



# From the Fringe to Mainstream

A Strategic Plan for  
Integrating Native Biodiversity  
2004-2007



GOULBURN  
BROKEN  
CATCHMENT  
MANAGEMENT  
AUTHORITY





# Foreword

We are indeed fortunate to live in such a diverse and vibrant part of the world.

Our people come from all parts of the globe and include the largest population of indigenous Australians in Victoria.

Our primary, secondary and tertiary industries are for the most part thriving and rapidly adjusting to the dynamic demands of the 21st century.

Our landscapes range from snow-covered alps to broad Red Gum floodplains and our native ecosystems are equally varied, supporting unique and abundant native flora and fauna.

Native biodiversity is vital to our quality of life and the wellbeing of our future generations. However, our native biodiversity must be managed carefully if it, and indeed our whole way of being, is not to suffer the fate that has befallen others through the ages in many parts of the globe.

For many years Goulburn Broken catchment communities have recognised the importance of native biodiversity and the need to include it as a key component of decision-making. The production of this strategic plan follows through on the GB CMA's commitment listed in *Goulburn Broken Regional Catchment Strategy (1997)*, building on other strategic plans such as the *Goulburn Broken Native Vegetation Management Strategy (2000)*.

This plan is the result of extensive research and discussion with Goulburn Broken communities and outside experts. Feedback has been gained over several years on various native biodiversity issues from participants in GB CMA workshops and committees and from comments on draft documents. This has involved over 100 people who are representative of key stakeholders.

The GB CMA thanks those who have contributed. We look forward to working with you to help shape the future of our unique and wonderful native biodiversity.

*Stephen Mills*

Chair  
Goulburn Broken Catchment Management Authority





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Cover photos: Royal spoonbill in Barmah Forest (Keith Ward, GB CMA); Warby Ranges landscape (Kate Stothers, Department of Primary Industries).

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# Executive Summary



Native biodiversity is found right across the Catchment so anyone who manages land or water has a role to play.

Major gains for native biodiversity come from helping land and water managers integrate it into what they do. The GB CMA's budget for managing native biodiversity directly is dwarfed by opportunities from fund sources primarily aimed at other issues.

We are still in our infancy of aligning methodologies from different disciplines to gain an integrated sense of priority. This strategic plan takes us another step forward.

## Information for Decision-Making

Decision makers use information on the needs of native biodiversity and the community's readiness to act to help set targets and strategic directions. Facts summarised in this strategic plan include:

- Native biodiversity assets (native vegetation, wetlands, rivers and streams, native fauna and soil native biodiversity);
- Threats (categorisation into 'threatening activities' and 'induced threats' and risk ratings);
- How native biodiversity relates to other GB CMA biophysical themes, including integration achievements (river health, soil health, dryland salinity, irrigation salinity, pest plants and animals and climate change);

- Opportunities for integrating native biodiversity into partner programs;
- Works achievements; and,
- Investment profiles.

A brief description of major shifts in land use expected over the next 50 years is also given.

## From Information to Decision-Making and Action

The GB CMA, with the community, has expressed what can reasonably be expected to be achieved in the long-term (20+ years) as resource condition targets. Targets are listed for native vegetation, threatened species and wetlands.

There are several mission statements and visions that sit underneath the GB CMA's overarching mission statement, including the native biodiversity mission statement, developed in 1999:

*"The community will work in partnership with Federal and State Governments and other agencies to protect and enhance ecological processes and genetic diversity to secure the future of native species of plants, animals and other organisms within the Catchment."*

Underpinning the GB CMA's mission statements are strategic objectives. Strategic priorities have been set to guide actions that enable these objectives to be achieved. The GB CMA will work with partners to undertake listed actions during 2004-07.



### **Strategic objective 1: Strong strategic partnerships**

Key actions include ensuring decision-making forums involve native biodiversity expertise and have ready access to native biodiversity information; fostering relationships with philanthropists, business and Federal and State Government investors; and developing and implementing projects with the community, including volunteers and government agencies. This work will provide more opportunities for the community to become involved in native biodiversity management. People will be retained in native biodiversity management by having positive experiences in decision-making forums and in works on the ground.

### **Strategic objective 2: Priorities for allocating resources based on rigorous methodologies**

The GB CMA will continue working with partners to refine priorities for native biodiversity and ensure that these are an important part of integrated decision-making. Our aim is to maximise the community return on investment. Actions include updating priority maps and priority documents and ensuring GB CMA and partner decision-making processes can accommodate native biodiversity priorities.

### **Strategic objective 3: Costs shared fairly**

Costs of managing native biodiversity will be shared according to well-developed principles and arrangements used by the GB CMA, including principles of duty of care, beneficiary pays, and government contributions being proportional to public benefit. The GB CMA has identified four groups of beneficiaries: Federal, State and local governments (as regional community representatives) and landholders. The GB CMA considers that the most appropriate policy is for beneficiaries to share equally the 'public' component of the costs. Landholders will continue to make a significant contribution for most actions on their land.

### **Strategic objective 4: Efforts focused on results at large scales**

Mechanisms are being developed to piggy-back on broad-scale change in land use and management that is happening due to factors such as changing commodity prices, the development of water markets and the increased demand for 'lifestyle' properties. Actions include exploring new ways to protect and enhance native biodiversity as land use changes from agricultural enterprises to less intensive uses over large areas, and expanding the adoption of direct seeding technology.





### **Strategic objective 5: Cultural heritage issues included in decision-making**

Actions have been in place for over a decade to ensure that cultural heritage values are included in site-by-site decision-making. Opportunities for more pro-active and strategic decisions are being explored generally and the major action specifically for native biodiversity is to capture opportunities for including cultural heritage in decision-making where native biodiversity outcomes are sought.

### **Strategic objective 6: Stakeholders who clearly understand their responsibilities**

Issues between Australian and Victorian Governments and the CMAs about where decision-making responsibilities lie need to be resolved. In parallel with this, issues have arisen on the level of detail to be provided and when. This is impacting on relationships and overhead costs at all levels in the decision-making chain from the individual landholder through to the community group, the GB CMA and beyond. Actions will define and refine responsibilities of various stakeholders in decision-making and reporting in terms of native biodiversity.

### **Strategic objective 7: Adaptive management systems in place**

Actions listed in this strategic plan will be monitored, evaluated and reported back to the GB CMA Board, with recommendations for changes and additions. One of the key actions is to document and test the assumptions that link the outputs (or 'works actions') with the outcomes (or 'resource condition changes'). The strategic plan will be reviewed in 2007 (prior to the review of the *Regional Catchment Strategy*) and will be renewed following release of the updated *Regional Catchment Strategy* (probably 2008).



# Our Native Biodiversity

Information on the status and management of native biodiversity has been summarised in this strategic plan from several documents, especially *Caring for our living treasures – Report on the condition and management of Goulburn Broken’s native biodiversity (in prep.)*. (Refer to ‘List of background documents’ section at the end of this strategic plan.)

Native biodiversity is the natural diversity of all life: the sum of all our native species of flora and fauna, the genetic variation within them, their habitats, and the ecosystems of which they are an integral part. Native biodiversity is vital to the quality of our lives as well as those of future generations. It underpins our economic and social health and there is growing recognition of the integral value of native biodiversity, such as the right of all native species to exist.

Australia is the only ‘developed’ country of 12 ‘mega-diverse’ countries and a significant proportion of Australia’s native biodiversity is found in the Goulburn Broken Catchment.

The Catchment crosses eight bioregions including the Victorian Riverina, Goldfields, Murray Fans, Northern Inland Slopes, Highlands – Northern Fall, Highlands – Southern Fall, Central Victorian Uplands and Victorian Alps. Bioregions are the broadscale mapping units for biodiversity planning in Victoria and have been adopted under Victoria’s Biodiversity Strategy (1997) and the national Environment Protection and Biodiversity Conservation Act (1999).

Bioregions capture the patterns and ecological characteristics in the landscape. Victorian bioregions nest within the national categorisation for terrestrial and marine environments. Priority setting for management of native vegetation, threatened species and wetlands is based on the asset’s relative distribution within and between each bioregion.

