



VICTORIA'S NATIVE VEGETATION MANAGEMENT
➤ A FRAMEWORK FOR ACTION



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MINISTER'S FOREWORD

Growing Victoria Together outlined how Government will balance our economic, social and environmental goals and actions. A key element of the State Government's vision for Victoria is that by 2010 we will be a State where protecting the environment for future generations is built into everything we do. This Framework describes the Government's goals and aspirations for native vegetation management in Victoria. It provides a logical and consistent approach to valuing native vegetation and a reporting framework for accounting for our actions toward the net result.

While Victoria no longer has the widespread tree clearing of the past, we know that there is a continued incremental loss in the extent and quality of native vegetation. The National Land and Water Resources Audit's *Australian Native Vegetation Assessment 2001* highlights the history of land clearing in Victoria.

Over the last decade, protection of remnants and revegetation has become a central component of protecting the environmental values and productive capacity of our land and water resources. This has taken place through our Land for Wildlife, Tree Victoria, salinity, Landcare and water quality programs. Strategic revegetation is vital to restoring

catchment processes by reducing the amount of rain entering the groundwater systems and by removing nutrients from waters draining into our rivers and streams. Internationally, loss of native vegetation is recognised as a major reason for biodiversity decline and the increase in greenhouse gas emissions.

Recent research has revealed the real magnitude of the challenge we face in stemming the tide of emerging dryland salinity. The work undertaken by CSIRO for the Murray Darling Basin Salinity Audit shows that unless we get vegetation management right we face a ten-fold increase in land affected by salinity within the next 50 years. In some catchments revegetation of 60% to 70% of the catchment is needed to substantially redress the hydrological imbalance that is leading to our growing salinity problems. The significant investment into the joint State and Commonwealth *National Action Plan for Salinity and Water Quality* reflects the recognition of the challenge ahead of us in addressing these issues.

The Government's recent announcement of major industry reform in *Our Forests Our Future* is another significant step in achieving sustainability in the way we use our natural resources.

Achieving the goals of *Victoria's Native Vegetation Management - A Framework for Action* requires a long-term commitment to improving the security and quality of remnant vegetation and accelerating revegetation activities. Over the years we have learnt a great deal from efforts to revegetate the landscape. This knowledge needs to be made widely available.

A long-term perspective is required if we are to make our programs more effective and equitable. We have adopted the policy of achieving a Net Gain in extent and quality of native vegetation. The Framework defines and outlines the application of Net Gain and will be supported by further details in operational guidelines. A new native vegetation accounting system has also been developed to improve the transparency and consistency of decision making for native vegetation management. A priority for implementing Net Gain is to avoid clearing. Where flexibility is required to support landholders as they move towards more sustainable land use and limited clearing is permitted, a rigorous process of ensuring achievement of the Net Gain principles must be pursued through strict application of the offset requirements. In doing this we are providing the guidance for native vegetation management decisions and investment associated with other natural resource management programs.

The Net Gain principle and the accounting process are being used by the Catchment Management Authorities and the Port Phillip and Westernport Catchment and Land Protection Board in preparing their regional Native Vegetation Plans.

This Framework represents a significant contribution to implementing Government policies to restore catchments and rivers by providing goals, priorities and decision-making tools for native vegetation management. It is essential that all Victorians understand and support our efforts to protect and enhance our valuable natural heritage.



Sherryl Garbutt MP

Minister for Environment and Conservation



EXECUTIVE SUMMARY

Victoria's Native Vegetation Management - A Framework for Action establishes the strategic direction for the protection, enhancement and revegetation of native vegetation across the State. The Framework addresses native vegetation management from a whole of catchment perspective but necessarily focuses primarily on private land where the critical issues of past clearing and fragmentation exist.

The Net Gain goal is consistent with the framework for sustainable forest management that guides native forest management on public land and reinforces the objectives outlined in *Our Forests Our Future* to improve the sustainability and stewardship of our forests. Clearly the management of our State National Parks and Reserves system places a high priority on conserving, protecting and enhancing native vegetation for biodiversity outcomes and this approach is supported by Victoria's Native Vegetation Management Framework. The Framework identifies principles and goals that apply to private and public land but recognises that the management approaches to achieving the goals will vary according to the management objectives of each tenure and the conservation value of the vegetation.

The Framework identifies the following principles to guide native vegetation management in Victoria:

- retention and management of remnant native vegetation is the primary way to conserve the natural biodiversity across the landscape,
- the conservation of native vegetation and habitat in a landscape is dependent on the maintenance of catchment processes,
- the cost of vegetation management should be equitably shared according to benefits accrued by the landholder, community and region, and
- a landscape approach to planning native vegetation management is required. Goals for native vegetation management will be based on bioregions, or sub-units, within the Catchment Management Authority region. Priorities for vegetation management should be specific for each bioregion and catchment.

The primary goal identified for native vegetation management is 'A reversal, across the entire landscape, of the long-term decline in the extent and quality of native vegetation, leading to a Net Gain'. Net Gain is the outcome for native vegetation and habitat where overall gains are greater than overall losses and where individual losses are avoided where possible. The losses and gains are determined by a combined quality-quantity measure and over a specified area and period of time. Gains may be either required offsets for permitted clearing actions or as a result of landholder and Government assisted efforts that are not associated with clearing. Additional outcomes are identified for biodiversity, land and water quality, and climate change amelioration.



We need to be able to measure our progress in achieving the primary goal and this Framework introduces an accounting system for this purpose. The system is based on habitat hectares, a site-based measure of quality and quantity of native vegetation that is assessed in the context of the relevant native vegetation type.

The notion of Net Gain recognises that for native vegetation, although “natural is best”, it is possible to partially recover both extent and quality by active intervention and thus to effect the net result. Whilst the priority is to avoid clearing, where clearing is permitted offset criteria have been established to provide a clear link between gains and losses and in this way ensure that the “commensurate” requirement of mitigation is met.

In order to achieve the biodiversity goals for native vegetation management, application of the Net Gain approach needs to be linked to the conservation significance of the native vegetation in question. The conservation significance of a patch of vegetation (from Very High to Low) is determined according to:

- the conservation status of vegetation types present,
- the quality of the vegetation,
- the conservation status of species present (and the potential habitat value), and
- other recognised site-based criteria.

The Framework provides a strong focus on the protection and net improvement of higher conservation significance vegetation and a flexible but accountable approach for lower conservation significance vegetation to enable landholders to move towards more sustainable land use options.

Victoria’s strong integrated catchment management framework represented by the nine Catchment Management Authorities (CMAs) and the Port Phillip Catchment and Land Protection Board provides an appropriate mechanism for integrating native vegetation management as a key element of Regional Catchment Strategies and action plans.

A range of actions has been identified to implement Government policy and achieve the Net Gain goal. The actions are grouped under three broad areas of implementation:

- Protection and Enhancement on Private Land,
- Monitoring and Evaluation, and
- Research for Improved Management.

This Native Vegetation Management Framework reflects the considerable input, through community consultation, from a broad range of stakeholders.

The principles and approaches outlined in this Framework are applicable from the on-ground level upwards. Only by ensuring that decisions about the protection and improvement of individual stands of native vegetation deliver an appropriate contribution to our goals, will the net outcomes be demonstrably achieved. The Framework sets out the broad approach and specifies minimum standards, recognising that as native vegetation values and issues vary across the State, so too will the regional priorities and responses identified by this broad approach. Regional Native Vegetation Plans will outline these priorities and responses in detail, setting targets and extending the minimum standards as required.





11 INTRODUCTION

An estimated 66% of Victoria's native vegetation has been cleared as a result of the growth and economic development of the State. Of the remaining 34% it is estimated that 7.4 million hectares are located on public land and approximately 1.1 million hectares are found on private land.

The extent of clearance varies around Victoria. Accessible and relatively fertile landscapes that were developed for pastoral and agricultural activities have been the most affected. For example, the Victorian Volcanic Plains in the south west are 94% cleared. Major rivers and coastal areas have also been significantly affected by urban expansion and related industrial activities. For example, the Port Phillip catchment management area is 71% cleared. Even in bioregions that remain largely covered by native vegetation because of historic and current land use, specific vegetation types may have been significantly depleted. For example, in the East Gippsland Uplands bioregion, Montane Grassy Woodland is 57% cleared.

The National Land and Water Resources Audit's *Australian Native Vegetation Assessment 2001* provides an analysis of clearing across Australia. Five of the 85 designated bioregions in Australia have less than 30% of the pre-1750 cover of native vegetation remaining. Four of these bioregions are in western Victoria. The

protection status for the vegetation in these five bioregions is low and the majority of the vegetation groups in each region have less than 10% of the pre-European extent of the vegetation group in a protected area.

There are two major legacies of this history of clearing. Ecosystems upon which our presence and productivity depends are now beyond the point of sustainability. Evidence of this is in the continuing problems of salinity, soil structure decline, reduced water quality and quantity and increased rates of severe flooding. The biodiversity that built and maintains these ecosystems is also in decline.

Victorians have made significant progress in protecting and enhancing native vegetation. But a greater effort is needed. We still have a permanent loss of native vegetation at an estimated 2500 hectares a year and the quality of the remaining native vegetation continues to decline¹. We need greater protection for scattered trees that provide important habitat for rare and threatened native fauna and our latest understanding of the future impact of salinity and reduction in water quality calls for a substantial increase in our revegetation efforts.

Our understanding of native vegetation and its importance has increased significantly. Victoria has:

- increased funding for grants programs that assist Landcare and other community groups to undertake vegetation management activities;

1. Estimates are based on TREE100 dataset (i.e. woody vegetation at 1:100 000 scale derived by visual interpretation of 1995 Landsat satellite imagery). Current development of a TREE25 dataset (i.e. woody vegetation at 1:25 000 scale derived by computerised interpretation of more recent SPOT satellite imagery), which also is able to recognise smaller or less dense patches (e.g. narrow strips along stream frontages or roadsides; groups of scattered woodland trees), will provide a more accurate estimate.



- mapped existing native vegetation and estimated the pre-European distribution in terms of Broad Vegetation Types and Ecological Vegetation Classes (EVCs) across the majority of the State;
- developed a methodology for assigning priorities for protection and enhancement of remnants on the basis of their conservation status, quality and a range of site specific features; and
- developed a new approach for accounting for changes in remnant vegetation, which considers both quality and quantity of native vegetation.

Our farmers and land managers have been at the forefront of Victoria's native vegetation management efforts. Through the Landcare, Land for Wildlife, Bushcare and salinity programs the rural community has strongly backed the native vegetation management effort. The mid-term review by CSIRO of the Commonwealth's Bushcare program reported that in Victoria 45,548 hectares of native vegetation would be protected from various threatening processes and a further 11,025 hectares planted over the four years of the program.

The approach outlined in this Framework recognises that:

- almost \$15 million of State and Commonwealth funds have been spent within Victoria each year on native vegetation protection and revegetation programs and this contribution is more than matched by on-ground work by Landcare groups and other community members;
- there has been no comprehensive review of our native vegetation retention controls since 1989;

- land and water quality degradation problems are more serious than initially thought;
- there is increasing consumer awareness about the impact on environmental values arising from agriculture production systems; and
- the protection and enhancement of native vegetation, particularly of the most depleted vegetation types, is an important factor in achieving a Net Gain in quantity and quality of native vegetation, and private land has a key role to play.

The goals and principles presented in this framework apply across the State to both private and public land. However, the ways in which the goals are achieved will vary depending on the management objectives of the land and the conservation value of the native vegetation. The Net Gain approach will complement the Framework for sustainable forest management on public land. The Regional Forest Agreement (RFA) process undertaken in partnership by Commonwealth and State agencies used National Forest Reserve Criteria which included a number of biodiversity criteria for establishing a Comprehensive Adequate and Representative reserve system (outlined in JANIS 1997). Many of these criteria have been used as the basis for assessing conservation status of vegetation types in the Net Gain approach. The approach is described in Appendix 2.

While Victoria can take pride in its significant steps towards stabilising the status of native vegetation, it is clear that much remains to be done, particularly in conserving biodiversity and restoring landscapes to the point of long-term sustainability.

The purpose of this Framework is to set out the broad approach to achieving a Net Gain in extent and quality of native vegetation. Adoption of this approach through our strategic Natural Resource Management (NRM) processes will ensure that the combination of individual decisions add up to the overall outcomes we seek. The Framework recognises that the vegetation management needs of each region are different. Landscape change, biodiversity loss and land and water problems vary across the State and therefore regional priorities and responses are also necessary. Regional catchments are the most appropriate management unit to address these issues if we are to integrate our land, water and vegetation programs. However, our vision, goals and strategic directions need to be set at a State level to provide guidance and ensure a consistency of approach.



2 | NATIVE VEGETATION MANAGEMENT POLICY CONTEXT

The Victorian Government recognises the permanent care of our natural environment as one of the most important duties of any government. Our quality of life depends on properly managing our environment and protecting our precious natural, urban and historical heritage. Victoria's rich biodiversity of species, habitats and ecosystems is a legacy to be held in trust for future generations.

In fulfilling this duty, the State Government's policy is to:

- incorporate environmental and conservation considerations into all aspects of planning and government program delivery and build the principles of ecologically sustainable development into the process of decision-making across the whole of Government.

