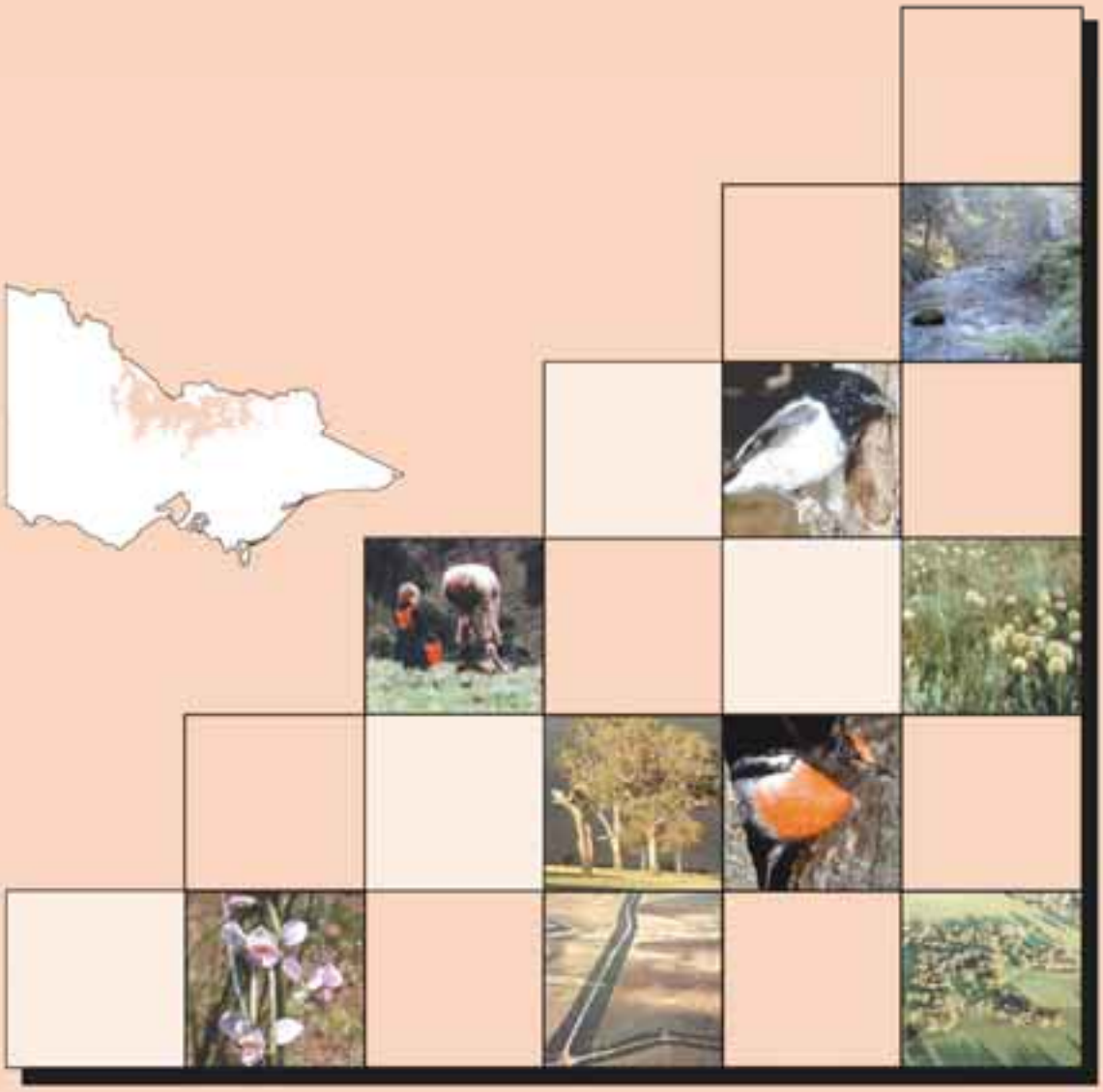
Biodiversity Action Planning

Strategic Overview for the Victorian Riverina Bioregion



Department of Natural Resources and Environment

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Biodiversity Action Planning

Strategic Overview for the Victorian Riverina Bioregion

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Executive summary

This Strategic Overview for biodiversity action planning for the Victorian Riverina bioregion translates the statewide biodiversity strategy to the regional scale, and provides the foundation for producing landscape-scale biodiversity action plans to direct on-ground works by private landholders, community groups, corporations and all levels of Government, with the ultimate aim of achieving broadscale conservation of native biodiversity across the region.

The bioregion covers 1.9 million hectares extending over 18 local government areas and three catchment management regions, stretching from Charlton in the west to Wodonga in the east and from Echuca in the north to Seymour in the south. It has a unique and relatively early history of European settlement due partly to the ease of access of the open grassland plains. The landscape has been radically altered within the last 150 years, particularly over the last 30-40 years. Most of the region is private freehold dominated by agriculture and there are small blocks of public land. The native vegetation of the Victorian Riverina bioregion is one of the most depleted in the State. Only 2.2% still has a cover of native vegetation, and less than 1.3% is in formal reserves. Nearly 11% is currently being mapped for native vegetation. Four species of indigenous flora and fauna are extinct, whilst of the remaining species, 162 species are considered threatened, 97 plants, (28 Monocotyledons & 69 Dicotyledons) including 65 animals of which there are 5 mammals, 44 birds, 8 reptiles/amphibians, 7 fish and 1 invertebrate. The bioregion is characterised by riverine plains with many natural wetlands; more than 60% of these have been altered significantly but some internationally and nationally important wetlands remain. Nine major river systems transect the Victorian Riverina bioregion – few river reaches in the Victorian Riverina bioregion are in good or excellent condition principally due to siltation from accelerated erosion, nutrient run-off from agricultural land and grazing.

Conservation of biodiversity is formally recognised at international, national, and state levels as critically important for sustainability. Action to conserve the biodiversity of the Victorian Riverina bioregion will need to include, among other measures:

- *protection of viable remnant habitats and their flora and fauna;*
- *management to enhance the condition of these habitats and populations; and*
- *restoration of at least some of their former extent by revegetation.*

The aims of this document are to:

- *provide a regional overview of the planning and management of native biodiversity,*
- *summarise the remaining biodiversity assets across all land tenures,*
- *identify priorities for conservation and restoration of biodiversity,*
- *identify mechanisms for more efficiently conserving the bioregion's key biodiversity assets, including threatened vegetation communities, threatened taxa, wetlands and rivers;*
- *provide the basis for further biodiversity planning at increasingly finer scales, such as landscapes and local areas; and*
- assist communication and integration of conservation activities by private landholders, community groups, corporations and all levels of Government.

Executive summary *(cont'd)*

It presents the methodology behind bioregional and landscape-scale biodiversity action planning, including:

- *the strategic and planning framework provided by the state biodiversity strategy and native vegetation management framework and Flora and Fauna Guarantee Act, and how this fits with the regional catchment strategy process;*
- *tools including Bioregional Network Analysis (BNA) for identifying priority species for action, threatening processes affecting biodiversity, the habitat-hectare approach for assessing native vegetation quality, and the focal species concept whereby management targeted at particular species can be used as a cost-effective approach for broader biodiversity conservation;.*
- *the scientific basis underpinning biodiversity conservation management, particularly the direct and indirect effects of habitat loss and fragmentation on local extinction, and some of the critical thresholds; and*
- *Guidelines for compiling landscape-scale biodiversity action plans, which will direct on-ground actions by the community and other stakeholders, and are the next stage.*

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1. Introduction

1.1 The biodiversity action planning framework

Biodiversity is the natural variety of life: it is the sum of our native plants and animals, the genetic variation they contain, and the natural ecosystems that they form (NRE 1997b).

