume, Tumbarumba, Tumut and Wagga local government areas, but there are no recent records from these areas.

If koalas are present in the region they are likely to have a very restricted distribution and occur as small and isolated populations. Regionally the species would be classed as extremely rare and probably highly endangered.

Their most likely habitat would appear to be Peppermint forests at higher elevations, and River Red Gum communities. Koala populations have been recorded in Bundy or Long leaf box (*Eucalyptus goniocalyx)* associated with vegetation types such as Dry Stringybark / Broad-leaf

Peppermint and Ironbark / Stringybark / Red Box Communities in Yass Shire, which adjoins the Riverina Highlands to the north.

SEPP 44 Considerations
Schedule 2 of the policy lists 10 eucalypt species as primary koala food trees. Of these Ribbon Gum *(E. viminalis)*, River Red Gum (*E camaldulensis)*, and White Box (*E. albens)* occur in the region.

Potential koala habitat is described as areas in which tree species listed in Schedule 2 of the policy constitutes at least 15 % of the total number of trees in both strata of the vegetation. Such areas exist in the region but it is unlikely that they are core koala habitat (area with resident populations of koalas evidenced by attributes such as breeding females and recent sightings of, and historical records for, a koala population).

As a result, it is not considered that koala habitat (under SEPP 44) warrants or necessitates the production of a Koala Plan of Management under the SEPP.

A requirement for assessment of the SEPP 44 provisions would apply for nearly all clearing that would impact on likely koala habitat. Also, there would be need to apply the *test* of significance (under the *TSCA*) to determine any likely impacts on koalas and their habitat under the threatened species legislation provisions.

C1.1.3 Regional biolinks

Regional biolinks or corridors are fundamental for the movement of wildlife between remnants in the Riverina Highlands, and a priority for the conservation management of native vegetation.

The RHRVC has identified biolinks on ridgelines and riparian areas. Riparian vegetation is one the most cleared of all vegetation types within the region. Vegetation on ridgelines is often all that is left, due to the fact that the larger remnants are mostly on steep ridgelines unsuited to clearing for agriculture.

Work has been undertaken to identify broad principles for "designing" biolinks at a landscape or regional scale that best integrate with surrounding land-uses [124, 125]. These regional biolinks provide corridors linking areas of habitat to facilitate migration, colonisation and interbreeding of plants and animals. The RHRVC has considered these broad principles and defined regional biolinks as one of many criteria for identifying high conservation value areas (see Attribute 1d in Table 8).

Figure 10 illustrates where these regional biolinks occur in the landscape at a regional scale.

Due to scale factors this map does not show the areas that are proposed for protection and re-establishment under local natural heritage trust projects. Local projects such as "Corridors of Green" (Ournie Landcare Group) and "East Hume Corridors" linking Table Top with Woomargama State Forest (East Hume Landcare Group) are critical to achieving targets for regional biolinks.

C1.1.4 Depleted vegetation types

A number of depleted vegetation types ie those that have been cleared to less than 30% of their 1800 extent, have been identified in the region. There is substantial evidence to suggest that when

vegetation communities are cleared below a threshold of 30% of their original extent, both species numbers and diversity starts to decrease exponentially [137].

The four depleted vegetation types in the region, and the percentage of their original extent that remains include:

- Yellow Box / Blakely's Red Gum Woodlands 7%
- Ironbark / Stringybark / Red Box Communities 29%
- White Box / Stringybark Woodlands 8%
- Riparian Communities (River Red Gum / River Oak) 7%

Figures 11 and 12 illustrate the change in extent for the four depleted vegetation types within the Riverina Highlands. These communities have been depleted below the 30% threshold over a 200 year period (accelerated in the last 100 to 50 years) and thus are extremely vulnerable to many threats. They are undergoing continual decline that will ultimately result in non-viable populations of plant and animal species.

C1.1.5 Grasslands and grassy ecosystems

It is questionable as to whether there are any true grasslands in the Riverina Highlands region. Grassy ecosystems that do occur in the region exist predominantly as small isolated remnants and occupy only a small proportion of their original extent. For example, broad vegetation types characterised by a grassy understorey such as Yellow Box / Blakely's Red Gum Woodlands and White Box / Stringybark Woodlands currently cover only 10% of the area they occupied prior to European settlement (see Tables 3 & 4). There is evidence to suggest that few examples of these grassy ecosystems remain in good condition (ie structurally and floristically intact) in the Riverina Highlands region [127]. The grass and forb layers of the remnants that have been retained in relatively good condition have done so because of conservative management. [128].

In order to avoid long-term decline of diversity within the range of grassy ecosystem sites, they need to be sufficiently linked to enhance the genetic structure of the small populations of the range of species present. That means augmenting existing sites with lesser value sites that will link them together and assist in maintaining their long-term viability [129].

There is a need for the conservation, management and enhancement of high conservation value grassy ecosystems on all land tenures, particularly those that support sites in good condition like those on private land, TSRs, roadside and rail reserves, commons and cemeteries. Private land tends to support the largest high conservation value sites, TSRs support remnants up to 60 ha in size and cemeteries contain sites of up to about 2 ha [130].

Criteria developed by NSW NPWS to identify high conservation value (HCV) grassy ecosystems [131] have been used by the RHRVC to develop a sysytem based on the 'significant species concept'. This is contained in Schedule 3 of the *RHRVMP 2003*. The system identifies species considered to be indicative of the conservation value of grassy ecosystems. They also often characterise the ground layer of grassy woodlands that have undergone relatively little disturbance and therefore, are indicator species of high conservation value.

Identification of these species is aided by the use of pictures provided in the comprehensive booklet *Grassland Flora – a field guide for the Southern Tablelands (NSW & ACT),* Eddy *et al*, 1999.
The methods used to develop the rapid appraisal process are detailed in the report *Grassy Ecosystems in the Riverina Highlands: a method for rapid appraisal of Grasslands* [147].

Figure 10: Regional Biolinks (Ridgeline)in the Riverina Highlands

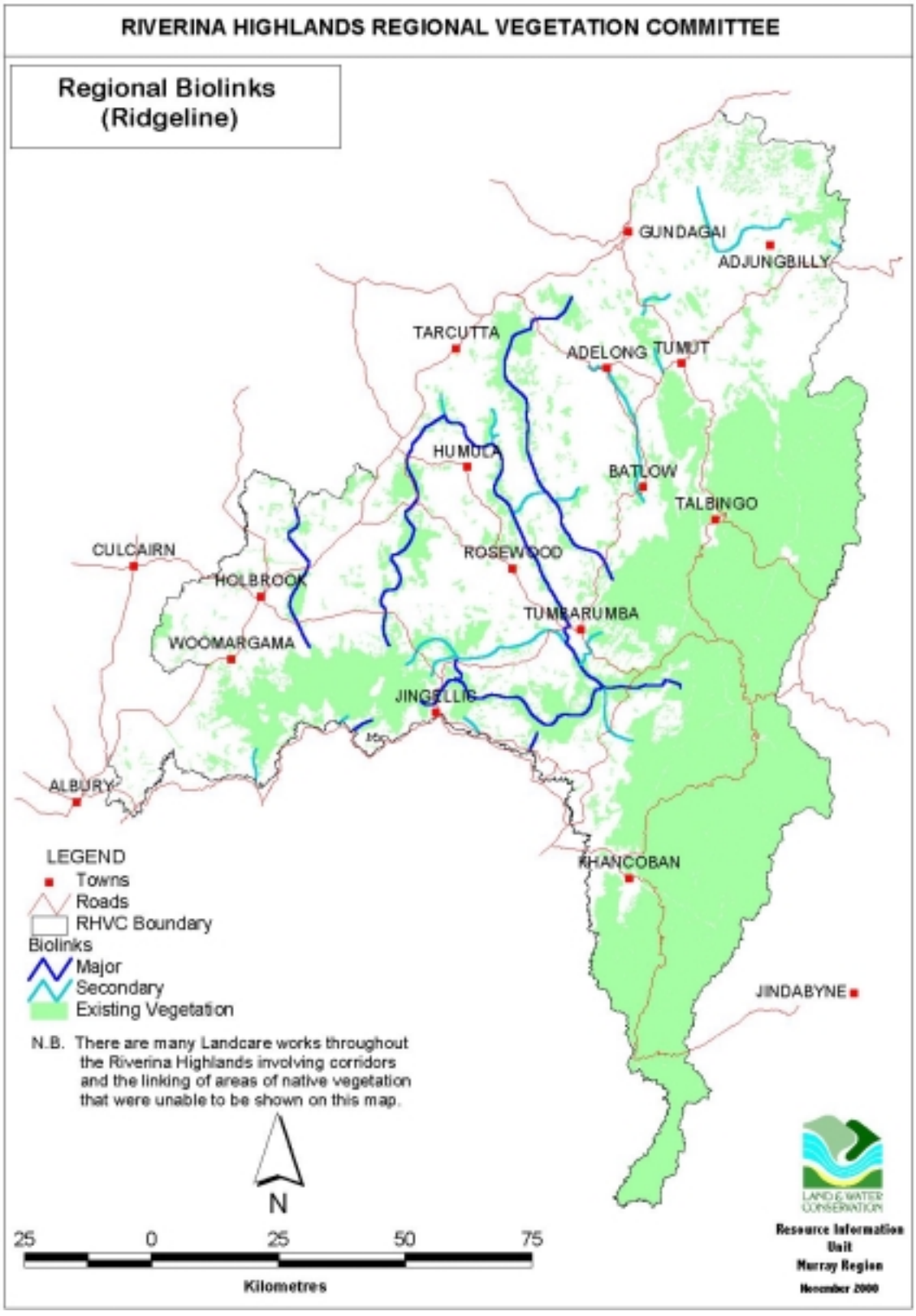


Figure 11 Depleted vegetation types (1800 extent) in the Riverina Highlands

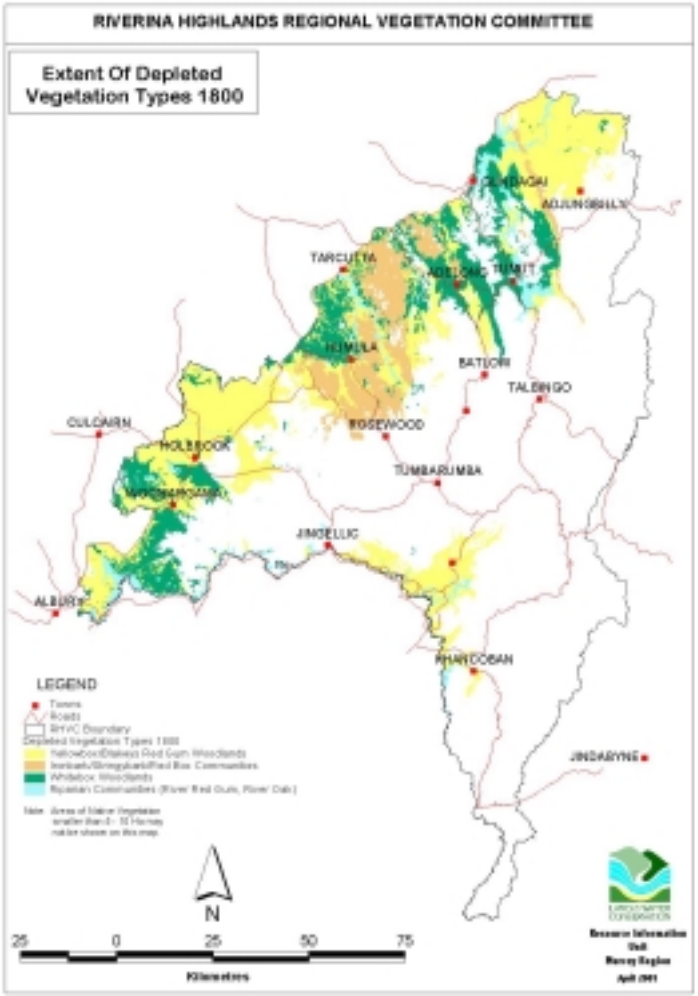
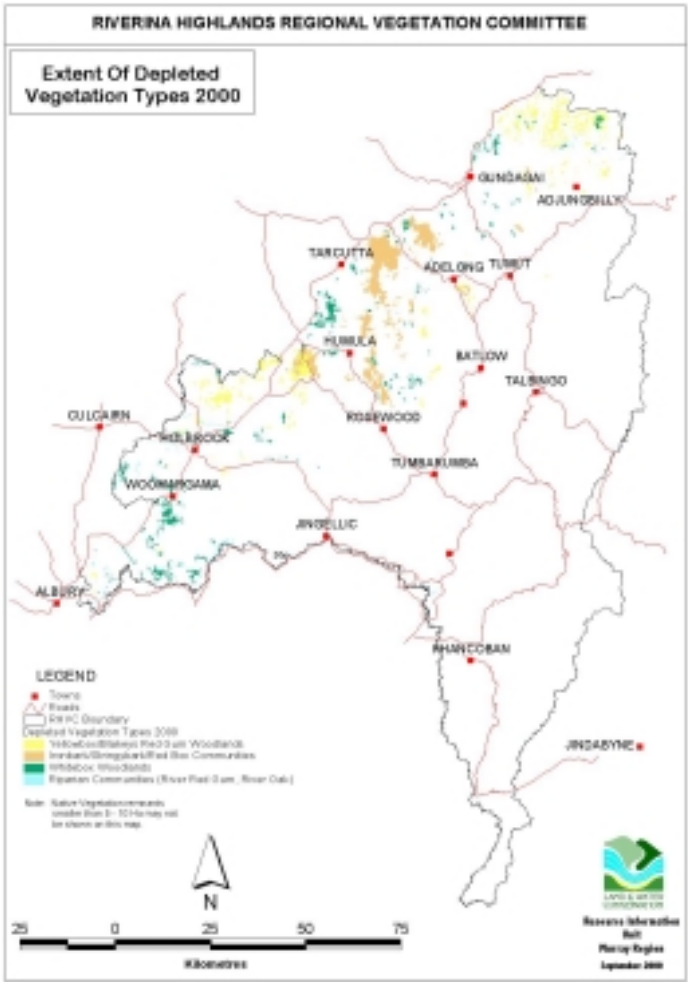


Figure 12: Depleted vegetation types (2000 extent) in the Riverina Highlands



It should be noted that grassland assessments should only be carried out in spring and early summer; it is only then possible to detect the majority of the grassland forbs that are so important in the assessment process.

Further survey work is being undertaken by NSW NPWS to develop a more comprehensive list of species relevant to the Riverina Highlands region. As this information becomes available the above system will be reviewed and updated (see **Section E** and the ***Action Plan for Implementation***).

C1.1.6 Wetlands

The Riverina Highlands contain a rich diversity of wetlands, ranging from river oxbows and billabongs along the Murray and Murrumbidgee Rivers, to the alpine bogs in the highlands. Most wetlands in the region have suffered either moderate or major disturbance[132]. Wetlands are a key landscape feature and are valued because they are habitat for fauna, including migratory birds, and are important for water quality.

Wetlands have been subject to degradation in the form of:

- clearing of vegetation;
- drainage and impoundments;
- inappropriate wetting and drying cycles;
- inappropriate grazing regimes;
- road and track construction;
- pollution from sediment, fertilisers and agricultural chemicals;
- salinity.

Vegetation remaining on wetlands that have suffered little disturbance is of high conservation value. As of 2002, survey work is being undertaken to develop an inventory of wetlands across the region.

C1.2 Identifying Regional Protected Lands

Regional Protected Lands are defined in Part 1 of the *RHRVMP 2003* and include:
Regional Protected Lands - Steep and Erodible; and
Regional Protected Lands - Streamsides.