## Native vegetation

Thirty per cent (715,000 ha) of native vegetation remains, with most extensive clearing having occurred in bioregions most suited for intensive agriculture, such as the Victorian Riverina (97%). Most remaining native vegetation in the Murray Fans, Victorian Riverina, Goldfields and Central Victorian Uplands bioregions is threatened.<sup>1</sup> Declines in extent have largely stabilised with incremental losses still occurring. These losses are particularly important for isolated and scattered trees on farmland (up to 4.8% per decade decline is occurring in the Victorian Riverina bioregion of the Goulburn Broken Catchment).<sup>2</sup> Dead trees with hollows are still being removed on private land. Hollows in current plantings will not form until at least 2100, which may be too late for many fauna species that need them. The total area of native vegetation is expected to increase over the next few years due to accelerated action over the past decade (replanting, direct seeding, grazing management, understorey planting and pest plant control programs).



<sup>1</sup> Ecological vegetation classes classified as extinct, endangered, vulnerable, depleted or rare as per the Bioregional Conservation Status of EVCs described in Victoria’s Native Vegetation Management (2002).

<sup>2</sup> Assessment of the rate and cause of paddock tree decline in the Victorian Riverina Bioregion of the Goulburn Broken Catchment (2004).



## Wetlands

One thousand, eight hundred and eighteen wetlands (greater than 1 ha each) cover an area of 82,181 ha (including natural and man-made wetlands). There is one wetland of international significance (a Ramsar wetland: Barmah component of Barmah Millewa Forest), ten wetlands of national significance<sup>3</sup> (Barmah Millewa Forest, Broken Creek, Kanyapella Basin, Lower Broken River, Lower Goulburn River Floodplain, Muckatah Depression, Wallenjoe Wetlands and Central Highlands Peatlands), and 113 wetlands of bioregional significance.<sup>4</sup> There are many high value wetlands along the floodplains of the middle reaches of the Goulburn River and its tributaries.

Twenty seven thousand hectares of wetlands have been lost, and 56,000 ha have been affected by drainage or altered water regimes. There has been a major decline in freshwater meadows and shallow freshwater marshes and therefore a significant loss of specific habitats, while there have been man-made increases in deep freshwater marshes, permanent open freshwater wetlands and permanent saline wetlands.

## Rivers and streams

The Catchment has more than 9,849 km of streams, with 8,157 km in the Goulburn Basin and 1,692 km in the Broken Basin. There are three declared Heritage Rivers (the Goulburn below Eildon, the Big and the Howqua). The Acheron, Yea and Murrindindi Rivers in the North central uplands satisfy the criteria of a 'representative river'.<sup>5</sup> All of these rivers are tributaries of the Goulburn River.

Some 30% of the Catchment's streams are in good condition as measured by the Index of Stream Condition.<sup>6</sup> The Sevens Creek supports one of only two viable populations of Trout Cod.

## Native fauna

The Catchment has 431 vertebrate species and an unknown (but very large) number of invertebrates. Many species exist beneath minimum threshold habitat levels and natural and human-induced events can cause their extinction within the Catchment.

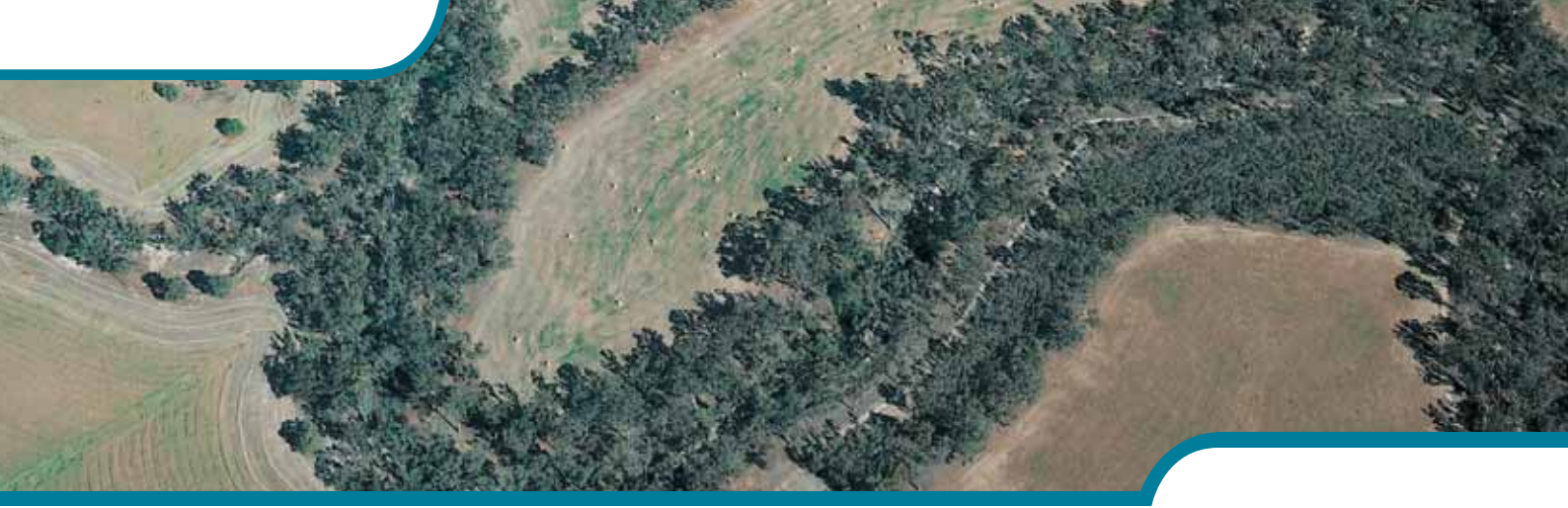
With the extensive clearing of native vegetation and fragmentation of habitat, populations of fauna (and flora) are often isolated which limits gene flow.

<sup>3</sup> *Directory of important wetlands in Australia (2001)*

<sup>4</sup> *Wetlands directions paper for the Goulburn Broken Catchment (2002)*. (These wetlands are in addition to those listed in the 'Directory' (see previous). Where a wetland was listed as important in the Directory it was not included in the list.)

<sup>5</sup> *Victorian River Health Strategy 2002; North central uplands is an interim river region*

<sup>6</sup> [www.vicwaterdata.net](http://www.vicwaterdata.net)



### Summary of conservation status of vertebrate fauna in the Goulburn Broken Catchment.

Threat Category*	Birds	Mammals	Reptiles	Amphibians	Fish	Total
Extinct	2**	2	0	0	0	4
Critically Endangered	5	1	0	2	3	11
Endangered	19	5	2	0	1	27
Vulnerable	17	3	3	2	3	28
Lower Risk	6	2	1	0	0	9
Total Threatened	49	13	6	5	7	79
No of species in catchment	282	51	57	24	19	435
% threatened	17%	25%	11%	17%	37%	18%
Insufficiently known	6	3	1	1	4	15

\*Threat categorisation follows the International Union for the Conservation of Nature classification system. Information from various Department of Natural Resources and Environment databases 2000.

\*\*Magpie Goose and White-winged Fairy-wren (Dr Doug Robinson, pers comm.)

## Soil native biodiversity

The below-ground flora and fauna represents one of the most species rich components of terrestrial ecosystems but is often ignored because it is not well known or understood. Recent research is also showing there is a strong link between above ground and below ground native biodiversity. Healthy remnants and biodiverse soils go hand in hand and this is likely to influence how we restore landscapes.

# Threats to Native Biodiversity



A standard list of threats and impacts has been produced to encourage clear, consistent and shared decisions across disciplines. Threats have been categorised as a 'threatening activity' or an 'induced threat' to provide a focus for action.