1.1.1 Different plans for different scales of operation.

The need for biodiversity action planning (BAP) is recognised as urgent by all levels of government, and there is a need for an integrated series of plans from the international scale to the local scale. Australia is a signatory to the international Biodiversity Convention (1992), and has a National Strategy for the Conservation of Australia's Biological Diversity (1996). The State of Victoria published its statewide strategy for Victoria's Biodiversity in 1997. Complementary regional, landscape and local plans are also required to coordinate actions at all necessary scales (Figure 1).

Integrated catchment management is co-ordinated through Victoria's 10 catchment authorities. This provides a primary mechanism for delivery of biodiversity action planning. (see section 3.12). Local government also has a pivotal role in biodiversity action planning.

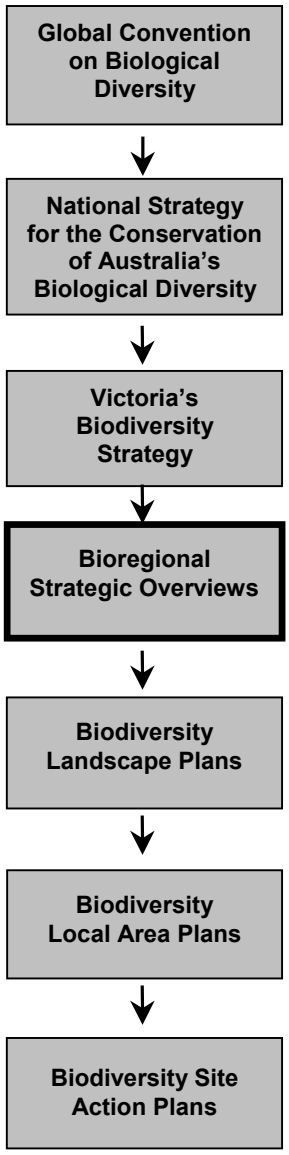


Figure 1. Biodiversity planning process

1.1.2 The state biodiversity framework

The State biodiversity strategy *(Victoria's Biodiversity* NRE 1997b) fulfils a statutory requirement under Section 17 of the *Flora and Fauna Guarantee Act* 1988 and provides the *top level* biodiversity action plan for the State. However, the effective planning of actions for native biodiversity also requires more detailed planning at a bioregional level and also at a landscape level.

These subsequent bioregional and landscape plans will complement Victoria's Native Vegetation Management Framework (NRE 2002a), which establishes the strategic direction for conserving the native vegetation component of biodiversity across the State, and the Regional Native Vegetation Plans being developed for each Catchment Management Authority (CMA) region.

The Victorian River Health Strategy (NRE 2002b) provides a complementary framework for managing and restoring rivers, streams and floodplains in Victoria.

1. Introduction

1.1 The biodiversity action planning framework (cont'd)

1.1.3 Bioregional biodiversity action planning

The purpose of bioregional biodiversity action planning is to summarise the key biodiversity assets of the bioregion, and the actions and tools that are required to achieve statewide biodiversity goals.

They are intended as preliminary plans to stimulate discussions and action planning within the regional community and to identify options for intervention that the local community can select from. The plans will be developed in stages and with component parts that can be aggregated or separated depending upon the users area of interest.

The **Strategic Overview** provides details of the framework and methodology used in developing bioregional biodiversity action planning (BAP) and an overview of the features and assets of the bioregion. Specific information on assets and priorities for actions within landscape zones is assembled in the **Landscape Plans**. Landscape plans include the native vegetation priorities identified in the regional Native Vegetation Plans (NVP) and identify the best options for restoring native vegetation to recover biodiversity at a more detailed scale than is possible in the NVPs. The biodiversity information provided in Landscape Plans is a resource input to **Local Area Plans,** or other planning processes such as Landcare plans, which may be developed through community engagement processes, and cover the range of natural resource issues.

1.1.4 Bioregional biodiversity assets

Biodiversity assets include:

- *native vegetation communities;*
- *native species of plants and animals;*
- *wetlands; and*
- *rivers.*

1.1.5 Bioregional actions

Priority bioregional actions include:

- *protection of viable remnant habitats, and the flora and fauna populations they contain;*
- *management to enhance the condition of these habitats and populations; and*
- *restoration of at least some of the former extent of these habitats by revegetation, re-introduction or restoring water regimes.*

1. Introduction

1.1 The biodiversity action planning framework (cont'd)

1.1.6 Bioregional tools

Bioregional planning actions will be underpinned using a variety of tools including:

- *Legislative tools - e.g. the use of local government planning schemes.*
- *Voluntary tools - e.g. voluntary agreements with landholders, or adoption of a cost-sharing framework that will lead to wide adoption of on-ground works by private landholders.*
- *Market tools - e.g. new policy instruments employing social choice and market forces to encourage land use change and development of more environmentally benign agricultural systems.*

Information on these assets and priorities for actions is assembled in the Landscape Plans.

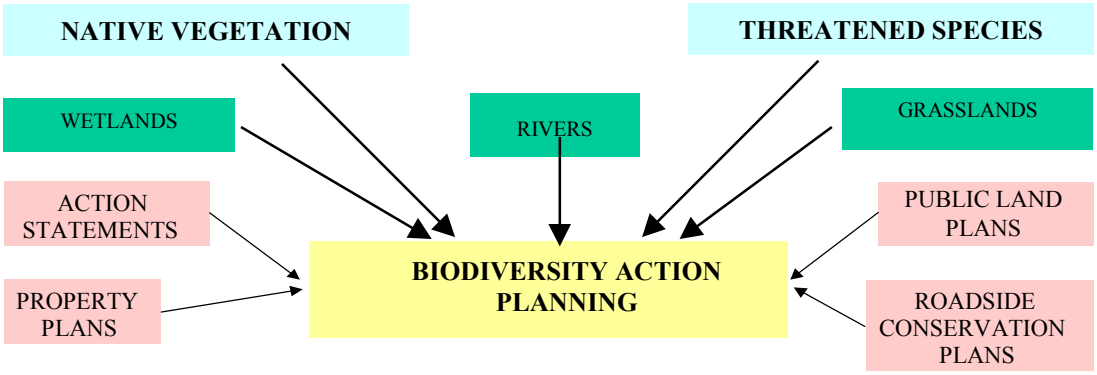


Figure 2. Biodiversity action planning framework

Aims

2. Aims

2.1 Aims of biodiversity action planning

2.1.1 Ultimate aim

The ultimate aim of biodiversity action planning is to achieve broad-scale conservation of native biodiversity in the bioregion.

2.1.2 Aims of this document

This Strategic Overview for the Victorian Riverina bioregion translates the principles and processes identified in Victoria's Biodiversity Strategy (1997) to the *bioregional* and *landscape* levels.