The Government is committed to:

- restoring Victoria's rivers and catchments;
- reducing land clearance and promotion of revegetation programs to expand the coverage of our native bushland;
- actively promoting the responsible management and expansion of our natural ecosystems including the protection of remnant vegetation along streamsides, roadways, wetlands and the conservation of native vegetation on private land, backed by an improved system of native vegetation retention controls;



- undertaking a trial program in a selected region in which formal contractual arrangements will be entered into between the landowner and Government agencies covering the management of native vegetation on private land; and
- establishing a Commissioner for Ecologically Sustainable Development to provide an ombudsman role for considering public complaint and auditing compliance with environmental legislation.

In November 2001 the Victorian Government released *Growing Victoria Together*, providing the signposts for Government action for the next decade. *Growing Victoria Together* balances economic, social and environmental goals and action with a vision in which protecting the environment for future generations is built into every thing we do. One of the priority actions of this vision is to increase and provide greater protection for areas of high conservation value.

The Victorian Government Policy Statement on Forests - *Our Forests, Our Future, Balancing Communities, Jobs and the Environment* was released in February 2002. *Our Forests, Our Future* outlines the substantial investment in forestry reform required to ensure that the public land forestry industry is managed on a sustainable and commercial footing and to improve the stewardship of our forests.

The development of this Framework has been guided by these State policies and gives effect to the native vegetation goals of *Victoria's Biodiversity Strategy*.

This Framework also reflects a range of Victoria's commitments to national policies, principally:

- The '*National Framework for the Management and Monitoring of Australia's Native Vegetation*' (ANZECC 1999). The National Framework provides a vehicle for the implementation of the Natural Heritage Trust Partnership Agreement between the Commonwealth and the State and Territory Governments. Its primary objective is to reverse the long-term decline in the quality and extent of Australia's native vegetation cover by June 2001.



- The *National Strategy for Ecologically Sustainable Development (ESD) (1992)*, with the goal, as endorsed by all Australian governments, of:

Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.

The core objectives of ESD are:

- to enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations;
- to provide for equity within and between generations; and
- to protect biological diversity and to maintain essential ecological processes and life support systems.

The Framework also complements the approach taken in the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* by recognising the importance of:

- World Heritage properties
- Ramsar Wetlands of international significance, and
- Listed threatened species protected under international agreements.



3 | A VISION FOR VICTORIA'S NATIVE VEGETATION

Victoria's landscapes have changed significantly over the past 150 years and if we do not act now Victoria faces increasing costs from land and water degradation and loss of biodiversity. Our productive land, the quality of our water resources and the extent of our biodiversity all require the full ecological functioning of catchments. We must continue to develop ecologically sustainable production processes that conserve and enhance our unique biodiversity and natural heritage.

To assist us in achieving these outcomes we have set the following Vision for native vegetation:

Management of native vegetation provides a sustainable landscape and protects the long-term productive capacity and environmental values of our land and water resources.

The unique beauty and diversity of Victoria's landscapes and the importance of the underlying complex ecosystems are recognised internationally.

This Vision will be achieved by:

Our land managers understanding and actively promoting improved native vegetation practices that provide real benefits for their businesses and the community.

Our State and Local Governments and Catchment Management Authorities driving a comprehensive and scientifically-based native vegetation management program that provides certainty to land managers and investors.



4 PRINCIPLES FOR NATIVE VEGETATION MANAGEMENT

In keeping with the policies outlined in section two, this Framework has the following four guiding principles for native vegetation management in Victoria:

1. Retention and management of remnant native vegetation is the primary way to conserve the natural biodiversity across the landscape.
 - a. All native vegetation has value.
 - b. Important habitats and populations of endangered species should be protected through voluntary or regulatory means.
 - c. Biodiversity values are not restricted to threatened and depleted vegetation communities. An adequate proportion of each non-threatened vegetation community must also be managed principally for conservation.
 - d. Large natural areas of remnant vegetation are of fundamental importance for nature conservation and are irreplaceable. All other things being equal, large remnants are inherently more valuable than small patches that total the same area.
2. The conservation of native vegetation and habitat in a landscape is dependent on the maintenance of catchment processes.
 - a. Maintaining ecological processes provides productivity, salinity, water quality and other land management benefits.
 - b. Native vegetation management strategies must be integrated with land protection and resource use, including productive agriculture, for both long-term success and for ensuring that land and water protection outcomes are achieved.
3. The cost of vegetation management should be equitably shared according to benefits accrued by the landholder, community and region.
 - a. Land managers have a responsibility to retain native vegetation.
 - b. Public resources are to be directed to increasing the extent of native vegetation or to enhancing the quality of native vegetation through appropriate management.
 - c. Public resources are to be used to facilitate voluntary actions by landholders and for shared investment in enhancing vegetation of conservation importance.
4. A landscape approach to planning native vegetation management is required . Goals for native vegetation management will be based on bioregions, or sub-units, within the Catchment Management Authority region². Priorities for vegetation management should be specific for each bioregion and catchment.
 - a. Multiple patches of the same vegetation community should be retained or enhanced across their geographic range.
 - b. The position of remnants in the landscape affects their conservation value.

2. Public land forests are managed on the basis of Forest Management Areas.



5 | VICTORIA'S NATIVE VEGETATION MANAGEMENT GOALS

“It is not just how much we have but how good it is”

The need to both better manage and increase the cover of native vegetation in Victoria is beyond question. In setting our sustainability goals for native vegetation we recognise that we are responsible for a diverse and dynamic asset that will continue to support a variety of uses on both public and private land. We need to strike a balance between our efforts to achieve the following:

- active improvement of the quality of existing native vegetation;
- avoidance or minimisation of further permanent losses through clearing;
- strategic increase in the cover of native vegetation through biodiverse revegetation; and
- the flexibility that is required to support landholders as they move towards more sustainable land use.

Accordingly, our goal must be expressed in terms of the sum of all these individual actions for native vegetation (i.e. the net outcome) that we aim to achieve as part of the broader goal of ecologically sustainable development.

PRIMARY GOAL

Our primary goal for native vegetation management in Victoria is to achieve:

A reversal, across the entire landscape, of the long-term decline in the extent and quality of native vegetation, leading to a Net Gain

ADDITIONAL OUTCOMES ACHIEVED BY PURSUING OUR PRIMARY GOAL

Reversing the long-term decline in the extent and quality of native vegetation in accordance with the principles and approaches outlined in this Framework will make a significant contribution to achieving the following outcomes:

Biodiversity

- The ecological processes and the biodiversity dependent on terrestrial, freshwater and marine environments are maintained and, where necessary, restored.
- The present diversity of species and ecological communities and their viability is maintained and improved across each bioregion.
- There is no further preventable decline in the viability of any rare species or of any rare ecological community.
- There is an increase of the viability of threatened species and in the extent and quality of threatened ecological communities.

Land and Water Quality

- Improvements in land and water quality due to the restoration and protection of ecological processes within catchments.
- Reduction in the impact of secondary salinity on the State's land and water resources by increasing vegetation cover and reducing groundwater recharge.
- Improvements in water quality due to the interception of nutrients in surface runoff.

Climate Change

- Enhanced amelioration of the impact of climate change by significantly increasing Victoria's carbon sinks through revegetation and regeneration.
- Increased carbon sinks and provision of a range of other benefits through the development and expansion of private forestry in a way that complements native vegetation retention.

These goals for native vegetation in Victoria can best be achieved by having a "whole of landscape" perspective, encompassing all tenures, and are most usefully informed by catchment-wide and bioregion-wide understandings of native vegetation processes and values. The approaches to meeting these goals outlined in this Framework also recognise the primary importance of existing native vegetation, particularly in terms of irreplaceable natural assets and cost-effective delivery of ecosystem services. We also need to ensure that these perspectives are part of the complementary policies that drive our salinity, water quality, biodiversity, land protection and greenhouse programs.

The principles and approaches outlined in this Framework are applicable from the on-ground level upwards. Only by ensuring that decisions about the protection and improvement of individual stands of native vegetation deliver an appropriate contribution to our goals, will the net outcomes be demonstrably achieved. The Framework sets out the broad approach and specifies minimum standards, recognising that as native vegetation values and issues vary across the State, so too will the regional priorities and responses identified by this broad approach. Regional Native Vegetation Plans will outline these priorities and responses in detail, setting targets and extending the minimum standards as required.



6 | A SHARED UNDERSTANDING OF THE NET GAIN GOAL

As a basis for developing a consistent and more effective approach to accounting for native vegetation it is important to have a shared understanding of the meaning of the key words used in defining the Net Gain goal.

EXTENT AND QUALITY OF NATIVE VEGETATION

At the regional scale, native vegetation is usually considered from the point of view of what type it is (and consequently how rare or depleted the type is) and in what tenures it occurs (and consequently how well protected the type is). At the local landscape-scale it is also important to focus on where the native vegetation occurs. It is important to determine not just how much native vegetation is present but how good it is. On-ground actions, including revegetation and improved management of existing vegetation, can increase the overall quantity and quality of habitats and ecosystem services across the local landscape - particularly in terms of the levels of biodiversity and catchment protection that they can support.



How do we measure extent and quality?

In determining what exists, what could be lost and what could be gained, there needs to be a measure. The simplest way would be to measure the area of native vegetation in hectares, but our goals mean we must also consider the quality of vegetation. The quality of native vegetation is relevant to the effectiveness of both biodiversity conservation and catchment protection roles, but the biodiversity conservation role has the more specific requirements and accordingly has been the primary focus when developing a quality assessment approach that serves both roles.

There is no absolute measure of general vegetation/habitat quality but there is a range of well-accepted indicators. A method of combining a number of such indicators to calculate a practical relative measure is required, and a simple equation has been developed to achieve this. The two primary determinants of the general vegetation/habitat quality of an area are:

- inherent **site condition** – i.e. how altered is the site from a notionally optimal state?; and
- **viability** in the **landscape context** – i.e. does the patch of vegetation that the site is within retain its broader ecological functions and linkages, in a manner that enables it to respond successfully to natural fluctuations and other disturbance events?

NRE has developed a standard statewide approach for estimating general vegetation/habitat quality using the following criteria:

For site condition:

- retention of large old trees (for woodlands and forests)
- retention of tree canopy cover (for woodlands and forests)
- retention of the cover of, and diversity within, understorey lifeforms
- presence of appropriate recruitment
- absence of weeds
- litter
- logs (for woodlands and forests)

For landscape context:

- size of remnant vegetation patch
- links to, and amount of, neighbouring patches

Native vegetation at a site is assessed by comparing it to a benchmark which represents the average characteristics of a mature and apparently long-undisturbed stand of the same type of vegetation. General vegetation/habitat quality is scored from one (complete retention of natural quality as described by benchmark characteristics) to zero (complete loss) – Parkes *et al* 2002 (J. Ecol.Mgt.& Restor - in press). This approach has been successfully utilised in the BushTender Trial and will be reviewed after a further two years of use in the context of this Framework and refined in the light of research and operational experience.

The combination of this quality measure and the area of native vegetation that it refers to is known as a habitat hectare (habitat score X area = habitat hectare). A habitat hectare assessment can provide information for three key tasks - it:

- provides a snap-shot of current quality;
- can be the basis for estimating what and how much change will occur at a site under different management scenarios; and
- provides a means of calculating net outcomes across losses and gains.



What is a Habitat Hectare?

A habitat hectare is a site-based measure of quality and quantity of native vegetation that is assessed in the context of the relevant native vegetation type. This measure can be consistently applied across the State.

If it is assumed that an unaltered area of natural habitat (given that it is large enough and is within a natural landscape context) is at 100% of its natural quality, then one hectare of such habitat will be equivalent to one habitat hectare. That is the quality multiplied by the quantity. Ten hectares of this high quality habitat would be equivalent to ten habitat hectares, and so on. If an area of habitat had lost 50% of its quality (say, through weed invasion and loss of understorey), then one hectare would be equivalent to 0.5 habitat hectares, ten hectares would be equivalent to five habitat hectares, and so on.

**ACHIEVING AND ACCOUNTING FOR NET GAIN***What is Net Gain?*

Net Gain is the outcome for native vegetation and habitat where overall gains are greater than overall losses and where individual losses are avoided where possible. Losses and gains are determined by a combined quality-quantity measure and over a specified area and period of time. Gains may be either required offsets for permitted clearing actions or as a result of landholder and Government assisted efforts that are not associated with clearing.

Net Gain comprises three essential components to ensure an overall increase in the extent and quality of native vegetation:

1. A reduction in losses in the extent of existing native vegetation,
2. A reduction in losses in the quality of existing native vegetation due to threatening processes, and
3. The achievement of gains in extent and quality of native vegetation through its rehabilitation and revegetation with indigenous species for biodiversity conservation and land and water resource outcomes.

The Net Gain approach:

- has, as a priority, the avoidance of further permanent losses of existing native vegetation through clearing,
- recognises that for native vegetation, although “natural is best”, it is possible to partially recover both extent and quality by active intervention and thus to effect the net result,
- identifies a quantitative approach to the “reverse the decline” pathway, allowing us to set targets and measure performance,
- at the on-ground level, expresses the principle that where losses are directly permitted and/or incurred, effort should be made, at a minimum, to balance such losses with commensurate gains in some way,
- at the regional level, facilitates establishment of a complete picture of the native vegetation asset, against which incremental losses and emerging issues can be evaluated, and
- plays an important part in assessing ecologically sustainable development.