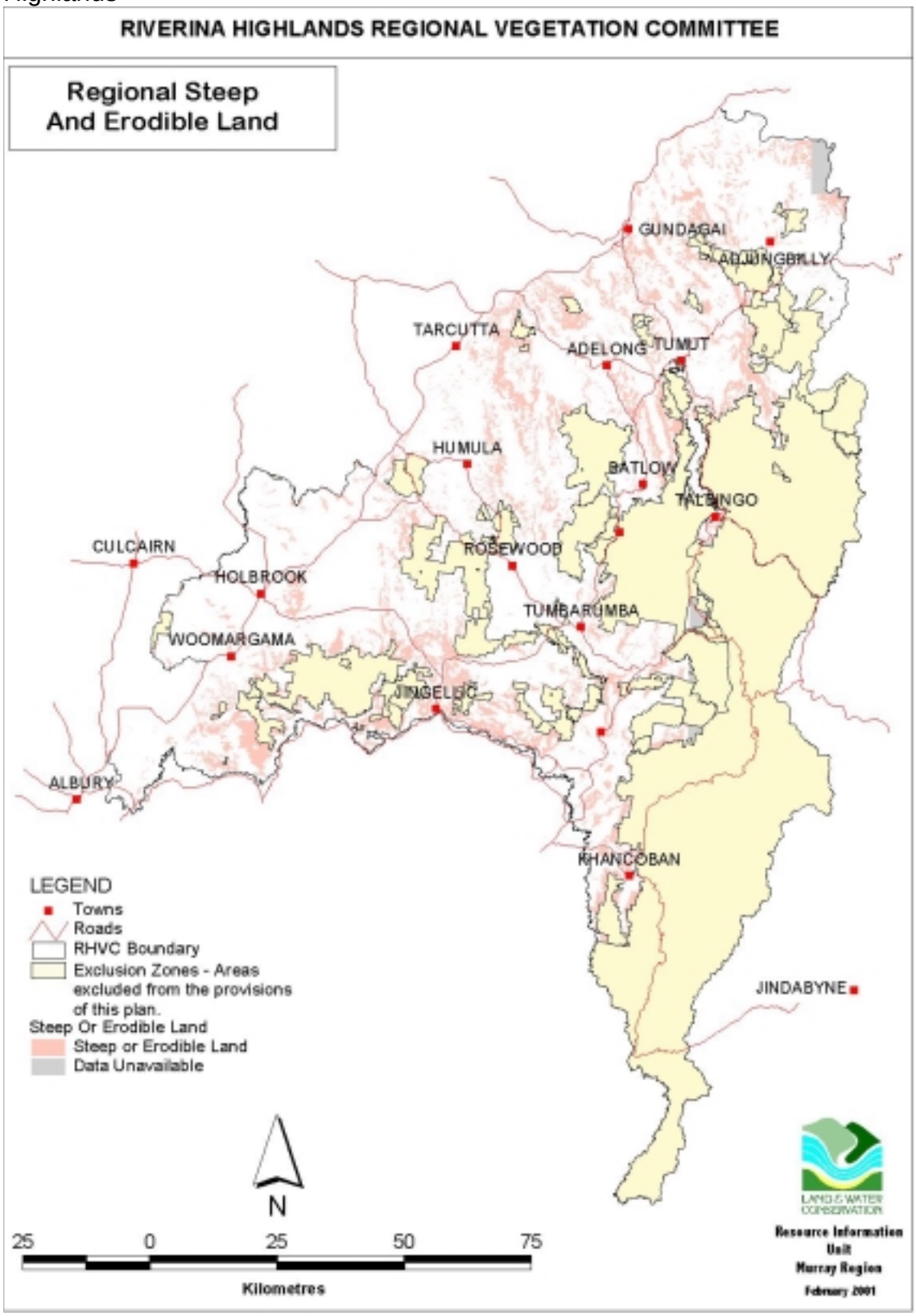
Steep and erodible lands were identified from mapping completed by the Department of Sustainable Natural Resources, and accepted by the Riverina Highlands Regional Vegetation Committee. Steep land is land that has a general slope greater than 18^0. Erodible lands include the following categories:

- Category e4: Extremely erodible and dispersible soils on granite source material, mapped to include slopes greater than 11^0.
- Category e6: Extremely erodible soils on massive granite outcrops, mapped to include slopes greater than 12^0.
- Category e7: Extremely erodible soils on sedimentary (late Devonian) parent material, mapped to include slopes greater than 12^0.
- Category e9: Extremely erodible soils on sedimentary (Ordovician and Silurian) parent material, mapped to include slopes greater than 10^0.

These categories are further explained in the report "Protected Lands Mapping for Vegetation Mapping", which is available for inspection from DSNR Albury [133].

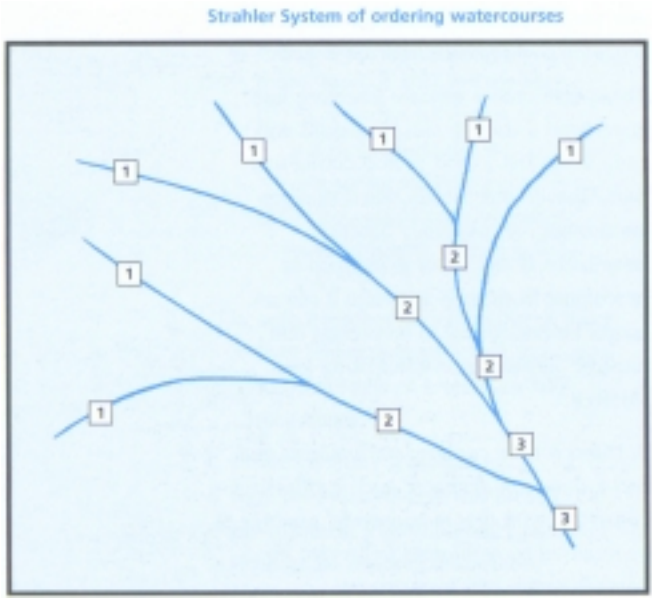
Figure 13 illustrates Regional Protected Lands-Steep and Erodible within the region

Figure 13: Regional Protected Lands –Steep and Erodible in the Riverina Highlands



Streamsides were identified by the RHRVC as all lands within 20 m of the banks of third order, and larger, streams. Stream ordering is based on Strahler's system, and is represented in the diagram contained in Figure 14 below.

Figure 14: Stream ordering



Stream ordering starts at the top of the catchment, where a watercourse (shown as blue on the most recently published 1:25 000 topographic map) which has no other watercourses flowing into it, is classed as a first-order stream (1 in Figure 14). Where two first-order streams join, the stream becomes a second-order stream (2 in Figure 14). Where a second-order stream is joined by a first-order stream, it remains as a second-order stream. Where two second-order streams join, they form a third-order stream (3 in Figure 14). A third-order stream does not become a fourth-order stream until it is joined by another third-order stream, and so on.

Both Regional Protected Lands -Steep and Erodible and Streamsides are further described and provided for in **Section D** of this document.

C1.3 Identifying recharge areas

Salinity is an increasingly vital issue in the Riverina Highlands region as it is in the whole Murray-Darling Basin.

In order to prevent development of dryland salinity in the region it is necessary to intercept recharge so that the amount of water entering the water table is reduced. However, because of the number of contributing factors it is very difficult to identify actual recharge areas in the landscape.

The RHRVC has considered a number of useful surrogates or "indicators" of recharge sites including land capability and underlying geology, both of which influence the recharge capacity. Land capability Classes 5-7, when overlaid with the presence of Ordovician sediments as the underlying geology, prove useful surrogates for identifying priority areas with recharge potential.

Although these attributes cannot predict exactly where recharge takes place in the landscape they are useful indicators of 'potential' recharge areas. It should be noted that the surrogate has limited use at a local scale.

In order to ensure landholders and land managers retain, conservatively manage and restore native vegetation in priority areas, specific land management actions need to be highlighted. These actions will contribute to the targets set in this plan, and also the Biodiversity, Water Quality and Soil Health targets and actions outlined in the Catchment Blueprints.

Provision of financial incentives and the support outlined in Section C2, will ensure that the targets can be met.

C1.4 Bushfire management

The intensity, frequency and timing of bushfires can have an adverse affect on the values and quality of native vegetation. Table 9 provides guidance to fire management authorities on fuel reduction and other burning activities. All fire activities should be in accordance with these thresholds, or fire may adversely affect native vegetation. The RHRVC recommends that these thresholds be used as guidelines for Bushfire Risk Management Plans developed for the Riverina Highlands region. The thresholds were developed by the RHRVC and adapted from Hawkesbury Biodiversity Regime Guidelines [134] in the Hawkesbury Bushfire Risk Management Plan.

Table 9: Bushfire management thresholds

Broad Vegetation Type	**A decline in biodiversity is predicted for each regime. To maintain biodiversity, bushfires should be managed below the thresholds for each BVT.**					**Regime**
	Period between fires (5 scenarios)					
	Scenario 1: Any fire	**Scenario 2: Three or more low intensity fires**	**Scenario 3: Two or more high intensity fires with a complete scorch of the canopy**	**Scenario 4: No high intensity fires**	**Scenario 5: No fires**	
Snow Gum/ Mountain Gum Communities	Any fire occurrence for higher exposed sites only	3 or more consecutive low intensity fires, with each of the fires being 8 years or less apart	2 or more high intensity fires with a complete scorch of the canopy within a period of 50 years		No fires for 100 years	A
Narrow - leaved Peppermint / Mountain Gum Communities		3 or more consecutive low intensity fires, with each of the fires being 8 years or less apart	2 or more high intensity fires with a complete scorch of the canopy less than 50 years apart		No fires for 100 years	B
Alpine Ash Communities		3 or more consecutive low intensity fires, with each of the fires being 30 years or less apart	2 or more high intensity fires with a complete scorch of the canopy less than 80 years apart	No high intensity fire within a period of 150 to 300 years		C
Peppermint / Stringybark / Apple Box Communities		3 or more consecutive low intensity fires, with each of the fires being 6 years or less apart	2 or more high intensity fires with a complete scorch of the canopy less than 50 years apart		No fires for 50 years	D
Dry Stringybark / Broad-leaf Peppermint Communities		3 or more consecutive low intensity fires, with each of the fires being 6 years or less apart	2 or more high intensity fires with a complete scorch of the canopy less than 50 years apart		No fires for 50 years	
Yellow Box / Blakely's Red Gum Woodlands		3 or more consecutive low intensity fires, with each of the fires being 8 years or less apart	2 or more high intensity fires with a complete scorch of the canopy less than 50 years apart		No fires for 50 years	E
Ironbark / Stringybark/ Red Box Communities		3 or more consecutive low intensity fires, with each of the fires being 8 years or less apart	2 or more high intensity fires with a complete scorch of the canopy less than 50 years apart		No fires for 50 years	
White Box / Stringybark Woodlands		3 or more consecutive low intensity fires, with each of the fires being 8 years or less apart	2 or more high intensity fires with a complete scorch of the canopy less than 50 years apart		No fires for 50 years	
Riparian Communities		3 or more consecutive low intensity fires, with each of the fires being 8 years or less apart	2 or more high intensity fires with a complete scorch of the canopy less than 50 years apart		No fires for 50 years	
Narrow - leaved Peppermint / Ribbon Gum Communities*	Any fire occurrence	3 or more consecutive low intensity fires, with each of the fires being 40 years or less apart	2 or more high intensity fires with a complete scorch of the canopy less than 100 years apart	No high intensity fire within a period of 200 to 400 years		F
Grasslands*		3 or more consecutive low intensity fires, with each of the fires being less than 8 years or less apart	3 or more high intensity fires with successive intervals of 15- 30 years		No fires for 30 years	G

*Although not identified as broad vegetation types as such in the region these vegetation types have been provided for separately as information for BRMPs.
NB: Predictions of biodiversity decline may not be applicable to some vegetation types. This table has been adapted from a similar table in the Hawkesbury Bushfire Risk Management Plan.

C2 Incentive payments for landholders and land managers

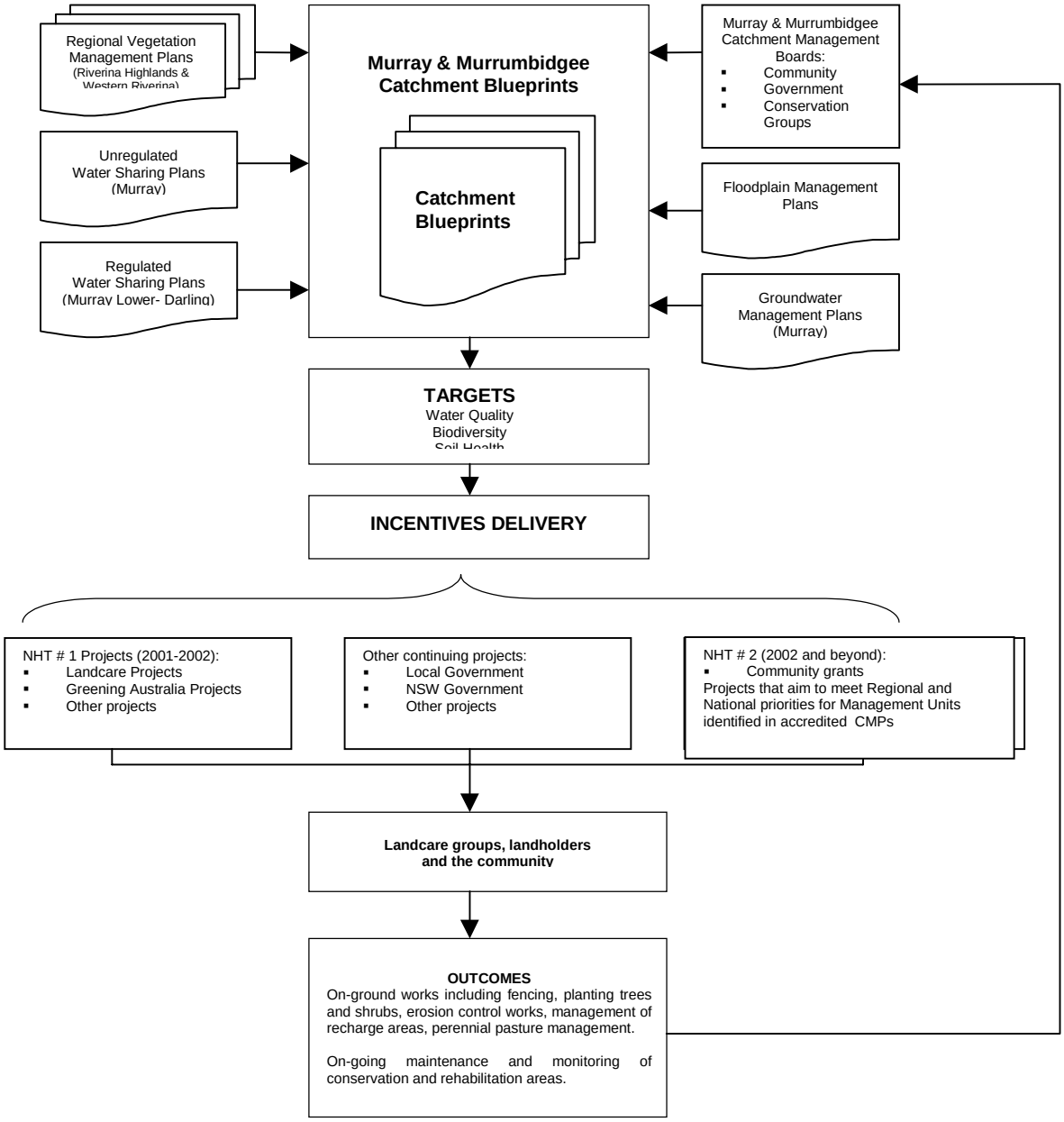
Conservation activities are integral to catchment health, and the native vegetation targets in both this Plan and the Catchment Blueprints make a wider contribution to other targets such as salinity and water quality.

Because these works have a degree of 'public good' associated with them, the RHRVC recognises the importance of providing incentives to encourage landholders to undertake conservation management of native vegetation.

Public good benefits of sound native vegetation management include:

- protection of catchments from land degradation such as salinity and soil erosion;
- maintenance and enhancement of water quality and river flow;
- maintenance of the scenic and visual appeal of the region;
- protection and management of flora and fauna, including threatened species; and
- protection and management of our cultural heritage.

The delivery of incentives under the Catchment Blueprints.



C2.1 The process

The RHRVMC have recommended incentives as a means of delivering the various programs outlined. Funding, should it become available would be administered via the relevant Catchment Boards in accordance with the relevant Catchments blueprints.

Material incentives

Material costs of native vegetation management include fencing, tubestock or direct seeding, and the costs of weed control. The RHRVC considers that there should be incentives available to landholders to encourage these activities.

In return for receiving incentives landholders would be required to provide some form of agreement where financial incentives have been invested. This could occur through either:

- Contracts or agreements being entered into between the landholder and the funding provider, which set out the obligations of both parties; or
- Covenants being registered on the title of the land.

The Committee agreed that:

- The minimum cost-share should be 50%, with flexibility to negotiate higher cost-share arrangements based on the value of the site and the services being provided by the landholder.