- *Bioregional* analysis provides a view of biodiversity that relates to the ecological function of species and ecosystems.
- *Landscape* is the level appropriate for local planning to guide and direct on-ground management tasks for biodiversity conservation.

Its aims are to:

- provide a regional overview of the planning and management of biodiversity;
- summarise the remaining biodiversity assets across all land tenures;
- identify priorities for conservation and restoration of biodiversity;
- identify mechanisms for more efficiently conserving the bioregion's key biodiversity assets, including threatened vegetation communities, threatened taxa, wetlands and rivers;
- provide the basis for further biodiversity planning at increasingly finer scales, so that priorities for biodiversity can be overlain with those of other environmental programs, such as salinity control, greenhouse amelioration and pest management, to encourage synergies between these programs; and
- assist communication and integration of conservation activities funded by private landholders, community groups, corporations and all levels of Government.

Policy

3. Policy

3.1 Context

This part covers existing government policy as developed through strategies that direct actions for native biodiversity at various scales. It includes (amongst other items) the Flora & Fauna Guarantee Act, the state framework as laid out in Victoria's Biodiversity Strategy, Victoria's Native Vegetation Management: a Framework for Action, River Health Strategy, Wetlands policy, Forest policy, Greenhouse policy, Regional Catchment Strategies and Local Government planning schemes.

These policies spell out the priorities by assigning conservation significance to each biodiversity asset type.

3. Policy

3.2 Legislation

3.2.1 Flora and Fauna Guarantee Act

Intent of the Act

Under Victoria's *Flora and Fauna Guarantee Act* 1988 (FFG Act), provision is made to ensure that all Victoria's native flora and fauna can survive, flourish and retain its potential for evolutionary development in the natural environment.

Objectives

The objectives of the FFG Act include:

- conserving flora and fauna taxa and communities;
- managing *potentially threatening processes*;
- ensuring only sustainable use of flora and fauna resources;
- ensuring the maintenance of genetic diversity;
- fostering community education; and
- encouraging voluntary conservation management agreements.

It is also an objective that public authorities be administered so as to have regard to these flora and fauna conservation and management objectives.

FFG strategy

The preparation of a statewide biodiversity strategy is a requirement under the FFG Act. "*Victoria's Biodiversity"* (contained in 3 volumes) was published in 1997.

Volume 1:"*Victoria's Biodiversity - Our Living Wealth"* presents pictorially and in writing a summary of Victoria's major habitats (ecosystems) and native species;

Volume 2: "Victoria's Biodiversity – Sustaining Our Living Wealth" describes the legal, economic and social parameters; and

Volume 3: "Victoria's Biodiversity – Directions in Management" introduces the bioregional approach, and outlines key directions and actions for biodiversity conservation in each Victorian bioregion.

Listing and action statements

Threatened taxa and communities and Potentially Threatening Processes (PTPs) can be listed under the FFG Act. Not all threatened species and communities and PTPs in Victoria – or even in the Victorian Riverina bioregion - have been listed yet.

Action Statements (required under the Act for listed taxa, communities and PTPs) have been prepared for a number of threatened taxa, and for some PTPs (see sections 7.4).

Flora and Fauna Guarantee Action Statements have been published for 11 species of plants and 20 species of animals found within Victorian Riverina bioregion (Appendices 4 & 5).

3. Policy

3.2 Legislation (cont'd)

These include the Small Scurf-pea (formerly known as Small Psoralea), Stiff Groundsel, Bush Stone-curlew, Freckled Duck and Plains-wanderer.

There are two threatened communities which have been listed under the *Flora and Fauna Guarantee Act* 1988; the Victorian Temperate-woodland Bird Community and the Northern Plains Grassland Community. Neither community has a published Action Statement.

Three listed potentially threatening processes operating in the Victorian Riverina bioregion have published Action Statements - Predation of Native Wildlife by the Cat *Felis catus*, Predation of Native Wildlife by the Introduced Red Fox *Vulpes vulpes,* and Use of Lead Shot in Cartridges for Hunting Waterfowl.

3.2.2 Environment Protection and Biodiversity Conservation Act

The Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act), came into force on 16 July 2000. The EPBC Act promotes the conservation of biodiversity by providing strong protection for (among other things):

- listed species and communities in Commonwealth areas (this includes listed threatened species and ecological communities, listed migratory species and listed marine species);
- protected areas (World Heritage properties; Ramsar wetlands; Biosphere reserves and Commonwealth reserves);
- conservation zones; and
- wildlife species and wildlife products subject to international trade.

The Act provides for the:

- identification of key threatening processes;
- protection of critical habitat;
- preparation of recovery plans; threat abatement plans; wildlife conservation plans; bioregional plans and conservation agreements;
- issuing of conservation orders; and
- regulation of exports and imports of live animals and plants, wildlife specimens, and products made or derived from wildlife.

Recovery plans under the EPBC Act have been published for three species of animals (Bluenose Cod, formally known as Trout Cod, Regent Honeyeater, Striped Legless Lizard and Swift Parrot) and one plant species, Stiff Groundsel, found within Victorian Riverina bioregion.

Published Threat Abatement Plans under the EPBC Act relevant to the Victorian Riverina bioregion include, Competition and Land Degradation by Feral Rabbits, Dieback caused by the root-rot fungus (*Phytophthora cinnamomi*), Predation by European Red Fox and Predation by Feral Cats.

3. Policy

3.2 Legislation (cont'd)

3.2.3 Planning and Environment Act

The *Planning and Environment Act* 1987 outlines the planning processes and requirements for planning schemes, which includes the development of planning permit applications of which NRE may be a referral authority. The Planning and Environment Act provides local government with the power to implement controls on significant building or places, including conservation areas. Within this Act, protection of wetlands and native vegetation is encompassed under the planning permits process, through Native Vegetation Retention (NVR) controls and through identification of wetlands as conservation areas in local planning schemes. (See section 3.13).

3.2.4 Local Government Act

Local government also has the power under the *Local Government Act* 1968 to pursue any matter of importance to its community, and this can include the development of municipal policies, strategies and plans for biodiversity and native vegetation conservation, or participation in other regional or local plans.

3.2.5 National Parks Act

The *National Parks Act* 1975 provides the framework for the establishment, management, protection and use of National, State and Wilderness Parks. Under the Act, the Parks are to be managed in a way to protect the natural state of the park and the indigenous flora and fauna within it. A management plan is required for each park.

3.2.6 Heritage Rivers Act

The *Heritage Rivers Act* 1992 provides for the protection and management of nominated rivers in line with approved recommendations of the Victorian Land Conservation Council.

3.2.6 Water Act

The *Water Act* 1989 sets down a legislative framework for the allocation of environmental flows in rivers and wetlands in Victoria. The legislation takes account of environmental requirements of rivers and wetlands through mechanisms such as the granting of Bulk Entitlement for environmental purposes and ensuring that new development in water management takes account of environmental needs. Section 40 of the Act identifies matters to be taken into account when applying for a Bulk Entitlement, which includes the need to protect the environment, including the riverine and riparian environment.