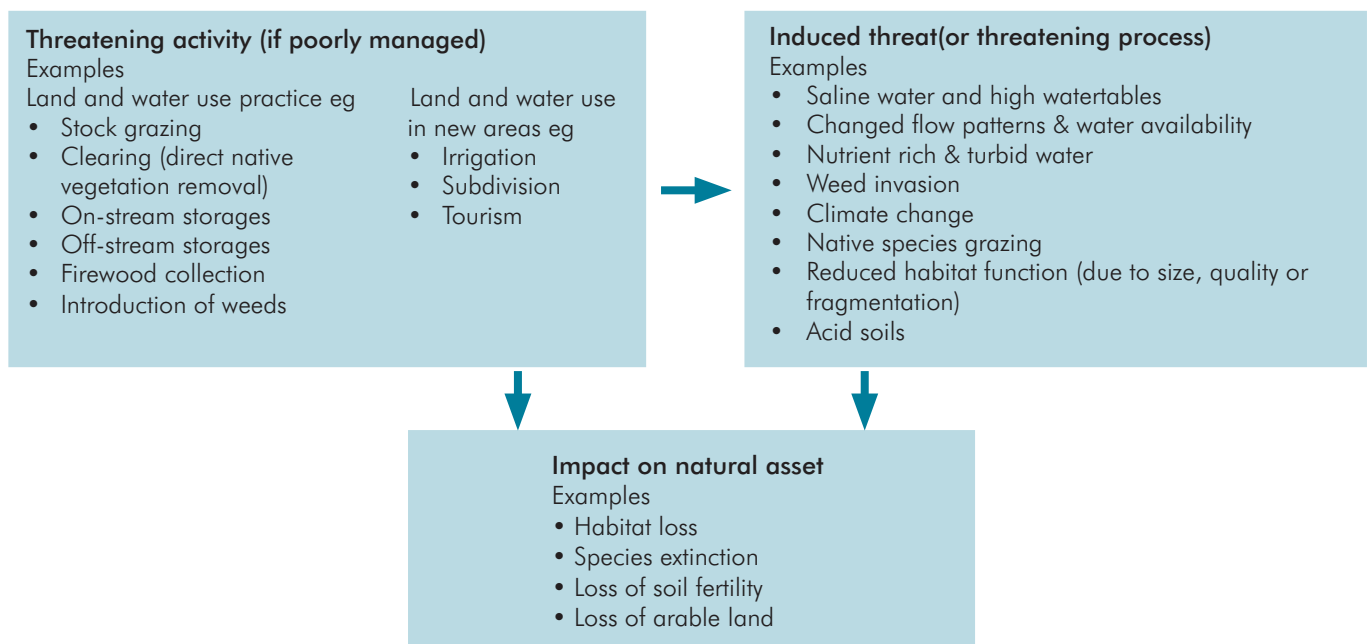
The major threats to our native biodiversity arise from the clearing of native vegetation that largely occurred many decades ago and from competing land and water uses.

Potentially threatening activities include stock grazing, irrigation, on-stream barriers and water storage management, and cultivating, cropping and pasture management. Subdivision of agricultural blocks into rural 'lifestyle' blocks, especially along the southern hills around Broadford, Kilmore, the Strathbogies and Seymour often results in clearing or degradation of native vegetation.

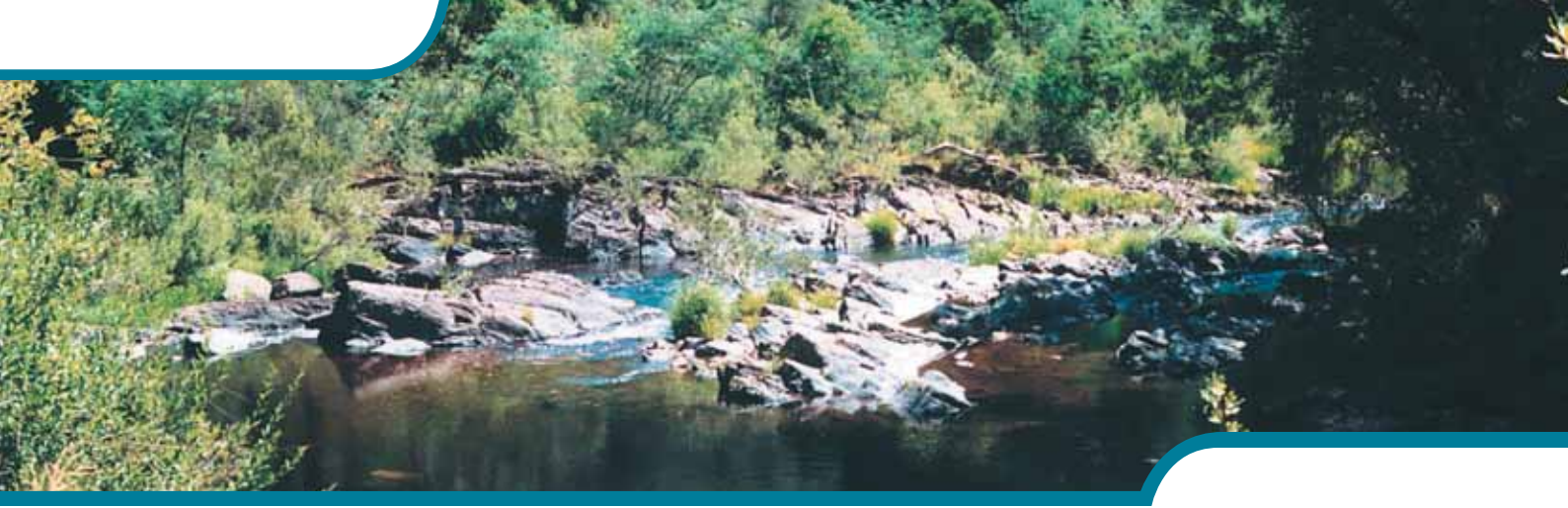
Significant threats induced from human activities include saline water and high watertables, changed flow patterns and water availability, and reduced habitat function due to reduced size, quality or fragmentation.

Estimates of the risk of major threats to native biodiversity which are included in the following table can help guide government investment. The estimates can be used to check that the balance of investment and actions undertaken to manage each threat and asset is appropriate. For example, the table tells us that stock grazing, cultivating, cropping, pasture management and reduced habitat function pose major risks to native vegetation and we need to balance investment to ensure these threats in particular are well managed. Analysis of the table and investment patterns occurs at the next level of planning (during implementation of this strategic plan).

## Relationship between threatening activity, induced threat and impact on natural assets.







### Summary of major\* risks\*\* to native biodiversity assets.\*\*\*

Threat	Native biodiversity asset				
	Native vegetation	Wetlands	Rivers & streams	Native fauna	Soil native biodiversity
<b>A Threatening activity (if poorly managed)</b>					
<b>Land and water use practice</b>					
Clearing (direct native vegetation removal)	M	M	M	M	L
Stock grazing	VH	H	VH	M	H
Irrigation	M	VH	VH	M	H
On stream barriers (includes culverts & regulators)	L	M	M	H	L
On-stream storages (flow regulation)	M	VH	VH	M	L
Off-stream storages (water harvesting)	L	M	H	H	L
Cultivating, cropping and pasture management	VH	VH	M	M	H
<b>Land and water uses in new areas</b>					
Subdivision	H	M	M	M	M
Irrigation	H	M	M	M	M
Introduction of genetically modified organism	M	M	M	M	H
Reforestation (plantations)	M	M	H	M	L
<b>B Induced threat</b>					
Reduced habitat function (due to size, quality or fragmentation)	VH	H	VH	VH	VH
Species population size, isolation or genetic decline	H	M	M	VH	M
Saline water and high watertables	H	VH	VH	VH	M
Nutrient-rich and turbid water	M	H	H	H	L
Changed flow patterns and water availability	M	VH	VH	VH	L
Climate change	M	M	H	H	L
Soil sodicity	L	M	M	L	H
Weed invasion	M	M	H	M	L
Pest animals	L	M	M	H	L

Legend: VH – very high risk; H – high risk; M – medium risk; L – low risk

\*Many other risks are included in a separate document Caring for our living treasures – Report on the condition and management of Goulburn Broken’s native biodiversity (in prep.).

\*\* Guide to ratings: Ratings of risk consider likelihood and/or potential consequence of threat occurring.