- Because of the additional security which a covenant brings, higher incentives should be available for covenants than would be available for contracts and agreements.

- Incentive funds should not be available for offsets for any approved clearing.

The total cost of works recommended by the RHRVC as being required to ensure that the Plan's targets can be met are set out below. The Committee recommends that cost-share assistance available to landholders to complete these works be at least 50% of the total cost.

Recommended on-ground works: Total costs, and appropriate cost-share arrangements.

Fencing
Total costs, including material and labour, range from $3,000/km to $7,000/km, depending on terrain and location of the fence.
Average cost: $5,000/km.
Appropriate public cost-share: 50% minimum.

Planting (tubestock)
Total costs include site preparation (spraying and ripping), plants and labour.
Average cost: $800/ha.
Appropriate public cost-share: 50% minimum.

Direct seeding
Total costs include site preparation (spraying), seed, and contractor labour and equipment hire.
Average cost: $410/ha.

Appropriate public cost-share: 50% minimum. However, if tubestock planting costs the Government $400/ha, this would pay for almost the total cost of direct seeding the same site. If 'revegetation' attracted a public cost-share of $400/ha, and this was used for direct seeding, it would significantly boost revegetation in the region.

Regeneration incentive
A fixed-term payment is suggested (5 years minimum) to encourage regeneration of native vegetation through grazing management, targeted at 'unimproved' country. Following expiry of the agreement sustainable grazing regimes can be re-introduced. Total costs include weed and pest control, and opportunity costs for grazing (assume no fencing required (whole-of-paddock approach) and an agreed management plan.)

Average cost: $50 – $500/ha/yr.
Appropriate public cost-share: 50% minimum.

Weed control
Total cost estimated on a site by site basis.

	Dryland	Riparian
Year 1 (knockdown)	$50-$400/ha	$100-$800/ha
Year 2	$50-$200/ha	$100-$400/ha
Year 3	$50-$200/ha	$100-$400/ha
Ongoing	$25-$50/ha/yr	$50-$100/ha/yr

Appropriate public cost-share: 50% minimum, up to 80% for high value sites.

Pest control
Site specific costs; likely average up to $100/ha Year 1; up to $20/ha ongoing.
Appropriate public cost-share: 50% minimum.

Alternative water -points
For situations where stream frontages are fenced to exclude domestic stock. Total cost includes pipe and trough, plus pump and tank for first water-point.
Average cost for first water-point: $3000;second and subsequent water-points per property: $500.
Appropriate public cost-share: 50% minimum.

These types and levels of incentives are recommendations from the RHRVC to investors in natural resource management, including Commonwealth and State agencies. These generally exceed incentive payments currently available, and would help to ensure that targets can be met. The Committee recommends that publicly-funded cost-shares should be increased for sites of High Conservation Value.

The RHRVC has worked closely with the Bushcare Facilitator for the Murray/Murrumbidgee regions to develop a model that is consistent catchment-wide.

Management of land for Environmental Services

It is widely recognised that landholders managing native vegetation over and above their "duty of care" are providing a level of service to the wider community. The RHRVC considered the following models for the delivery of funds to facilitate this type of land management:

Stewardship
Stewardship is considered as:

- payment to cover ongoing management costs of native vegetation, such as weed control,
- where the amount of native vegetation on a property exceeds a regionally agreed benchmark, payment in lieu of opportunity costs.

Ongoing costs of weed control are stated previously, and range from $25-$100/ha/yr. Other costs associated with management, such as supplementary planting, pest control and fence maintenance, could double this figure. Payments in lieu of opportunity costs would vary, as follows:

- $75/ha/yr for hill country
- $100/ha/yr for rising country
- $150/ha/yr for flat and gently undulating country
- $300/ha/yr for alluvial river flats.

Benchmarks of 10%, 20% and 30% native vegetation cover were discussed as suitable benchmarks for a 'duty of care', above which payments would be available for additional hectares of native vegetation. It was agreed that a benchmark of 10% native vegetation cover, managed for vegetation outcomes, was appropriate for all properties as a way of expressing a 'duty of care'. Where a property has more than this benchmark, payments in lieu of opportunity costs should be considered. Special recognition should be given to landholders whose property exceeds 30% native vegetation cover.

However, it was also agreed that investors in natural resource management, including State and Commonwealth agencies, should consider:

- That, in some circumstances, it may be paying for outcomes that are already guaranteed. For example, some parts of the region have thick forest cover that is not under immediate threat from clearing. Governments are unlikely to pay stewardship for the maintenance of this vegetation when its continued existence is likely for a zero cost outlay.
- Commitments for on-going stewardship could lock Governments into expensive commitments, without a sunset clause, despite changing notions of duty of care or the emergence of alternative approaches.

Nevertheless, for some activities per hectare payments are likely to be a cost-effective way of delivering native vegetation management. For example, the cost of revegetation is estimated at $800/ha, plus the cost of fencing, which could be estimated at between $3,000/ha (for small areas) and $300/ha (for large areas). By comparison, natural regeneration could be achieved across a whole paddock, without the need for fencing costs, at $100/ha for rising and hill country, or $500/ha over 5 years. This would represent the cost to the landholder for de-stocking for a number of years, achieving tree regeneration, and then implementing a sustainable grazing regime. This is considerably cheaper than traditional revegetation methods.

Recommendations

1. Ongoing stewardship payments should be provided, especially where the level of native vegetation cover on a property exceeds a regional benchmark.
2. A 'regeneration incentive' (see above) be introduced to provide an incentive for flexible management over a defined term eg a limited 5-10 year period, as a means of cost-effective revegetation. Because of the potential of this proposal, rather than purely the maintenance of existing native vegetation, it should be considered as 'on-ground work'.

3. The development of rate and tax relief for land protected through 'conservation management' could provide some benefits to landholders conducive to fostering stewardship of native vegetation.

Purchase of land

The idea of a revolving fund to be used to purchase land of high conservation value, covenant and then re-sell it, is supported. This has been successful in Victoria. The Committee notes that the NSW Nature Conservation Trust has been established for this purpose, but is yet to be fully operational.

Recommendation

That the NSW Nature Conservation Trust be given the resources to work effectively in rural parts of the State.

Purchase and lease-back

This proposal is based on the operation of the Closer Settlement Leases under the Crown Lands Act. Under such a scheme, land with high conservation value, or to be retired from agriculture and managed for regeneration for biodiversity and salinity mitigation, would be purchased by the Government and leased back at 3% of valuation annually under a 'conservation lease'. The lease would not prohibit grazing by domestic stock, but would limit their numbers in accordance with an agreed management plan. The scheme could be made further attractive to prospective leaseholders through the negotiation of ownership of environmental services to the lessee.

Recommendation

The Committee strongly recommends that options for purchase and lease-back be thoroughly investigated.

Purchase of partial interests in land

This proposal is based on the concept that ownership of land represents a 'bundle of rights', and that some sticks in this bundle represent the conservation value of the land. For example, a conservation covenant does not prevent the owner living on or enjoying the land, nor does it prevent the establishment of enterprises that do not threaten the conservation value of the land, such as tourism. However, it may control the ability of the landholder to clear, subdivide, or log the land.

The rights represented by the covenant are valued separately, so that the 'covenant value' is determined. This may equate to anything from 30% to 70% of land value, and is paid to the landholder in return for the covenant. The scheme could be operated by the NSW Nature Conservation Trust using funds from Government, corporate or philanthropic sources.

Recommendation

Whilst not opposing the development of such a scheme the Committee considers that it is likely to be less successful than a purchase and lease-back arrangement.

Valuing and trading environmental services

The development of tradeable credit schemes has appeal. It promises that the market can pay for environmental management by paying for its own environmental mitigation. Landholders would have the ability to secure multiple income streams from a variety of services such as carbon sequestration, salinity mitigation and biodiversity. Development of such schemes is in its infancy;

little information is available on how biodiversity might be defined and traded, and what rules might govern that trading.

Recommendation

Until the RHRVC has a clearer idea of how such a trading system might work, and how biodiversity is defined, measured and valued, it is not in a position to support such a scheme.

Development of an Environmental Fund

The delivery of appropriate incentives and cost-sharing arrangements so necessary to meet the vegetation targets agreed by the Committee, will require the establishment of an environmental fund. There has been discussion on the development of an *Environmental Levy*, which could form an ongoing source of funds for environmental repair and vegetation management. There may be other ways in which such a fund could be resourced.

Recommendations

The RHRVC recommends that an Environmental Fund be established. Investigations should determine the most appropriate mechanisms that could be used to resource the fund, including:

- The development of an *Environmental Levy*,
- The Commonwealth Government declaring that investments in an Environmental Fund be eligible for 150% tax deductibility.

Targeting incentives to the priorities in the plan

The RHRVC has set targets for retention, protection, management and restoration of native vegetation in Section B6. For each of these activities, area targets have been set for each broad vegetation type shown in **Section B6**. Their future relies on the active participation of landholders and the effective types and delivery of incentives. When the proposed cost of the incentives is compared to the targets of the plan, a total figure for the amount of incentives required over the 10-year life of the plan can be estimated.

To construct these estimates, several assumptions have been made. These include:

- One km of fencing will protect different areas of different vegetation types. For instance, 1km of fencing for Yellow Box Woodlands would protect only 5 ha of vegetation, because the individual remnants are small and scattered, whereas 1km of fencing of Stringybark or Peppermint forest might protect 20 ha of vegetation, as the size of remnants is much larger and usually only need to be fenced on one side to afford protection.
- Different amounts of revegetation activity are needed for different broad vegetation types. For instance, Yellow Box and White Box Woodlands have limited 'resilience' or recovery potential, because of their history of grazing and fertiliser use. Stringybark and Peppermint Communities are more likely to regenerate naturally.
- The publicly funded cost-share that different vegetation types are likely to attract will vary. For instance, Yellow Box Woodlands should attract higher cost-shares, because of their high conservation value, whereas some Stringybark Communities (BVTs 4 and 5) may attract only the minimum 50% cost-share. This will affect the level of incentive available for different projects.

The cost of meeting the targets set out in Section B6 has been estimated. These estimates are summarised in Table 10.

Table 10: Estimated cost of meeting targets

Broad Vegetation Type (BVT)	Protection* / Management#		Revegetation†				Total Cost of meeting target ($)
	Target area (ha)	Cost ($)	Target area (ha) to achieve by 2010	Target area (ha) to achieve by 2050	Cost ($) (to achieve 2010 targets)	Cost ($) (to achieve 2050 targets)	
1: Snow Gum / Mountain Gum Communities	500	88 625	nil	NA	NA	NA	88 625
2: Narrow-leaved Peppermint / Mountain Gum Communities	500	88 625	nil	NA	NA	NA	88 625
3: Alpine Ash Communities	nil	NA	nil	NA	NA	NA	NA
4: Peppermint / Stringybark / Apple Box Communities	500	8 625	1 560	NA	85 250	NA	873 875
5: Dry Stringybark / Broad-leaved Peppermint Communities	1 640	290 690	520 (biolinks)	NA	260 650	NA	551 340
6: Yellow Box / Blakely's Red Gum Communities	1 700	1 341 300	1180 (biolinks)	12 980	965 925	10 643 700	12 950 925
7: Ironbark / Stringybark / Red Box Communities	2 425	429 050	800 (biolinks)	NA	428 000	NA	857 050
8: White Box / Stringybark Woodlands	1 200	345 900	740 (biolinks)	4 706	504 125	3 149 462	3 999 487
9: Riparian Communities	240	2 251 800	nil	NA	NA	NA	2 251 800
TOTALS ($)		**4 924 615**			**2 943 950**	**13 793162**	**♣$21 661 727 (50 yrs)** **♦$7 868 565 (10 yrs)** **♠$2 166 000 / yr**

KEY: * Fencing (ie with contract / with covenant); # Management (eg pest animal and weed control, grazing management); † Revegetation (ie enhancement of existing vegetation remnants and/or revegetating cleared areas with seedlings / direct seeding with contract / with covenant); ♦ Alternate watering points; ♣ = to meet all targets over 50 years ; ♦ = to meet the 10 year targets only; ♠ = to meet all of the targets within 10 years, calculated as a yearly cost

The 'grand total' figure needs to be compared to the amount spent currently on natural resource management programs in the region. It is considered that if one examines the trend over the past 10 years, the figure quoted to meet the targets is realistic.

It is likely that around $1.2 million per year is already being invested in natural resource management projects in the region (E Willinck pers. comm.). If focussed to the targets, then they can be achieved. The difference between current expenditure and expenditure needed to achieve the targets, could be used as the basis for a submission for additional investment from the Native Vegetation Management Fund, or other sources.

The RHRVC would advocate that restoration should occur firstly on public lands, such as linear reserves (travelling stock routes and Crown reserves). It is estimated that these areas constitute 5-

6% of the Lower Slopes Sub-region and could contribute significantly to the targets for the Lower Slopes broad vegetation types.

Further regeneration and revegetation should occur on areas identified as having greater 'resilience' or recovery potential, such as areas with native pastures or which have been free of recent fertiliser application. It is estimated that a further 8-10% of the Lower Slopes may be in this condition, and would respond to revegetation and regeneration efforts. The Action table (Table 13 in Section E2.2.2 of this plan) recommends that an inventory of 'resilient lands' be carried out to identify these areas and target the funding towards them.

In setting the targets, the RVC is *not* advocating large-scale planting of tube-stock on land which has been modified by pasture improvement or cropping. Such areas are likely to be difficult to revegetate because of high nutrient loads and competition from introduced pasture grasses and weeds. Additionally, securing such agriculturally productive lands for revegetation may be difficult to achieve without substantial financial incentives, hence the need for flexible cost-sharing arrangements. This is especially relevant for Yellow Box/Blakely's Redgum communities, which are generally on this high value land.

How should incentives be delivered?

Process for delivery of incentives

Currently, the level of funds being invested for on-ground works consistent with the Plans targets, is approximately $1.2 million annually (E Willinck, pers. comm.). This estimate includes funds from DSNR's Native Vegetation Management Fund, Greening Australia's Fencing Incentive Program, and various programs delivered by local Landcare groups, predominantly sourced from the Commonwealth's Natural Heritage Trust. It is estimated that at least 90% of this investment is dependent on the NHT (E Willinck, pers. comm.).

The Murray and Murrumbidgee Catchment Blueprints will provide the framework for the delivery of future funding from the Natural Heritage Trust II and the National Action Plan for Salinity. The Riverina Highlands RVMP provides the framework for how incentives should be delivered to meet the biodiversity or native vegetation targets.

It will be necessary to streamline and co-ordinate the delivery of existing programs. Key elements of this process include:

- Ensuring that all programs align in a way that addresses the targets.
- Ensuring that the delivery of the programs across the region is complementary, so that resources and efforts are not duplicated unnecessarily.
- Ensuring that investments in natural resource management works in the region, regardless of who administers or funds them, are recorded in a region-wide database so their contributions to the targets can be assessed.
- Ensuring minimum standards are maintained for funded projects.
- Competitive assessment of applications to ensure the funds are achieving best possible conservation outcome.
- Landholders or land managers applying for funds would make a single application, receive one site inspection and, if eligible for funding, one cheque and one contract only to sign. This would mean that investment in natural resource management would be coordinated from a "single-desk" in each District – especially where funds are drawn from public sources.

Delivery of funding should be through an 'investment coordinator', who is able to draw on the funds of all incentive programs operating in the region, and has a role in attracting funding from a range of sources, including Commonwealth and State Governments, corporate support, and philanthropic sources.

The RHRVC considers that there is a range of bodies that could act as 'investment coordinator'. These include DSNR, Landcare groups, non-government organisations such as Greening Australia, the NSW Nature Conservation Trust (NSWCT) (acting through its agent in the region), Local Government and Rural Lands Protection Boards. The choice of 'investment coordinator' would vary according to which organisation has the greatest ability to provide these services in the various parts of the region.

Table 13 in Section E2 documents the strategies and associated actions necessary to achieve the aims, objectives and targets with regard to incentives delivery.