3. Policy

3.3 Victoria's Biodiversity Strategy

Victoria's Biodiversity strategy (NRE 1997b) provides the over-arching framework for bioregional biodiversity action plans. The volume *Victoria's Biodiversity—Directions in Management* outlines the statewide biodiversity objectives, management approaches, community involvement, legislation and self-regulation, information systems and reporting framework. It also provides, for each bioregion, a summary of the bioregional landscape, natural capital, land management themes, biodiversity condition and management responses.

Statewide goals

The strategy established five goals for biodiversity management in Victoria:

- a reversal, across the entire landscape, of the long-term decline in the extent and quality of native vegetation, leading to a net gain (with the first target being no net loss by the year 2000);
- maintenance and, where necessary, restoration of the ecological processes and the biodiversity dependent upon terrestrial, freshwater and marine environments.
- maintenance or improvement of the present diversity of species and ecological communities and their viability across each bioregion;
- no further preventable decline in the viability of any rare species or of any rare ecological community; and
- an increase in the viability of threatened species and in the extent and quality of threatened ecological communities.

The advantage of a bioregional approach

Bioregions are promoted for regional-scale planning because they are based on the patterns of ecological characteristics and the underlying environmental features (Map 1). They therefore reflect natural boundaries and relationships between biodiversity assets and natural resource based activities (NRE 1997b). It is an objective of the National Strategy for the Conservation of Australia's Biodiversity to use bioregional planning for the effective conservation of biodiversity (Commonwealth of Australia 1996).

Priorities for management

The state biodiversity strategy provides a list of priorities for management responses at the bioregional level. For the Victorian Riverina bioregion the priorities are to:

- complete and implement the Mid-Murray Forest Management Plan and West Regional Forest Agreement, and management plans for all the major reserves;
- finalise the bulk water entitlement process so that adequate and timely environmental flows are established for the rivers and wetlands;
- reach Public Authority Management Agreements (PAMA) with public authorities that manage significant vegetation communities;
- protect and fence remnants, encourage revegetation and property management planning which enhance off-reserve conservation of highly depleted vegetation types such as grasslands, Plains and Riverine Grassy Woodland Complexes, Box-Ironbark Forest Complexes, and Herb-Rich Woodland Complexes;

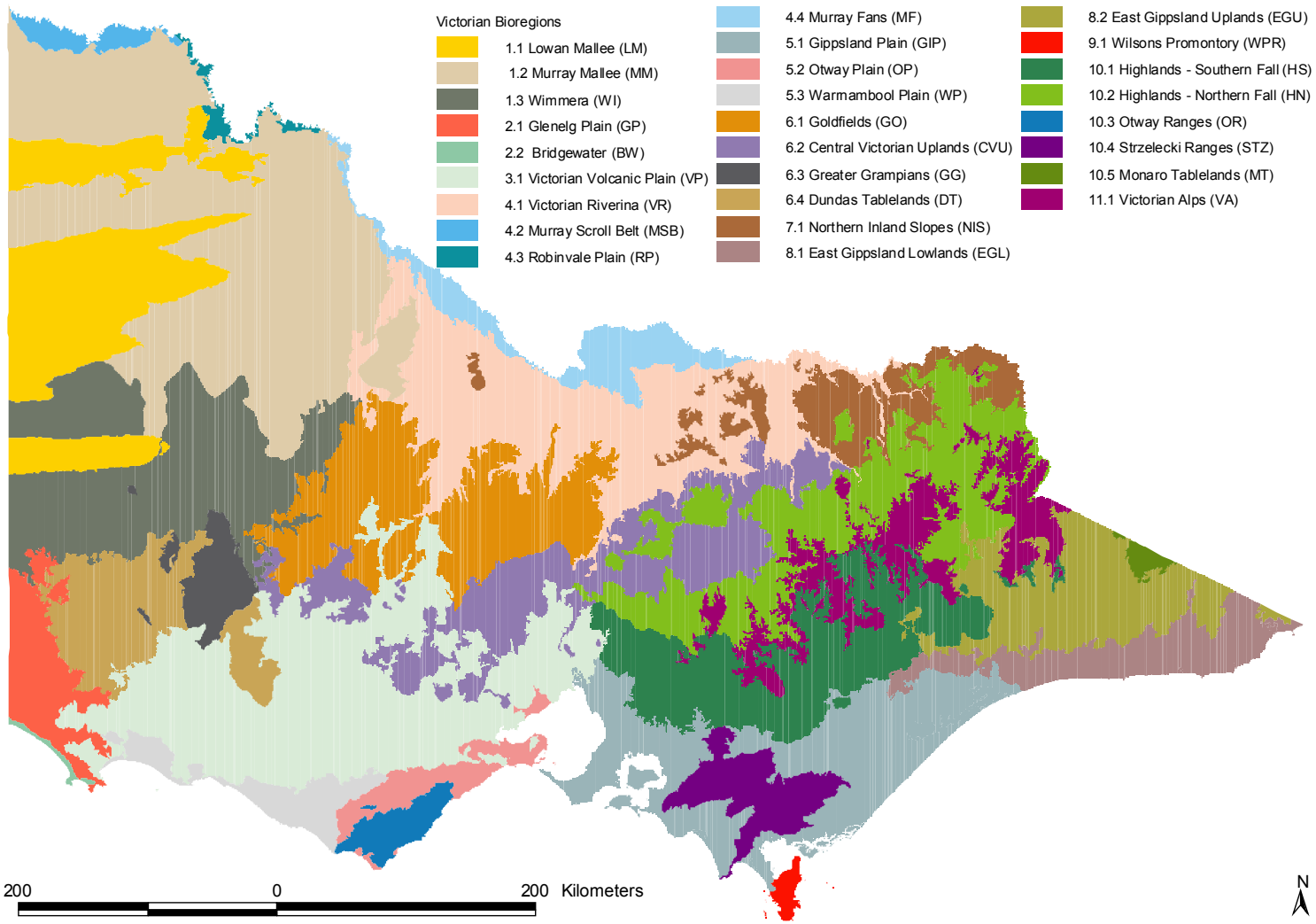
3. Policy

3.3 Victoria's Biodiversity Strategy (cont'd)

- develop Roadside Conservation Plans for all shires particularly those in the west of the region to protect and enhance habitat for threatened species, such as the Grey-crowned Babbler; and,
- develop a comprehensive conservation plan for the Northern Plains Grasslands.

Wetlands are an important component of the biodiversity of the Victorian Riverina. Victoria's Biodiversity Strategy lists the following priority management responses for land and water planners and managers with regard to wetlands:

- work in conjunction with the Commonwealth and other States and Territories to implement the Ramsar Convention and to secure the best possible outcomes for wetland biodiversity through the Natural Heritage Trust and forums such as Australian and New Zealand Environment and Conservation Council (ANZECC);
- complete integrated management planning Ramsar sites and investigate potential new sites;
- protect important habitat of migratory waders and species listed on JAMBA and CAMBA with a focus on investigating the addition of significant sites to the East Asian–Australasian Shorebird Reserve Network;
- ensure wetland water regimes are considered in the bulk water entitlement conversion and new allocation processes. As part of the Government's water reform package, investigate new strategies for the effective use of environmental water on floodplains, use savings in irrigation systems for environmental purposes and improve and maintain habitat where environmental water is provided;
- develop management agreements to encourage water authorities to take account of the environmental values of those wetlands that are part of the water distribution system;
- implement the State Environmental Protection Policy *Waters of Victoria* as it relates to water quality in wetlands;
- complete the process of identifying important and representative wetlands in Victoria and contribute to a national wetlands inventory;
- promote recognition of important wetlands and encourage actions leading to their improved management;
- promote World Wetlands Day and World Wetlands Week in Victoria as a focus for increasing community awareness of the importance of wetlands;
- make information about wetlands more accessible to the community, wetland managers, students and planners through Land for Wildlife and other extension programs and by establishing a Victorian Wetlands Home Page on the Internet and promoting useful publications and interpretive material; and
- improve environmental monitoring programs in wetlands with particular emphasis on Ramsar sites and encourage the community to adopt new wetland sites for monitoring through the Waterwatch Program.