What contributes to the Net Outcome?

With respect to the quality and quantity of native vegetation, a broad range of actions, both human-related and natural, contribute to the net outcome for Victoria.

Losses in extent include:

- permanent clearing of native vegetation, both approved and illegal and,
- incremental reduction of woodlands through tree decline.

Losses in quality include:

- on-going decline resulting from insufficient management of threatening processes,
- impact of forest product harvesting and mining operations, and
- impact of wildfires and fuel-reduction burns.

Gains in extent include:

- new areas of revegetation primarily for biodiversity conservation, and
- new areas of revegetation for land protection, greenhouse or other purposes which have included sufficient locally indigenous species to be considered part of the native vegetation estate.

Gains in quality include:

- improved management of threatening processes within existing native vegetation including both active improvement (e.g. control of weeds) and avoidance of further impacts by landholders agreeing to forego permitted uses (e.g. stock grazing, harvesting timber for on-farm use),
- recovery from forest product harvesting and mining operations,
- recovery from wildfires, and
- supplementary plantings into depleted existing native vegetation.



BIOREGIONAL CONVERSATION STATUS OF ECOLOGICAL VEGETATION CLASSES (EVCS)

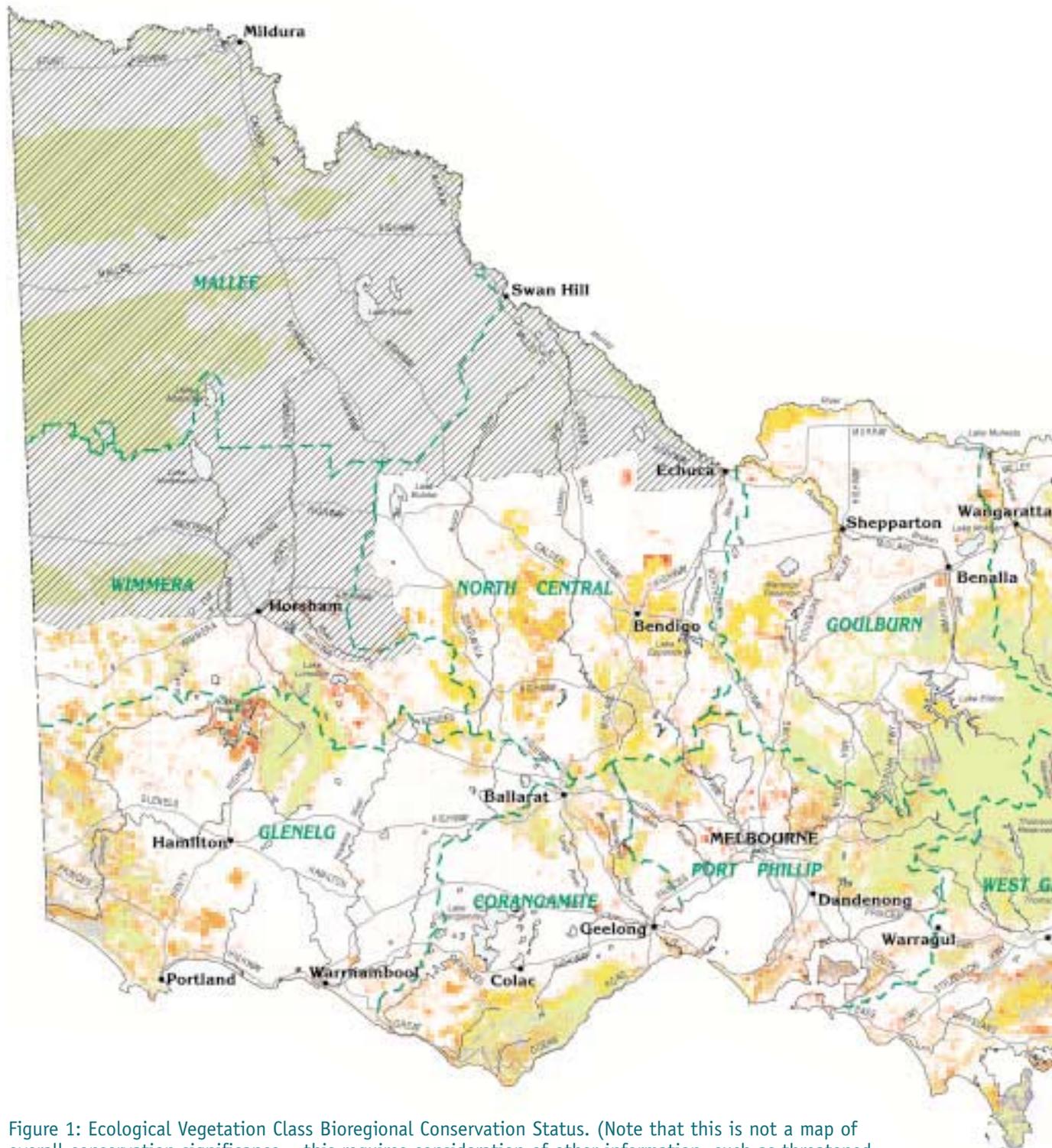
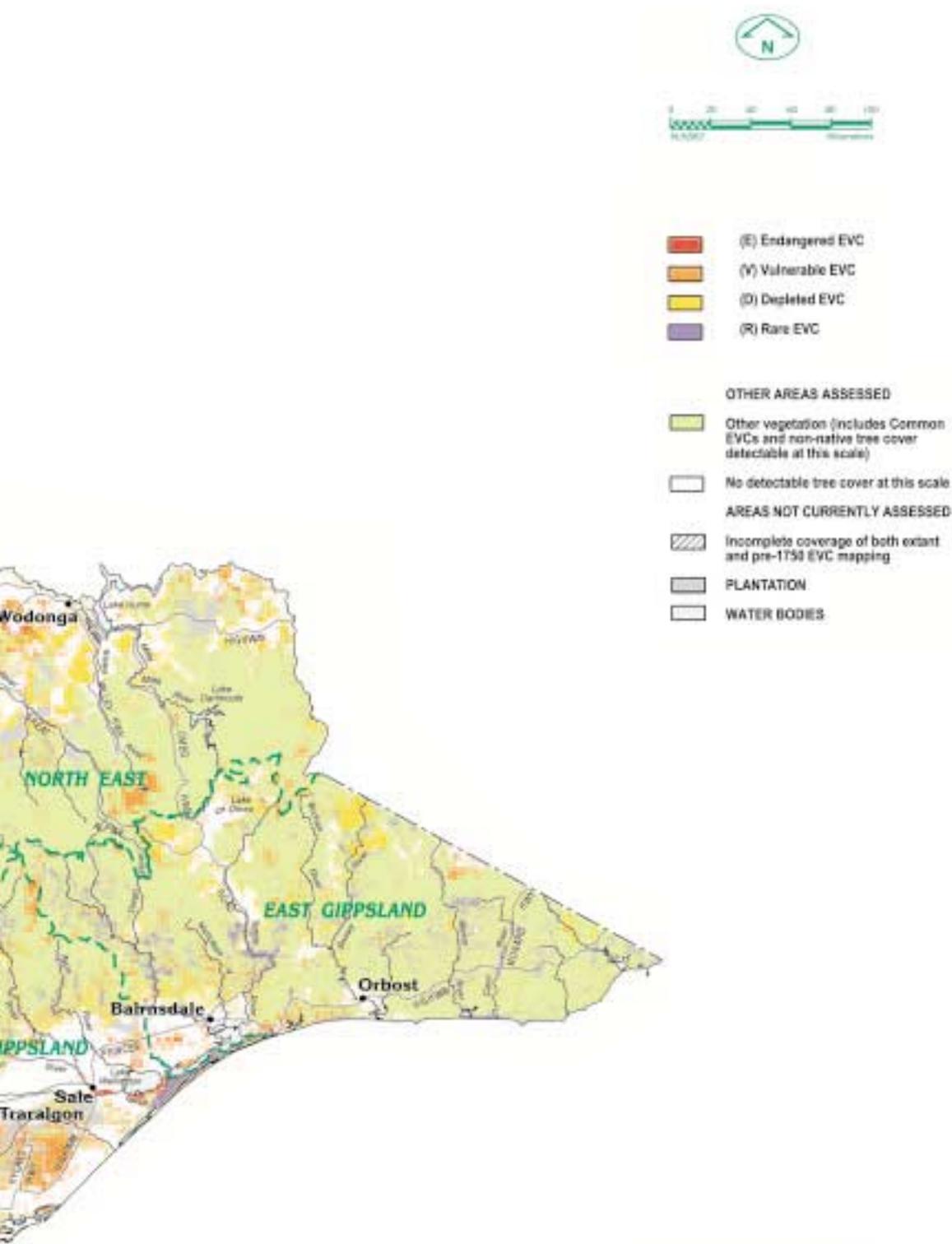


Figure 1: Ecological Vegetation Class Bioregional Conservation Status. (Note that this is not a map of overall conservation significance – this requires consideration of other information, such as threatened species habitat, which is not comprehensively mapped)





CONSIDERING LAND PROTECTION AND CONSERVATION SIGNIFICANCE IN NET GAIN

In order to achieve the goals for native vegetation management, application of the Net Gain approach needs to be linked to the land protection and conservation significance of the native vegetation in question.

For land protection, the significance of a patch of vegetation (from the point of view of both hazard avoidance and mitigation) is determined according to:

- the role of the site in surface and groundwater behaviour,
- the erosion hazard and soil structure characteristics of the site,
- the ability of the vegetation to provide ongoing land protection role,
- the productive capability of the site, and
- other recognised criteria (for example, whether climatic conditions favour rapid re-establishment of vegetation cover).

Appendix 1 sets out the factors considered when determining significance of native vegetation for land protection. Priorities for revegetation for land protection outcomes are outlined in regional plans arising from other strategic documents such as *Victoria's Salinity Management Framework* and the *Victorian River Health Strategy*.

For biodiversity, the conservation significance of a patch of vegetation (from Very High to Low) is determined according to:

- the conservation status of vegetation types present,
- the quality of the vegetation,

- the conservation status of species present (and the potential habitat value),
- the strategic location in the local landscape, and
- other recognised criteria (for example, commitments under international conventions).

The approach to assessing bioregional conservation status of vegetation types (Ecological Vegetation Classes) is described in Appendix 2 and Figure 1 shows the distribution of conservation status ratings across the State. The criteria and approach for determining conservation significance for biodiversity are outlined in Appendix 3 and are supported by technical documents.

ENSURING THAT INDIVIDUAL PROTECTION AND CLEARANCE DECISIONS CONTRIBUTE TO OUR NET GAIN GOALS

To achieve this, Government will require:

- **An appropriate assessment of any potential impacts on native vegetation and management options that avoid clearing;**
- **Consideration of clearing in the context of sustainable land use change, and**
- **That any losses associated with clearing are mitigated by commensurate gains through appropriate offsets.**

Appropriate offsets are outlined below, summarised as criteria in Appendix 4 and supported by technical documents.



The three step approach to applying Net Gain

It is important to ensure that the Net Gain approach is only applied in a way that supports the overall conservation of the great majority of existing native vegetation. In applying the Net Gain approach to protection and clearance decisions at the on-ground level the steps are:

1. To avoid adverse impacts, particularly through vegetation clearance.
2. If impacts cannot be avoided, to minimise impacts through appropriate consideration in planning processes and expert input to project design or management.
3. Identify appropriate offset options.

Only after these steps have been taken should offsets (actions undertaken to achieve commensurate gains) be considered. In order to ensure that the “commensurate” requirement of Net Gain is met a clear link between gains and losses must, at a minimum, be achieved. These offset criteria are summarised in Table 6, they represent the minimum requirement (they could be increased, where appropriate, in the regional Native Vegetation Plans). To qualify as a Net Gain outcome all criteria must be met in each case. Calculation of the amount of gain associated with the offset actions will be based on an estimate of the improvements that will be realised within 10 years of the actions being initiated. The offset criteria and the rationales for their application are briefly outlined in the following section.

Response to proposal to clear & offset

To meet our goals for native vegetation in the most efficient and practical manner, responses to planning applications to clear native vegetation will be graded according to conservation significance.

Net outcome of offset

To ensure that net outcomes are strongly positive for higher significance vegetation, whilst also ensuring that less substantial achievements in lower significance vegetation do not undermine achievement of the overall objective of Net Gain, the relative size of offset will be graded according to conservation significance. Where the following criteria allow flexibility associated with achieving offsets in higher conservation significance vegetation/habitat than that lost the amount of the offset will be proportionally reduced as a recognition of the increased biodiversity benefit.

Like-for-Like

Vegetation or Habitat Type of Offset

To ensure that there is a clear link between the vegetation or habitat type that is lost through clearing and the subsequent mitigation, there will be a graded response: from a direct link between loss and offset for higher significance, down to more flexibility for lower significance (at the discretion of the planning authority) leading to opportunities to optimise conservation outcomes.



Landscape Role

To ensure that important functional aspects of vegetation at the landscape scale (e.g. protection from erosion or salinisation; buffering of riparian or other significant areas; wildlife movement; large patch size) are adequately considered, there will be a graded response: from close consideration of both ecological and land protection function for higher significance, down to a focus on land protection function for lower significance vegetation, recognising that this latter aspect will be determined on a case-by-case basis by the planning authority.