Technical guidelines for investment in native vegetation

The minimum standards that should be met for funded projects should include:

- All blocks, corridors and riparian strips should be >25 m in width and > 2 ha in size to maximise biodiversity, salinity control, water quality and land management gains. The only exemptions to this rule might be in the protection of HCV areas or in areas where it is impractical to work with these conditions.
- As part of the revegetation or enhancement works only natives specific to the local area should be used.
- Native vegetation establishment and management techniques should encourage as much natural structure and biodiversity as possible.
- All successful landholders will be required to enter a management agreement between the landholder and the funding organisation – either contracts (similar to Greening Australia's Management Agreements) or covenants (similar to DSNR's Property Agreements).
- Sites that do not have a productivity focus will be managed to maximise biodiversity outcomes and outcomes that mitigate against land degradation (as detailed in the management agreements).

C3 Management of land clearing

The RHRVC recognises that management of land clearing is an important part of achieving the native vegetation targets for the Riverina Highlands region. Management of land clearing is addressed in the regulatory provisions contained within Appendix 7 of this document.

If clearing is required for a specific purpose (eg building a shed) there may be other permits required, and applicants are advised to check with the local council and DSNR office.

When is a permit required?

There are three types of clearing:

- Clearing that is exempt (no permit required)
- Clearing that requires development consent (permit required)
- Clearing that is not allowed by the Plan (no clearing permitted)

Maps and descriptions for the three management areas are available from DSNR:

- Regionally Protected Lands – Steep and Erodible (these areas are mapped at 1:100 000)
- Regionally Protected Lands – Streamsides (third order streams and above on 1:25 000 maps)
- Regional Linear Reserves – (roadsides, TSRs, Crown lands etc)
- Unclassified Land – (land not in any of the above categories)

The Summary Clearing Control Table in **Appendix 7** is a summary of what rules apply in the different management areas.

How to apply for a clearing application

Contact your nearest DSNR office and you will be:

- Referred to the Vegetation Management Officer for your area
- Provided with the "Guidelines to Applicants" and the Application Forms and information including various "guidelines" or best management practices that might be relevant.

Assessment of the application

Applications are assessed by the Consent Authority in accordance with the standard consent conditions and procedures outlined in the *Native Vegetation Conservation Act 1997* and the *Environmental Planning and Assessment Act 1979.*

Provided that all the necessary information is included with the application, the application should be assessed within 40 days.

DSNR Guarantee of Service under the *NVC ACT* states:

If an application meets approved Best Management Practice (BMP) Guidelines, the Consent Authority will endeavour to grant consent within two to five days. If it is a small application and there are no significant or high conservation value areas affected, and no impacts on cultural heritage, the Consent Authority will endeavour to grant consent within 15 days. If it is a medium application the Consent Authority will endeavour to grant consent within 30 days. If it is a large application, the full "statutory" period of 40 days would be required.

More information on the application and consent process is in **Appendix 7**

Table 11 explains the purpose and status of each of the guidelines that have been developed or are to be developed prior to gazettal of the Plan.

Table 11:
Guidelines for landholders and land managers in the RiverinaHighlands region

Guideline	What is the purpose of these guidelines in the Riverina Highlands region?	Status
Guidelines for willow (and other exotic plant) control within the Riverina Highlands.	[Originally developed and approved under the *NVC ACT* for State Protected Lands as *Willow Clearing Guidelines for Applicants: Best Management Principles for Willow Clearing on Riparian State Protected Land under the NVC ACT*]	To be reviewed, updated and approved for the purposes of defining BMPs for willow (and other exotic plant) removal that is exempt under the Plan.
Guidelines for Sustainable Harvesting of Dry to Moist Open Sclerophyll Forest within the Riverina Highlands.	RHRVC guidelines which explain the Private Native Forestry Exemption.	Developed and approved under the Plan.
Guidelines for Beneficial Conservation Management within the Riverina Highlands.	DSNR BMP that explains the Beneficial Conservation Management Exemption.	To be developed and approved under the Plan.
Explanatory Note # 1: Applying for Development Consent.	RHRVC guide to broadly explain the process for applying for development consent to clear vegetation.	Developed and approved under the Plan (in Resource Guide)
Guidelines for Landholders # 1: How to Minimise the Environmental Impacts of Clearing.	RHRVC guide to explain offsets requirements for clearing native vegetation.	Developed and approved under the Plan.
Guidelines for Landholders # 2: Regional VegGuides 1.1 – 1.7 How to Prepare a Property Vegetation Plan (PVP).	• DSNR guide for development of a PVP for the purposes of submitting an application to clear native vegetation. • For development of a PVP for conservation and management of native vegetation where there are no offsets (ie incentives only).	Draft has been developed and approved under the Plan.
***Proposed* Guidelines for Landholders # 3: Principles for landscape design.**	DSNR guide to assist with development of a PVP for the purposes of submitting an application to clear native vegetation. To assist with development of a PVP for conservation and management of native vegetation where there are no offsets (ie incentives only).	To be developed and approved under the Plan.
Guidelines and Application Form for Clearing Vegetation under the Plan.	DSNR guide to provide guidance to landholders about applying to clear vegetation under the Plan.	*NVC ACT* guidelines to be reviewed, updated and approved for the purposes of explaining the process and requirements for applying to clear vegetation under the Plan.
Roadside Handbook: Environmental Guidelines for Road Construction and Maintenance Workers	Recommends BMPs for road construction and maintenance staff and contractors, for local government and the NSW Roads and Traffic Authority.	Developed by NSW Roadside Environment Committee, Roads and Traffic Authority, NSW and Department of Local Government, NSW.

If the clearing proposal conforms to the 'recommended limits to clearing' in the *Guidelines for Landholders # 1: How to minimise the environmental impact of clearing,* it may streamline the assessment procedure and increasing the likelihood of quicker assessment and determination.

Landholders wishing to clear native vegetation for the purpose of Plantation Development must follow the procedures of the *Plantations and Reafforestation Act 1999.* This Act obviates the need for landholders to gain a separate consent under the *Native Vegetation Conservation Act 1997*.

C4 Encouraging Property Vegetation Planning

Property Vegetation Planning is a tool that is intended to be used for two things:

- where applying for incentives; and
- where applying for consent to clear areas of native vegetation greater than 1 ha.

Incentives will not be provided to protect areas identified as an offset.

There are many advantages to be gained by completing an approved Property Vegetation Plan (PVP), including:

- The ability to plan and obtain consent for any clearing activities within an approved plan at any time within 10 years from the approval date, without the need for further application;
- Qualifying to receive incentive payments for vegetation management activities;
- Getting 'the big picture' of a property's natural resources (eg an inventory of a property's assets and resources); and
- Planning for sustainable development.

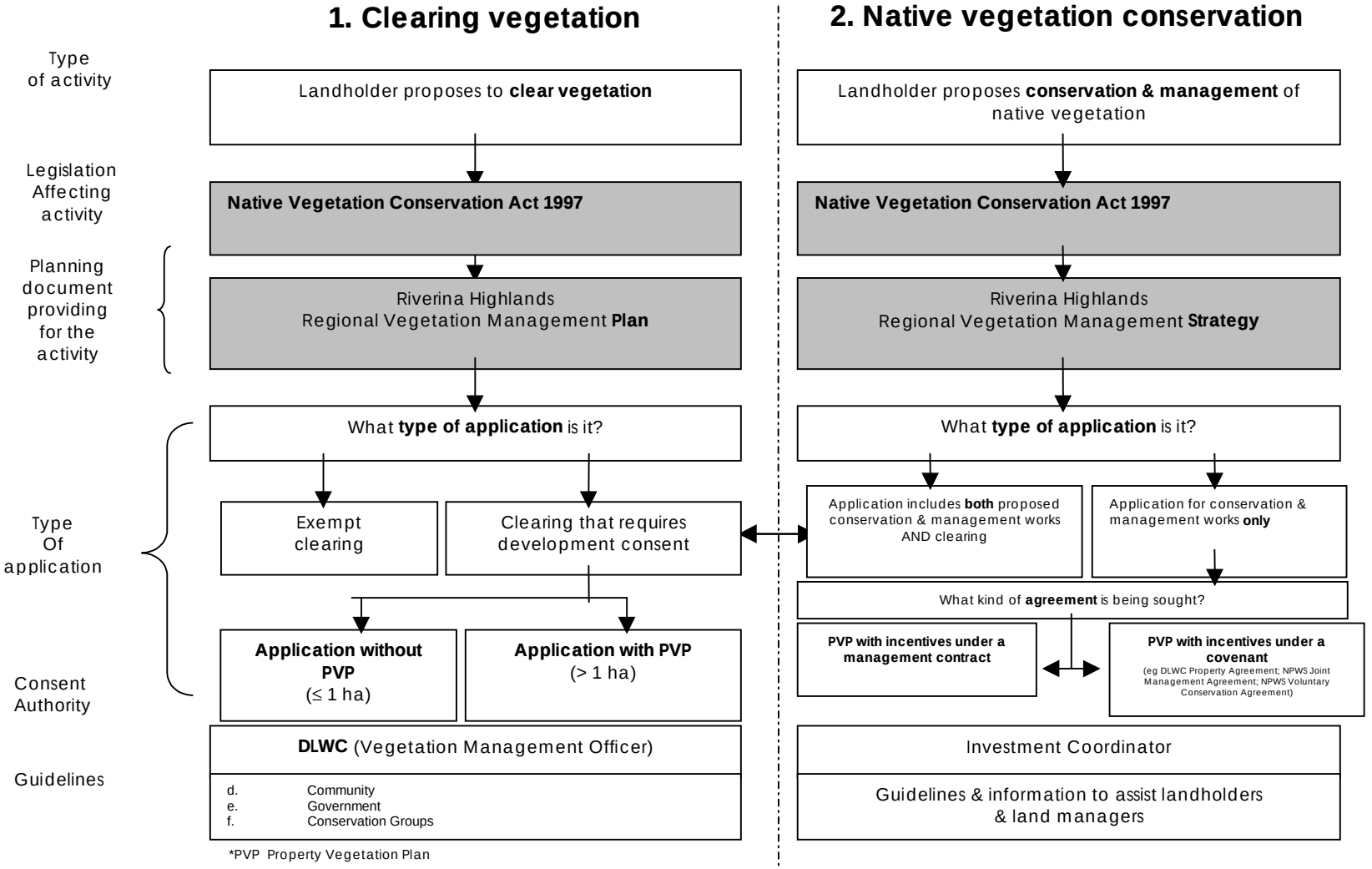
The process for developing a Property Vegetation Plan is shown in Figure 15. VegGuides 1.1 – 1.7 provide a step by step guide to producing one, and are contained in the ***Resource Guide.***

1. Getting support.
2. Preparing a base map.
3. Proposed management of native vegetation.
4. Areas proposed for clearing.
5. Proposed conservation areas.
6. Proposed retention areas.
7. Obtaining approval.

Property Vegetation Plans (PVPs) are an effective tool to aid in the understanding of the relationship between vegetation and property landscapes. However, the committee recognises that Property Management Plans (PMPs) offer a more holistic approach to incorporating native vegetation into long term strategies for farm development and utilisation, than do PVPs.

PVPs have been chosen as a consent tool but landholders are encouraged to undertake the development of a more comprehensive Property Management Plan. PMPs put all aspects of farm bio-physical resources into a management context, and provide a comprehensive management tool for effective long term planning. For those wishing to go the next step and develop a PMP, assistance can be provided through NSW Agriculture and DSNR.

Figure 15: The two strands of the Property Vegetation Plan process.



C5 Improved Public Land management

C5.1 Importance of Public Land management

When there is little native vegetation left in the surrounding landscape (eg Lower Slopes Sub-region), remnants on public lands are often the best examples of broad vegetation types and therefore of high conservation value. These include roadsides, stock routes, and areas of Crown Land, and are referred to as Regional Linear Reserves.

The *Native Vegetation Conservation Act 1997* does not apply to public lands such as State Forests and National Parks. Management of these areas is covered under other legislation.

Remnant vegetation on Regional Linear Reserves provide for:

- conservation of native plants and animals;
- prevention of land degradation (eg soil erosion and salinity);
- corridors linking remnants and allowing the movement of species between communities and across the landscape;
- seed source for revegetation projects;
- representative examples of broad vegetation types that are a 'living' guide to local planting.

Public lands often contain cultural sites of significance to both European and Indigenous heritage. In addition, they provide for a number of economic uses including public utilities (eg gas, electricity and telecommunications), provide shade and shelter for stock, crops and pastures, and in some cases allow for the grazing of stock.

Because Regional Linear Reserves are a resource that provide benefits to the community and environment, they should be managed to maximise these benefits.

C5.2 Incentives for Local Government and Rural Lands Protection Boards (RLPBs)

The regulation of clearing on Regional Linear Reserves is an important part of achieving good conservation outcomes for native vegetation. However, as for private land, incentives are needed to enable the implementation of activities that are for the public good.

It is proposed that incentives be made available to Local Government and RLPBs for the management of native vegetation on Regional Linear Reserves.

Appendix 4 outlines examples of the incentives proposed for activities associated with the conservation, management and enhancement of native vegetation on Regional Linear Reserves in the Riverina Highlands region.

C5.3 Regulating clearing on Regional Linear Reserves

Regulatory provisions of this plan in relation to Linear Reserves are contained in the RVMP.

Additionally, the RVC has considered the land-use activities on roadsides and linear reserves, and whether these are appropriate for all conservation categories. The RVC has developed a series of

recommendations to local government as to how these activities should be managed. These are summarised in Table 11. It is proposed that councils adopt these recommendations as a Development Control Plan and ultimately in their Local Environment Plans. The aim of doing so would be to ensure greater consistency across the region, so that contractors and other service providers who work in the region have a standard set of rules to adhere to.

Refer to the **Action Plan for Implementation (Section E),** which identifies actions necessary to implement this plan on public lands.

C5.4 Crown Land management

The RVC congratulates local governments and RLPBs that have undertaken a rapid appraisal of conservation values on their linear reserves. The RHRVC recommends that DSNR undertake a similar process for Crown Lands, either reserved or unreserved, and including Crown Roads. This would identify those parcels of land that would benefit most from conservation management, and also help to ensure that lease or licence conditions are tailored to the conservation values of the land.

Table12: Recommendations for Linear Reserves in the Riverina Highlands

Activity*	**High conservation value (HCV) areas**	**Medium conservation value (MCV) areas**	**Low conservation value (LCV) areas**
Public safety	Permissible in accordance with best practice guidelines (eg. NSW REC Road Maintenance Guidelines)	Exempt	Exempt
Road maintenance	Permissible in accordance with best practice guidelines (eg. NSW REC Road Maintenance Guidelines)	Exempt	Exempt
Ancillary works (stockpile dumps, machinery parking bays, turning circles)	Not recommended	Not recommended	Permissible
Borrow-pits	Not recommended	Permissible, with retention of all trees >50cm DBHOB	Permissible, with retention of all trees >50cm DBHOB
Rest areas	Not recommended	Permissible, with retention of all trees >50cm DBHOB	Permissible, with retention of all trees >50cm DBHOB
Grazing	Not recommended, unless specified in Vegetation Management Plan	Permissible for travelling stock	Permissible
Firewood collection	Not recommended	Permissible, with permit issued in accordance with Council Roadside Plan	Permissible, with permit issued in accordance with Council Roadside Plan
Apiary	Not recommended	Permissible, with permit issued in accordance with Council Roadside Plan	Permissible, with permit issued in accordance with Council Roadside Plan
Weed management	Permissible* in accordance with approved best management practice guidelines.	Exempt	Exempt
Revegetation	Recommend Bush Regeneration techniques	High priority areas. Mandatory following road construction, with local native species.	Mandatory following road construction, with local native species In other cases, lower priority
Firebreaks	Not recommended	Not recommended	Permissible if slashed or sprayed.
Bush rock removal	Not recommended	Not recommended	Not recommended

* The RHRVC recognises that authorities are obliged to undertake certain weed management actions under other legislation, however, it would like to ensure good outcomes for native vegetation.

Section D – Riverina Highlands Regional Vegetation Plan 2003 Clearing consent process

D1 Introduction

The *RHRVMP 2003* is a legal document and is found as **Appendix 7.** Copies are available from the DSNR offices in Albury and Deniliquin or from the internet at www.dlwc.nsw.gov.au.

Section D contains the some additional notes (of intent drafted by the RHRVC) to help explain the provisions of the *RHRVMP*.These notes provide background but do not have any legal effect. When deciding whether you need concent to clear you should refer to the RVMP.

The provisions contained in the *RHRVMP 2003* specify whether or not development consent is required for clearing native vegetation or ***regional protected land***, pursuant to section 25 (2)(a) of the *NVC ACT*.