\*\*\*Methodologies for determining risk are rapidly evolving in several natural resource management disciplines. Ratings in this table are based on the Goulburn Broken Catchment scale: those threats that pose major risk at small scale do not necessarily pose a major risk at Catchment scale. Methodology to ‘build’ a rating from other component considerations such as extent and trend, and likelihood and consequence is expected to evolve: ratings given are based on shared intuitive judgments only (quantitative data is not yet available in an appropriate form). Ratings assume prevailing community attitudes and practices but no government investment. (That way all needed government investment can be identified.) Ratings are a guide to opportunities for investment: issues such as costs and benefits of managing threats must be considered prior to investing. The complex connections between native biodiversity assets make it extremely difficult to separate the assets to help focus management. The categories of asset are based on those in Victoria’s Biodiversity Action Plan.

# Decision-Making Environment



The Catchment is among the few non-coastal areas in Australia that are thriving. However, land use patterns are changing. The shift in land use likely to occur over the next 50 years is likely to result in a mosaic that comprises:

- Intensive agricultural zones (especially in the Shepparton Irrigation Region) with a smaller ecological footprint – ‘double the production from half the land’;
- Increased ‘conservation’ zones where the land previously used for traditional agriculture is managed for nature conservation (these will be across the Catchment); and,
- Rural living areas where land, particularly near urban centres, is converted to hobby farms and smaller farms where the main household income is from activities other than agriculture and which may offer additional conservation benefits.

The GB CMA works with the Catchment’s communities to respond to challenges. Strategies developed to address several issues simultaneously include:

- Complementing the best practice approach with large scale land-use change;
- Market-based approaches;
- Focussing on natural assets and ecosystem services;
- Priority area projects; and,
- A quality system-style approach to catchment management.

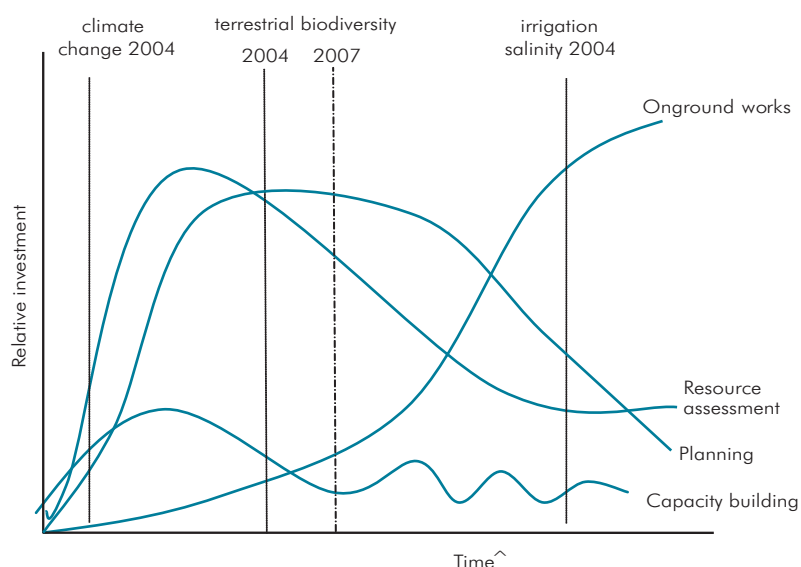
## Maturity of decision-making for native biodiversity

Decision-making processes have evolved to a relatively sophisticated level in the Goulburn Broken Catchment and involve a complex network of agency and community organisations. The maturity of our decision making varies between issues, with native biodiversity ‘maturity’ sitting somewhere between climate change (immature, emphasis towards planning) and irrigation salinity (mature, emphasis towards on-ground works).

The table to the right shows that significant gains can come from integration and that we must carefully consider where our efforts to integrate are placed. For example, the greatest benefits for native biodiversity from GB CMA biophysical themes are likely to come from efforts that integrate native biodiversity needs into management of rivers and streams and dryland salinity.



Changing natural resource management investment patterns\* over time, showing different stages of Goulburn Broken 'maturity' of investment in climate change, terrestrial native biodiversity and irrigation salinity and how far this strategic plan is expected to take us (between 2004 and 2007).



^ The time scale is different for each issue. Irrigation salinity investment began much earlier and with continued investment is more mature than terrestrial biodiversity investment, which in turn is more mature than investment in climate change.

\*Labels used to categorise these actions (on-ground works, resource assessment, planning and capacity building) are those suggested by Victorian and Australian government National Action Plan staff in 2003. These differ slightly from categories developed in the Goulburn Broken. The patterns shown are idealised: Government investors often dictate the levels of investment in each category although the GB CMA attempts to ensure the balance of investment between the different categories is appropriate for the issue.

Summary of benefits from integrating native biodiversity into GB CMA biophysical themes.\*

GB CMA biophysical theme	Native biodiversity asset					Overall (average)
	Native vegetation	Wetlands	Rivers and streams	Native fauna	Soil native biodiversity	
River health	H	VH	VH	H	L	H-VH
Soil health	M	L	L	L	VH	M
Dryland salinity	VH	H	H	H	H	H
Irrigation salinity	M	VH	H	M	H	M-H
Pest plants and pest animals	H	M	H	M	M	M-H
Climate change	M	M	H**	H***	L	H

Legend: VH – Very High; H – High; M – Medium; L – Low.

\* Ratings show relative returns or benefits for native biodiversity from investing the same effort and resources in integrating biodiversity into biophysical themes. Ratings are based on subjective judgments and current knowledge only.

\*\* As the climate changes, potential changes to flooding regimes of rivers and streams must be managed to cater for the needs of native biodiversity.

\*\*\* Carbon sequestration activities such as revegetation present significant opportunities for native fauna.



## Integration achievements

Native biodiversity is being integrated to varying degrees in natural resource management programs. The GB CMA's budget for managing native biodiversity directly is dwarfed by opportunities from fund sources primarily aimed at other issues. The GB CMA therefore places significant emphasis on integrating Catchment priorities for native biodiversity into other GB CMA and partner programs.

### Integrating GB CMA biophysical issues

One of the most important gains for native biodiversity in the Catchment in the past decade has come from adjusting waterways management actions. The advent of the GB CMA in 1997 brought together the 'land' and 'water' managers and this accelerated integration. Incentives include a scoring system based on a large range of environmental benefits such as water quality, salinity and native biodiversity. This system results in works being taken up in the highest priority areas and provides multiple benefits. The system was pioneered in the Catchment and is now being used in many places in Australia.

Biodiversity risk mitigation protocols are being integrated into decision-making of all Regional Catchment Strategy programs at all levels. These protocols increase understanding of the needs of all native biodiversity so that risks are minimised and opportunities are captured.

Implementation of several GB CMA strategic documents impacts heavily on native

biodiversity. *The Draft Goulburn Broken Regional River Health Strategy (2004)* includes native biodiversity in priority setting, while updates of the *Goulburn Broken Water Quality Strategy (1996)* and the *Goulburn Broken Regional Floodplain Management Strategy (2002)* are expected to include native biodiversity issues more explicitly. Soil native biodiversity concerns are helping to drive the development of a comprehensive Soil Health Strategy. We are beginning to understand the role of soil health in habitat (especially native vegetation) management.

It is now clear that 'living with salt' is inevitable for large areas of the Catchment. This also means that many sites with significant native biodiversity values are at risk. Improved knowledge gained in the early 2000s on likely salinisation patterns and emerging information on native biodiversity features at local scale (through Biodiversity Action Planning) will provide a solid base to further develop integrated priorities. A project between Department of Sustainability and Environment, Department of Primary Industries and GB CMA under the biodiversity and dryland salinity programs is predicting salinity impacts on priority native biodiversity assets and identifying mitigation options.

*The Shepparton Irrigation Region Land and Water Salinity Management Plan (1990)* recognised the 'environment' by including it as one of the key programs. Native biodiversity now benefits from investment in salinity mitigation and water quality control works. Surface water management, sub-surface water management and farm programs include native biodiversity factors at all stages of planning and implementation.





Wetlands and remnant vegetation are being protected and areas are being revegetated.