Quality objectives for offset

To ensure that the use of a measure (habitat hectares) that “blends” quality and quantity does not allow inappropriate trade-offs between high and low quality vegetation, quality thresholds have been set for offsets, graded according to conservation significance. This effectively means that any loss of higher significance vegetation must be predominantly mitigated by improvement of other existing vegetation of comparable quality, and the contribution of revegetation of previously cleared areas will be limited according to conservation significance of the lost vegetation. Revegetation as the only means of offset will generally only be an option for mitigating lower quality or lower significance losses.

On a site where the loss of vegetation is temporary (eg. mining followed by rehabilitation) this criterion is applied according to the Low Conservation Significance. In addition, for any further gains that are required to reach the appropriate net outcome of offset

(in number of habitat hectares) this quality criterion will be applied according to the conservation significance of the vegetation that was removed.

Large Old Tree objectives for offset

For remnant patches of native vegetation that contain large old trees

Large old trees are important environmental assets that are being progressively lost through clearing and declining health but are impossible to replace in the short term. Whilst recruiting new trees for the future is very important, replacement ratios cannot address the need to retain, and improve the on-going survival of, as many large old trees as possible in the current landscape.

Where large old trees (i.e. trees of key long-lived dominant species - greater than a certain diameter at 1.3 m above ground level - as specified in the relevant EVC benchmark) are part of a vegetation remnant to be cleared, both protection of other large old trees and recruitment of new trees will be required as part of the offset, with graded ratios according to conservation significance. Protection will be according to standards specified in the Regional Native Vegetation Plan, with the objective of maximising the longevity of the large old trees that are being protected. Recruitment of new trees may be either through plantings to the prescribed standard (e.g. species composition, density, survivorship) and/or through regeneration associated with protection of other old trees, at the discretion of the planning authority. Any plantings which have been undertaken by the landholder since 1989 and which meet all the relevant offset criteria, can be used to meet this requirement.

For stands of scattered old trees

Relatively dense stands of scattered old trees that occur within pasture rather than in clearly defined vegetation remnants (i.e. where tree densities are not greatly reduced from benchmark densities, but the understorey is less than 10% of the total cover specified for the benchmark) are also important environmental assets. This can be the most common way that some vegetation types such as Plains Grassy Woodlands still occur and the best stands represent possible options for the recovery of these vegetation types. However, scattered old trees are often less consistently protected and their health may be more at risk. Using habitat hectare assessments to calculate offsets for scattered old trees is unnecessarily complex and simple protection and replacement ratios will be adequate in this case.

Protection of existing trees will be required for offsets in parcels of land which are greater than 4 hectares in area and have 8 or more large old trees per hectare. Recruitment of new trees will be required for offsets in parcels of land which are greater than 4 hectares in area but have less than 8 large old trees per hectare. The offset ratios will be graded according to conservation significance. This area threshold could be reduced and the minimum ratios identified in Table 6 could be increased in regional Native Vegetation Plans.

Vicinity

There needs to be an adequate geographic link between losses and offsets if mitigation benefits are to generally accrue to the catchments and plant / animal populations that have been impacted.

There will be a graded response: from as close as possible and/or effective for higher significance, down to more flexibility for lower significance (at the discretion of the planning authority) leading to opportunities to optimise outcomes.

Timing

To ensure that delays between clearing and mitigation do not unnecessarily exacerbate the risk to environmental values during the “transition” to recovery through offsets, the timing of offsets needs to be appropriate. It is also important to properly manage risks of non-compliance, particularly for the most significant impacts.

There will be a graded response: from formally initiating offsets prior to clearing taking place, to initiating offsets as soon as seasonally practicable after clearing has taken place.



Formal Agreement to Achieve and Secure Offset

To ensure that the management actions required to achieve offsets are undertaken, and that permanent losses from clearing are mitigated by gains of an on-going and secure nature, offset arrangements will be formally established through the routine and streamlined use of management agreements or permit conditions. The planning authority will maintain adequate and readily accessible records of agreed offset arrangements.

In ensuring that individual protection and clearing decisions effectively contribute to our overall goals, the achievements of the Net Gain approach will be formally reviewed four years after implementation of the approach commences. The review will assess how effective the Net Gain implementation has been in reducing land clearance and in achieving commensurate gains.

Response to proposal to harvest timber from naturally-established forest on private land

The harvesting of naturally-established native forest has environmental consequences but is clearly a different level of impact to permanent clearing. In general terms, the approach to this activity on private land will reflect the approach on public land. However, an important difference with respect to environmental factors at the landscape scale is that private land timber stands are often neither as large in area nor as surrounded by extensive areas of other forest as stands on public land, and so there are often more limited options for “buffering” the impacts of harvesting in time and in space.

The Net Gain approach will complement the framework for sustainable forest management on public land. Consistency with the Net Gain approach means that utilisation of native vegetation for timber products (eg. selective harvesting, harvest and regeneration) on private land must be part of a sustainable forest management approach and will only normally be permitted in Low and Medium conservation significance categories. In some cases there are combinations of conservation status and quality of vegetation that result in a Very High or High Conservation Significance rating, but harvesting is currently allowed on public land under certain conditions (eg. silviculture prescriptions) within the same bioregion. In these circumstances harvesting followed by regeneration can be permitted on private land with similar conditions unless other criteria on the site warrant a Very High or High rating (eg. threatened species). However, the amount of harvesting will need to be determined on a site by site basis taking into consideration the need to buffer the impact of harvesting in time and in space. Appendix 5 summarises the offset criteria for harvesting timber from naturally-established native forest on private land.

Applying this broad approach through the regional Native Vegetation Plans will reflect regional differences. These Plans are also able to refine this approach using additional criteria, and through consideration of the most feasible, effective and urgent actions can further identify priorities for funding.

REFLECTING CONSERVATION SIGNIFICANCE IN OVERALL OUTCOMES FOR NET GAIN

As a result of applying the above criteria to protection, investment and offset decisions the following net outcomes can be expected at the regional and statewide levels.

TABLE 1. REFLECTING CONSERVATION SIGNIFICANCE IN OVERALL OUTCOMES FOR NET GAIN

Conservation Significance	extent of existing native vegetation	gains in habitat quality-quantity	net outcome
Very High	no losses	substantial gains	substantial net gain
High	losses minimised	moderate gains	net gain
Medium	losses minimised	some gains in medium term	equivalent gain
Low	some losses	some gains in longer term	short term loss longer term equivalent gain
TOTAL			reversal of decline (change from net loss to net gain)

How will we measure the Net Gain outcome?

Using the Net Gain approach, the habitat-hectare currency and the conservation significance levels outlined above, an accounting framework can be used to quantify the net outcome for native vegetation.

Each native vegetation management activity needs to be accounted for in similar terms (i.e. habitat hectares) so that the quantity

and quality of gains and losses can be combined and relative contributions can be evaluated. Gains and losses need to be identified for each of the conservation significance levels for both biodiversity conservation and land protection so that performance with respect to the identified priorities can be evaluated. Medium-term targets can also be established by Regional Native Vegetation Plans within the terms of this accounting framework.



TABLE 2. PROPOSED NET GAIN REPORTING SHEET

	TOTAL NATURAL CHANGE	TOTAL INTENTIONAL CHANGE	LOW	MEDIUM	HIGH	VERY HIGH
GAINS IN QUALITY						
<ul style="list-style-type: none"> Public land management Private land management - including voluntary and Government assisted 						
GAINS IN EXTENT						
<ul style="list-style-type: none"> Public land management Private land management - including voluntary and Government assisted 						
LOSSES IN QUALITY						
<ul style="list-style-type: none"> Public land management - including permitted use; wildfires Private land management - including permitted use; wildfires 						
LOSSES IN EXTENT						
<ul style="list-style-type: none"> Public land management – including approved clearing Private land management - including clearing by permit Unrecorded changes - including tree decline, clearing by exemption, illegal clearing 						
TOTAL						

7 | KEY GOVERNMENT AGENCIES IN VEGETATION MANAGEMENT IN VICTORIA

Institutional arrangements for native vegetation management in Victoria are robust and, compared to other States, relatively straightforward. Catchment Management Authorities provide a focus to enable native vegetation management activities to be developed within a catchment and landscape context. Landholders, Landcare groups, non-government organisations all play important roles on delivering native vegetation management outcomes. In some cases the non government partners in Native Vegetation management have found the roles and responsibilities of Government agencies challenging. This section seeks to help clarify the arrangements within Government by providing a brief overview of each agency and their role in relation to native vegetation management.

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT

The Department of Natural Resources and Environment (NRE) is the main State Government department responsible for the administration and the management of Victoria's natural resources and public lands. NRE has policy responsibility for native vegetation management and oversees the implementation of the government's native vegetation management programs. These programs are delivered through the direct management of public lands and through provision of technical advice and financial support programs for private land programs.

NRE is the referral authority for some categories of planning permit applications for the removal of native vegetation.

VICTORIAN CATCHMENT MANAGEMENT COUNCIL

The Victorian Catchment Management Council (VCMC) was established under the *Catchment and Land Protection Act 1994*. Its role is to advise the Minister for Environment and Conservation on natural resource management issues and reporting on the quality of land and water resources. The Council is a referral body for *Flora and Fauna Guarantee Act 1988* listing recommendations.

CATCHMENT MANAGEMENT AUTHORITIES

Victoria's Catchment Management Authorities (CMAs) and the Port Phillip and Westernport Catchment and Land Protection Board are the principal vehicles for the development and implementation of regional catchment strategies designed to foster ecologically sustainable development of regions. A key component of the catchment strategies is the Native Vegetation Plan, which sets out the directions and priorities for vegetation management within the region. CMAs guide the implementation of catchment priorities through advice to the State Government and Regional Assessment Panels on regional priorities for funding.

TRUST FOR NATURE

The Trust for Nature is a statutory authority established by the *Victorian Conservation Trust Act 1972*. It can hold, buy and sell property and has the power to enter into a binding covenant with a landholder. The Trust



operates a revolving fund that purchases areas of high conservation significance. Covenants are placed on the title, binding all future owners, and the property is resold

DEPARTMENT OF INFRASTRUCTURE

The Department of Infrastructure has responsibility for the development of State planning policy and the administration of the planning system in accordance with the *Planning and Environment Act 1987*. It is responsible for the Victoria Planning Provisions (VPP), the set of standard planning provisions that provide the standard format for all planning schemes in Victoria.

In the *State Planning Agenda - a sensible balance* released by the Minister for Planning in December 1999, the Government indicated its commitment to reversing the decline in the extent and quality of native vegetation in Victoria. As part of this commitment the Department of Infrastructure is reviewing the Victoria Planning Provisions as they relate to native vegetation retention to give effect to the principles in this Framework. A discussion paper will be released after the practical methods of application of the key concepts have been demonstrated. The Government is also committed to assisting councils to identify biodiversity and establish appropriate management strategies. Close coordination with the work of the Catchment Management Authorities is acknowledged as vital in this regard.

LOCAL GOVERNMENT

Local Government in Victoria has relatively broad powers in relation to environmental control, protection and conservation. The primary mechanism for vegetation protection by local government is the planning system. There is a planning scheme for every council in Victoria. Local Government is responsible for developing, administering and enforcing its own planning scheme. The planning scheme sets out policies and requirements for the use, development and protection of land. The planning scheme also states which activities, development or uses of land require a planning permit. In assessing a planning permit application a council must consider, among other things, the environmental impact of a proposal. At a national level, Local Governments have prepared a Biodiversity Strategy. Within Victoria, Local Governments are also increasingly supporting native vegetation protection and management activities through initiatives such as rate rebates and taking a lead role in roadside vegetation management.

The Municipal Association of Victoria (MAV) is the peak body for local government in the State of Victoria. Under the *Municipal Associations Act 1970*, the MAV is required to represent all 78 local governments in the state. The MAV has an ongoing commitment to supporting the development of the effective role of Victorian local government authorities in environmental management.



8 INVESTING IN ACTION

Increasing the investment in vegetation conservation is complex because individuals can have competing objectives for use of land. The challenge for Government is to determine how much investment in vegetation is needed, who should pay for this effort and what is the most efficient way to achieve our vegetation goals?

HOW MUCH INVESTMENT IN NATIVE VEGETATION CONSERVATION AND ENHANCEMENT IS NEEDED?

The optimal level of investment in vegetation improvement occurs when the additional benefit of improving or increasing vegetation equals the additional costs of achieving this improvement. In cases where we don't fully understand the benefits (e.g. biodiversity conservation, soil health) or cannot fully quantify the interactions with other areas of the economy (e.g. vegetation's role in preventing dryland salinity) but there are likely to be irreversible implications it is prudent to adopt a precautionary approach.

SHARED INVESTMENTS

The beneficiary pays principle is used to assist in identifying who should pay for natural resource management programs. This relies on identifying the distribution of benefits between private individuals, industries or regions and the public in general. On many farms, landholders have recognised the importance of native vegetation in protecting agricultural land from rising water tables, reducing weed and pest problems and for aesthetic appeal.

Benefits of native vegetation extend beyond the farm gate to other farmers (e.g. water table control), to society as a whole through such things as a more diverse genetic stock and carbon sequestration. Some mix of public, collective (industry, consumer or catchment) and private funding of vegetation protection and enhancement activities is warranted.