In addition this chapter outlines the requirements for assessing applications, including information to be submitted for Level 1, 2 and 3 Applications. A PVP must be submitted with applications for greater than 1 ha ie Level 2 and 3 Applications.

The Consent Authority (DSNR) may notify stakeholders of the application, in accordance with the *EP&A Act*. Local Government must be notified of the application and determination under the *EP&A Act.*

If the application triggers S5A of the EP&A Act, the application must be advised in a local peper and NSW National Parks and Wildlife Service (NPWS) must be notified of the application. DSNR may send a copy of the application and additional information to the relevant local council, National Parks and Wildlife Service office, NSW Agriculture office and adjoining landholders. These stakeholders may provide comment on the application to DSNR within 21 days of the notification.

Consent will only be granted where the Consent Authority (DSNR) is satisfied that no unacceptable environmental impact is likely to result.

D2 Process of Application

A landholder or land manager proposing to clear land should contact the Consent Authority, DSNR, to discuss the proposal.

If the landholder considers that the proposal falls inside the exclusions to the NVC Act, then the relevant local council should be contacted for advice as to whether local restrictions apply. It is the landholder's responsibility to ensure the proposal meets local council requirements.

If the landholder considers that the proposal falls outside the exemptions defined in this Plan, an appointment for a pre-application site visit should be made with an officer from DSNR. The *Guidelines and Application Form* will be provided to the landholder.

Before clearing using an exemption in the RVMP the landholder should check to see whether it is necessary to notify the Department before using the exemption. This is currently the case in relation to the private native forestry exemption.

At the pre-application site visit, DSNR will advise of any Regional Protected Land, land tenure surrounding the property, the scope of the proposal, and discuss the information necessary for the completion of an application to clear native vegetation under the Plan.

D3 Explanatory Notes relating to Regulatory Plan

These notes provide detail as to the intent of the Riverina Highlands Regional Vegetation Plan 2003 drafted Parliamentary Counsel and found as **Appendix 7** These notes provide background but do not have legal effect. When deciding whether you need consent to clear you should refer to the RVMP

Explanatory notes to accompany Riverina Highlands Vegetation Management Plan 2003

These notes were prepared by the Riverina Highlands Vegetation Committee to explain the intent of the Plan

Notes for Part 1

Under the Native Vegetation Conservation Act 1997, there are certain lands and types of clearing which are excluded, and are therefore also excluded from the RHRVMP. The RHRVMP cannot make rules about these types of clearing, or about clearing on these types of land.

Notes for Part 2

The Consent Authority, for the purposes of this Plan, is the Minister for Land and Water Conservation. Clearing applications will be assessed according to S79C (1) of the EP&A ACT and also the provisions of this Plan.

Applicants will need to be aware of requirements under the Environmental Protection and Biodiversity Conservation Act 1999. The Commonwealth Government has a development control role for determination on whether or not consent is required under the EPBC Act (after a proposed action is referred to the Commonwealth Environment Minister) in relation to any matters of national environmental significance.

Where development consent for clearing is required the relevant local office of the Department of Sustainable Natural Resources (DSNR) must be contacted to arrange a pre-application interview prior to any formal application being submitted. An application form and a guide to completing the application will be provided.

If you are clearing native vegetation under an exemption in conjunction with another activity, you may need development consent for that other activity. Landholders or land managers should check with their local Council about what restrictions may apply to them.

The RHRVC set out principles and objectives that the Consent Authority (DSNR) has to take in to consideration, and be satisfied that the proposal is consistent with. These are set out in Part 2 of the RHRVMP

The RHRVC has recommended appropriate level of offsets (Guidelines: How to Minimise the Environmental Impacts of Clearing) that may be required for consent of a clearing proposal to be given, in order to achieve the "no net loss" target and the "net gain" target for the depleted vegetation types.

Net gain of native vegetation will be achieved by enhancing both the quality and quantity of native vegetation. Over a specified area and period of time, losses of native vegetation and habitat, as measured by the quality and quantity measure (habitat hectare), are reduced, minimised and more than offset by commensurate gains.

Notes for Part 3

Does the clearing require development consent?

The region has been divided into four management areas referred to as:

- Regional Protected Lands - Steep and Erodible (as mapped by DSNR at 1:100000 and gazetted with this Plan);
- Regional Protected Lands - Streamsides (20 metres from the 3rd order and larger streams);
- Land within a Regional Linear Reserves; and
- Unclassified Land.

For the purpose of this Plan, vegetation clearing activities are identified for each of these Management Areas relating to:

- Clearing allowed without development consent;
- Clearing allowed with development consent; and
- Clearing not allowed by this plan

'Clearing' and 'Native Vegetation' have the same meaning as defined in the Native Vegetation Conservation Act 1997.

The provisions that relate to each of these management areas are summarised in the Summary Clearing Control Table (D2.3).

Restrictions on certain clearing without consent
Intent:

The exemptions are intended to identify clearing activities that could be undertaken without requiring development consent. These activities, including consideration of concurrent use of exemptions, were deemed to not have an overall impact on the achievement of the aims and objectives of this plan. Consideration was also given to impacts on threatened species, populations and ecological communities (TSC Act) and matters of national environmental significance (EPBC Act).

The exemptions (eg. with particular reference to the Minimal Tree Cutting, Regrowth and Rural Structures exemptions) are not intended to allow a means for progressive clearing.

The exemptions must be considered as one part of an overall package in the context of achieving regional and bioregional targets. The RHRVC reviewed the *NVC ACT* exemptions to determine what was appropriate within the Riverina Highlands region (eg. the 2 ha Minimal Clearing Exemption no longer applies to the region under this Plan once gazetted.)
A few general rules apply to exemptions, which include:
Exemptions prevail over clearing not allowed (hence RHRVC's precautionary approach of limiting the number and type of exemptions available in the environmentally sensitive streamsides);
Once development consent has been issued for an area, exemptions cannot be used.

Restrictions on granting consent

A landholder or land manager who is proposing to clear land should contact the Consent Authority, DSNR, to discuss the proposal. If the landholder considers that the proposal falls inside the exclusions to the NVC Act, then the relevant local council should be contacted for advice as to whether local restrictions apply. It is the landholder's responsibility to ensure the proposal meets local council requirements.

If the landholder considers that the proposal falls outside the exemptions defined in this Plan, then an appointment for a pre-application site visit should be made with an officer from DSNR.

At the pre-application site visit, DSNR will advise of any Regional Protected Land, land tenure surrounding the property, the scope of the proposal and discuss the information necessary for the completion of an application to clear native vegetation under the Plan.

Information to be submitted with a clearing application

The requirement for assessing applications for development consent under the *NVC ACT* are outlined in s79(c) (1) of the EP & A Act and its regulations. The following is intended to provide a guide to the Consent Authority and applicants as to the requirements for native vegetation assessment within the Riverina Highlands region.

Scope of Applications

Level 1 applications: are for vegetation clearing which is less than 1 hectare, and which does not propose the clearing of native vegetation with HCV. Only the application form itself needs to be submitted.

Level 2 applications. are for larger clearing proposals between 1 and 40 hectares in size and which does not propose the clearing of native vegetation of HCV. A Property Vegetation Plan (PVP) must be submitted with the application.

Level 3 applications are those which propose vegetation clearing for areas larger than 40 hectares, or propose any clearing of native vegetation of HCV. In addition to a PVP, applications may be required to be accompanied by any or all of, but not limited to:

Targeted Flora Survey;
Targeted Fauna Survey;
Biodiversity Survey Report;
Landscape Survey Report;
Heritage Survey Report; and
Socio-economic Report.

At the pre-application phase, the Consent Authority will indicate which of these documents, if any, will be necessary.

In addition if the application is likely to have a significant effect on threatened species, populations or ecological communities, a species impact statement will be required

Property Vegetation Plans

The Guidelines for preparing Property Vegetation Plans in the Riverina Highlands and Regional Veg guides 1.1 –1.7 provide the information you require. These are

available in the Resource Guide from the Department of Sustainable Natural Resources.

Notes for Schedule 2

Regional protected land—steep and erodible

The mapped areas (mapped by DSNR at 1:100 000) include:
Slopes greater than 18 degrees
Highly erodible areas of sedimentary sourced parent material, and
Highly to moderately erodible areas of granite (igneous) sourced parent material

The vegetation clearing provisions on all regional protected land relate to native vegetation, exotic trees and dead trees.
Intent:
The intent of not allowing certain clearing on Regionally Protected Lands –steep and erodible is to:

a) protect known sites containing threatened flora and ecological communities in Recovery Plans on steep and erodible lands; and
b) to disallow clearing of more viable patches of Grassy White Box Woodlands, an endangered ecological community. The intent is that the 2ha are non-cumulative. The impacts of this will not be significant, as this community is not common on steep lands.

In addition, this type of land is mapped to enable delineation of where this prohibition does and does not apply.

Regional protected land—streamsides

The vegetation clearing provisions on all regional protected land relate to native vegetation, exotic trees and dead trees.
Intent:
Riparian vegetation is among the most cleared and degraded BVTs in the region. This Management Area is a priority for retention and revegetation and ultimately a net gain is required to ensure viability of the riparian zone or streamsides into the future. This Management Area is mapped to enable delineation of where this prohibition does and does not apply.

Land within a regional linear reserve

Intent:
Intent of not allowing certain clearing on Regional Linear reserves is to assist in the shift to manage linear reserves for their relative conservation or biodiversity values.

It is also to encourage the relevant authorities to take on the responsibility of ensuring that linear reserves have been assessed for their conservation significance.

The restriction on >1ha is intended to be non-cumulative (ie. to restrict progressive clearing)

Unclassified land

Intent:

Unclassified lands are the areas in the region that are most extensively cleared, are in the Lower Slopes Sub-region and therefore contain most of the depleted vegetation types.

The intent is that the clearing of the >2ha is non-cumulative (ie. not for progressive clearing)

Notes on Schedule 3

Identifying high Conservation Value vegetation is discussed also in Section C 1.1. Regional Veg guides 1.1-1.7 can also help to identify HCV. The Consent Authority (DSNR) will be able to help at the pre-application stage to determine if the proposed clearing involves HCV vegetation.

Notes on Schedule 4

These notes must be read in conjunction with the actual terms of the exemption contained in the RVMP in Appendix 7.

Beneficial conservation management

Intent:

This exemption is intended to exempt clearing that involves management of native vegetation for conservation outcomes in accordance with approved guidelines. It is intended to encourage 'active management' of native vegetation without requiring an involved approval process.

Maintenance of fence lines on regional protected land Clearing for rural structures on unclassified land

Intent:

The intent of restricting the clearing for a rural dwelling to 0.4ha is based on interpretation of the "Planning for Bushfire Protection" (Planning NSW & NSW RFS), providing protection from a moderate level of danger from bushfires.

The 10m exemption for fences is intended to allow for vehicle access for maintenance and fire fighting access

Eucalyptus leaf cutting

Intent and impacts:

This exemption was included because this practice is a traditional yet minor activity undertaken by farmers and small operators in the region. There are no likely significant impacts in terms of meeting regional targets. The activity is undertaken by 2-3 people in the region who receive their major income from this activity and between 6-12 people who supplement their income by undertaking this activity. The RHRVC felt that it was easier to permit this activity without requiring consent than it was not to do so. The potential negative response to not making this activity exempt, in the context of the overall impacts of the activity, would have been significant.

Horticultural harvesting or pruning

None

Indigenous cultural practices

Intent:

This exemption has been proposed to allow the continuation of a 'living culture' and therefore the collection of native plants for traditional cultural purposes. There is obviously a requirement to get the relevant permits from NSW NPWS and permission from the relevant land manager. Essentially it exempts them from having to gain consent from DSNR under the *NVC ACT*.

Minimal tree cutting

Intent:

Trees that can be removed under the proposed exemption proposed in this plan above (ie. < 50 cm DBHOB) are unlikely to have significant hollows and therefore low habitat value. This exemption is intended to allow more liberal removal of trees in more heavily wooded areas. Even if this exemption was used every year by a landholder, there are no significant impacts on woody tree cover in the region.

Intent is that there is no upper limit of trees for the >40 stems per ha category

Noxious weed eradication

Intent:

The control of noxious weeds is excluded from the Plan. This exemption allows for the unavoidable clearing of other non-target vegetation associated with some methods of noxious weed control.

Pest control

Intent:

This exemption has been limited to burrowing and den making pests by definition. It is intended that a Best Management Practice Guideline would be developed for this exemption which defines "to the minimum extent necessary".

Planted native vegetation

Intent:

This exemption was intended to exempt clearing of native vegetation plantings that are not regulated under any recognised framework such as the Plantations and Reafforestation Act. That is for areas that are self funded or where harvesting was permitted under conditions applying with the original provision of incentive funding.

Private native forestry

Intent:

This exemption is intended to permit selective harvesting of private native forests within a set of silvicultural and operational constraints that are specific to this region; and it is aimed at ameliorating any impacts and ensuring that areas harvested are able to recover.

Tree species associations restrictions are aimed at avoiding depleted vegetation types and areas not well protected in the region.

The exemption is designed to allow small-scale farmer operation of portable mills, or cutting of round timber products for sale, thinning for green firewood etc. as well as larger contractor based operations that conform to these regional guidelines.

The Schedule 1 guidelines in are the result of a wide regional circulation of interim guidelines drawn up by a committee with representatives of DSNR, industry, landholders and conservation interests. These were then reviewed by the RHRVC with input from zone NPWS forestry licensing staff, amended and then adopted by the RHRVC.

Particular habitat and wildlife restrictions in the guidelines are reasonably straight forward when it was realised that northern corroboree frog breeding sites potentially only exist on parts of about 3 properties, and yellow-bellied gliders on potentially 6 to twelve properties adjoining large areas of National Parks and State Forests, whilst other general drainage and retention provisions also protect for these and other species including the limited number of regional threatened plants. The habitat and wildlife restrictions do allow for particular input in compliance

monitoring and at the notification stage. Any effects on individual animals or plants are not considered likely to significantly affect the viability of populations of protected fauna at the regional level.

The general clause "a." to is intended to restrict the reuse of the exemption too frequently in recognising that different stands may have differences in age structure and be able to sustain variable harvesting rates.

Public utility clearing

None

Regrowth removal

Intent:

There is not enough regrowth in the region to warrant a large impact on threatened species because of the level of grazing management. Other factors important to consider when analysing the impacts of this exemption include:

- the Minimal Tree Clearing (2ha) exemption has not been adopted in this plan;
- the requirement for advice to the DSNR for removal of more than 0.5 ha will not differentiate between single paddock trees and larger patches;
- in a regional context this exemption will not significantly impact on the quality and quantity of native vegetation in the region;
- changes to grazing management need to be encouraged to foster regeneration. This exemption will not adversely impact on this process. Restrictions on the removal of trees/patches from previously cleared areas which are impacting on economic returns would discourage these changes and reinforce the practices of rotating sheep grazing to stop regeneration.
- trees less than 20cm DBHOB still have a way to go to be significant habitat resources (ie. form hollows and to flower significantly).

Stock fodder provision

Intent:

The areas of NSW "suffering from drought conditions" are shown on maps posted monthly on the NSW Agriculture Website at www.agric.nsw.gov.au. This information is also available from NSW Agriculture District offices

Clearing by Registered Surveyors

None

Management guidelines

Guidelines have been developed where a need is identified to further explain elements of the Plan and the Strategy. They are similar but more detailed and locally specific than standard consent conditions. These guidelines and those relating to the consent process are listed below. They are further described in Section C3 of the Strategy and those that have been developed are contained in the supporting Resource Guide.

Explanatory Note # 1: Applying for Development Consent;

Guidelines for Sustainable Harvesting of Dry to Moist Open Sclerophyll Forest within the Riverina Highlands;

Beneficial Conservation Management Exemption Guidelines for the Riverina Highlands;

Guidelines: How to Minimise the Environmental Impacts of Clearing;

How to prepare a Property Vegetation Plan (PVP) in the Riverina Highlands

Regional Veg Guides 1.1 – 1.7 (How to Prepare a Property Vegetation Plan (PVP);

Guidelines: Principles for landscape design; and

Guidelines and Application Form for Clearing Vegetation under the Plan.

Dispute resolution

In the event of a dispute arising from the processing and determination of a clearing application, the Consent Authority will advise the applicant of the dispute resolution procedures that are available in the Land and Environment Court of NSW.

The Riverina Highlands Regional Vegetation Committee supports the development of alternative dispute resolution procedures.

