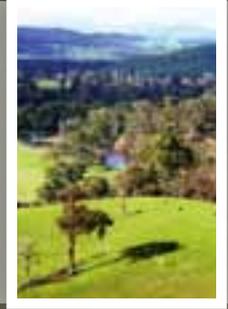
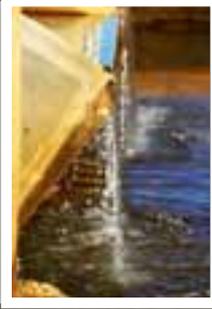




**GOULBURN  
BROKEN**  
CATCHMENT  
MANAGEMENT  
AUTHORITY



08-09

# ANNUAL REPORT 2008-09

GOULBURN BROKEN CATCHMENT MANAGEMENT AUTHORITY



## Ratings legend

Annual performance and long-term strategy implementation progress	Well below target (<50%)	Below target (50-79%)	On target (80-109%)	Exceeded/exceeding target (>110%)
Catchment condition	Very poor	Poor	Satisfactory	Good to excellent
Certainty of rating	Very low	Low	Medium	High
Trend	Declining	Static	Improving	Dramatically improving

For an explanation of how and why ratings are applied, see 'Understanding progress and ratings' at the start of 'The Environment - details of annual performance and long-term progress' section.

## Our Vision

A catchment recognised locally, nationally and internationally for quality agricultural produce where community values contribute to the benefits of abundant and well maintained environmental assets used for tourism and recreational activities.

The environmental footprint of irrigation and dryland farming will be significantly reduced, with farmers occupying less land and using less water whilst managing their resources more sustainably. New opportunities will arise for increasing ecosystem services provided by the land retired from agriculture and improved environmental flows.

The region's economy will be robust, with much of the agricultural produce processed within the region, generating employment and wealth creation opportunities for a regional community actively engaging in natural resource management programs.

## Our Mission

As a peak natural resource management organisation, the Goulburn Broken Catchment Management Authority will lead the cost effective protection and enhancement of the Catchment's land and water resources to improve social well being, environmental quality and the sustainable productive capacity of the Catchment.



**GOULBURN  
BROKEN**  
CATCHMENT  
MANAGEMENT  
AUTHORITY

### Front cover:

#### Main photo

- Tree fern shoots emerge in Murrindindi Scenic Reserve, May 2009. Photo: Mark Turner, GB CMA

#### Inset photos (left to right)

- Peregrine Falcon. Photo: Keith Ward, GB CMA
- Water over a flume gate regulator. Photo: Chelsea Nicholson, DPI
- Gary Hendy, landholder from Strath Creek. Photo: Bridget Clarke, Upper Goulburn Landcare Network
- View of the Goulburn River from Acheron cutting, Maroondah Highway. Photo: Mark Turner, GB CMA



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## About this report

This report provides information on the Goulburn Broken Catchment Management Authority's performance and finances, which can be assessed against the targets as per the Goulburn Broken 2008-09 to 2012-13 Corporate Plan. The Corporate Plan can be accessed online at [www.gbcma.vic.gov.au](http://www.gbcma.vic.gov.au).

The Goulburn Broken Catchment Management Authority (GB CMA) aims to provide information which is easily accessed, easily understood and relevant to readers. More detailed and scientific data can be accessed at [www.gbcma.vic.gov.au](http://www.gbcma.vic.gov.au).

A **separate summary** of this Annual Report is available at [www.gbcma.vic.gov.au](http://www.gbcma.vic.gov.au) or from GB CMA offices (see back cover).

This report is prepared in accordance with all relevant Victorian legislation. This includes the requirement under the Catchment and Land Protection Act (1994) for the GB CMA to submit "...a report on the condition and management of land and water resources in its region and the carrying out of its functions."

## What's new in this report

- All major issues drawn from long-term progress and annual performance scorecards are summarised in the Chair's review and Chief Executive Officer's reports.
- More explicit links between ratings of long-term progress (strategy implementation and Catchment condition) and evidence that justifies these ratings.
- Immediate operational and long-term strategic issues for each investment area are summarised in 'What's next?' sub-sections.