Map 1. Location of Victoria's bioregions showing the Victorian Riverina bioregion

3. Policy

3.4 Native vegetation planning

3.4.1 Native Vegetation Management Framework

Victoria's Native Vegetation Management - A Framework for Action (NRE 2002a) establishes the strategic direction for the protection, enhancement and restoration 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 used in the Framework 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' (NRE 2002e) 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 tenure status, management objectives 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.

Goals

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

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.

3. Policy

3.4 Native vegetation planning (cont'd)

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 bioregional 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.

3.4.2 Regional Native Vegetation Plans

The Victorian Riverina bioregion is covered by three Draft Native Vegetation Plans – Goulburn Broken, North Central and North East. These plans cut across bioregional boundaries and aggregate data and principles across CMA administrative region. They include:

- *the pre-1750 and extant areas of all ecological vegetation classes in each CMA region;*
- *the conservation significance of remnant vegetation within each CMA region based on status within each bioregion;*
- *the expected responses to clearing applications;*
- *broad priorities and principles for protection and revegetation in each CMA region; and*
- *set resource condition targets for native vegetation in the CMA region.*

3. Policy

3.4 Native vegetation planning (cont'd)

Aspirational targets for vegetation

Victorian Riverina bioregion	Cover targets		Quality targets		Other targets
Catchment Management Authority	Increase in native vegetation cover		Extent of existing native vegetation managed according to BMP *		
	to % of pre-1750 cover	By year	%	by year	
Goulburn Broken	15 (all endangered & applicable† vulnerable EVCs)	2030	90	2010	▪ net gain in all EVCs from 1999 levels ▪ increase viability of threatened species and extent and quality of threatened EVCs
North Central	20 (total)	2020	90	2010	▪ all areas of endangered rare or vulnerable EVCs, and/or endangered, vulnerable or threatened flora and fauna (on private land) managed according to BMP by 2002
North East	15 (all endangered & vulnerable EVCs)	No Targets specified	No Targets specified	No Targets specified	▪ net gain in extent and quality of all EVCs from 1999 levels ▪ Improve management and connectivity of remnants on private land ▪ BMP approach to native vegetation of all land tenures

*BMP: Best management practice—If appropriateness of a practice can be measured, then *best* practice will occur when contributing to maximum possible positive change (Goulburn Broken CMA 2000a)
† All *endangered* EVCs are below 10% pre-1750 cover and some vulnerable EVCs are below 15% (Goulburn Broken CMA 2000a).

Figure 3. Aspirational targets for vegetation

3. Policy

3.5 Rivers

3.5.1 SEPP (Waters of Victoria)

The State Environment Planning Policy (SEPP) (Waters of Victoria) EPA 2001, which applies to all surface waters of Victoria, aims to provide a coordinated approach for the protection and, where necessary, rehabilitation of the health of Victoria's water environments. This policy protects the environmental values, beneficial uses and associated social and economic values of the water environment to ensure that the needs of current and future generations are met. Specific schedules to SEPP (Waters of Victoria) deal with individual catchments and have more detailed requirements that apply within the catchments in question.

3.5.2 Victorian River Health Strategy

The Victorian River Health Strategy was released in 2002 (NRE 2002b). It provides a framework to enable Government, in partnership with the community, to make decisions on the management and restoration of Victoria's rivers. It establishes a vision that our rivers will be ecologically healthy, managed within healthy catchments whilst providing high value sustainable agriculture, clean drinking water and enjoyment opportunities.

The strategy sets Statewide targets and provides priority-setting criteria for investment. It outlines an integrated and evidence based planning framework for rivers, summarises government policy and the institutional arrangements needed to achieve the vision.

Statewide targets

The strategy established a series of targets, including:

- all heritage rivers are to be maintained to at least their current condition;
- by 2021 one major representative river reach will be in ecologically healthy condition in each river class;
- by 2021 there will be an increase of 3000 km in the length of rivers in excellent or good condition;
- by 2011 there will be an improvement in the status of designated freshwater-dependent focal species in each bioregion;
- by 2011 there will be significant improvements in environmental flows of 20 high value river reaches that are currently flow stressed;
- by 2011 there will be an increase of 7000 ha of riparian areas under management agreements.

An ecologically healthy river

The strategy defines this as a river that retains the major features and functioning of a river prior to European settlement and which would be able to sustain these characteristics into the future. An ecologically healthy river will have flow regimes, water quality and channel characteristics such that the majority of plant and animal species in the river and riparian zones are native and no exotic species dominates; has natural ecosystem process; has representative major habitat features and has

natural linkages along its length, with floodplain and wetlands and with terminal lakes, estuaries and the sea. Further definition is provided in the strategy.

3. Policy

3.5 Rivers (cont'd)

3.5.3 Regional River Health Strategies

Five and ten year regional targets will be set for riverine (includes floodplain) protection and restoration through the development of community-driven regional River Health Strategies which will cluster under the Regional Catchment Strategies (see section 3.12). These river strategies will:

- identify environmental, recreational, cultural, social and economic assets;
- identify threats to these assets;
- identify opportunities and requirements for restoration;
- set broad priorities for protection and restoration and actions required;
- set and integrate implementation for major river reaches;
- include monitoring, reporting and review programs.

3.5.4 Victoria Floodplain Management Strategy

The Victorian Government, through its Victorian Flood Management Strategy, has instigated major floodplain management reforms. These include:

- devolving floodplain management and rural drainage responsibilities to Catchment Management Authorities;
- introducing a floodway zone, rural floodway overlay and land subject to inundation overlay into the Victorian Planning Provisions, enabling adoption by councils into their planning scheme;
- letting contracts to include all available data on digitised maps;
- producing a Floodplain Management Manual.

CMAs across Victoria are responsible for developing individual Floodplain Management Strategies to address floodplain issues. The Strategies should address key floodplain management issues including asset management and protection, statutory land use planning, emergency response and impacts on the environment.

3. Policy

3.6 Water allocation

3.6.1 Water allocation

National Strategic Framework for Water Reform

The National Strategic Framework for Water Reform is comprised of two parts: the CoAG Strategic Framework (CoAG 1995), which defines specific water industry reforms and the National Competition Policy (CoAG 1998), which defines non-industry specific reforms. Through these processes five key elements for reform have been identified: Cost recovery and pricing, Institutional Reform, Water Allocation and Trading, Environment and Water Quality and Public Consultation and Education.