Significant human intervention is needed to manage the increased pressure from climate change on native biodiversity. Through techniques such as revegetation and enhanced agricultural practices we can generate multiple benefits for the region. A project being run by GB CMA with local government and community groups is measuring carbon in multiple benefit revegetation. This project is funded by the Victorian Government under its *Greenhouse Strategy*.

### Integrating partner programs

Significant opportunities also exist in integrating native biodiversity needs into partner programs. Progress to date includes:

- The Department of Primary Industries (DPI) implements environmental management incentives. These incentives achieve several environmental outcomes simultaneously, including native biodiversity. DPI also manages fishing and aquaculture industries and pest plants and animals programs. DPI is a major service provider of the GB CMA's *Regional Catchment Strategy*.
- The Department of Sustainability and Environment (DSE) manages native fauna and flora, provides expert advice on conserving and managing species, regulates wildlife possession and trade and the taking of native plants and animals, and manages vast areas of State Forest. DSE provides technical input into the GB CMA's priority setting and threatened species recovery programs are now included in the GB CMA's regional funding.
- Goulburn-Murray Water (G-MW) liaises with DSE and GB CMA to ensure its broad strategic plans and water storage plans include current native biodiversity information. G-MW is a major service provider of the GB CMA's *Regional Catchment Strategy*.
- Goulburn Valley Water (GV Water) has undertaken flora and fauna plans at all of its 27 wastewater management facilities and native biodiversity is included in staff training. GV Water intends to improve native biodiversity values at all sites under its management.
- Parks Victoria actively manages vast tracts of native vegetation and wetlands in National and State Parks and other public reserves across the Catchment. Parks Victoria works with the GB CMA on a range of projects involving native biodiversity.
- Trust for Nature promotes and administers conservation covenants and purchases and brokers purchase of properties with high native biodiversity values. It works with community networks to identify priorities and opportunities.
- Native biodiversity information is included in a profile for each municipality which can be included in each Municipal Strategic Statement review. Roadside management plans have been prepared for five of the Catchment's eight municipalities. Rate rebates for conservation covenants are now available in four municipalities and there are moves to expand this across the Catchment.
- Many Landcare groups have native biodiversity as a priority.

## Works achievements

It has been very difficult to monitor progress of on-ground works because contributions come from many and varied sources and consistent measurement systems are not well developed. The following graph is one of several quantitative measurements recently developed.

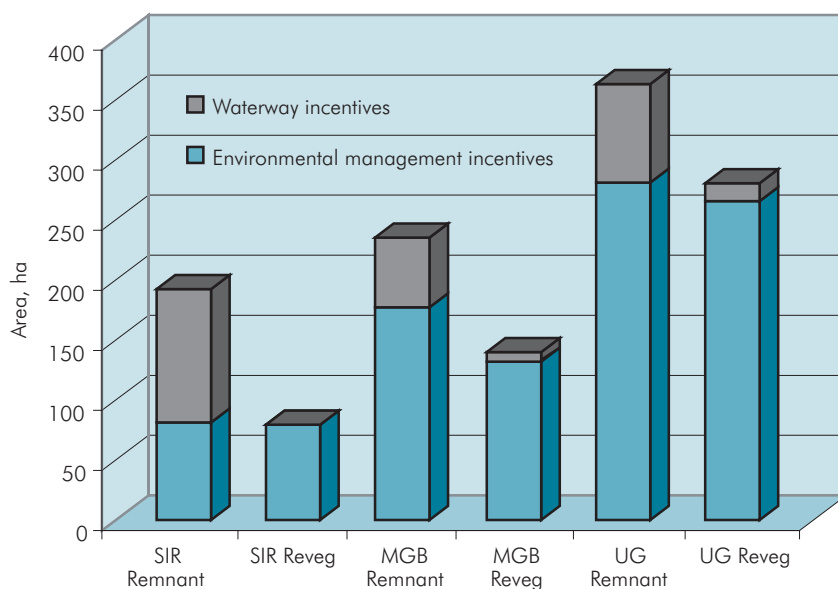
## Investment profiles

Investment in native biodiversity is balanced between different:

- Action types, such as planning, capacity building, resource assessment and works (protection, enhancement or restoration);
- Asset types, such as native vegetation and wetlands;
- Threat types, such as stock grazing and saline water and high water tables; and,
- Manager types, such as government agencies and farmers.

Investment profiles are being developed to inform decision makers what the balance of investment is for these different parameters.

Native vegetation works in the Catchment funded through multiple-benefit incentives\* 2002-03.



Remnant = works to protect and enhance (through enrichment planting) remnant vegetation.

Reveg = works to revegetate previously cleared areas with indigenous vegetation.

\* Graph shows that significant quantities of native biodiversity works are undertaken via waterways and salinity programs (which respectively have waterway and environmental management multiple-benefit incentives).

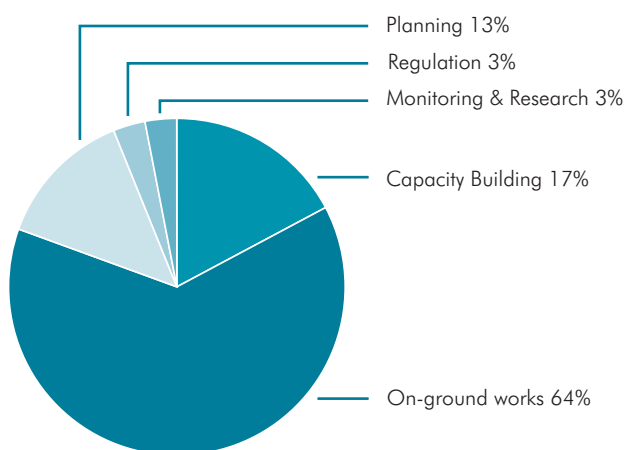
SIR = Shepparton Irrigation Region Implementation Committee area.

MGB = Mid Goulburn Broken Implementation Committee area.

UG = Upper Goulburn Implementation Committee area.



Native biodiversity investment\* by action type (2002-03).\*\*



\* These are not just 'biodiversity' programs. Includes activities funded through other GB CMA programs such as salinity and waterways. Funding shown is primarily through the GB CMA's regional management plan and Department of Sustainability and Environment's Flora and Fauna program and does not include other significant contributors to native biodiversity funding such as Parks Victoria and private landholders.

\*\* There may be some activities built into one activity type that may better fit another, however the analysis gives a broad picture of native biodiversity funding in the catchment.

On-ground works = generally works such as fencing and revegetation but includes other on-ground works activities. This category may include some staff costs for administering grants that could not be separated with the information available.

Planning = any planning activities to better direct where works may be undertaken and to improve information provided for native biodiversity.

Capacity building = any staff associated with implementing works and directly building the general capacity of other staff or the community relating to native biodiversity.

Monitoring and research = any general research or monitoring activities that will feed into native biodiversity information.

Regulation = generally statutory planning type activities and implementation of Victoria's Native Vegetation Management (2002).