DUTY OF CARE

General duties of a landowner include those identified in s20 (1) of the *Catchment and Land Protection Act 1994*:

In relation to his or her land (where land includes soil, water, vegetation and fauna on land) a landowner must take all reasonable steps to -

- a. avoid causing or contributing to land degradation which causes or may cause damage to land of another landowner; and
- b. conserve soil; and
- c. protect water resources; and
- d. eradicate regionally prohibited weeds; and
- e. prevent the growth and spread of regionally controlled weeds; and
- f. prevent the spread of, and as far as possible eradicate, established pest animals.



To assist in determining when and where Governments invest, the following principles have been adopted:

- land managers have a responsibility to retain native vegetation,
- Public resources are to be directed to increasing the extent of native vegetation or to enhancing the quality of native vegetation through appropriate management, rather than to the status quo of retaining existing vegetation,
- public resources will be used to facilitate voluntary actions by landholders and also for shared investment in enhancement of vegetation of conservation importance and regionally important land and water protection.

9 IMPLEMENTATION

To achieve our Net Gain goal, implementation programs will require the following characteristics:

- continued effort to avoid clearing, with an improved focus on the most significant native vegetation;
- active management aimed primarily at improving the quality of existing remnants;
- long-term commitment by landholders and Government to the management task;
- developing understanding by landholders of the need for extensive revegetation;
- increasing the capacity of landholders and rural communities to undertake vegetation protection and revegetation works.

Our challenge is to promote a permanent change to the way landholders use and manage remnant native vegetation on their land. To achieve this we must make the most of opportunities presented by other programs. Native vegetation management objectives are being incorporated into these programs and the targets for the programs are increasingly reflecting native vegetation management outcomes.

This Statewide Framework provides the guiding principles for managing native vegetation to achieve a Net Gain and the underlying method for determining conservation status and conservation significance as well as the Net Gain outcomes. Being a Statewide policy the

Framework must take a big picture approach and relies on the regional Native Vegetation Plans to provide a regional flavour to achieving a Net Gain in extent and quality of native vegetation. Much of the implementation will be guided by the Native Vegetation Plans and they have the flexibility to incorporate additional offset criteria and to be more explicit about the management priorities for vegetation communities, habitat requirements and threatening processes.

Catchment Management Authorities (CMAs) have prepared Native Vegetation Plans for their regions that will:

- act as reference documents for the conservation status of vegetation communities within CMA regions;
- provide strategic directions for protecting and enhancing remnants and establishing regional targets for vegetation types;
- develop regional priorities and targets for replanting of native vegetation for biodiversity, greenhouse and land and water protection purposes;
- provide regional guidelines for responsible and referral authorities in determining permit applications to remove, destroy or lop native vegetation;
- identify gaps in knowledge and best management practices for native vegetation retention, regeneration and planting across the catchment, and
- identify appropriate opportunities for interaction with local landscape scale processes that provide additional detail for key natural resource management issues eg. salinity management plans and biodiversity action plans.

The Plans have identified priority actions that demonstrate investment value. In identifying actions, within a given vegetation category and for habitat of equal value, priority has been given to:

- protection of remnants (e.g. reservation, covenants, management agreements),
- management of existing remnants (e.g. weed control, maintenance of the hydrological regime, revegetation for buffering, promoting and/or enhancing natural species and/or structural and/or age class and/or size class diversity),
- enhancement of degraded remnants,
- enhancement of connectivity and integrity through recreation of habitat (including riparian re-vegetation) (e.g. corridors, buffers, restoration of ecological processes)
- revegetation for land degradation mitigation works
- re-creation of isolated areas of habitat, and finally
- revegetation works of lower order than above.

9.1 PROTECTION AND ENHANCEMENT ON PRIVATE LAND

Between 1972 and 1987 clearance rates of native vegetation on private land were approximately 10,700 hectares per year. This rate has been reduced to approximately 2,500 hectares per year for the period 1990 to 1995 (Barson *et al.* 2000). While the regulations, along with other changes in Government policy and changes in community attitude have been successful in reducing broadscale native vegetation clearance, clearing is still





occurring and there has been limited protection for some of the more rare and threatened vegetation communities. In addition substantial work has been undertaken by individuals and community groups to revegetate for land and water resource protection, biodiversity protection and greenhouse gas amelioration. Despite these efforts our best estimates indicate that we are in a net loss situation and implementation of our goals will require significant further work.

Statutory Protection of native vegetation

A range of measures has been adopted in Victoria to facilitate native vegetation protection. These measures sit within the legislative framework provided under the *Flora and Fauna Guarantee Act 1988* (FFG Act) and the *Planning and Environment Act 1987*.

The FFG Act provides a legislative foundation to guarantee that all Victoria's flora and fauna can survive, flourish and retain their potential for evolutionary development in the wild. Complementary goals are to conserve communities of flora and fauna; manage potentially threatening processes; ensure that any use of flora or fauna by humans is sustainable; and ensure that the genetic diversity of flora and fauna is maintained. The FFG Act lists species of 'protected' flora and facilitates various programs that foster community education and voluntary agreement opportunities. Wherever possible, implementation of the FFG Act is integrated into the operation of other legislation that impacts on biodiversity but has broader objectives (eg. land protection role of the native vegetation retention controls) and that has processes that adequately deal with the

objectives of the FFG Act eg. *Forests Act 1958*. In such cases this arrangement is formalised through a Governor in Council Order under the FFG Act. *The Victorian Biodiversity Strategy* has been prepared as a requirement of this Act.

Under certain circumstances, NRE makes targeted purchases of land to address critical gaps in the reserve system. Funding is about \$650,000 per annum although funding from the Commonwealth is also available from time to time.

The *Catchment and Land Protection Act 1994* provides for the declaration of special areas and the development of management plans to address specific land management issues in those areas.

The *Planning and Environment Act 1987* provides the planning system through which environmental impacts of land use and development can be considered. The Victoria Planning Provisions (VPP) provides the standard format and the Statewide standard planning provisions for planning schemes in Victoria. A key component of the VPP is the State Planning Policy Framework, which comprises the State planning policies for all land in Victoria.

Statewide Native Vegetation Retention controls (NVR) were introduced in all planning schemes in 1989 and are set out in Clause 52.17. The controls require a planning permit for the removal, destruction or lopping of native vegetation subject to a range of exemptions designed to facilitate normal domestic and rural practices.



The local council is usually the responsible authority for administering and enforcing the planning scheme including deciding on permit applications. However, NRE is the referral authority for a range of applications including those to clear more than 10 hectares. The responsible authority must include any conditions on a planning permit issued which a referral authority requires to be included and must refuse to grant a permit if the referral authority objects to the grant of a permit.

The State Planning Policy Framework (SPPF) states that responsible authorities should have regard to any relevant Regional Vegetation Plans when amending planning schemes and reviewing Municipal Strategic Statements. Responsible Authorities must also consider any relevant approved Regional Vegetation Plan when considering a planning permit application under Clause 52.17.

Reviewing the Victoria Planning Provisions (VPP)

After practical methods of application of the Net Gain and habitat hectare concepts in the planning system have been demonstrated, the Department of Infrastructure will prepare a discussion paper on possible changes to the Victoria Planning Provisions to give effect to the Framework. The discussion paper will be circulated for public comment. Depending on the level of public interest or issues raised, an advisory committee may be appointed to review submissions and provide independent advice to Government on VPP changes. Following the consideration of public submissions, necessary changes to the VPP will be made.

Supporting Local Government - Improved Information and Training

Since the release of the Draft Native Vegetation Management Framework in August 2000, NRE has created ten new Native Vegetation Officer positions to provide support and training to local government in implementation of the native vegetation controls and adopting the Net Gain approach.

This support will be complemented by better access to NRE's natural resource management GIS layers eg.

- Ecological Vegetation Classes (EVC),
- Bioregional EVC conservation status,
- tree cover mapping (at 1:25,000 scale)

through the fourth phase of development of the Native Vegetation Permit Tracking system (NVPT).

Whilst primarily aimed at improving our understanding of changes to the native vegetation component of Victoria's greenhouse gas sink, NVPT will have a range of applications. It is being developed by NRE with the cooperation of a group of local government representatives in order to improve recording systems for permitted clearing. NVPT will also have the capability of spatially documenting Net Gain offset arrangements where clearing is permitted. The spatial information accessible through NVPT (outlined above) will also assist local government planners in deciding planning permit applications affecting native vegetation.





The approach advocated in this Framework, in conjunction with the information provided by the Native Vegetation Plans, will facilitate better adoption of planning tools to protect native vegetation (e.g. Zones, Overlays, Municipal Strategic Statements, and local policies). The Department of Infrastructure has in conjunction with NRE prepared a Biodiversity Planning Practice Note that will also contribute to the effective protection and enhancement of native vegetation. The envisaged improvements in consistency and transparency of planning decisions should reduce the number of applications for a hearing at the Victorian Civil and Administrative Tribunal (VCAT).

Actions:

- In conjunction with the Department of Infrastructure, prepare a Discussion Paper detailing proposed amendments to the Victoria Planning Provisions to ensure consistency with this Framework.
- Revise the planning guidelines for native vegetation retention.
- Provide access to Tree Cover mapping through the internet.
- Finalise construction and implementation of the Native Vegetation Permit Tracking system.

Incentives for protecting and enhancing native vegetation

While regulations controlling the clearing of native vegetation are essential, they are only one of a range of tools necessary for achieving our Net Gain goal. The regulatory approach generally focuses on what is not allowed and does little to encourage or inform better conservation and management of native vegetation. The real progress in achieving a Net Gain in extent and quality of native vegetation will come from continuing land holder efforts combined with better targeted incentives backed by readily accessible information and experience in native vegetation management.

Financial assistance and labour support

Victoria, in partnership with the Commonwealth Government has made substantial investments in protecting and enhancing our natural assets through the Natural Heritage Trust (NHT). The Bushcare component has seen over \$36 million invested in on ground works to reverse the decline in extent and quality of native vegetation over the four years of the program.

Arrangements for the second phase of NHT have not been finalised but it is apparent that the Bushcare component will continue with a broader focus for funded activities eg. weeds of international significance and threatened migratory species.



Some Local Governments recognise and support landholders retaining and managing remnant vegetation by offering rate rebates. The Shire of Mount Alexander and Maroondah City Council, for example, with Government support through Natural Heritage Trust funding, have started a rate rebate program for landholders with conservation covenants on their properties.

The State Government also supports community groups' on-ground works by providing for labour programs to landholders through the Australian Trust for Conservation Volunteers and the Landmate program.

Future Investment Approaches

To ensure that Victoria achieves "value for money" from funds that are allocated to native vegetation management, it will be important to include as many landholders as possible and to engage policy tools that specifically suit the characteristics of the different types of landholders. This will reduce the cost of conserving vegetation by including those landholders that have both valuable vegetation classes and low costs of vegetation management.

The current set of mechanisms needs to be strengthened to engage a broader range of land holders with a better resolution of the cost sharing issue. For example, a survey across northern Victoria found that up to 80% of the remnant vegetation in the region occurs on larger more commercially oriented properties but the landholders tend not to be engaged in existing voluntary programs.

BushTender

The Draft Native Vegetation Management Framework identified the following action:

'Undertake a trial of the funded management agreement mechanism in a Catchment Management Authority region, based on biodiversity and salinity recharge benefits.'

During 2001 a trial was undertaken of BushTender, a new mechanism, based on a competitive auction process, for establishing management agreements with landholders. The BushTender trial aimed to increase the level of landholder participation in active native vegetation management and to target biodiversity priorities in a cost-effective manner. Salinity recharge was not directly addressed because the method for identifying preferences at the local landscape scale was not sufficiently well developed. The trial was undertaken in two areas within the North Central and the North East CMA regions. Expressions of interest from landholders were called for and site assessments were conducted. Site management plans for the protection and improvement of native vegetation were developed in consultation with the landholders.

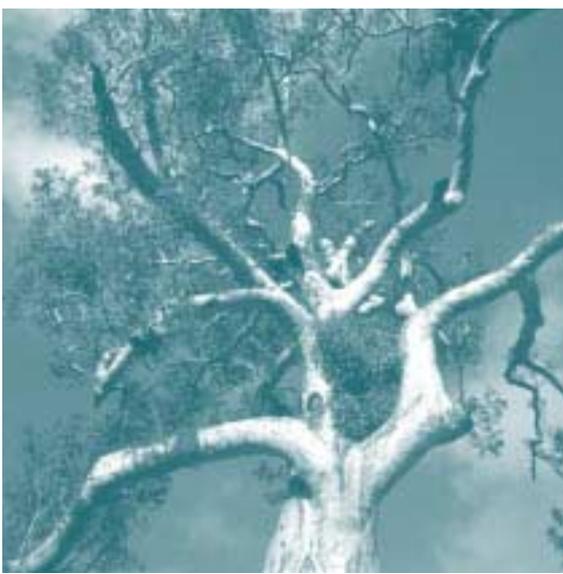
In the BushTender trial, landholders established their own price for the management services they were prepared to offer to improve their native vegetation. This price formed the basis for their bid, which was compared with the bids from all other landholders who participated in the trial. The bids offering the best value for money were identified and these landholders will receive periodic payments for their services under a three-year management agreement.