The Framework provides clear guidance relating to State requirements to meet the above five elements. In relation to water for the environment, the CoAG Strategic Framework states that:

- where they have not already done so, States would give priority to formally determining allocation of entitlements to water, including allocation for the environment as a legitimate user of water;
- that the environmental requirements, wherever possible, will be determined on the best information available and have regard to the inter-temporal and inter-spatial water needs required to maintain the health and viability of river systems and groundwater basins; and
- where significant future irrigation activity is contemplated, appropriate assessment would be undertaken to ensure environmental requirements of the river systems would be adequately met.

National Principles for the Provision of Water for Ecosystems

The purpose of these National Principles is to provide policy direction on how the specific issue of water for the environment should be dealt with in the context of general water allocation decisions.

The National Principles identify a goal for the provision of water for ecosystems viz, “the goal of providing water for the environment is to sustain and where necessary restore ecological processes and biodiversity of water dependant ecosystems”. A series of principles relating to the provision of water for ecosystems, management of environmental water allocations, determining environmental provisions, further research and community involvement have been developed.

Bulk Water Entitlements/Stream Flow Management Plans

Bulk Entitlements (BE) are a legally documented system of rights and obligations for the allocation of water resources to water authorities. They aim to define the volume of water that an authority may take from a river or storage and during this process aim to ensure environmental needs are adequately met in the allocation of flows to river systems. A BE is issued to a rural or urban water authority that diverts directly from rivers, or, in the case of regulated rivers, from a storage or dam. To protect unregulated rivers and streams that have water directly diverted from them, a Stream Flow Management Plan (SFMP) is developed.

Through the BE and SFMP process, rules for water allocation are developed which are aimed at protecting the environment. One of the key outputs for the BE or SFMP process is the development of environmental flow recommendations.

3. Policy

3.6 Water Allocation (cont'd)

The recommendations should aim at developing an environmental flow regime that should retain and/or reinstate as many of the features of the natural flow regime as possible. NRE has recently developed a statewide methodology to ensure a consistent approach to assessing environmental flow requirements.

Water for the environment is generally provided by placing conditions on the BE, for example by requiring a water authority to release a particular flow regime from a storage, but in some cases, a BE for the environment can be granted.

Bulk Entitlements for the environment

Within the Victorian Riverina bioregion, a BE of 27 600 ML has been allocated for flora and fauna conservation (NRE 2000d). The BE is located within the Murray River system and as such can be used in wetlands in the Victorian Riverina bioregion that are linked to the Murray River (including the Kerang Lakes Ramsar Site), as well as adjacent wetland sites such as Barmah and Gunbower forests (in the Murray Fans bioregion). Previously it has also been used in wetlands of the Goulburn River system, however this is dependent on being able to trade water into the Goulburn system.

Stressed River Plans

Under the Victorian River Health Strategy, provision exists to identify rivers and streams that are stressed. Where provision in a BE and the immediate negotiated environmental flows in SFMP's do not meet environmental needs (and will not be enough to restore ecological health of the system), these rivers are considered within the water allocation framework to be stressed. In these cases, a Stressed Rivers Plan can be developed. The Plan aims to build on or accelerate the environmental flows recommendations made through BE and SFMP processes. The Plans will identify the environmental flow improvement required, how these could be best achieved, any complementary habitat restoration activities and cost sharing arrangements.

3. Policy

3.7 Wetlands

3.7.1 Victoria's Wetlands policy

Victoria's wetland policy is outlined in the State biodiversity Strategy. Victoria works cooperatively with other States and the Commonwealth to implement the Convention on Wetlands (Ramsar, Iran 1971), to which Australia has been a contracting party since 1975.

3.7.2 Wetland Policy for the Commonwealth Government of Australia

The purpose of the Wetland Policy of the Commonwealth of Australia is to build wetland conservation, within the broader context of environmental management, into the daily business of the Commonwealth Government. In recognition of the special role of wetlands, it aims to provide guidelines and processes to ensure wetlands are managed in accordance with principles of Ecologically Sustainable Development.

3.7.3 Ramsar Wetlands

The Ramsar Convention is an inter-governmental treaty, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. Contracting Parties to the Convention commit themselves to:

- designate at least one site that meets the Ramsar criteria for inclusion in the List of Wetlands of International Importance (the Ramsar List), and ensure the maintenance of the ecological character of each Ramsar site. Countries are expected to include in the List as many wetlands that meet the criteria as possible. Listed sites do not necessarily require protected area status, provided their ecological character is maintained through a wise use management approach. There are 11 Ramsar sites in Victoria listed under the Convention. Ramsar sites are considered to be the pre-eminent wetland areas for conservation in the State;
- include wetland conservation within their national land-use planning, so as to promote the wise use of all wetlands within their territory;
- establish nature reserves on wetlands, and promote training in wetland research, management and wardening; and
- consult with other Parties about the implementation of the Convention, especially with regard to transfrontier wetlands, shared water systems, shared species, and development projects affecting wetlands.

A wetland may be considered internationally important if it meets at least one of the following criteria:

- representative, rare, or unique example of a natural or near-natural wetland type found within the appropriate biogeographic region;
- vulnerable, endangered, or critically endangered species or threatened ecological communities;
- populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region;

- plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions;

3. Policy

3.7 Wetlands (cont'd)

- regularly supports 20,000 or more waterbirds;
- it regularly supports 1% of the individuals in a population of one species or subspecies of waterbird;
- significant proportion of indigenous fish subspecies, species or families, life-history stages, species interactions and/or populations that are representative of wetland benefits and/or values and thereby contributes to global biological diversity;
- an important source of food for fishes, spawning ground, nursery and/or migration path on which fish stocks, either within the wetland or elsewhere, depend.

3.7.4 Directory of Important Wetlands

Victoria identified 159 nationally important wetlands under this directory, which took a national bioregional approach using the IBRA regions (Environment Australia 2001). These wetlands are considered to form the second tier of wetlands of conservation significance in Victoria. The criteria for nomination of a nationally important wetland are based on those used to define Ramsar wetlands, with modifications to the criteria to suit Australian conditions. A wetland may be considered nationally important if it meets at least one of the following criteria:

- it is a good example of a wetland type occurring within a biogeographic region in Australia;
- it is a wetland, which plays an important ecological or hydrological role in the natural functioning of a major wetland system/complex;
- it is a wetland, which is important as the habitat for animal taxa at a vulnerable stage in their life cycles, or provides a refuge when adverse conditions such as drought prevail;
- the wetland supports 1% or more of the national populations of any native plant or animal taxa;
- the wetland supports native plant or animal taxa or communities, which are considered endangered or vulnerable at the national level;
- the wetland is of outstanding historical or cultural significance.

3.7.5 Land and Water Audit Case Studies

Victoria made a preliminary assessment of wetlands of State bioregional (or subregional) significance under the national land and water resources audit. This pilot is under review.

A wetland may be considered bioregionally important if it meets at least one of the following criteria:

- wetlands are identified in state/territory lists of important wetlands (Directory wetlands addressed separately);

- significant for the maintenance of ecological processes at a subregional scale (not addressed);
- important for breeding, feeding, roosting, moulting or nursery areas, or refugia for animal taxa (only addressed for colonially breeding waterbirds);

- supports significant number of plant and animal taxa including migratory species and/or supports a significant abundance of some taxa (only addressed for migratory shorebirds);
- contains rare or threatened species/ecosystems (record of threatened species occurrence in last 20 years or a wetland type depleted to 30% or less than its original area.