The intention of advising the applicants of alternative dispute resolution procedures is to avoid the commencement of costly litigation. These procedures include mediation, conciliation and arbitration, which may be obtained through independent agencies such as the Australian Commercial Dispute Centre, Lawyers Engaged in Alternative Dispute resolution, or the Centre for Environment Dispute and Resolution at Macquarie University.

Existing and continuing use rights in RVMPs:

In certain circumstances, the EP&A Act allows an established and lawful land use to continue without any further requirement for development consent, even though a subsequent EPI states that a new development consent is required if the land-use is to be changed. In this way, the EP & A Act allows for "continuing use" of land (s109 AP&A Act).

Continuing use rights however do not apply in RVMPs. The requirement in the *NVC ACT* that "Development consent may be required under a RVMP." (s36 (2)), overrides a claim of continuing use right under the EP&A Act..

Section E – Implementation and monitoring

E1 Introduction

This section of the document details principles for implementing the aims, objectives and targets, tools for implementation including an action plan, monitoring indicators and standards, a reporting and review timetable and a process for amending the RVMP.

E2 Actions for Implementation

E2.1.1 Introduction

The action plan is intended to show how the aims and objectives of this RVMP are translated into specific programs and implementation actions. It has been developed by the RHRVC in consultation with all relevant organisations and agencies, which enabled them to assign relative priorities, responsible agencies, supporting organisations, and action requirements.

E2.1.2 Action plan for implementation

The action plan below identifies actions necessary for the implementation of the Plan.

Table 13: Action plan for implementing the Riverina Highlands RVMP

Parts to achieving the vision for the region	Priority	Responsible Agency	Supporting Agencies	Costing (days/weeks, positions)	Timeframe (target for completion)	Action Requirements
1. Identifying Priority Areas						
Cultural Heritage						
Identify plants of significance to Wiradjuri/Walgalu people.	**H**	WCoE	DSNR; NPWS		Ongoing	Develop a database for the Riverina Highlands region which identifies plants of significance to Wiradjuri/Walgalu people. Draw on existing information eg "Database of NSW plants utilised by Aborigines"
Monitoring						
Establish a group to develop benchmark sites to monitor the effect of management changes.	**M**	DSNR	NPWS; SF; NSW Ag NGOs; RHRVC	Expert Panel: CNR; PO; VMO 1 & 2: 4 weeks 3: 4 weeks	2002/2003	Develop a joint agency approach to and undertake: 1. condition benchmarking (ie BVT condition benchmarking) 2. area-based monitoring (ie to measure targets) using indicator/focal species techniques 3. identification of areas of high biodiversity significance through workshops and targeted surveys
Ensure that a comprehensive assessment process is developed for identifying HCV grasslands and grassy ecosystems that is consistent across the State but applicable at a regional scale.	**H**	NPWS	RHRVC; DSNR; SF; NSW Ag	3 person days	End 2002	Field test "Grasslands and grassy ecosystems significant indicator species rapid appraisal process" as it is further developed by NPWS
Monitoring						
Develop working models of native vegetation management.	**H**	DSNR	RHRVC; NSW Ag; Landcare; CSIRO; NPWS; NGO's		On-going	Demonstrate
Monitor and integrate into advisory material information from relevant research projects undertaken in and around the region .	**M**	DSNR	NSW Ag; EA; CSIRO; NPWS; CSU	BF; Landscape Knowledge Div Establishment: 4 person days Maintenance: on-going	2002 / 2003	Facilitate a workshop Develop a research sites database to include reference to existing projects in the region
Mapping and survey						
Identify the location of wetlands and their management for conservation.	**H**	MWWG	RHRVC	NRPO: W 3 weeks	2001/2002	Review wetlands mapping once ground-truthed, and identify the conservation value of wetlands in the region

Target areas that respond best to revegetation and incentives (ie resilient lands).	**H**	DSNR; Plan IC	RLPB; CSU; NSW Ag; CMB	CNR; Resource Knowledge Div[n] 4 weeks	2002 / 2003	Develop a technique for identifying 'resilient lands' and target those areas for incentives and action.
2. Incentives Package						
Funding Required						
Ensure the necessary funds are available to effectively implement the plan through the Catchment Blueprints	**H**	DSNR CMB	NPWS; NSW Ag; NGOs	ISM	On going	Source funds from a range of sources (government and private) as per recommendations in Section C.
Incentives Delivery						
Target incentives for pest and weed control (including public land provided plan of management or PVP developed).	**M**	CMB NCWG	NSW Ag; NGOs; DSNR; RLPBs; LG	NRPO: NV 3 weeks	2001 / 2002	Develop lists and management strategies for pests and weeds not currently declared.
	M	DSNR; CMB	NSW Ag; NGOs; DSNR; RLPBs; LG	ISM; CMB	On-going	Target incentives for pest and weed control.
Support the implementation of State-wide (or regional pilot) management projects similar to a stewardship program on public lands	**M**	RHRVC; DSNR	CMB	NRPO:CS 4 person days	2002 / 2003	Review pilot stewardship program (WRRVC) and others and adopt as appropriate.
Incentive Structures						
Better coordinate investment and incentives to minimise duplication.	**H**	DSNR; CMB	DSNR	ISM	On-going	Streamline the delivery of all incentive funds.
Promote the targeting of incentive funds for restoration projects with an Indigenous cultural heritage component	**H**	DSNR;CMB; WCoE	DSNR		On-going	Involve the WCoE in implementation
'Investment coordinator' to consider innovative options for delivering incentives across all lands, in ways that ensure that funds available are used effectively.	**H**	DSNR; CMB	RHRVC	NRPO:CS	2002 / 2003	Review a range of innovative options for delivering incentives (eg a 'tender' system being piloted in Liverpool Plains and by the NECMA; stewardship payments to facilitate 'land retirement').
3. Management of Land Clearing						
Guidelines						
Develop and update approved guidelines to guide implementation.	**H**	DSNR	RHRVC to review	Drafting of Guidelines: NRPO:CS 5 weeks Review draft Guidelines: Committee – CO; VMO 2 pos[ns] × 2 weeks	2002 / 2003	Develop approved guidelines to interpret the Beneficial Conservation Management exemption.
	L	DSNR	RHRVC to review		2002 / 2003	Review guidelines developed in other regions and by other agencies and incorporate into existing guidelines where necessary.
	M	DSNR	RHRVC to review; NCWG		2002 / 2003	Develop and update approved guidelines to clarify best management practices (BMP) relating to the consent process and exemptions that require clarification.

1 pos[n] × 2 weeks

	L	DSNR	RHRVC to review		2002 / 2003	Update approved clearing guidelines: " How to minimise the environmental impacts of clearing" as necessary.
	L	DSNR	RHRVC to review		2002 / 2003	Review approved Explanatory Note No. 1: "Applying for Development Consent" and update as necessary.
	M	DSNR	RHRVC to review		2002 / 2003	Develop and update approved DSNR guidelines on how to prepare PVPs.
	L	DSNR	RHRVC to review		2002 / 2003	Develop approved DSNR guidelines for assessing heritage as it relates to native vegetation.
	M	DSNR	RHRVC to review; NPWS; WcoE		2002 / 2003	Review and update staff guidelines to further improve clarification of implementation of the plan (eg. BMP for Vermin Control Exemption).
	M	CMB/DSNR	RHRVC to review		2002 / 2003	Collate guidelines detailing Landscape Design Principles from the latest research.
Consent, exemptions and PVP processes						
Establish a consent process and a process for PVP development.	**H**	DSNR		Landscape Knowledge Div[n] 5 person days	2002 / 2003	Develop DSNR protocols for providing aerial photos and/or satellite imagery for PVP development.
	H	DSNR	CMB; Landcare; NSW Ag;SF	Regional Landscapes Div[n] 2 weeks	End 2002	Develop an education package to promote PVP development for clearing applications (ie. Resource Guide & CD data package).
	H	DSNR	EA; NGOs	BF; VMO 1 week	2002 / 2003	Establish a consistent process for site inspections for PVP development.
	H	DSNR	RHRVC to review	Evaluation: CO; PO; VMO 6 person days	On-going	Evaluate PVP process and feedback through plan review.
	H	DSNR	RHRVC to review	Resource Access Div[n] Establishment: 0.5 person days Maintenance: 2 person days	On-going	Provide a field in DSNR database, VegNet, for archiving Clearing Applications and Property Agreements (ie. 'approved' PVPs) for consideration in future applications.
	L	DSNR	RHRVC to review	Establishment / maintenance: CO; 3 person days	On-going	Provide a field in the DSNR Compliance Database for recording notifications of exemptions.
	H	DSNR	RHRVC to review	Clearing applications: CO (4 person days) Property Agreements / Incentives: Investment Services Div[n] (4 person days)	2002 / 2003	Establish DSNR compliance procedures to monitor PVP approvals (ie. auditing and notifications of works procedures).

	H	DSNR	RHRVC to review	VMO; PO 4 person days	2002 / 2003	Review information requirements for different scales of PVPs (ie. small, medium and large applications) and standards to ensure that suitably qualified, experienced and reputable consultants undertake the necessary surveys.
Cultural Heritage						
Support the need for consultation processes (in relation to native vegetation) with Indigenous people to be relevant and appropriate (ie. Wiradjuri people in Wiradjuri Country).	**M**	DSNR; CSU	DSNR; NPWS; NSW Ag; SF	-	On-going	Formalise and integrate consultation and participation of Indigenous people across all relevant natural resource management legislative frameworks and administering local, State and Commonwealth agencies.
	M	WCoE; NSW ALC; Aboriginal Affairs	DSNR; NPWS; NSWAg; SF	-	On-going	Establish a "Wiradjuri Board" as a central body to consult on NRM issues in Wiradjuri Country.
Actively improve knowledge of Indigenous cultural heritage sites of significance (as they relate to native vegetation) involving the appropriate Indigenous people in specific local areas.	**M**	NPWS	WcoE	-	On-going	Work with local Aboriginal communities to identify an appropriate process for assessing sites and identifying sensitivity issues to ultimately improve information in existing registers. Intent: To ensure the Indigenous Cultural Heritage Sites Register has a comprehensive record of significant sites within the Riverina Highlands region.
	M	NPWS	Local Councils	-	On-going	Access survey work done by Councils on identifying sites of significance and include on existing registers.
Monitoring						
Maintain meaningful records so that native vegetation targets can be monitored.	**L-M**	DSNR	NGOs; Landcare; NPWS; NSW Ag	ISM	2002/2003	Develop a system for comparing relative environmental benefits.
	M	DWLC;CMB	NGOs; Landcare; NPWS	BF; Landscape Knowledge Div^{n} 5 person days	End 2002	Develop a shared database of environmental works.
Cultural Heritage						
Prepare Property Vegetation Plans (PVP) with a cultural heritage component to provide working models.	**2001/ 2002**	PlanIC	DSNR, Local Govt.; NPWS; Aboriginal Affairs; WcoE	-		Prepare at least 1 PVP with an Indigenous cultural heritage component for each of the four Management Areas (in consultation with each landholder/land manager, the Wiradjuri Council of Elders and the relevant authorities). Intent: To provide a working model on how to prepare a PVP appropriate for that Management Area.

Encourage the establishment of pilot joint management models on public lands.	**M**	WCoE	NPWS; Aboriginal Affairs; Local Govt.; RLPBs	-		Liaise with the relevant authorities on establishment of joint management models on public lands. Intent: To support existing joint management models on public lands (eg. Mungabareena Reserve).
5. Public Land Management						
It is recommended that Local Government develop and implement a Development Control Plan for Linear Reserves in accordance with the Recommendations in the plan.	**M**	DSNR; Local Government	CMB	NRPO:CS	2002/2003	DSNR to write to each local council within the region to seek endorsement and implementation of the recommendations outlined in Table 11 in the plan. Intent: The recommendations were identified as necessary to improve management of native vegetation on public reserves.
Promote management of Linear Reserves for conservation.	**H**	DSNR	RLPBs; SR; RA; LG; NGOs; NPWS; CMB	Regional Landscapes Div[n]	On-going	Encourage Linear Reserves are managed (in target areas) to maintain their conservation values.
	M	DSNR	CMB; RHRVC; NPWS	NRPO: CL	On-going	Identify target areas and assess Crown Reserves for their conservation significance (in the target areas). NB: The TSR assessment method provides a suitable guide for this process.
	M	DSNR	CMB; RHRVC; NPWS	NRPO: CL	On-going	Ensure that Crown Reserves be managed for their conservation significance in the Riverina Highlands and encourage State-wide adoption of this practice.
	H	DSNR; CMB	NGOs; NPWS	Investment Services Div[n]	On-going	Assist RLPBs to source public funding to manage public assets sustainably.
	H	DSNR; RLPBs; Local Govt; roads authorities		NRPO: CL Regional Landscapes Div[n]	On-going	Encourage the development of PVPs on public land in rural areas, ie Linear Reserves.
6. Other important actions						
Education, training and research						
Ensure implementation staff are suitably trained.	**H**	DSNR	-	Resource Access & Compliance Div[n] 2 person days	On-going	Train VMOs and managers in plan provisions (curriculum is the plan itself) and skills necessary to assist decision making.
Ensure stakeholder groups understand the application of the Plan on the ground.	**H**	DSNR	-	NRPO:CS	2002/2003	Develop a brochure listing Q and As from the RHRVCs public meetings (including scenarios).
Undertake an education program to raise awareness in the community about the values and role of native vegetation in landscape management.	**M**	DSNR	NPWS; CMB; NSW Ag	Regional Landscapes Div[n]	On-going	Initiate projects to raise awareness about the values of native vegetation including: • Value of small remnants program • Value of standing and fallen dead timber • PVP process

Improve techniques for effective weed and animal pest control.	**M**	NWAC	NSW Ag; DSNR; NPWS; CSIRO; SF; NSW Farmers; LG		On-going	Actively support research into biological control of blackberries
	L	NWAC	NSW Ag; DSNR; NPWS; CSIRO; SF; NSW Farmers; LG		2002/2003	Develop BMP Guidelines for weed management that are consistent with the following: • Buchanan, 1989, Bush Regeneration, TAFE Student Learning Publications, Sydney. • Brodie, 1999, Bush Regenerators' Handbook, National Trust of Australia, Sydney.
Cultural Heritage						
Support the need for Indigenous people and organisations to apply for funds for projects aimed at restoration of native vegetation as outlined in this plan.	**H**	WCoE	DSNR; NPWS	-	On-going	Develop a brief for a 4 year project to engage a coordinator to train and educate young Indigenous people in fencing and revegetation techniques and to establish "Outdoor Learning Centres. Funding sources include: Caring for Country, Regional Solutions Program, Indigenous Land Management Fund – EA, Community Development Employment Program. Intent: To provide employment opportunities for Indigenous people in land rehabilitation
Plantation development						
Ensure consistency between the PRA Code of Practice and the Plan	**H**	RHRVC	DSNR	NRPO:CS	August 2002	Seek and review feedback on the Interim Regional Vegetation Schedule to the PRA (Code) to ensure it is consistent with the Plan.
Threatened species						
Incorporate relevant provisions of future threatened species recovery plans into the RHRVMP	**H**	RHRVC; DSNR	NPWS		On-going	Update and review the Plan to include new listings and new recovery plans
Monitor regional progress in the implementation of threatened species recovery plans	**H**	RHRVC; DSNR	NPWS		On-going	Update and review the Plan to include new listings and new recovery plans

E3 Indicators for review

Performance indicators have been identified (see Table 14) to provide measures for reviewing the implementation of the Plan.