Both the trial participants and the successful participants represented a typical cross-section of landholders in the regions. The average property size of participants was 286 ha and the average property size of successful participants was just over 300 ha.

The results of the trial indicate that the auction process can be successfully operated to establish native vegetation management agreements. Landholders accepted the mechanism and actively participated. The bidding was competitive and bidding success was evenly distributed across the two trial areas. The biodiversity priorities were successfully identified and secured through the site assessment and bidding process.

Like many trial programs the BushTender trial, whilst successful, has only investigated a limited range of aspects of what would be required for a full program. The initial trial was modest in scale and only offered one round of bidding. The full impact of the BushTender approach can only be assessed following several rounds of bidding over consecutive years to enable initially unsuccessful landholders to modify their bids to improve their competitiveness.



BushBroker

Where mitigation for vegetation loss is required, the preference is for offset gains to be generated on the same property. However, there are situations where this is not possible or preferred, for example where there is no suitable offset site on the property or where the proponent has no interest in native vegetation management. In these situations there is a need for the offsetting gains to be generated elsewhere by third parties and to be available for purchase. The Net Gain policy requires appropriate matching of losses and gains, and procedures to ensure that gains are appropriately secured and protected (table 6). There is a role for a broker to facilitate and oversee this exchange where third parties are involved.

The major challenge for this type of scheme is the method of price setting for the offsite gain. Under the BushBroker proposal the price for offsite gains would be established through the operation of BushTender where the competitive auction process would provide a fair market price for proponents seeking to purchase offsets generated under management agreements. The site information required for matching appropriate gains to losses is also collected during the BushTender process. Proceeds from the sale of offsets would be recycled back into future BushTender rounds.

Action

- Extend the BushTender trial into additional Catchment Management Authority regions and operate over several years.
- Develop the BushBroker proposal with a view to its implementation when sufficient BushTender agreements are in place.

Building Capability in Landscape Change

Landscape change to protect and enhance native vegetation is predominantly dependent on the capability of private land managers. The capability of land managers to implement change is enhanced by partnerships with community, non-government organisations and government agencies.

Government builds community capacity for native vegetation management through the provisions of information, advice, skills training, and participatory and voluntary programs. These capacity building activities are enhanced by the community-based Landcare movement and non-government organisations such as Greening Australia, (Victoria).

These participatory and voluntary programs seek to improve understanding of the importance of native vegetation and the steps that can be taken to protect and enhance native vegetation. Victoria's Landcare movement underpins much of the voluntary effort. Resources in the form of facilitators and grants are offered to Landcare groups to address native vegetation management and other natural resource

protection issues within their areas. Technical advisory services are provided through the Department of Natural Resources and Environment and by a number of non-government organisations such as Greening Australia (Victoria).

Two important programs specifically target native vegetation protection: Land for Wildlife and Trust for Nature. Private landholders participate in these programs primarily because of their personal interests in conservation.

The Land for Wildlife Program establishes voluntary non-binding agreements with landholders to manage land for biodiversity conservation. Over 5,000 properties are now participating, covering 125,000 ha of habitat. The program provides an extension and education service that aims to encourage conservation-orientated approaches to property management.

Trust for Nature covenants are voluntary, legally-binding agreements (registered on the property title) regarding the use of land. Over 417 covenants have been registered in the last 15 years covering more than 18,000 ha of private land. The Trust also operates a 'revolving fund'. Under this scheme land is purchased then resold with a covenant. The sale proceeds are then used to purchase further properties. Voluntary but binding agreements may also be made under the *Conservation, Forests and Lands Act 1987* and the *Wildlife Act 1975*.





Community engagement processes that build individual's capabilities and the capacity of the community for native vegetation management are vital to balanced catchment management outcomes. Each CMA's Regional Catchment Strategy and Native Vegetation Plan provides community engagement tools and priorities for native vegetation management.

The regional Native Vegetation Plans pave the way for effectively targeted local action that will achieve the best integration of the objectives for native vegetation retention and revegetation. At the next spatial scale down from regional plans, Biodiversity Action Plans (BAP) will use a structured approach to identifying priorities and mapping significant areas for biodiversity conservation at the landscape scale. Native vegetation biodiversity priorities identified in the Native Vegetation Plans are included in the BAP and supplemented by other biodiversity priorities (eg. threatened species, wetlands and river health). Using existing information on biodiversity assets and current understanding of species requirements for habitat within the local landscape, BAP identify the best options for restoring native vegetation to recover biodiversity. These options can be mapped with related information on land and/or water protection and land use potential to enable local communities to visualise how sustainable landscapes can be achieved.

This approach allows the knowledge of people in the local community to be used in applying the priorities identified in the regional Native Vegetation Plan. NRE is developing tools and undertaking research to support effective planning at the local landscape scale (see sections 9.2 & 9.3).

FarmBis

FarmBis is a joint Commonwealth / State Initiative, managed by the Department of Natural Resources and Environment and administered by the Rural Finance Corporation in Victoria. FarmBis will help achieve:

- Profitable, competitive and sustainable farm and fishing business enterprises.
- Self-reliant primary producers who are equipped to handle change through adoption of a culture of continuous learning and skills development.
- Enhanced sustainability of Australia's natural resources.

The new FarmBis program provides grants to subsidise training for farmers, land managers and wild catch fishers to improve their self-reliance and ability to manage change. A range of natural resource management courses, including Vegetation Management and Natural Resource Planning & Risk Management subjects, are now eligible for subsidies.

Rural and Regional Development

Natural resource management and environment protection are becoming recognised as key factors in regional development. The provision of native vegetation information and improvements in the native vegetation retention decision-making process are essential for good planning for rural and regional development. Not only will the information enable communities to effectively protect native vegetation but also it will provide opportunities to capitalise on the benefits of native vegetation. This is particularly important in regions with the potential for nature-based tourism and boosting regional populations through providing an attractive country lifestyle. The increasing awareness of the value of native vegetation also presents an opportunity to engage schools and the broader community in monitoring the condition of their native vegetation.

Actions:

- Ensure that all NRE technical and awareness programs deliver consistent advice that protects and enhances native vegetation and biodiversity outcomes.
- Assist CMAs to develop community engagement processes that builds the region's capacity to implement native vegetation management for multiple benefits.
- Develop mapping and analysis tools to enable visualisation and shared understanding of where remnant vegetation enhancement and revegetation can be most effectively undertaken at the local level.

- Deliver ecology training courses addressing particular vegetation types (e.g. Box Iron Bark) or issues (fire management) and link with existing education programs (e.g. Waterwatch) where appropriate.

Land and Water Programs

There is a range of natural resource management and land protection programs operating in Victoria. Whilst native vegetation management may not be central to all of these programs they represent important opportunities for achieving Net Gain. Already many of these programs recognise the contribution that native vegetation can make in achieving their objectives and, where appropriate, reflect native vegetation management priorities in planning and implementing projects under these programs. The further development of the Net Gain concept outlined in this document will assist Victoria to realise the multiple benefits that can be derived from effective native vegetation management.

The National Action Plan for Salinity and Water Quality

The National Action Plan for salinity and water quality (NAP) has been developed as a joint initiative between the Commonwealth and State Governments. In Victoria this agreement translates into \$304 million of new funding over 7 years being made available to motivate and enable regional communities to use coordinated and targeted action to:



- a. Prevent, stabilise and reverse trends in salinity, particularly dryland salinity, affecting the sustainability of production, conservation of biological diversity and the viability of our infrastructure; and
- b. Improve water quality and secure reliable allocations, for human uses, industry and the environment.

In the following priority regions:

- Lower Murray - Mallee and Wimmera CMAs
- Goulburn Broken - Goulburn Broken CMA,
- Avoca-Loddon-Campaspe - North Central CMA
- Glenelg-Corangamite – Glenelg-Hopkins and Corangamite CMAs.

Investment of these funds will be through the CMA's accredited Regional Catchment Strategies. The funds are to be invested in addressing salinity and water quality issues, including where they are specific threats to biodiversity, but there will be additional benefits for the protection and enhancement of native vegetation particularly in relation to managing threats associated with salinity.

If areas that are identified as benefiting from revegetation are not commercially viable, or appropriate for commercial plantings, are revegetated with indigenous communities with high habitat hectare potential we can make significant progress in our Net Gain goal through revegetation under NAP.

In cases where revegetation with indigenous species will not be successful because of the high level of salinity discharge, it is important that the non-indigenous alternatives which can tolerate this high level of discharge are not species that threaten the condition or viability of nearby remnant vegetation e.g. through invasion.

Second Generation Landcare

The Second Generation Landcare program makes available State government funding for community projects by groups and in some cases individuals. The Program aims to:

- Help community groups to operate at their optimum level,
- Provide support to community groups to participate in natural resource management projects,
- Recognise regional diversity,
- Provide a catalyst for changing land management practices, and
- Promote and protect biodiversity values.

Investment decisions for on ground projects are driven by the extent to which the project addresses the regional priorities as identified in Action Plans (including the Native Vegetation Plans) giving effect to the Regional Catchment Strategies. In 2001/02 approximately \$4 million were provided across the State for community projects through second generation Landcare.

Pest Management

Victorian Pest Management – A Framework for Action is pursuing a more integrated approach and introduces an increased focus on protecting Victoria's biodiversity assets as a driver for investment priorities.



Private Forestry

The private forestry program, which covers a range of activities but has a focus on commercial production of timber products, can offer benefits associated with addressing land and water degradation as well as climate change. Commercial timber growing and harvesting on private land can generally be considered as encompassing two types of forest - native forest and plantations. Plantations on previously cleared land provide the opportunity to reduce incremental clearing of native vegetation caused by firewood collection and sourcing farm timber (eg. for posts and construction). One of the environmental challenges associated with plantations is to strike a balance between recharge control for salinity benefits and maintaining sufficient water yield for wetlands and their associated native vegetation. The issue of genetic pollution impacts on remnant vegetation also warrants further investigation. *Private Forestry Victoria: Focusing on 2002-2005* recognises these issues through its Environmental Health strategic element that will address improved biodiversity values across the landscape.

Commercial timber production from native regeneration on private land is a long-term prospect that has scope for significant land management and biodiversity benefits. However, there is significant reluctance to pursue this activity in the absence of harvesting rights once the trees are mature. Similarly, the perception of red tape associated with pruning, thinning and other management activities has been identified as a significant barrier. The planning scheme has the capacity to address these barriers through the granting of a planning permit against a land management (or timber production) plan that covers the life of the operation (this may be 5 years or 40 years). The management plan would need to identify the site, its physical and biological features, particularly existing remnant vegetation that will be retained, and the management regime planned for the timber production operation (eg. thinning, pruning and harvesting). The submission of a Timber Harvesting Plan to Local Government is already a requirement of the *Code of Forest Practices for Timber Production*.

Clearing or destruction of native vegetation to facilitate plantation establishment or other timber products will be considered in the same manner as any other planning permit applications and will require appropriate offsets. Net Gain offset requirements for harvest and regeneration and selective harvesting activities will be deemed to have been met through effective regeneration as outlined in Table 7, Appendix 5.





Sustainable Agriculture and Land Management Program

The Sustainable Agriculture and Land Management (SALM) extension program aims to implement plans that will reduce the environmental, economic and social impacts of salinity, soil erosion and land degradation on Victorians. A key focus of the program is to implement Victoria's Salinity Management Framework, which recognises the importance of strategic revegetation to maximise salinity control benefits, while also achieving improved biodiversity outcomes. Integrated Catchment Management is a central theme of the SALM program, which has close linkages with other Land and Water programs. Private Forestry and Greenhouse outcomes are valuable cross benefits from SALM revegetation activities. Pests impact directly upon the implementation of SALM management options, while Landcare provides the framework through which the concept of improved land management combined with biodiversity outcomes reaches the community. The potential for SALM activities to have negative impacts of on biodiversity is recognised and the development of industry standards, to address this issue, are being explored.

Growing Victoria's Greenhouse Sinks

The *Victorian Greenhouse Strategy* recognises that the release of CO₂ from land clearing is an important source of greenhouse gas emissions in Australia, but that in Victoria this source contributes only around 1% of Victoria's total emissions. Although only one part of a comprehensive greenhouse response, the creation of carbon sinks through revegetation, will play an important role in achieving Kyoto targets. Growing Victoria's Greenhouse Sinks is a program aimed at creating carbon sinks to contribute to the amelioration of the Greenhouse effect, however other benefits, in the form of a reduction of land and water degradation and conservation of biodiversity, are also achieved. For example, the re-establishment of habitat links has the potential to increase the resilience of natural systems to adapt in the face of climate change. Growing Victoria's Greenhouse Sinks has been operating for 3 years with around \$1.5 million/year allocated for revegetation with indigenous species. This program will be extended with \$3 million over three years.

Actions:

- Undertake scientific investigations to identify salinity hazard and recharge areas for use in developing strategic revegetation or vegetation management plans and identifying opportunities for revegetation with indigenous vegetation communities to reduce the impact of salinity.
- Develop native vegetation management and revegetation components for inclusion in Environmental Management Systems for marketing 'world-class' and 'green' agricultural products.
- Continue to promote the concept of multiple benefits to enhance the outcomes of revegetation and vegetation management projects.
- Develop an improved understanding of the water yield impacts of private forestry enterprises on wetlands and associated aquatic vegetation and develop guidelines for plantation establishment to avoid further impacts.
- Develop an improved understanding of the genetic pollution impact of private forestry enterprises on native vegetation.
- Develop local prescriptions for protection and enhancement of indigenous vegetation associated with plantations and timber harvesting for inclusion in the Code of Forest Practice for Timber Production on private land.