3.7.6 Regional Wetland Strategies and Plans

Several CMA regions are developing wetland strategies and discussion papers. Detailed management plans are also being developed for priority wetlands in the Victorian Riverina bioregion.

3. Policy

3.8 Salinity management

3.8.1 Victoria's Salinity Framework

This framework was released in August 2000 to help address Victoria's $50 million a year salinity problem. Victoria's Salinity Management Framework (NRE 2000e) will provide a statewide plan for protecting Victoria's environment from salinity. Victoria has committed to achieving a real reduction in the environmental and economic impacts of salinity by 2015.

The framework focuses on the need for land use change in the future, the role of the various levels of Government, the need to build the skills and capacities of landholders to deal with salinity and the need for efficient water use. The framework promotes the partnerships between State Government and the community through the Catchment Management Authorities and with Local Government dealing with land and water salinity.

3.8.2 National Action Plan for Salinity and Water Quality – is IGA important or just a funding source?

As signatories to the Inter-Governmental Agreement on a National Action Plan for Salinity and Water Quality (IGA), the Commonwealth and Victoria have committed to an action plan to motivate and enable regional communities to use co-ordinated and targeted action to:

- 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
- improve water quality and secure reliable allocations for human uses, industry and the environment.

Under the IGA, the parties have committed to a Bilateral Agreement. The purpose of this Agreement is to establish the framework for implementation of a National Action Plan for Salinity and Water Quality in Victoria in accordance with the Inter-Governmental Agreement, including commitments to:

- establishing regional targets and national standards for natural resource management, particularly for salinity and water quality;
- the criteria and process for government accreditation of integrated natural resource management plans, particularly regional catchment strategies, developed by the community;
- multi-lateral arrangements required where regions or activities cross jurisdictional boundaries;
- government investment in salinity and water quality actions to implement accredited catchment/regional plans and, where appropriate, foundation funding to catchment/regional bodies to assist them to develop and refine plans;
- arrangements for early consideration and implementation of agreed priority projects;

- capacity building activities to assist communities and landholders to develop and implement regional/catchment plans, including through national programs and state specific activities;

3. Policy

3.8 Salinity management (cont'd)

- land and water policy reforms, with milestones, to create an improved governance framework and secure government investments and community action in the long term;
- clearly articulated roles for the Commonwealth, Victorian and local governments and for industry, business and the community to provide an effective, integrated and coherent framework to deliver and monitor implementation of the National Action Plan;
- a public communication program to support widespread understanding of all aspects of the National Action Plan so as to promote behavioural change and community support; and
- developing protocols and resolving disputes between the Parties.

3. Policy

3.9 Pest management

Victoria's Pest Management Framework (VPMF) outlines the important strategic actions to adequately deal with pest plants and animals at a State and Regional level (NRE 2002c). It provides a basis for pest managers to work together to implement integrated pest management processes that protect Victoria's native biodiversity, natural values and productive capacity of land. Its scope includes weeds, rabbits, wild dogs, wild goats, pigs and foxes across all land tenures.

The VPMF provides a consistent approach through:

- the application of a set of basic principles across all pest management programs;
- a focus on impacts and outcomes of the programs;
- appropriate institutional arrangements and effective working partnerships for progressive pest management.

3. Policy

3.10 Forests

3.10.1 Code of Forest Practices

To better manage timber production on private and public land the Code of Forest Practices for Timber Production (NRE 1996) was introduced. This sets guidelines that aim to maintain the Victorian forest industry in a way that is compatible with the conservation of environmental values within forests and will promote ecological sustainability. The code specifies that all Forest Management Areas (FMA) must prepare a Forest Management Plan. These management plans provide for the management and protection of the forest values and uses in State forest. Management and protection generally focus on such areas as biodiversity conservation, forest protection from fire, forest (timber) production and soil, stream and catchment protection.

3.10.2 Regional Forest Agreements

The Regional Forest Agreements (RFAs) have been established for most public forests in Australia to further specify the way forests are to be managed. This is a binding 20-year agreement between the Commonwealth and State Government that sets out how public forests should be managed in regard to timber production, conservation and other purposes. The North East Victoria RFA (VicRFASC 1999), covers all public forest within the north east of Victoria, including the parts of the Victorian Riverina bioregion. The RFA process delivers conservation outcomes through a Comprehensive, Adequate and Representative (CAR) reserve system and Ecologically Sustainable Forest Management (ESFM). Through the CAR reserve system, special forest management zones have been created:

- Special Protection Zones (SPZ) will be managed for conservation purposes, and timber harvesting is excluded.
- Special Management Zones (SMZ) will be managed to conserve specific features, while catering for timber production under certain conditions.
- General Management Zones (GMZ) will be managed for a range of uses, with timber production the major use.

3. Policy

3.11 Greenhouse

3.11.1 Victoria's Greenhouse Strategy

The Victorian Greenhouse Strategy was released in 2002 (NRE 2002f). It provides a framework to enable Government, in partnership with the community, to make concerted and co-operative actions to manage the impacts of climate change. The strategy sets out a suite of actions for reductions in greenhouse gas emissions over the next decade, as well as establishing the basis for the directional change that is needed to respond to the escalating threat of climate change.

The Strategy includes action on three fronts:

- the reduction of greenhouse gas emissions;
- the sequestering of carbon through enhancement of greenhouse sinks; and
- the development and implementation of strategies to adapt too climate change.

It uses the range of policy tools available to government – including regulation; financial incentives; cooperative/partnership-based programs; information and education; and support for research, development, demonstration and commercialisation activities.

Importantly, in addition to delivering greenhouse benefits, many actions in the Strategy will bring about other benefits that will improve our lives – including enhancements in the competitiveness of our economy and improvements in the health of our ecosystems. Specific projects aim to realise the potential multiple benefits of greenhouse and biodiversity outcomes. Biodiversity action planning is seen to be a vehicle to guide greenhouse investments.

3. Policy

3.12 Regional Catchment Strategy

3.12.1 Role of the Regional Catchment Strategy

The Regional Catchment Strategy is the top-level strategic regional blueprint for coordinating, in partnership with government, the processes of sustainable land and water management and biodiversity conservation within each CMA region, while ensuring a full opportunity for involvement of land managers, stakeholders and the wider community.

As specific biodiversity objectives are identified, they will be integrated under each relevant program and receive appropriate priority. The CMAs will have a critical coordinating and resourcing role over all of the recommended actions, as well as ensuring that appropriate inventory, planning and monitoring activities are put in place and that these receive proper support.

3.12.2 Supporting plans and strategies

A raft of other regional action plans covering natural resource management issues align with and contribute detailed information to the Regional Catchment Strategy. These cover issues such as native vegetation, river health, land and water, salinity, water quality, biodiversity, pest plants, pest animals and greenhouse.

The role of Implementation Committees of the CMAs in some areas is to integrate these issues. Local area planning is also used to integrate issues in a local geographic area.