**Feedback** on this report is encouraged to help improve future annual reports. Please provide comments by 31 December 2009 to guarantee consideration. A feedback form to help direct comments is available at [www.gbcma.vic.gov.au](http://www.gbcma.vic.gov.au).

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# Goulburn Broken profile

## Goulburn Broken Catchment Management Authority (GB CMA)

The GB CMA is a statutory authority established as a body corporate by the Victorian Parliament in 1997 under the Catchment and Land Protection Act 1994 (CaLP Act). The GB CMA is accountable for its performance to the Minister for Environment and Climate Change, Gavin Jennings MLC, who was the responsible Minister during the reporting period.

In addition, the GB CMA is empowered as an Authority under the Water Act 1989. Under this Act, the GBCMA is accountable for waterway management in its region to The Honourable Tim Holding, Minister for Water.

The GB CMA develops and implements the Goulburn Broken Regional Catchment Strategy (RCS) by working with the community and government, research and funding organisations. The RCS sets out the framework for coordinating land, water and biodiversity management in the Catchment.

The GB CMA focuses on private land mostly managed for agriculture and on the interface of private and public land. The GB CMA therefore relies on shared contributions from government and private landholders to undertake works.

The GB CMA's role in water is to:

- be the caretaker of river health, including managing the environment's right to water (the environmental water reserve) and implementing works on waterways via its operational arm
- provide waterway, regional drainage and floodplain management services.

Water storage, delivery and drainage systems are managed by partner agency Goulburn-Murray Water and urban water and wastewater services are provided by partner agency Goulburn Valley Water.

See the 'Governance' section (page 51) for more details.

### GB CMA's values

**Respect of the community:** implementing natural resource management actions cannot occur without the support, guidance and active participation of the community.

**Quality:** the management actions and works actions promoted by the Regional Catchment Strategy will be delivered to a high standard dictated by community expectations.

**Learning and adapting:** we must strive for excellence in our monitoring and evaluation processes. They must be transparent and invite community scrutiny, and we must achieve best practice in reviewing and adjusting our efforts to accommodate new research findings and revised community expectations.

## Goulburn Broken Catchment

### Landscape

The Goulburn Broken Catchment boasts a wide diversity of landscapes, including 1,800 metre snow covered alps, moist montane and dry sclerophyll forests, granitic outcrops, gentle sloping plains, box woodlands and red gum floodplains, mixed farms and irrigated pastures and orchards.

### Rainfall

Average annual rainfall varies substantially, from 1,600 millimetres in the high country of the south east to 400 millimetres in the north west.

### Land use

The Catchment which is 2.4 million hectares north of the city of Melbourne to the River Murray, the border with New South Wales. About 1.4 million hectares is dryland agriculture, 270,000 hectares is intensive irrigated agriculture and 800,000 hectares is public land with extensive areas for conservation.

In addition, for ease of management, the Shepparton Irrigation Region includes 70,000 hectares of the adjacent North Central Catchment in its works program.

### Environmental problems

Major environmental problems include degraded river health, reduced extent and quality of native vegetation, reduced water quality and quantity, dryland and irrigated salinity, loss of biodiversity, and pest plant and pest animal invasion.

## Industry

Dairying is the largest agricultural industry, controlling about 70 per cent of water entitlements. Other major industries are irrigated horticulture and viticulture, dryland grazing and cropping, timber production, thoroughbred and standardbred horses, food processing, tourism and recreation.

The annual economic activity for the Goulburn Broken Catchment was estimated to be \$9.5 billion in 2005 with the bulk of this generated in the Shepparton Irrigation Region

## Population

The Catchment is home to over 200,000 people.

Many of the Catchment's 6,000 Indigenous Australians are from the traditional owner groups, the Taungurung and Yorta Yorta clans.

Migrants mainly from the British Isles took up landholdings in the 1800s.

Since World War Two, there has been an influx of migrants, especially in the north, from Italy, Greece, the Netherlands, Germany, New Zealand, Turkey, Iraq and many other countries.