9.2

MONITORING AND EVALUATION

Monitoring of vegetation management activities is undertaken by:

- Local Government as part of implementing the Planning Scheme,
- CMAs and the Victorian Catchment Management Council as part of their statutory responsibilities under the *Catchment and Land Protection Act 1994*, and
- State Government agencies in order to meet National environmental reporting requirements.

The challenge is to ensure that these reporting efforts are well coordinated and that we have an efficient system of reporting progress towards our Net Gain goal.

Catchment Activity Management System

NRE is improving its accountability by using the Regional DataNet Catchment Activity Management System (CAMs) to record on ground activities that received financial assistance from Government. CAMs is a statewide web based data management and reporting system and contains tools to:

- Keep track of expenditure
- Record details on activities
- Record spatially where the activities are
- Report on activities, outputs, issues and budget, and
- Perform simple Geographic Information System (GIS) functions



All on ground NHT Bushcare projects have a condition requiring documentation of activities on CAMs. By providing a spatially linked register of activities CAMs facilitates evaluation and monitoring of the success of Government investments, particularly the effectiveness of targeting funds to priority areas of the State. It also improves our ability to ensure the ongoing security of these investments. In future, the improvements in native vegetation quality and extent will be assessed and reported in terms of habitat hectares as a contribution to our Net Gain goal.

Native Vegetation Permit Tracking System

Victoria has a strong background in vegetation mapping for regional planning and is now moving to cover the rural landscape with mapping that is suitable for local planning. This mapping builds on the work undertaken as part of the Regional Forest Agreements and uses extensive remotely sensed information. However, further development of this technology is needed to assist Local Governments with monitoring of compliance with permit conditions and to use this information to track changes in vegetation cover for greenhouse and carbon credits purposes. The Native Vegetation Permit Tracking system outlined in section 9.1 will complement the Regional Datanet and value add to the satellite imagery used for tree cover mapping.

National Vegetation Information System

The NHT National Land and Water Audit, in cooperation with all States and Territories, has developed a National Vegetation Information System (NVIS) to assist States undertake monitoring of their native vegetation resources in a consistent manner Australia-wide. NVIS provides guidelines and defines the minimum requirements for the compilation of vegetation data across Australia.

Environmental Management Systems

An Environmental Management System (EMS) is a methodical approach to continuous improvement in planning, implementation and review of an organisation's efforts to manage its impacts on the environment. EMSs can provide a framework for a voluntary but systematic set of procedures for improving environmental performance. Performance Standards, accepted specifications or codes of practice which define materials, methods, processes and practices, when effectively implemented, ensure that consistent and acceptable levels of quality, performance, safety and reliability are achieved. NRE has commenced pilot EMS projects on grains, beef and wool properties to develop practical examples of how EMSs can improve biodiversity conservation and can support the substantiation of 'clean and green' production. The projects are funded through the Naturally Victorian marketing initiative.

Actions

- Develop and implement a Statewide Vegetation Quality Indicator (or mapping method) that contributes to an overall assessment of progress towards a Net Gain in native vegetation and complements National and other relevant systems. As part of this action, enhance NRE's biodiversity information systems with standard descriptions of EVCs, particularly with respect to attributes relevant to condition assessment and revegetation.
- Undertake regular remote sensed mapping of the extent of tree cover at a scale of 1:25,000 (Tree 25) for Net Gain monitoring and tree cover change analysis for detecting illegal native vegetation clearance.
- Introduce a compliance auditing system for the *Code of Forest Practice for Timber Production* on private land.
- Develop and implement an approved framework for reporting key biodiversity assets (including native vegetation) across Victoria.



9.3 RESEARCH FOR IMPROVED MANAGEMENT

Native Vegetation Management requires both an understanding of ecosystem functioning on a landscape scale and the development of appropriate management responses by land managers.

The extent of Victoria's vegetation challenge requires an understanding of the implications of broadscale landuse change at a catchment level as well as the implications for different farming systems.

Catchment Management Authorities will need to understand the long-term implications of extensive revegetation on water quality and yield, while individual farmers will need information on the impact of different management practices on their farm business.

State and Local Governments will also need to better understand the effects of different management objectives for the development of land management agreements. As well as technical biophysical issues, there is a need for a greater understanding of the human dimension - for example, factors affecting uptake of incentives and works.

Victoria has invested strongly in vegetation mapping and has been a major supporter of efforts by Land and Water Australia (L&WA) to both audit native vegetation and develop best management responses to protecting and enhancing native vegetation. The Goulburn

Broken Native Vegetation Plan is an example of this partnership approach. The Plan's development was supported by both the Victorian Government and L&WA to pilot approaches for regional planning.

Victoria, in partnership with L&WA through the Native Vegetation R&D program has invested in two research projects:

- *Landscape level thresholds for conservation of biodiversity in rural environments, and*
- *Managing landscapes to meet public biodiversity goals and farm business goals.*

Victoria will also benefit from the knowledge generated through the projects undertaken by other jurisdictions as part of the Native Vegetation R&D Program.

NRE is also undertaking a range of research projects focussing on biodiversity conservation under the Ecologically Sustainable Agriculture Initiative:

- Achieving Biodiversity Gains in conjunction with Land Use Change;
- Grazing for Biodiversity and Profit;
- Improved Riparian Zones and Remnant Vegetation in High Rainfall Intensive Grazing Systems;
- Shelter-belts for Enhancing Biodiversity in Intensive Agricultural Systems;
- Targeted Water Management Strategies for Ecologically Sustainable Agricultural Industries; and

- Protection of Threatened Species in Agricultural Landscapes.

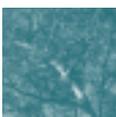
In addition environmental research is supported through NRE's Grains program:

- Environmental Impacts of Raised Bed Cropping Systems in south west Victoria – Biodiversity Component.

Action:

Develop a research strategy for native vegetation management within Victoria as part of NRE's Natural Resource Management R&D strategy that includes:

- calibration of the habitat hectare methodology to more specific biodiversity attributes and to improve estimates of the relative value of offset actions,
- improving the cost-effectiveness and ecological "know-how" of management techniques for enhancing habitat values in remnant native vegetation or re-creating habitat values through revegetation,
- identifying and progressively refining rule sets which summarise relationships between habitat characteristics and key species and can be used to promote better understanding of the best options for restoring native vegetation to recover biodiversity,
- identification of salinity management targets through analysis of the best available information,
- pathways for research information to successfully influence State policy, extension programs and investment strategies.



APPENDIX 1 | LAND PROTECTION HAZARD FOR NET GAIN OUTCOMES

TABLE 3. IDENTIFYING LAND PROTECTION HAZARD FOR NET GAIN OUTCOMES

HAZARD RATING	WATERWAY PROTECTION	SALINITY CONTROL	SOIL CONSERVATION	SOIL/LAND QUALITY	PRODUCTIVE CAPABILITY OF SITE
Very High	Riparian zone vegetation (ie adjacent to or within waterway, wetland or significant drainage line).	Vegetation on an area identified as having a high groundwater recharge potential OR Salinity discharge site and its immediately adjacent area	Very high erosion hazard associated with the proposed use and the activities needed to bring about the change in use (defined as land with >20% slope) OR Salinity discharge site	Land highly susceptible to soil structure decline, water logging or landslips.	Land with restricted vegetative growth potential because of either moisture availability or the occurrence of low temperatures
High	Vegetation immediately adjacent to riparian zone	Vegetation on an area with moderately high groundwater recharge potential OR Vegetation slightly uphill of discharge site	High erosion hazard associated with the proposed use or the activities needed to bring about the change OR Potential salinity discharge site	Land moderately susceptible to either soil structure decline, water logging or landslips	Land with low potential for reliable vegetative growth
Medium	Vegetation away from riparian zone	Vegetation on an area identified as having a moderate groundwater recharge potential	Moderate erosion hazard with proposed alternative use	Land of low susceptibility to either soil structure decline, water logging or landslips	Land with adequate potential for vegetative growth
Low	Vegetation not adjacent to or within riparian zone	Vegetation on an area identified as having a low groundwater recharge potential	Low erosion hazard associated with proposed alternative use	Well structured soil of depth greater than 150 mm	Land of high potential for vegetative growth

APPENDIX 2

ASSESSING BIOREGIONAL CONSERVATION STATUS OF ECOLOGICAL VEGETATION CLASSES

Assessment of the conservation status of vegetation types is traditionally based on the broad concepts of inherent rarity, degree of threat (including consideration of historic and on-going impacts) and importance for supporting other significant features (for example, as a drought refuge for native fauna). These concepts have been expressed as more specific criteria in a number of processes at State and National levels. The Regional Forest Agreement (RFA) process undertaken in partnership by Commonwealth and State agencies used National Forest Reserve Criteria which included a number of biodiversity criteria for establishing a Comprehensive Adequate and Representative reserve system (outlined in JANIS 1997). Many of these criteria have been used as the basis for assessing conservation status of vegetation types in the Net Gain approach. However, there are inherent differences between the processes - RFAs focus primarily on establishing a reserve system for forests in largely natural landscapes across public land, while NVPs focus primarily on prioritising protection of all types of remnant vegetation in rural landscapes across private land. These differences necessitate a refinement of the criteria. The key refinements are as follows:

- depletion and rarity of occurrence assessments are made within a Victorian bioregional framework which is more informative than the RFA study area framework;
- combinations of depletion-degradation-rarity which give equivalent conservation status to depletion-only thresholds are more explicitly defined;
- a “depleted” category is added to allow identification of vegetation types which may become threatened if broad-scale depletion or degradation activities are not managed appropriately;

The criteria are detailed in Table 4 and have been used to assign a conservation status for each combination of EVC and bioregion. The status of each combination may be amended with time as more complete or better scale mapping of vegetation type and condition becomes available. Where an EVC is only a minor occurrence in a bioregion it is assigned the conservation status from an appropriate neighbouring bioregion, unless the occurrence is considered to represent a threatened floristic community.

Complexes/mosaics are assigned the conservation status of the most threatened component EVC. Similarly, where threatened EVCs/floristic communities are known to exist but mapping is not available at this level of discrimination, decision-making processes based on more generalised datasets (for example, Broad Vegetation Types at 1:250 000) should be driven by the conservation status of the most threatened component likely to be present in a mapped polygon.

TABLE 4A. BIOREGIONAL CONSERVATION STATUS OF ECOLOGICAL VEGETATION CLASSES (EVCS)

STATUS		CRITERIA
Presumed Extinct	X	Probably no longer present in the bioregion (the accuracy of this presumption is limited by the use of remotely-sensed 1:100 000 scale woody vegetation cover mapping to determine depletion - grassland, open woodland and wetland types are particularly affected)
Endangered	E1	Contracted to less than 10% of former range; or Less than 10% pre-European extent remains;
	E2	Combination of depletion, degradation, current threats and rarity is comparable overall to E1: <ul style="list-style-type: none"> • 10 to 30% pre-European extent remains and severely degraded over a majority of this area; or • naturally restricted EVC reduced to 30% or less of former range and moderately degraded over a majority of this area; or • rare EVC cleared and/or moderately degraded over a majority of former area.
Vulnerable	V1	10 to 30% pre-European extent remains;
	V2	Combination of depletion, degradation, current threats and rarity is comparable overall to V1: <ul style="list-style-type: none"> • greater than 30% and up to 50% pre-European extent remains and moderately degraded over a majority of this area; or • greater than 50% pre-European extent remains and severely degraded over a majority of this area; or • naturally restricted EVC where greater than 30% pre-European extent remains and moderately degraded over a majority of this area; or • rare EVC cleared and/or moderately degraded over a minority of former area.
Depleted	D1	Greater than 30% and up to 50% pre-European extent remains;
	D2	Combination of depletion, degradation and current threats is comparable overall to D1 and: <ul style="list-style-type: none"> • greater than 50% pre-European extent remains and moderately degraded over a majority of this area;
Rare	R	Rare EVC (as defined by geographic occurrence) but neither depleted, degraded nor currently threatened to an extent that would qualify as Endangered, Vulnerable or Depleted
Least Concern	LC	Greater than 50% pre-European extent remains and subject to little to no degradation over a majority of this area

TABLE 4B. GEOGRAPHIC OCCURRENCE OF ECOLOGICAL VEGETATION CLASSES (EVCS) WITHIN BIOREGIONS

GEOGRAPHIC OCCURENCE		CRITERIA
Rare	R1	total range generally less than 10 000 ha; or
	R2	pre-European extent in Victorian bioregion less than 1000 ha; or
	R3	patch size generally less than 100 ha
Naturally Restricted	NR	pre-European extent in Victorian bioregion less than 10 000 ha.
Common	C	pre-European extent in Victorian bioregion greater than 10 000 ha.
Minor	M	pre-European extent in Victorian bioregion less than approximately 1% of Statewide extent