# From Information to Decision-Making and Action

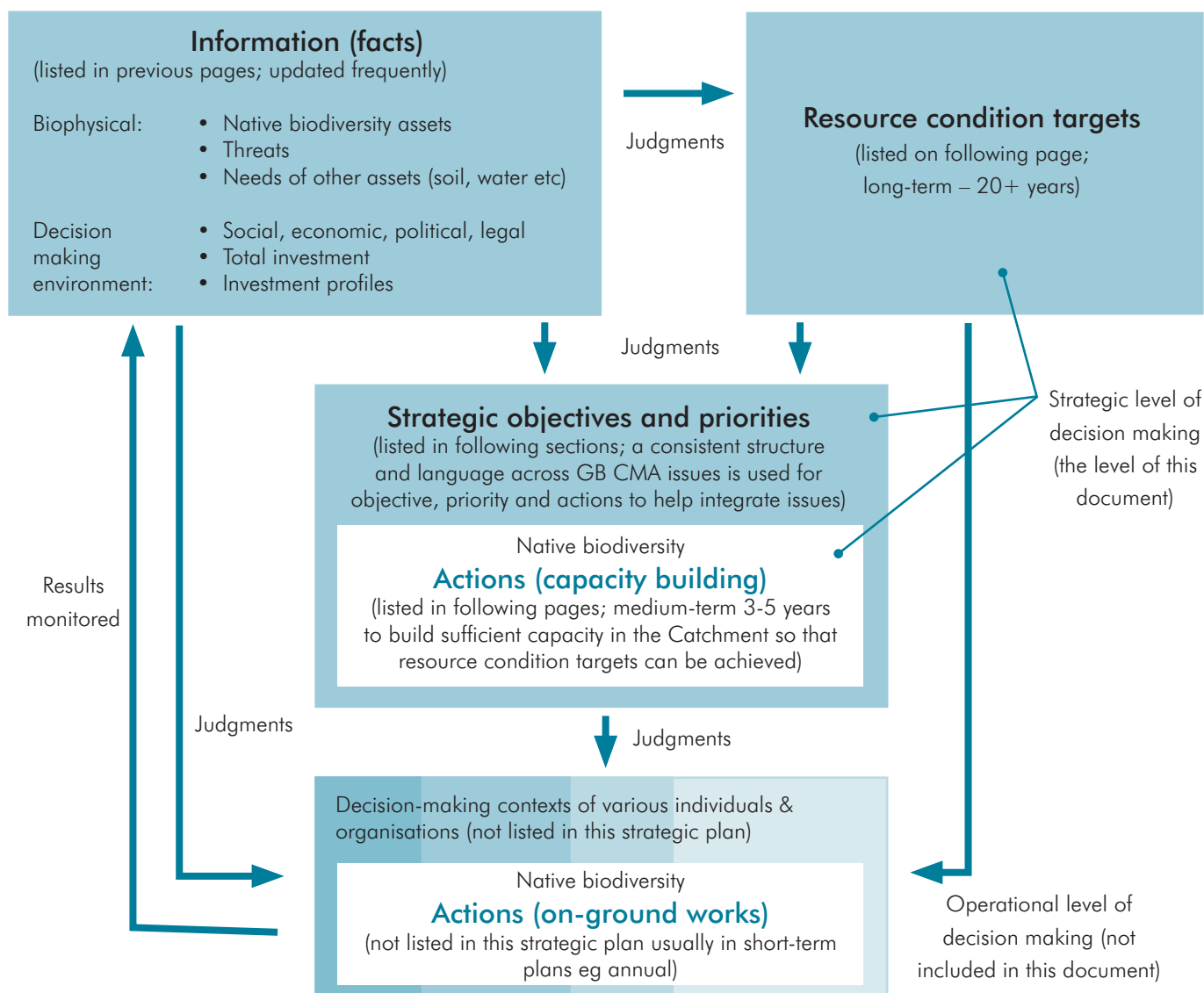


Decision-makers use the information (or facts; as indicated in previous pages) to develop an understanding of the needs of native biodiversity and 'community readiness'. This includes an understanding of what can reasonably be expected to be achieved over different timeframes. The GB CMA, with the

community, has expressed these expectations as resource condition targets and actions.

Actions are collated under the strategic objectives and priorities of a broad GB CMA framework that is applied to all issues to help foster consistency between disciplines and help integrate them.

Information flow for decision-making at strategic and operational levels.







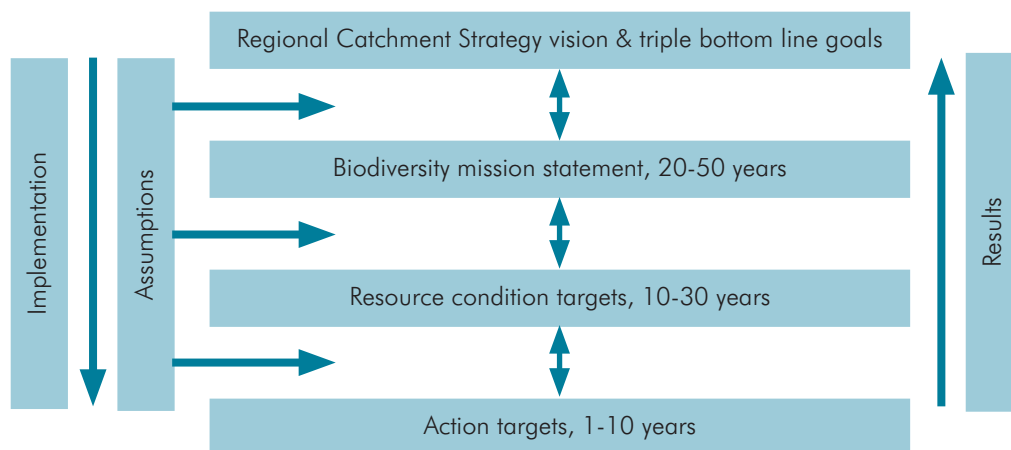
## Targets

Targets are based on a balance between what the science tells us is needed and what the community regards as being achievable given a reasonable level of public and private investment. This investment includes

continued significant private contributions in such forms as volunteer labour.

Targets are arranged as a hierarchical chain and relate to specific levels of decision-making.

### Targets hierarchy.



### Native biodiversity resource condition targets.\*

#### Native vegetation

- Maintain extent of all native vegetation types at 1999 levels in keeping with the goal of 'net gain' listed in Victoria's Biodiversity Strategy 1997.
- Improve the quality of 90% of existing (2003) native vegetation by 10% by 2030.
- Increase the cover of all endangered and applicable vulnerable Ecological Vegetation Classes (EVCs) ^ to at least 15% of their pre-European vegetation cover by 2030.

#### Threatened species\*\*

- Increase 2002 conservation status of 80% threatened flora and 60% threatened fauna by 2030.

#### Wetlands\*\*\*

- Maintain extent of all wetland types at 2003 levels where the extent (area and number) has declined since European settlement.
- Improve condition of 70% of wetlands by 2030, using 2003 as the benchmark for condition.

\* Targets evolve in response to changing expectations and are usually updated during major reviews. The native vegetation targets have been modified slightly since 2000. Riparian and instream targets are included in the Goulburn Broken Regional River Health Strategy (draft 2004). It is likely that targets for non-threatened fauna, non-vascular plants and invertebrates will also be set.

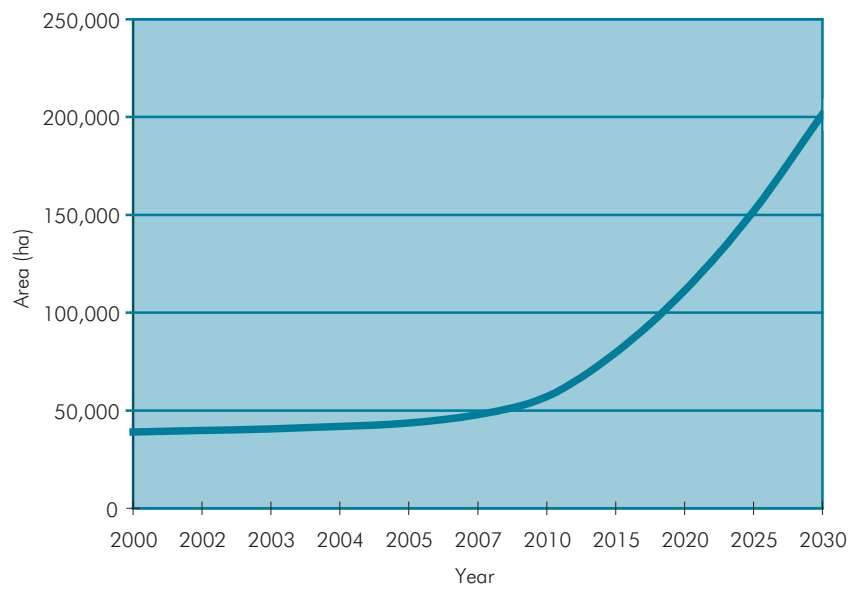
\*\*Threatened species targets also cover some significant species that may not be listed as threatened, such as regionally declining species.

\*\*\*Interim targets only from Goulburn Broken Wetlands Strategy (in prep.).

^ All 'endangered' EVCs are below 10% pre-European cover and some vulnerable EVCs are below 15%.