The proximity to Melbourne has attracted tree changers and commuters to the south of the Catchment, resulting in a significant increase in lifestyle landholders who manage land within the Catchment.

The average age of landholders is rising because fewer family farms are handed down to younger generations and new residents are also older. New residents generally have higher incomes, higher levels of employment and are employed in urban-focused employment sectors.

There are about 900 dairy farmers in the Catchment and this number is declining by about eight per cent a year. Severely reduced milk prices since late 2008 are likely to result in a more rapid exit of farmers and this will be exacerbated if conditions remain dry. The social adjustment for dairy farmers and flow on effects for the rest of the Catchment are potentially massive.

## Goulburn Broken Catchment



The Shepparton Irrigation Region Implementation Committee also delivers the Regional Catchment Strategy in that part of the Shepparton Irrigation Region which is in the North Central Catchment

Illustration: Colin Suggett. col.sugg@bigpond.com

# Year at a glance

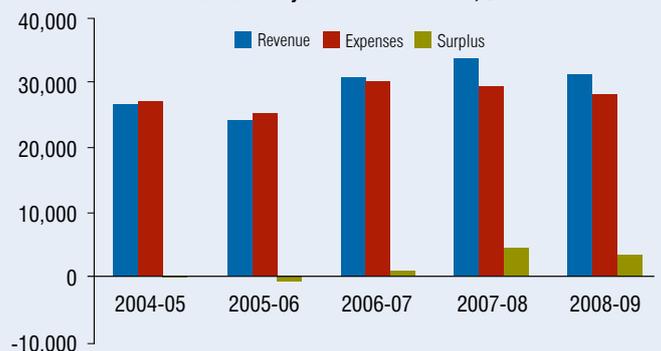
## Operational highlights

	Details page
<b>Drought and bushfire response and environmental water</b>	
<ul style="list-style-type: none"> <li>• Extreme dry conditions extended to 12 years, impacting on all areas of GB CMA's operations.</li> </ul>	10-13
<ul style="list-style-type: none"> <li>• An exceptionally difficult year in the Dryland:                             <ul style="list-style-type: none"> <li>- significant landholder and partner agency resources were devoted to suppressing and recovering from February's Black Saturday bushfires</li> <li>- levels of achievement were excellent under the circumstances, thanks largely to the Drought Employment Program.</li> </ul> </li> </ul>	22-28
<ul style="list-style-type: none"> <li>• Upper Goulburn Landcare Network is playing a huge role in recovering from Black Saturday bushfires, coordinating over 230 volunteers from 13 diverse organisations to control weeds, demolish fences and out buildings, construct fences, etc.</li> </ul>	22-29
<ul style="list-style-type: none"> <li>• Third year of Drought Employment Program again achieved excellent results, employing 81 drought-affected rural people during six months to erect 164 kilometres of fence, spray 8,000 hectares of weeds and plant 1,300 trees.</li> </ul>	15
<ul style="list-style-type: none"> <li>• Aquatic ecosystems were under significant stress because of very low stream flows:                             <ul style="list-style-type: none"> <li>- no single or immediate environmental disasters</li> <li>- given the low flows, the emphasis was on maintaining water quality as we attempt to manage drought conditions better</li> <li>- 840 megalitres of water was provided to wetlands.</li> </ul> </li> </ul>	105-107
<ul style="list-style-type: none"> <li>• Water recovery from irrigation farms accelerated, with 247 irrigation whole farm plans completed (an increase of 98 per cent on 2007-08) as Shepparton Irrigation Region Implementation Committee's Farm Program links with the Northern Victoria Irrigation Renewal Project to modernise irrigation infrastructure.</li> </ul>	30-36
<ul style="list-style-type: none"> <li>• Implementation programs are factoring in climate change adaptation strategies.</li> </ul>	118-119
<ul style="list-style-type: none"> <li>• Flood protection planning scheme amendments were prepared for Murrindindi and Mansfield shire councils, an integrated flood level atlas was finalised and uploaded onto the GB CMA website, and further funding for flood mitigation capital works at Nathalia and Euroa was approved.</li> </ul>	120-122
<ul style="list-style-type: none"> <li>• Rural Extension Program model continued to be successful, with two new community driven blackberry programs and one gorse program commenced.</li> </ul>	123-125
<b>Works and incentives</b>	
<ul style="list-style-type: none"> <li>• 743 incentives were provided for landholders to fence and revegetate waterways, to build stock containment areas, for whole farm plans, to improve irrigation and to install water reuse systems.</li> </ul>	throughout report
<ul style="list-style-type: none"> <li>• 3,623 hectares of remnant vegetation were fenced, the second successive year of achievement that was above the long-term average.</li> </ul>	7,115
<ul style="list-style-type: none"> <li>• 782 landholders received an average of \$16,200 as a Murray Darling Basin irrigation management grant for water use efficiency projects.</li> </ul>	31
<b>Funding</b>	
<ul style="list-style-type: none"> <li>• \$5 million was allocated over two years by the Australian Government and \$1.5 million was provided by the Victorian Government for environmental works following the Black Saturday bushfires.</li> </ul>	27,67
<ul style="list-style-type: none"> <li>• \$2.8 million was provided by the Victorian Government to fund the third year of the Drought Employment Program.</li> </ul>	15,67