EXPLANATION OF TERMS

subject to a threatening process	includes currently acting threats that will lead to degradation (moderate or severe) OR risk of significant rapid change (e.g. rising groundwater; change of land use)
majority	greater than 50% of area
minority	greater than 10% and up to 50% of area
severely degraded	floristic and/or structural diversity is greatly reduced (and/or subject to a threatening process which will lead to an equivalent reduction) and unlikely to recover naturally in medium to long-term
moderately degraded	floristic and/or structural diversity is significantly reduced (and/or subject to a threatening process which will lead to an equivalent reduction) but may recover naturally with removal of threatening processes
little to no degradation	floristic and/or structural diversity is largely intact
range	area of smallest concave polygon which includes all occurrences

APPENDIX 3 | DETERMINING CONSERVATION SIGNIFICANCE

TABLE 5. DETERMINING CONSERVATION SIGNIFICANCE

CONSERVATION SIGNIFICANCE	BIODIVERSITY ATTRIBUTES			
	VEGETATION TYPES		OR SPECIES	OR OTHER ATTRIBUTES
	Conservation Status ¹	Habitat Score ²		
VERY HIGH	Endangered Vulnerable Rare	0.4 - 1 0.5 - 1 0.6 - 1	<ul style="list-style-type: none"> best 50% of habitat for each threatened species² in a Victorian bioregion 	<ul style="list-style-type: none"> sites with unique National Estate values sites identified as being of national significance as a relict, endemic, edge of range or other non-species values Ramsar Sites East Asian-Australasian Shorebird Site Network sites Other wetlands of international significance for migratory waterbirds areas identified as providing refuges (e.g. during drought) for threatened species
HIGH	Endangered Vulnerable Rare Depleted	< 0.4 0.3 - 0.5 0.3 - 0.6 0.6 - 1	<ul style="list-style-type: none"> the remaining 50% of habitat for threatened species² in a Victorian bioregion best 50% of habitat for rare species² in a Victorian bioregion 	<ul style="list-style-type: none"> sites with rare National Estate values sites identified as being of state significance for relictual, endemic, edge of range or other non-species values Wetlands listed in 'A Directory of Important Wetlands in Australia' Wetlands of national significance for migratory waterbirds areas identified as providing refuges (e.g. during drought) for rare species priority areas for the re-establishment of habitat for a threatened species (eg. as determined in a Biodiversity Action Plan)
MEDIUM	Vulnerable Rare Depleted Least Concern	< 0.3 < 0.3 0.3 - 0.6 0.6 - 1	<ul style="list-style-type: none"> the remaining 50% of habitat for rare species² in a Victorian bioregion best 50% of habitat for regionally significant species² 	<ul style="list-style-type: none"> sites with uncommon National Estate values sites identified as being of regional significance for edge of range or other non-species values Wetlands of bioregional significance (based on application of National Land and Water Resources Audit criteria).
LOW	Depleted Least Concern	< 0.3 < 0.6		

1. see Appendix 2

2. conservation status of species determined with reference to NRE Victorian Rare or Threatened Flora and Fauna lists, as supplemented by the relevant Native Vegetation Plan. The relative quality and suitability of habitat for threatened species depends on particular requirements and therefore must be estimated on a species-by-species and location-by-location basis by the relevant planning authority using the best available information.

APPENDIX 4 | RESPONSES AND OFFSET CRITERIA - SUMMARY

TABLE 6. SUMMARY OF RESPONSES AND OFFSET CRITERIA GRADED ACCORDING TO CONSERVATION SIGNIFICANCE

CONSERVATION SIGNIFICANCE	VERY HIGH	HIGH	MEDIUM	LOW
Response to proposal to clear & offset	In keeping with the principles in Section 4 and in the context of the Net Gain approach which has, as a priority, the avoidance of further permanent losses of native vegetation through clearing (page 19):			
	Clearing not permitted unless exceptional circumstances apply (i.e. impacts are an unavoidable part of a development project, with approval of the Minister for Environment and Conservation (or delegate) based on considerations of environmental, social and economic values from a statewide perspective)	clearing generally not permitted	clearing generally not permitted	clearing may be permitted but only as part of an appropriate sustainable use response as determined by the responsible planning authority
If some clearing is to be permitted, the following offset requirements must be met				
Net outcome	substantial net gain i.e. at least 2 X the calculated loss in habitat hectares ¹	net gain i.e. at least 1.5 X the calculated loss in habitat hectares ¹	equivalent gain i.e. at least 1 X the calculated loss in habitat hectares ^{1, 2}	equivalent gain i.e. at least 1 X the calculated loss in habitat hectares ^{1, 2}
Formal agreement to achieve and secure offset	Requirements to achieve offsets must be identified in the associated management agreements &/or the permit conditions. Gains must be of an on-going and secure nature. Once achieved the offset must be maintained and the relevant planning authorities must maintain adequate and readily accessible records of agreed offset arrangements (ultimately on the Native Vegetation Permit Tracking system)			
Like-for-Like				
vegetation or habitat type of offset	the same vegetation/habitat type	the same vegetation/habitat type OR a Very High significance vegetation/habitat in the same Bioregion	Any EVC in the Bioregion OR a Very High or High significance vegetation/habitat in an adjacent Bioregion	
landscape role	Similar or more effective ecological function AND land protection function as impacted by the loss	Similar or more effective ecological function OR land protection function as impacted by the loss	Similar or more effective land protection function as impacted by the loss	
quality objectives for offset	The existing vegetation proposed as the basis of an offset must be at least 90% of the quality in the area being lost.	75% of the quality in the area being lost	50% of the quality in the area being lost	
	The proportion of revegetation included in the offset (in habitat hectares) is limited to 10%	25%	50%	100%

1 Gains can include active improvements of quality and/or avoiding potential losses of quality by agreement to forego permitted uses. Note that applying all of the following offset criteria (where relevant) may require more than the minimum habitat hectares specified by these multipliers

2 Where gains are achieved in vegetation/habitat of a higher significance than the vegetation lost, then the amount of the offset will be proportionally reduced (eg. offsetting losses in medium conservation significance with very high conservation significance gains will reduce the amount of the offsets required by half, i.e. the medium multiplier divided by the very high multiplier)

CONSERVATION SIGNIFICANCE	VERY HIGH	HIGH	MEDIUM	LOW
large old tree ⁴ objectives for offset	For remnant patches of native vegetation that contain large old trees ⁴ for each large old tree removed as part of permitted clearing ³ :			
	8 other large old trees to be protected AND 40 new trees to be recruited ⁵	4 other large old trees to be protected AND 20 new trees to be recruited ⁵	2 other large old trees to be protected AND 10 new trees to be recruited ⁵	no specific 'other large old tree protection' offset required
	For parcels of land greater than 4 ha and with 8 or more scattered old trees ⁴ /ha for each large old tree removed as part of permitted clearing ³ :			
	8 other large old trees to be protected AND 40 new trees to be recruited ⁵	4 other large old trees to be protected AND 20 new trees to be recruited ⁵	2 other large old trees to be protected AND 10 new trees to be recruited ⁵	10 new trees to be recruited ⁵
	for each medium old tree removed as part of permitted clearing ³ :			
	4 other medium old trees to be protected AND 20 new trees to be recruited ⁵	2 other medium old trees to be protected AND 10 new trees to be recruited ⁵	1 other medium old tree to be protected AND 5 new trees to be recruited ⁵	5 new trees to be recruited ⁵
	For parcels of land greater than 4 ha with less than 8 scattered old trees ⁴ /ha, or For parcels of land less than 4 ha with any number of scattered old trees ⁴ /ha for each medium or large old tree removed as part of permitted clearing ³ an appropriate number of new trees must be recruited. The number of new trees that must be recruited will be specified in regional Native Vegetation Plans and may be graded according to conservation significance. These numbers will be clearly greater than those specified above for recruitment that is supplementary to protection of other trees. However, where it better suits their circumstances, landholders may use the "protect other trees and ensure supplementary recruitment" approach to meet this criteria.			
Vicinity	Gains must be within the same bioregion, and within the same priority landscape zone ⁶ as the loss where considered appropriate by the planning authority	Gains must be within the same bioregion as the loss	Gains must be within the same bioregion as the loss OR an adjacent bioregion if offsets are in Very High or High significance vegetation	
Timing	Offsets to be initiated prior to the loss	Offsets to be initiated as soon as possible after loss occurs but no more than 1 year (seasonal requirements to be considered)		

3 these offsets are only required as a consequence of native vegetation clearing which requires and receives a planning permit, and not where tree removal is exempt from the requirement to have such a permit

4 old trees, large or medium, are defined as individuals of key long-lived dominant tree species (as specified in the relevant EVC benchmark) that are greater than certain diameters (for large or medium) at 1.3 m above ground level

5 on a case-by-case basis at the discretion of the planning authority, this requirement to recruit new trees may be either through plantings to a prescribed standard (e.g. species composition, density, survivorship) and/or through regeneration associated with protection of other old trees. Recruitment should meet the timing criterion below. Any plantings that have been undertaken by the landholder since 1989 and that meet all the relevant offset criteria, can be used to meet this requirement.

6 Identified in local landscape-scale biodiversity action plans

APPENDIX 5 | TIMBER HARVESTING OFFSET CRITERIA - SUMMARY

TABLE 7. SUMMARY OF OFFSET CRITERIA FOR HARVESTING TIMBER FROM NATURALLY-ESTABLISHED NATIVE FOREST ON PRIVATE LAND

CONSERVATION SIGNIFICANCE	VERY HIGH	HIGH	MEDIUM	LOW
Response to proposal	Harvesting generally not permitted ¹		Harvest and regeneration may be permitted as part of sustainable land use option	
Net outcome of offset			Regeneration undertaken according to the following criteria will be considered to have achieved sufficient offset	
Vegetation or Habitat Type of offset			same as harvested	
Landscape role			same as harvested	
Quality objectives for offset			<p>For clearfell harvest & regeneration</p> <p>Regeneration to be managed so that it has the best opportunity to reach a target of 50% of the quality of the vegetation that was harvested within 10 years and ultimately the same quality (minus large tree component) as required by permit condition. Where large old trees are included in the harvest area, mitigation will be determined on a case-by-case basis ensuring sufficient seed and habitat trees for regeneration of the forest values. Where private land forest is not substantially contiguous with the public forest estate, a higher level of mitigation will be required (to be specified in Regional Native Vegetation Plans)</p> <p>For selective harvesting</p> <p>The reduction in quality in a site due to selective harvesting must not be greater than the % specified in the Regional Native Vegetation Plans</p>	
Vicinity			same as harvested	
Timing			Regeneration to be initiated as soon as possible after harvesting but no more than one year (seasonal requirements to be considered by planning authority)	
Security of offset			Planning permit conditions to apply until the regeneration achieves the equivalent quality of the vegetation that was harvested (excluding the large old tree component)	

¹ unless harvesting is currently allowed on public land within the same bioregion for areas of vegetation which have equivalent conservation values.

GLOSSARY

Biodiversity - the variety of all life-forms, the different plants, animals and micro-organisms, the genes they contain, and the ecosystems of which they form a part.

Bioregions - biogeographic areas that capture the patterns of ecological characteristics in the landscape or seascape, providing a natural framework for recognising and responding to biodiversity values.

Broad Vegetation Types (BVT) - a classification that provides a simplified view of vegetation based on land system or biophysical attributes (such as geology, rainfall, elevation, soil type and landform). Each broad vegetation type will contain a mixture of EVCs, often in a recognisable pattern, however any one EVC can occur in more than one BVT.

CAMBA - Chinese-Australian Migratory Bird Agreement

Ecological Vegetation Class (EVC) - a type of native vegetation classification that is described through a combination of its floristic, life form, and ecological characteristics, and through an inferred fidelity to particular environmental attributes. Each EVC includes a collection of floristic communities (i.e. a lower level in the classification that is based solely on groups of the same species) that occur across a biogeographic range, and although differing in species, have similar habitat and ecological processes operating.

Habitat hectare - a site-based measure of quality and quantity of native vegetation that is assessed in the context of the relevant native vegetation type.

JAMBA - Japanese-Australian Migratory Bird Agreement

Net Gain - is where, over a specified area and period of time, losses of native vegetation and habitat, as measured by a combined quality-quantity measure (habitat hectare), are reduced, minimised and more than offset by commensurate gains.

Native vegetation management scales

Regional (or catchment) scale management refers to areas ranging from tens to hundreds of kilometres across, and involves the co-ordination of processes to engage the broad range of landholders, organised interest groups and government agencies. A perspective at this level facilitates medium to long term strategic planning for sustainable land and water management, and for conservation reserve systems.

Landscape scale management refers to areas from several kilometres to tens of kilometres across, usually involving a number of properties and individual land managers. At this level, consideration can be given effectively to differences in native vegetation type, coverage and quality, including spatial configuration and connectivity of habitats, and other factors influencing biodiversity and land protection in the local landscape.

Patch (or block) scale management relates to a discrete stand of native vegetation usually within a single rural property, and focuses on the size, shape and location of the patch and on the type(s) of vegetation. This level permits useful insight into how to best protect or enhance the value of patches as habitat and/or for land protection.

Site scale management refers to highly localised activities that may influence the characteristics of vegetation occurring within or adjacent to a patch. Such activities include planting, direct seeding or regeneration of vegetation, as well as weed control or thinning in established vegetation.



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