Table 14: Performance indicators for the Riverina Highlands RVMP

Aims and Objectives	Performance Indicator
Protect and enhance the area of all native vegetation types across the Riverina Highlands region **Target: No net loss of well represented Broad Vegetation Types and net gain of Depleted Vegetation Types in the Riverina Highlands region.**	***Protection and management (of existing remnant native vegetation for conservation outcomes):*** ■ Area of high conservation value native vegetation protected and managed across all tenures; ■ Area of broad vegetation types protected and managed; ■ Area of depleted vegetation types protected and managed; ■ Area of biolinks protected and managed; ■ Length (km) of fencing to protect existing remnant native vegetation; ■ Area of critical or identified habitat for threatened species or populations protected and managed; ■ Area of threatened ecological communities protected and managed; ■ Area being actively managed; ■ Area, number and types of cultural heritage sites supporting native vegetation protected and managed. ***Strategic enhancement (of existing remnant native vegetation) and re-establishment (of native vegetation in previously cleared areas) with indigenous species:*** ■ Area of high conservation value native vegetation enhanced across all tenures; ■ Area of broad vegetation types enhanced/re-established; ■ Area of depleted vegetation types enhanced/re-established; ■ Area of biolinks enhanced/re-established; ■ Length (km) of fencing to protect areas of re-established remnant native vegetation; ■ Area of critical or identified habitat for threatened species or populations enhanced/re-established; ■ Area of threatened ecological communities enhanced/re-established; ■ Area of enhanced/re-established native vegetation being actively managed; ■ Area, number and type of cultural heritage sites where native vegetation has been enhanced/re-established; ■ Area of 'resilient lands' enhanced/re-established; ■ Length (km) of direct seeding undertaken to enhance/re-establish native vegetation; ■ Number of seedlings established to enhance/re-establish native vegetation; ■ Area of enhanced/re-established native vegetation being actively managed. **(Monitor against the regional native vegetation targets)**
That native vegetation be an integral part of land-use management	■ Number of Property Vegetation Plans developed/implemented for incentives/ development consent for clearing; ■ Level and types of incentives dollars provided linked to PVPs; ■ Numbers, location and nature of approved clearing applications linked to PVPs; ■ Number of and types of exemption notifications; ■ Numbers of and types of breaches of the RVMP rules; ■ Number of functioning demonstration sites established;
Promote and encourage partnerships between the community, including Indigenous people, and governments through consultation and participation.	■ Number of discussion forums held involving all relevant stakeholdersand led by government / community partnership (topics: alternative use of marginal grazing land/resilient lands; types of incentives available to the community); ■ Area of 'resilient lands' enhanced/re-established; ■ Incentives dollars invested in priority areas throughout the region (stewardship for

	sustainable management of ecological services/ fencing/management/enhancement/revegetation);

Increase community knowledge and understanding of native vegetation, its values, history and management	▪ Number of Resource Guides requested/provided;
	▪ Number of Information Packs provided; one unit includes a leaflet holder containing:
	  ▪ Q & A sheets;
	  ▪ FactSheets;
	  ▪ Highland Cover Newsletter; and
	  ▪ Colour brochures
	▪ Number of CD Map Packages provided;
	▪ Number of and location of PVPs developed (which map native vegetation at a local scale);
	▪ Number of implementation Forums held;
	▪ Number of RVMP/RVMS reviews undertaken by the RHRVC and DSNR

Prevent and reverse land degradation by maintaining the value of native vegetation.	▪ Area of potential recharge sites supporting remnant native vegetation protected and actively managed; ▪ Area of enhancement/re-establishment in previously cleared potential recharge sites; ▪ Area of Regional Protected Lands supporting remnant native vegetation protected and actively managed; ▪ Area of Regional Protected Lands in previously cleared areas enhanced and re-established; ▪ Number and area of high conservation value wetlands protected and actively managed ie in terms of natural hydrological flows and native vegetation that they support; ▪ Number and area of high conservation value wetlands enhanced and re-established ie in terms of natural hydrological flows and native vegetation that they support; ▪ Area of weed control; ▪ Area of pest animal control; ▪ Area of acid soil supporting remnant native vegetation protected and actively managed to minimise acidification; ▪ Area of enhancement/re-establishment in areas affected by acidification; ▪ Area of riparian communities (Depleted Vegetation Type) protected/managed and enhanced/re-established; ▪ Number of BMPs and Codes of Practice provided to landholders/land managers; ▪ Number of community forums held to promote codes of practice and sound management of native vegetation and feedback of knowledge
Raise awareness of the cultural heritage of all people involved in native vegetation management, recognising the importance of traditional knowledge of the Indigenous Wiradjuri and Walgalu people of this region, as well as the substantial contribution of European culture.	▪ Number of Property Vegetation Plans developed with a cultural heritage component; ▪ Number of Resource Guides (containing Wiradjuri Profiles) requested; ▪ Number of cultural heritage forums held;
Support and encourage the involvement of Indigenous people.	▪ Number of cultural heritage forums held (topics: training in NRM science and technology issues; dialogue on NRM and scientific research; joint NRM models; access to natural resources for educational, medical, nutritional and other economic purposes); ▪ Number of notifications to Wiradjuri Council of Elders for PVPs.

E4 Standards for Monitoring

E4.1 Data collection

Standards for native vegetation mapping required by DSNR are contained within the document titled *Guidelines for mapping Native Vegetation* [135].

E4.2 Databases for recording clearing statistics

Databases for recording information contained within Property Vegetation Plans and Clearing Applications and held by DSNR include TEAMS and VegNet databases.

E4.3 Monitoring

This Plan provides several types of monitoring tools that allow the measurement of change in the quantity and/or quality of native vegetation in the region which include:

- area based monitoring ie of PVPs and clearing applications to reach regional native vegetation targets set out in Table 7;
- condition benchmarking ie broad vegetation type condition benchmarking reports to monitor condition to be actioned in Table 13; and
- significant indicator species monitoring ie grasslands and grassy ecosystems significant indicator species rapid appraisal process to be tested through PVPs.

The ***Resource Guide*** provides information on specific property based monitoring methods for native vegetation. The RHRVC will consider these monitoring programs in it's review of the RVMP.

E5 Review and reporting mechanisms

Table 15 provides a timetable for RVMP review that will meet the 10 year expiry limit. This Plan will undergo a major review every five years and in the event that no changes are approved following the review, this Plan will lapse after a period of 10 years from the date of gazettal.

Table 15: Review timetable and reporting roles

Plan review strategy	Responsibility	Costing	Timeframe	Action
Review the impacts of the plan on native vegetation in the Riverina Highlands region and ensure that this review is integrated with the review of other NRM plans and strategies eg WMPs and CMPs.	RHRVC & DSNR (Murray and Murrumbidgee Regions)	**RHRVC Review:** $6000 (sitting fees, on-costs, travel) 1-2 days **DSNR Reporting:** CO; PO; VMO; NRPO:CS 5 person days	Annual reporting: 2001/2002 – 2010/2011 Major Review: 2005/2006	Undertake annual (or on an as needs basis) reporting and review of activities undertaken during implementation of the Plan.

The role of the RHRVC beyond plan development is to meet annually (or on an as-needs basis) to review the implementation of the RVMP for the Riverina Highlands and the supporting Resource Guide.

The process for an annual review of the plan and associated documents is as follows:

1. DSNR to notify RHRVC Chairperson of details of the agenda, date and venue for Annual Implementation Report Review meetings.
2. DSNR to formally report to the RHRVC one month prior to each scheduled review on the Performance Indicators in Table 13. This would also include a report from the VMO on work undertaken to date, what is/isn't working and details of public feedback. DSNR to also prepare and table Discussion Papers identifying issues and options, for the RHRVC's consideration.
3. RHRVC to consider the annual report, stakeholder feedback and new information, and formally make recommendations to DSNR (and the CMBs) on necessary plan updates and/or amendments.
4. Agenda items for the first Annual Review to be undertaken by the RHRVC in their capacity as a plan review committee shall include (not exclusive):
   - New Recovery Plans (including draft Recovery Plans);
   - Regional Schedules ie Plan Schedule 1 and Regional Vegetation Schedule to the PRA;
   - Use of Offsets at a landscape scale;
   - Mapping and Guidelines;
   - Consider recommendations from 'expert Field Group' on "Grassy ecosystems significant indicator species rapid appraisal process" developed by NPWS [131] ;
   - *Regional VegGuides, VegNotes, Resource Guide* and reprint of the *Revegetation Guide for the Riverina Highlands*;
   - Wetlands report review;
   - Review Action Plan;
   - Review of funding and funding priorities.

5. The Chairperson may request the formation of working groups and sub-committees to consider issues requiring further discussion and/or expert advice.

E6 Amendments and additions

Sections 35 (1) and 35 (2) of the *NVC ACT* provide for the amendment and repeal of a RVMP. An RVMP can be amended at any time during its life. Once a RVMP is amended, the new RVMP will replace its predecessor and a new 10-year period for the life of the plan commences unless a different time-frame for review is indicated in the RVMP.

Best Operating Standards and Best Management Practices Guidelines approved by DSNR provide advisory material relating to the exemptions and the consent process respectively. These have not been included in the plan itself so that they can more easily be updated as new information comes to hand without the need to formally amend, re-exhibit and re-gazette the plan.

A Schedule has also been included in this plan in order to facilitate the updating of the *Guidelines For Sustainable Harvesting of Dry to Moist Open Sclerophyll Forest within Riverina Highlands of New South Wales* without the need to amend, re-exhibit and re-gazette the plan. These guidelines are required to define the Private Native Forestry exemption.

Identified sites for threatened flora listed in threatened species recovery plans, ie including draft and gazetted plans, are referred to in the regulatory section of this Plan. Recovery Plans are available from NPWS. Schedule 1 of the *Threatened Species Conservation Act* 1995 lists the threatened species referred to.

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Appendix 3 - Assistance available to landholders

1.0 Introduction

This paper provides general background information on the current system for providing incentive funds to assist with native vegetation conservation and management. It details the assistance available under current programs for each of the priority actions identified in this Strategy. Finally, this paper also attempts to provide some information about how the delivery of incentives might work under the new framework provided by the Catchment Management Plans that are currently being developed across NSW under the NSW *Catchment Management Regulation 1999.*

2.0 General background information on incentive programs

Current funding to assist with native vegetation management (and for other natural resource management) comes from both the Federal and State government level for various purposes and outcomes. Much of the funding is delivered through the Natural Heritage Trust (NHT #1). In the past, proponents may apply directly to the NHT for funding, or funding may be delivered through regionally based projects that have applied to deliver NHT funds on a devolved grant basis.

Many State Government departments also directly fund schemes that provide financial assistance, technical advice and mechanisms for long term protection and management of native vegetation. In addition, there are a number of tax benefits and rate reductions available to those interested in conservation of natural resources.

Who decides what is funded?

There are several layers of government involved in deciding the allocation of funding, as well as input from the community. Two catchment management boards (CMBs) cover the Riverina Highlands region – the Murray CMB and the Murrumbidgee CMB. The boards develop the overall catchment plans and targets. NHT and other natural resource management funding applications are assessed at the regional level by the CMBs.

For more information, please contact your local Catchment Management Board:
Murray Catchment Management Board
Executive Officer
Ph: (03) 5881 9200
Fax: (03) 5881 5102
PO Box 205
Deniliquin NSW 2710
www.murraycmb.org.au

Murrumbidgee Catchment Management Board
Executive Officer

43-45 Johnston St.
PO Box 10
Wagga Wagga NSW 2650
Free call: 1800 333 477
Ph: (02) 6923 0400
Fax: (02) 6923 0520
www.murrumbidgee-catchment.org.au

Landcare Programs

In 1999 there were more than 1400 Landcare Groups in NSW undertaking a wide range of activities including on-ground works, research, monitoring, education and community awareness. Landcare groups develop and implement local solutions to local problems that are part of funding priorities at the catchment level.

In some areas, several Landcare Groups have come together to form networks. These networks allow group members to share experiences, assist each other, work and plan across property and catchment boundaries.

Details of groups and Landcare activities, as well as devolved grant projects in your area can be found by contacting the Landcare Coordinator in your area (see list below) or on the Internet at www.landcarensw.pcn.org.au. By navigating to the Landcare database CLIO, you can find out what projects have been funded in your area.

For more information please contact your regional and/or local Landcare contacts:
Regional Landcare contacts:

Regional Landcare Facilitator (Murray)
DSNR Albury 02 6041 6777

Regional Landcare Facilitator (Murrumbidgee)
DSNR Wagga Wagga 02 6923 0400

Greening Australia

Greening Australia (NSW) Inc. (GANSW) is one of a nationwide federation of not-for-profit organisations which formed in 1982 - International Year of the Tree - to provide a practical means to addressing the need for large scale revegetation and management of Australia's native vegetation. Around the country Greening Australia is united by a common vision of a healthy, diverse and productive environment that is treasured by the whole community www.ga.org.au

For more information, please contact:
Greening Australia Riverina and South West Plains
Deniliquin 03 5881 3429

World Wide Fund for Nature

Information about current programs is available from the WWF website at www.wwf.org.au

NSW Department of Sustainable Natural Resources

The Department may have specific programs running in your area. For more information, please contact your local office:

- DSNR Wagga Wagga 02 6923 0400
- DSNR Albury 02 6043 0100

- DSNR Tumut 02 6947 0200

NSW National Parks and Wildlife Service
NPWS may have specific programs running in your area. For more information, please contact your local office:
- NPWS Tumut 02 6947 4200

NSW Department of Agriculture
The Department may have specific programs running in your area. For more information, please contact your local office:
- NSW Agriculture Tumut 02 6947 4188

What sort of funding agreements are available?

Short-term agreements
A management contract is a short-term agreement between the landholder and the project proponent which, when signed by both parties, binds the landholder to undertake the desired works for the incentives received within a certain time-frame. Examples of project proponents that provide these sorts of agreements include Greening Australia and Landcare.

Options for long term agreements
In order to ensure the long-term conservation and management of remnant vegetation, several formal arrangements can be made. Check with the local office of the organisation for the current availability of these programs and also check whether your area will qualify for an agreement.

DSNR Management Agreements
Features:
- Fixed term
- Not recorded on the title
- The time frame can be nominated; and
- Financial assistance is available for management of the conservation areas.

DSNR Property Agreements (fixed term)
Features:
- Fixed term
- Recorded on the title
- The time frame can be nominated; and
- Applicants maybe eligible for funding for fencing, revegetation and management through the Native Vegetation Management Fund.

DSNR Property Agreements (long term)
Features:
- 60 years + (can be in perpetuity)
- Recorded on the title
- Protection is long term and fixed on the title; and
- Applicant may be eligible for funding for fencing, revegetation and management through the Native Vegetation Management Fund.

NPWS Voluntary Conservation Agreements
Features:
- In perpetuity
- Recorded on the title
- Protection guaranteed if the applicant moves on or sells the property; and
- May attract rate and tax relief in some situations.

Conservation and the tax system

This is a summary of some of the financial incentives that may be available for conservation works or donations. Check with your accountant and the Australian Tax Office for up-to-date information.

Landcare operations tax offset

Primary Producers, or landholders conducting a business using rural land (other than mining and quarrying), with a taxable income of $20 000 or less may be eligible to claim a tax offset for the costs of approved landcare works. Works include land capability fencing, fencing out degraded land, drainage works to control soil erosion and salinity, pest control, windbreaks and regenerating native vegetation. Contact the Australian Tax Office National Hotline(1800 060 425) for more details.

Tax deductibility of land donated for conservation

Changes to the Income Tax Assessment Act 1997 have been made so that donations of property (must be valued at over $5000) to approved conservation organisations are tax deductible regardless of when or how the property was acquired. The deductions can be spread over 5 years. More information is available from the Australian Tax Office (National Hotline 1800 060 425) or Environment Australia (02 6274 1467).