Goulburn Broken investment share

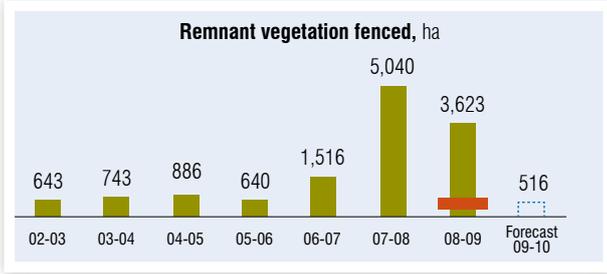


Financial summary 2004-05 to 2008-09, \$000

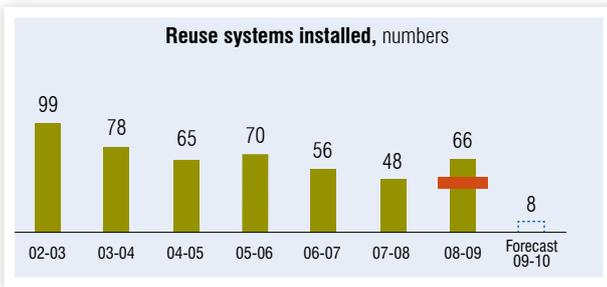
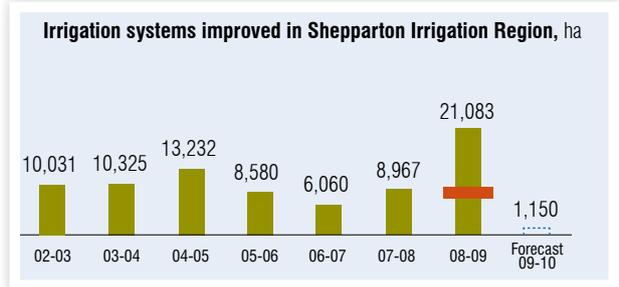
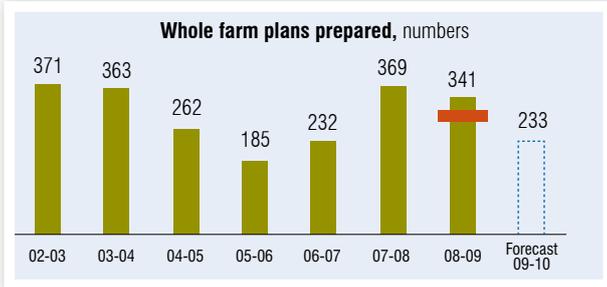