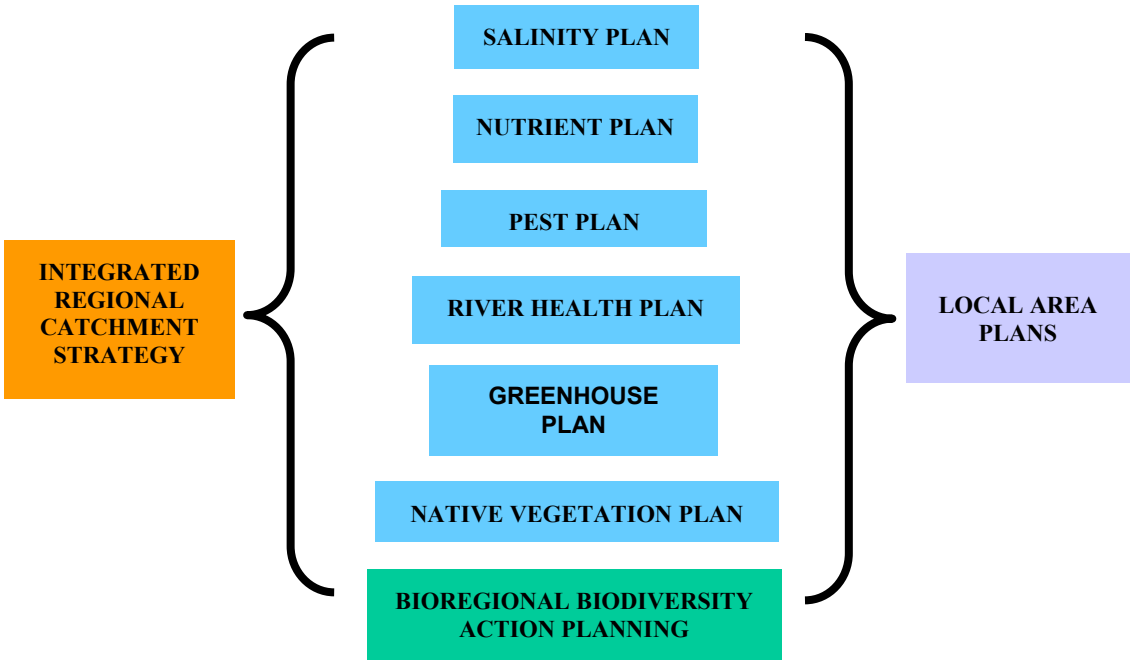


Figure 4. Integrated catchment management framework

3.12.3 Local areas

The regional Native Vegetation Plans in turn provide strategic direction for the development of local action plans for native vegetation retention and revegetation.

Examples of local areas are sub-catchments, local communities or Landcare Group areas.

3. Policy

3.13 Local government

3.13.1 Planning schemes

The main role of the planning scheme in protecting and enhancing biodiversity is to set in place policies and controls to guide decision-making about new landuse and development on private and public land in the municipality.

State Planning Policy Framework

All planning schemes contain the standard State Planning Policy Framework. Clause 15.09 (Conservation of native flora and fauna) includes the objective "to assist the protection and conservation of biodiversity, including native vegetation retention and provision of habitats for native plants and animals and control of pest plants and animals".

Clause 52.17 establishes the baseline native vegetation retention provisions, under which a planning permit is required to remove, destroy or lop native vegetation, except in exempted cases.

Local provisions

The Biodiversity Planning Practice Note (DOI 2002) outlines the way in which Councils can use local provisions to take a strategic approach to conserving the biodiversity assets of their municipality. Councils must have regard to *Victoria's Biodiversity* Strategy, other instruments made under the *Flora and Fauna Guarantee Act* 1988, and Regional Native Vegetation Plans when preparing Municipal Strategic Statements and planning scheme amendments.

The Municipal Strategic Statement (MSS) is intended to provide the broad brush strategic objectives of planning schemes, which are then fleshed out in local policies and provisions that include key decision guidelines. The MSS should highlight key biodiversity issues and local policies should provide guidance to Councils and applicants in day-to-day decision making. In the MSS, Council indicates how it will implement existing action plans and strategies (e.g. Regional Vegetation Plans prepared by CMAs, and its own Roadside Management Plans) relating to biodiversity conservation.

Where biodiversity values are likely to be of more than local significance, the planning scheme's baseline conservation provisions (eg. the Native Vegetation Retention controls) may not be sufficient to achieve the biodiversity conservation objectives. In these cases the MSS should indicate how overlays or zones will be applied and/or how local policies will be developed to achieve the stated objectives.

For example, an Environmental Significance Overlay (ESO) can be included in the planning scheme to identify a significant biodiversity asset, override an exemption so that a planning permit becomes necessary, and set out decision guidelines for such a permit.

3. Policy

3.13 Local government (contd)

3.13.2 Municipal plans and policies

Local government may address biodiversity conservation objectives in many other ways. For example a Council can:

- identify biodiversity conservation as a priority in its Corporate Plan;
- employ conservation officers to facilitate increased biodiversity conservation activity in the municipality;
- enact and enforce local laws under the *Local Government Act* 1968 to control particular uses of Council owned or managed land;
- prepare plans and guidelines for Council/contractor management of Council owned or managed land;
- support habitat restoration projects in the municipality through funding, encouraging community involvement, etc;
- offer incentives such as rate rebates for landholder action on priority biodiversity conservation programs;
- promote educational and awareness programs including Land for Wildlife;
- commission studies on biodiversity in the municipality and contribute data to plans and information systems;
- incorporate biodiversity in its business and purchasing decisions and encourage other businesses to do so too.

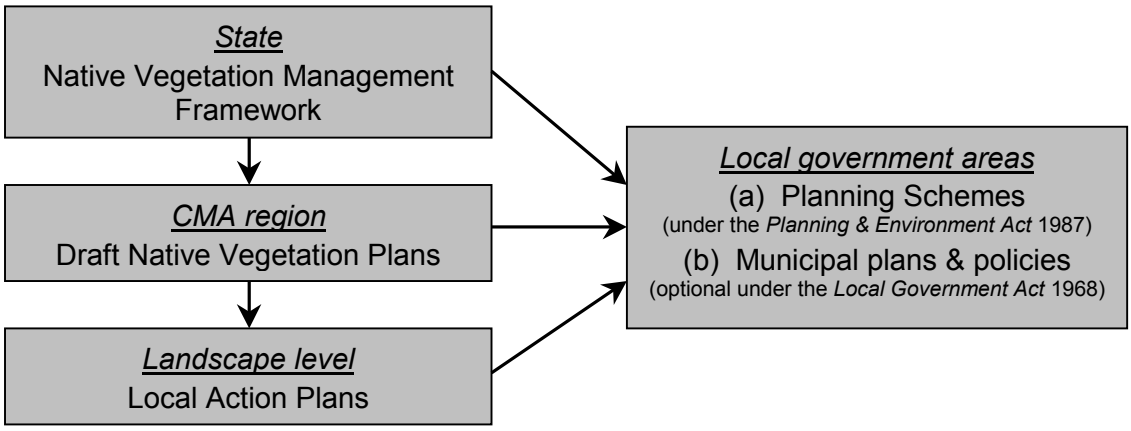


Figure 5. Local Government incorporation of biodiversity conservation objectives