Capital gains tax changes for land under perpetual covenant

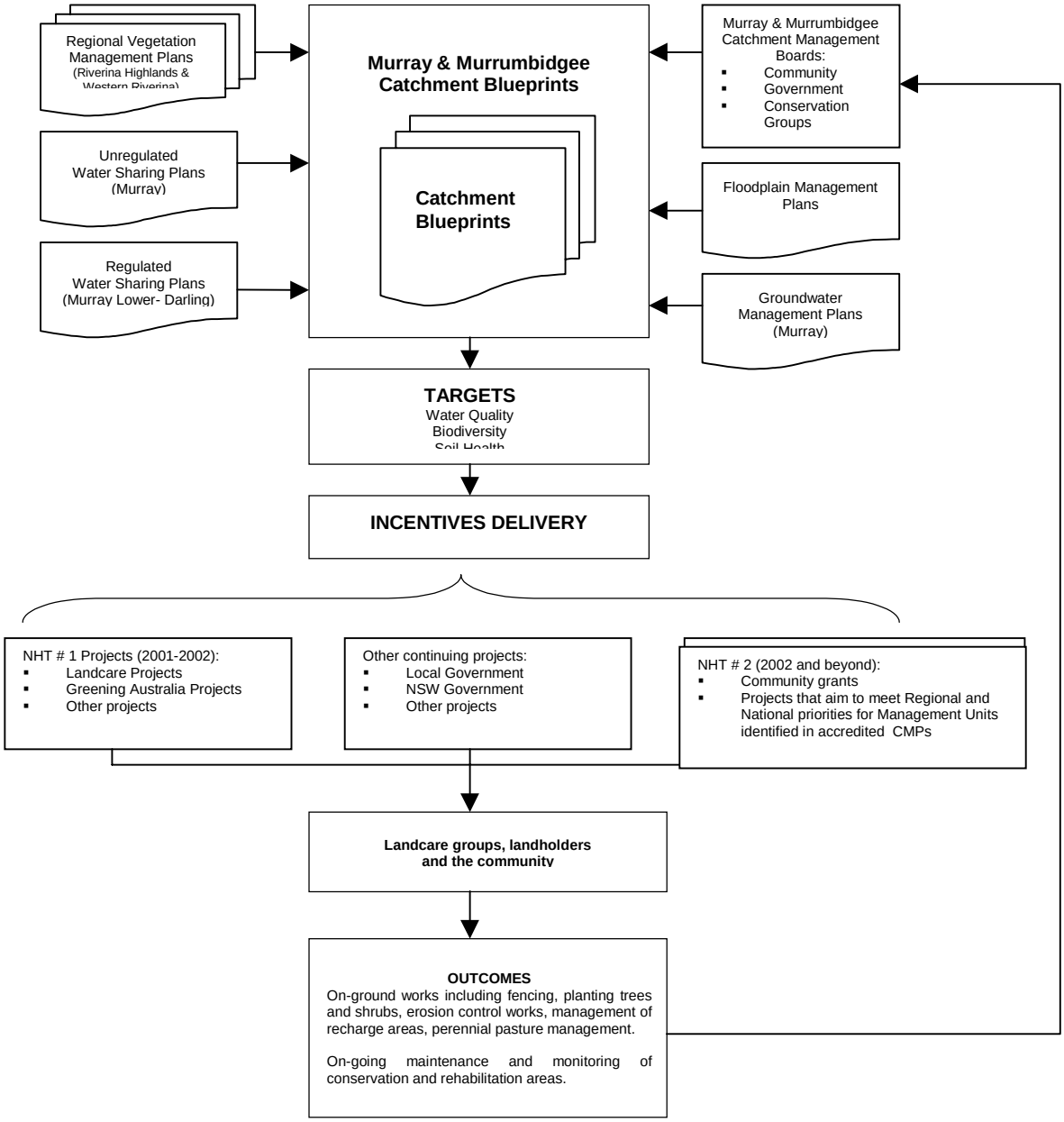
In June 2001 the Federal Treasurer announced a proposal for changes to the tax system that will mean perpetual conservation covenants with accredited programs may be treated as part disposal of the underlying land for capital gains tax purposes. Contact the Australian Tax Office (13 2861) for more updated information.

Rate relief for covenanted land

Land covenanted under the NPWS Voluntary Conservation Agreements is eligible for rate relief. Contact NPWS or your local council for more information.

Appendix 4

Proposed funding delivery



Appendix 5 - Estimated cost of meeting the native vegetation targets for the Riverina Highlands region

Broad Vegetation Type	Assumptions for Protection and Management	Protection and Management		Assumptions for Restoration	Restoration				TOTAL COST OF MEETING TARGET ($)
		Target area (ha)	Cost ($)		Target 2010	Cost 2010	Target 2050	Cost 2050	
1.Snow Gum/ Mountain Gum Communities	Average fencing payment $2500/km On average 1 km fencing protects 40 ha Management costs averaged over 5 years at $12/ha, 1/10ha requiring funding	500	66 250						66 250
2.Narrow-leaf Peppermint/Mountain Gum Communities	Average fencing payment $2500/km On average 1 km fencing protects 20 ha Management costs averaged over 5 years at $12/ha weeds, $2/ha pests. 1/15 ha requiring funding	500	66 250						66 250
3.Alpine Ash Communities									
4.Peppermint/ Stringybark/ Apple Box Communities	Average fencing payment $2500/km On average 1 km fencing protects 40 ha Management costs averaged over 5 years at $20/ha weeds and $3/ha pests. 1/6 ha requiring funding	500	142 500	Average fencing payment $2000/km On average 1 km protects 10 ha Restoration costs average at $70/ha (not all ha require full restoration funds) Management costs averaged over 5 years at $70/ha weeds and $14 feral animals	1 560	530 400	5 575	1 895 500	2 038 000
Riparian protection	Costs as per 9	150	437 325	As per 9	500	1 318 750	1913	5 045 538	5 482 863
5.Dry Stringybark/ Broad -leave Peppermint Communities	Average fencing payment $2500/km On average 1 km protects 25 ha Management costs averaged over 5 years $12/ha weeds, $2/ha pests. 1/10 ha requiring funding	1640	307 500	Average fencing payment $2000/km On average 1 km protects 10 ha Restoration costs average at $70/ha (not all ha require full restoration funds) Management costs averaged over 5 years at $8/ha weeds and feral animals	520	161 200	520	161 200	468 700
Riparian protection	Costs as per 9	30	87 465	As per 9	100	263 750	383	1 009 108	1 096 573
6.Yellow Box/ Blakely's Red Gum Communities	Average fencing payment $2500/km On average 1 km protects 4 ha Management costs averaged over 5 years $24/ha weeds, $3/ha pests. 1/5 ha requiring funding	1700	1 411 000	Average fencing payment $2000/km On average 1 km protects 3 ha Restoration costs average at $70/ha (not all ha require full restoration funds) Management costs averaged over 5 years at $16/ha weeds and feral animals	2578	2 376 264	51 565	47 525 281	48 936 281
Riparian protection	Costs as per 9	80	233 240	As per 9	250	659 375	957	2 522 769	2 756 009
I7.Ironbark/ Stringybark/ Red Box Communities	Average fencing payment $2500/km On average 1 km protects 25 ha Management costs averaged over 5 years $12/ha weeds, $3/ha pests. 1/10 ha requiring funding	2425	420 738	Average fencing payment $2000/km On average 1 km protects 3 ha Restoration costs average at $70/ha (not all ha require full restoration funds) Management costs averaged over 5 years at $8/ha weeds and feral animals	180	55 800	360	111 600	532 338
Riparian protection	Costs as per 9	20	58 310	As per 9	25	65 938	96	252 277	310 587
8.White Box/ Stringybark Communities	Average fencing payment $2500/km On average 1km protects 10ha Management costs averaged over 5 years $24/ha weeds, $3/ha pests. 1/5 ha requiring funding	1200	996 000	Average fencing payment $2000/km On average 1 km protects 3 ha Restoration costs average at $175/ha (not all ha require full restoration funds) Management costs averaged over 5 years at $16/ha weeds & feral animals	1512	758 576	30 242	15 171 529	16 167 529
Riparian protection	Costs as per 9	40	116 620	As per 9	125	329 688	500	1 319 409	1 436 029
9.Riparian (River Red Gum/River Oak Communities	Average fencing payment $3000/km On average 1km protects 2 ha Management costs averaged over 5 years $75/ha weeds, $2/ha pests. 1/2.5 ha requiring funding	640	1 865 920	Average fencing payment $3000/km On average 1km protects 2 ha Restoration costs average at $175/ha (not all ha require full restoration funds) Management costs averaged over 5 years at $10/ha weeds & feral animals	2000	5 275 000	7652	20 182 673	22 048 593

Appendix 6 - Broad Vegetation Types in the Riverina Highlands region

Broad Vegetation Type (BVT)	CRA No.	Indicator species commonly found within the variety of ecosystems that characterise each BVT				% retained in Riverina Highlands	Corresponding classifications used by Murray CMB
		Dominant over-storey species		Under-storey species			
		Common name	Botanical name	Common name	Botanical name		
1. Snow Gum/ Mountain Gum Communities	**76**	Candlebark Snow Gum	*Eucalyptus rubida* *Eucalyptus pauciflora*	Kangaroo Grass	*Themeda australis*	83%	Sub-alpine Woodlands
	97	Mountain Gum Snow Gum Silver Wattle	*Eucalyptus dalrympleana* *E. pauciflora* *Acacia dealbata*	Starwort	*Stellaria pungens*		
	98	Snow Gum Mountain Gum	*E. pauciflora* *E. dalrympleana*		*Daviesia ulicifolia* *Lomandra longifolia*		
	99	Snow Gum	*E. pauciflora*	 Starwort	*Leucopogon hookeri* *Stellaria pungens*		
	101	Mountain Gum Snow Gum	*E. dalrympleana* *E. pauciflora*	 Starwort	*Daviesia latifolia* *Coprosma hirtella* *Stellaria pungens*		
	123				*Baeckea utilis*		
	128	Snow Gum	*Eucalyptus niphophila*				
	129/ 133						
	130	Snow Gum	*Eucalyptus niphophila*				
	131						
	146	Snow Gum Black Sallee	*E. pauciflora* *Eucalyptus stellulata*		*Asperula scoparia*		
	148			Tussock Grass Sedge	*Poa labillardierei* *Carex apressa*		
	172						
2. Narrow-leaved Peppermint / Mountain Gum Communities	**82**	Manna Gum Robertson's Peppermint	*Eucalyptus viminalis* *Eucalyptus robertsonii*	Common Cassinia Common Bracken	*Cassinia aculeata* *Pteridium esculentum*	63%	Moist Foothill Forest & Montane Forest
	89	Mountain Gum Manna Gum Blackwood	*E. dalrympleana* *E. viminalis* *Acacia melanoxylon*	Starwort	*S. pungens*		
	103	Broad-leaved Peppermint Mountain Gum Robertson's Peppermint	*Eucalyptus dives* *E. dalrympleana* *E. robertsonii*	Common Bracken Fine-leaf Tussock Grass	*P. esculentum* *Poa sieberiana*		
	104	Robertson's Peppermint Mountain Gum Silver Wattle	*E. robertsonii* *E. dalrympleana* *A. dealbata*	Handsome Flat-pea Groundsels	*Platylobium formosum* *Senecio* sp		
	106	Robertson's Peppermint Mountain Gum	*E. robertsonii* *E. dalrympleana*	Handsome Flat-Pea Pink Bells	*P. formosum* *Tetratheca bauerifolia*		
3. Alpine Ash Communities	**58**	Brown Barrel	*Eucalyptus fastigata*	Musk Daisy-bush Tree Fern	*Olearia argophylla* *Dicksonia antarctica*	93%	Montane Forest
	86	Alpine Ash Snow Gum Elderberry Panax	*E. delegatensis* *E. pauciflora* *Polyscias sambucifolia*	Mountain Pepper	*Tasmmania lanceolata*		
	87	Alpine Ash Mountain Gum	*Eucalyptus delegatensis* *E. dalrympleana*	 Starwort	*Derwentia derwentiana* *S. pungens*		
	88	Bogong Gum	*Eucalyptus chapmaniana*	Hop Bitter-pea	*Daviesia latifolia*		
	124	Snow Gum	*E. pauciflora*	Heath	*Epacris breviflora*		
4. Peppermint / Stringybark / Apple Box Communities	**91**	Apple Box Eurabbie Silver Wattle	*Eucalyptus bridgesiana* *Eucalyptus bicostata* *A. dealbata*	Fine-leaf Tussock Grass	*P. sieberiana*	61%	Dry Foothill Forest
	93	Robertson's Peppermint	*E. robertsonii*	Weeping Grass	*Microlaena stipoides*		
	Part 94	Apple Box Red Stringybark Silver Wattle	*E. bridgesiana* *E. macrorhyncha* *A. dealbata*	Weeping Grass	*M. stipoides*		
	108	Red Stringybark Broad-leaved Peppermint	*E. macrorhyncha* *E. dives*	Grey Guinea-flower Fine-leaf Tussock Grass	*Hibbertia obtusifolia* *P. sieberiana*		
	154	Apple Box	*E. bridgesiana*	Kangaroo Grass	*Themeda australis*		
5. Dry Stringybark / Broad-leaved Peppermint Communities	**36**					50%	Dry Foothill Forest
	38	Long-leaf Box	*Eucalyptus goniocalyx*	Common Fringe-myrtle	*Calytrix tetragona*		
	70	Broad-leaved Peppermint	*E. dives*	Grass Tree Handsome Flat-pea	*Xanthorhoea australis* *P. formosum*		
	71	Red Stringybark Slender Tea-Tree	*E. macrorhyncha* *Leptospermum brevipes*				
	75	Broad-Leaved Peppermint	*E. dives*		*Chionchloa pallida*		
	109	Broad-leaved Peppermint Brittle Gum Red Stringybark	*E. dives* *Eucalyptus mannifera* *E. macrorhyncha*	Grey Guinea-flower	*H. obtusifolia* *C. pallida*		
	114	Red Stringybark Scribbly Gum Long-leaf Box	*E. macrorhyncha* *Eucalyptus rossii* *E. goniocalyx*		*C. pallida*		
	Part 119	Red Stringybark Red Box	*E. macrorhyncha* *Eucalyptus polyanthemos*	Grey Guinea-flower Raspwort	*H. obtusifolia* *Gonocarpus tetragynus*		
	Part 121	Red Stringybark Long-leaf Box	*E. macrorhyncha* *E. goniocalyx*	Raspwort Fine-leaf Tussock Grass	*G. tetragynus* *P. sieberiana*		
	192	Dwyer's Red Gum Currawang	*Eucalyptus dwyeri* *Acacia doratoxylon*				
	196	Tumbledown Gum	*E. dealbata*				
6. Yellow Box / Blakely's Red Gum Woodlands	**Part 94**	Apple Box Red Stringybark Silver Wattle	*E. bridgesiana* *E. macrorhyncha* *A. dealbata*	Weeping Grass	*M. stipoides*	7%	Grassy Box Woodlands
	116	Blakely's Red Gum	*Eucalyptus blakelyi*	Weeping Grass Stinking Pennywort	*M. stipoides* *Hydrocotyle laxiflora*		
	160	Blakely's Red Gum Yellow Box	*E. blakelyi* *Eucalyptus melliodora*	Wallaby Grass	*Danthonia racemosa* *Austrostipa scabra* ssp. *falcata*		
	161	Yellow Box	*E. melliodora*	Wallaby Grass	*D. racemosa*		
	162	Blakely's Red Gum	*E. blakelyi*	Sedge	*C. apressa*		
7. Ironbark / Stringybark / Red Box Communities	**118**	Mugga Ironbark Blakely's Red Gum Long-leaf Box	*Eucalyptus sideroxylon* *E. blakelyi* *E. goniocalyx*	Common Wheat-grass	*Elymus scaber*	29%	Dry Foothill Forest
	Part 119	Red Stringybark Red Box	*E. macrorhyncha* *E. polyanthemos*	Grey Guinea-flower Raspwort	*H. obtusifolia* *G. tetragynus*		
	Part 121	Red Stringybark Long-leaf Box	*E. macrorhyncha* *E. goniocalyx*	Raspwort Fine-leaf Tussock Grass	*G. tetragynus* *P. sieberiana*		

8. White Box / Stringybark Woodlands	**117**	White Box	*Eucalyptus albens*	Weeping Grass Red-Leg Grass	*M. stipoides* *Bothriochloa macra*	8%	Grassy Box Woodlands
	120	Red Stringybark White Box	*E. macrorhyncha* *E. albens*	Stinking Pennywort Weeping Grass	*H. laxiflora* *M. stipoides*		
9. Riparian Communities	**43**	River Red Gum	*Eucalyptus camaldulensis*			7%	Riverine Forest / Woodlands
	53	River Sheoak	*Casuarina cunninghamiana* ssp. *cunninghamiana*				

References:
Durant, K., and Bland, S., 2001, Draft Riverina Highlands Resource Guide: A guide for native vegetation conservation and management. Riverina Highlands Regional Vegetation Committee/DSNR, Albury.

Thomas, V., Gellie, N., Harrison, T., (2000) Forest Ecosystem Classification and Mapping for the Southern CRA Region. NSW NPWS Southern Directorate, Queanbeyan.

Maguire, O., and Hunter, S., (2000) Crafti Southern Floristic Field Validation Report: Eucalypt remnant mapping - Tumut and Tarcutta, South West Slopes, NSW. Southern CRA Aerial Photographic Interpretation Unit, NSW NPWS Southern Directorate, Queanbeyan.
* CRA – Comprehensive Regional Assessment

Appendix 7- Regulatory Plan
Riverina Highlands Regional Vegetation Management Plan