Although short-term targets are based on long-term targets, there is not necessarily a linear relationship between them. We expect the uptake of works benefiting native biodiversity to accelerate as awareness grows and mechanisms that encourage extra investment become available (some of these options are listed as actions in the following sections). Short-term targets for action are set when business plans are prepared.

**Projected increase in area of endangered and applicable vulnerable ecological vegetation classes in the Goulburn Broken to reach 15% of their pre-European cover by 2030 (third native vegetation target).**





## Strategic Objectives, Priorities and Actions

The GB CMA's strategic objectives that apply to all issues are to have:

1. Strong **strategic partnerships**.
2. **Priorities** for allocating resources based on rigorous methodologies.
3. **Costs shared fairly**.
4. Efforts focused on results at **large scales**.
5. **Cultural heritage** issues included in decision making.
6. Stakeholders who **clearly** understand their **accountabilities and responsibilities**.
7. **Adaptive management systems** in place.

Strategic priorities have been set to guide actions that enable these objectives to be achieved. These priorities are also generic: they apply to all issues. The GB CMA will work with partners to undertake these actions during 2004-07. Actions will be flagged to prospective investors as opportunities arise and details on timelines, costs and responsibilities will be provided when project proposals are formalised.

Several actions identified in the early stages of developing this strategic plan (and which are included in the following lists) are already being implemented.





## 1. Strategic partnerships

Native biodiversity occurs right across the Catchment and is managed – intentionally or unintentionally – by thousands of individuals and many organisations. The GB CMA will foster commitment to native biodiversity with key partners. Key actions include ensuring that decision-making forums involve native biodiversity expertise and have ready access to native biodiversity information; fostering relationships with philanthropists, business and Federal and State government investors; and developing and implementing projects with the community, including volunteers and government agencies.

This work will provide more opportunities for the community to become involved in native biodiversity management. People will be retained in native biodiversity management by having positive experiences in decision-making forums and in works achieved.

### Rationale

- Advance the profile of native biodiversity as a critical, interesting and rewarding issue to be involved with.
- Attract and develop contributors to native biodiversity management.
- Protect, develop and recognise the volunteer base.

### Strategic Priorities and Actions

#### Strategic priority 1.1: Involve agency and community stakeholders in key decision-making forums.

1. Achieve adequate stakeholder input into native biodiversity issues through a Native Biodiversity Integration Group.<sup>6</sup>
2. Achieve appropriate native biodiversity representation in Catchment processes such as
  - Implementation Committees
  - River Health and Water Quality Committee
  - various working groups
  - Dryland Support Team
  - Shepparton Irrigation Region Technical Support Group (SIRTEC).

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<sup>6</sup> This group has evolved from the GB Biodiversity Committee and is expected to meet three times per year or as needed. It has representatives from Department of Sustainability and Environment, Department of Primary Industries, Trust for Nature, GB CMA (biodiversity and waterways), local government, Parks Victoria and Landcare.





**Strategic priority 1.2: Integrate Catchment Community’s priorities in all partner programs.**

3. Analyse partners’ responsibilities and identify actions that would improve integration of native biodiversity needs.
4. Support partners in promoting the marketing biodiversity outcomes of their programs.
5. Provide native biodiversity input into GB CMA’s *municipal matrix for action* documents.
6. Provide input into Municipal Strategic Statement reviews.
7. Encourage development and implementation of municipal roadside management plans.

**Strategic priority 1.3: Include private industry sponsorship in natural resource management.**

8. Assess opportunities for private industry, philanthropic trusts and other organisations to invest in native biodiversity conservation.

**Strategic priority 1.4: Develop targeted awareness campaigns of natural resource management issues.**

9. Develop a Communication Action Plan for native biodiversity, which will emphasise building needs of native biodiversity into existing catchment communication processes.

**Strategic priority 1.5: Specify responsibilities of all organisations, including Australian and State governments and organisations funded through GB CMA programs.**

10. Clearly show native biodiversity responsibilities of all organisations receiving funds through the GB CMA in service level agreements.
11. Conduct an audit of the capacity of all organisations that have native biodiversity responsibilities to deliver on those responsibilities.



## 2. Rigorous priorities

We need the best available environmental, economic and sociological information to determine priorities.

The GB CMA will continue working with partners to refine priorities for native biodiversity and ensure that these are an important part of integrated decision-making. Our aim is to maximise the community return on investment. Actions include updating priority maps and priority documents and ensuring GB CMA and partner decision-making processes can accommodate native biodiversity priorities.

### Rationale

- Maximise overall community return on investment using best available environmental, economic and sociological information.
- Provide native biodiversity information in a form that is easily accommodated in integrated decision making.

### Strategic Priorities and Actions

#### Strategic priority 2.1: Develop Catchment-scale priority maps, Catchment-scale targets, and a list of opportunities.

12. Refine priority maps and prioritisation processes such as native pasture mapping and vegetation condition mapping and as per actions listed in *Goulburn Broken Native Vegetation Management Strategy (2000)* and *Wetlands Strategy (in prep.)*.
13. Continue developing landscape context/preference tools developed by Department of Sustainability and Environment to update Catchment maps.

#### Strategic priority 2.2: Tailor actions derived from RCS so they can be readily included in community organisation and government agency plans.

14. Expand coverage of Biodiversity Action Planning information so that it is available for decision-making by a range of stakeholders across the Catchment, focusing on high priority zones first.
15. Include Biodiversity Action Planning priorities and actions into GB CMA and partner programs.
16. Include native biodiversity needs as water allocations and environmental flows are determined.



**Strategic priority 2.3: Integrate priorities from all issues across all GB CMA programs.**

17. Analyse all GB CMA strategic and business planning documents and identify actions that would improve integration of native biodiversity needs.
18. Work with Department of Primary Industries staff managing pest plants and animals to integrate native biodiversity priorities, especially as they relate to environmental weeds.

**Strategic priority 2.4: Check feasibility of proposed actions through involvement of community in long and short-term priority setting processes.**

19. Annual priority setting process through community-based Implementation Committees and Biodiversity Integration Group to produce priorities document and assess expressions of interest for funding. (This includes technical advice being given to Implementation Committees).

**Strategic priority 2.5: Check feasibility of proposed actions through formalised risk and opportunity management process.**

20. Complete trial implementation of *Native Biodiversity Risk Mitigation Protocols* in Waterways and Dryland salinity Implementation Programs (2004) and apply to all other programs (2006).



### 3. Costs shared fairly

Costs of managing native biodiversity will be shared according to well-developed principles and arrangements used by the GB CMA, including principles of duty of care, beneficiary pays, and government contributions being proportional to public benefit.

Duty of care involves natural resource users and managers not damaging the natural resource base. They are responsible for making good any damage incurred as a result of their actions.

Beneficiary pays is used when it is not possible to determine who, if anyone, has done any damage. Existing and future users are expected to pay for actions that provide private benefits. Contributions from secondary beneficiaries will be negotiated with primary beneficiaries.

Government contributes primarily where public benefits are produced. Governments may contribute where there are private benefits if the cumulative uptake of actions provides significant public benefit and government support is needed to achieve this uptake.

The GB CMA has identified four groups of beneficiaries: Federal, State and local governments (as regional community representatives) and landholders. The GB CMA considers that the most appropriate policy is for beneficiaries to share equally the 'public' component of the costs. Landholders will continue to make a significant contribution for most actions on their land.

#### Rationale

- Support landholders who provide public benefits (in terms of native biodiversity) that are beyond their duty of care.

#### Strategic Priorities and Actions

##### Strategic priority 3.1: Develop cost-sharing arrangements by identifying benefits and beneficiaries, costs, and contributors to costs.

21. Periodically review cost-sharing arrangements for Waterways and Environmental Management Incentives (which include native biodiversity benefits).
22. Develop a better understanding of the value of native biodiversity assets.
23. Explore new tools and options for attributing cost sharing, including market-based instruments.
24. Encourage implementation of municipal rate rebates that include native biodiversity outcomes.
25. Improve understanding of expenses associated with conserving biodiversity. (The findings of the biodiversity and farm business project will be a starting point.)





## 4. Focus on the large scale

Broad-scale changes in land use and management are happening due to factors such as changing commodity prices, the development of water markets and the increased demand for 'lifestyle' properties. This presents us with an opportunity for large gains in habitat quality and quantity, which are needed to achieve our native biodiversity targets. Mechanisms are being developed to piggy-back on these broad-scale changes. Actions include protecting and enhancing native biodiversity as agriculture becomes less intensive in parts of the Catchment, and expanding direct seeding technology.

### Rationale

- Capitalise (in terms of native biodiversity) on broad-scale land use and management changes that are occurring.
- Develop a secure financial base for native biodiversity action by all stakeholders, especially landholders.

### Strategic Priorities and Actions

#### Strategic priority 4.1: Develop options for large tracts of land where existing land-use is no longer appropriate.

26. Identify and capture opportunities for protecting and enhancing native biodiversity, especially in the dryland, as land use continues to change from agricultural enterprises to less intensive uses over large areas.
27. Investigate options identified in *Landscape Change in the Goulburn Broken Catchment (2002)* that could have native biodiversity benefits, such as use of market mechanisms, (non-farm) private investment and a large range of possibilities to be explored with local government.
28. Encourage adoption of direct-seeding of appropriate sites in all programs.
29. Explore new tools for achieving large-scale changes such as encouraging natural regeneration as a cost-effective method of revegetation.
30. Explore new methods of revegetating for large-scale projects such as aerial seeding.



## 5. Cultural heritage

The Catchment has a wealth of indigenous and European heritage. There are 2,163 pre and post European-contact Aboriginal heritage sites and places registered.<sup>7</sup> There are several Aboriginal organisations that play a strong role in the community. Actions have been in place for over a decade to ensure that cultural heritage values are included in site-by-site decision-making. Opportunities for more pro-active and strategic decisions are being explored, including actions which help young Aboriginal peoples to connect with the land, water and native biodiversity.

### Rationale

- Include cultural heritage needs and involve Aboriginal people in decision-making.

### Strategic Priorities and Actions

**Strategic priority 5.1: Include cultural heritage values in risk and opportunity management processes.**

31. Capture opportunities for including cultural heritage in decision-making where native biodiversity outcomes are sought.

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<sup>7</sup> Goulburn Broken Regional Catchment Strategy 2003



## 6. Clear accountabilities

The governance and institutional frameworks for natural resource management have matured over the past decade, and it is broadly clear where accountabilities lie. However, issues between Australian and Victorian Governments and the CMAs about where decision-making responsibilities lie need to be resolved. In parallel with this, issues have arisen on the level of detail to be provided and when. This is impacting on relationships and overhead costs at all levels in the decision-making chain from the individual landholder through to the community group, the GB CMA and beyond.

Actions will define and refine responsibilities of various stakeholders in decision-making and reporting.

### Rationale

- Lower overhead costs of decision making by devolving to lowest appropriate level.
- Increase stakeholder satisfaction through clear understanding of who does what and when.

### Strategic Priorities and Actions

**Strategic priority 6.1: Establish a system of accountable targets and actions and aspirational targets and actions for each issue based on national and state guidelines.**

32. Provide native biodiversity input into the GB CMA's business planning and funding processes.
33. Establish management action targets relating to resource condition targets.

**Strategic priority 6.2: Produce progress reports that are regular, clear, meaningful, and link to regional, state and national targets and needs.**

34. Assist Implementation Committees to report quarterly on native biodiversity budgets and outputs to key stakeholders (Co-ordination Committees, GB CMA Board and Australian and State governments).
35. Report against long-term outcomes (resource condition targets).
36. Collate information on native biodiversity from stakeholders (River Health and Water Quality Committee, Implementation Committees, Department of Primary Industries, Goulburn-Murray Water, funding bodies and community) for reporting, including reporting on Catchment condition.

**Strategic priority 6.3: Identify duty of care for land and water managers and recommend changes where legislation is lagging community expectations.**

37. List duty of care for land and water managers with respect to native biodiversity.



## 7. Adaptive management systems

The key to successful adaptive management systems is for information from monitoring and evaluation to feedback clearly into decision-making processes. The GB CMA provides guidance for any natural resource management issue in its *Monitoring, Evaluation and Reporting Strategy for the Goulburn Broken Catchment (2004)*. It also highlights the importance of developing a common language and standardised information between different disciplines so that integrated decision-making can be improved.

The Catchment's communities have been adapting approaches to match changing knowledge and circumstances for two decades. Several natural resource management strategies and plans have been developed, implemented and revised. While this strategic plan includes the first comprehensive collated list of native biodiversity integration actions, native biodiversity has been included in many strategies and plans previously.

Actions listed in this strategic plan will be monitored, evaluated and reported back to the Board, with recommendations for changes and additions. One of the key actions is to document and test the assumptions that link the outputs (or 'works actions') with the outcomes (or 'resource condition changes').

The strategic plan will be reviewed in 2007 (prior to the review of the *Regional Catchment Strategy*) and will be renewed following release of the updated *Regional Catchment Strategy* (probably 2008).

### Rationale

- Decision-making processes at all levels are responsive to change.
- Data collection activities are linked to decision-making.

### Strategic Priorities and Actions

**Strategic priority 7.1: Include monitoring and evaluation as key components of all projects, including listing and analysis of assumptions.**

38. Co-ordinate, monitor, evaluate and report on the Catchment's funding specifically for native biodiversity outcomes from such programs as the National Action Plan and Natural Heritage Trust via Implementation Committees and Catchment-wide Programs as appropriate.
39. Develop consistent lists of outputs.
40. Continue to refine understanding of threats such as salinity, environmental weeds and climate change and their impacts on native biodiversity.
41. Refine the list of threats and the risk-rating methodology.
42. Develop consistent approach for projects across all disciplines for reporting on native biodiversity outputs, threats managed and outcomes achieved.





43. List and analyse assumed impacts of works actions (outputs) on native biodiversity outcomes.
44. Work with research groups to undertake research appropriate to GB CMA needs.
45. Adopt techniques developed to assess quality of vegetation (including grasses) and wetlands.

**Strategic priority 7.2: The Board monitors, evaluates and modifies projects related to policy direction that has Catchment-wide implications, or delegates this responsibility to Co-ordination Committees.**

46. Improve monitoring, evaluation and reporting processes for native biodiversity<sup>8</sup> especially at Catchment scale by developing a native biodiversity monitoring framework and associated action plan.
47. Analyse multi-stakeholder approach of Broken Boosey Conservation Management Network and apply successes to other situations.
48. Evaluate progress on actions listed in the *Goulburn Broken Native Vegetation Management Strategy (2000)* and in this strategic plan annually.
49. Review the *Goulburn Broken Native Vegetation Management Strategy (2000)* and this strategic plan every five years to inform the five yearly review of the Regional Catchment Strategy. This includes monitoring, evaluating and reporting on achievement of strategic objectives, strategic priorities and actions.
50. Renew this strategic plan every five years, following the review and release of the updated *Regional Catchment Strategy*.

**Strategic priority 7.3: Use existing systems such as the Code of Forest Practice as a basis for progressing a systems approach, and develop similar systems where these don't exist.**

51. Encourage native biodiversity to be included in Environmental Management Systems approaches that are being developed.

**Strategic priority 7.4: Individual site and property plans will reflect broader catchment needs.**

52. Provide native Biodiversity Action Planning information for inclusion in plans at the farm, local and sub-catchment levels.



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<sup>8</sup> This will foster greater links between high-level goals and on-ground activities and will be a key contributor to adaptive management. This includes benchmarking condition for a range of native biodiversity assets and more formal inclusion of native biodiversity with Catchment Condition reporting, in the context of Bioregions. Past and current works will be included in monitoring and evaluation processes. This also includes improving the surveying and monitoring of threatened species and ecological community distribution across the Catchment, such as White Box Grassy Woodland (Environment Protection and Biodiversity Conservation Act listed).

# List of Background Documents

- Alexandra, J. (2002) *Landscape Change in the Goulburn Broken Catchment Report*, prepared for Goulburn Broken Catchment Management Authority, Shepparton.
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