# Outputs achieved 2002-03 to 2008-09 and forecast 2009-10

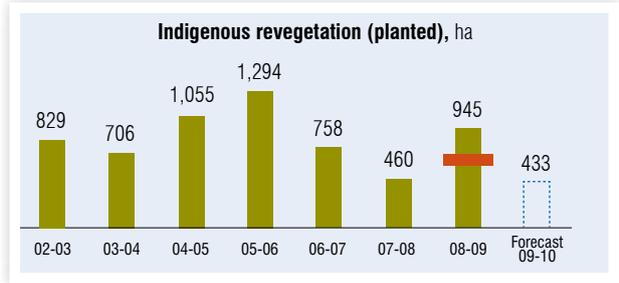
## Exceptional achievement due to Drought Employment Project (since 2006-07)



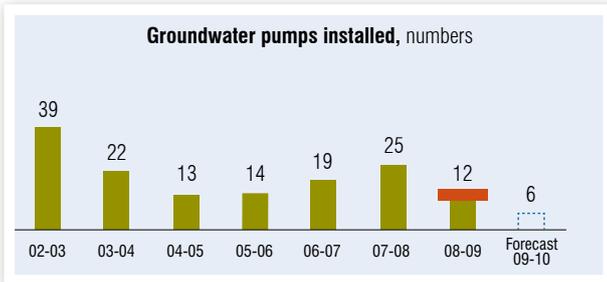
## Strong interest due to extended drought and Foodbowl Modernisation Project



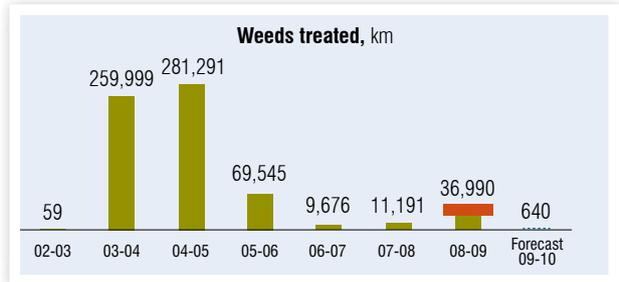
## Achievement from many programs



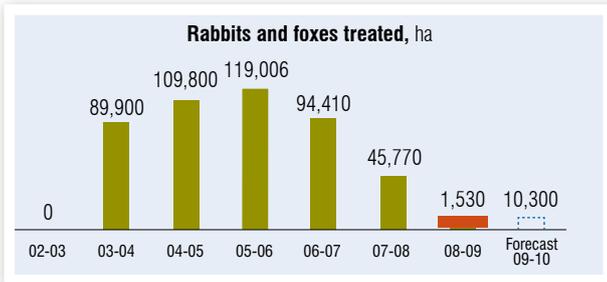
## On target



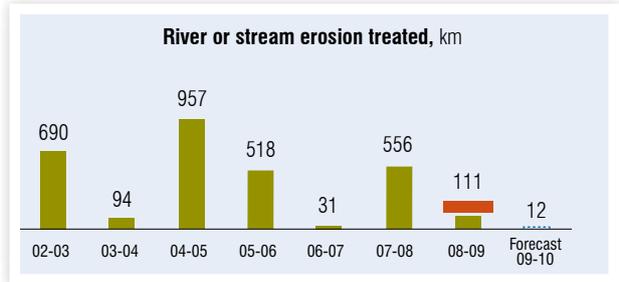
## On target



## Impacted by fires



## Impacted by redirection of effort to Drought Employment Program fencing



Output targets are generally forecast to be low in 2009-10 (as shown in the above graphs) because of reduced indicative funding from Australian and State Government programs. ■ Target for 2008-09

# Key events

## 2008

- July** Goulburn-Murray Water announces zero allocations for all systems in the Catchment
- Water shortage results in a qualification of (water) rights, which reduces the minimum flows in the Broken River and the lower Goulburn River
- GB CMA wins Banksia Environmental Foundation's Water Award for Vision for the Broken River Basin
- Victorian Environmental Assessment Council releases River Red Gum Forests Investigation Final Report
- August** Murray Darling Basin Authority commissioners tour Northern Victoria Irrigation Renewal Project
- September** Tenth anniversary celebration of International River Symposium; GB CMA is highlighted as inaugural National Riverprize winner
- Upper Goulburn and Mid Goulburn Broken Landcare Awards
- GB CMA hosts Fairley Leadership Program participants (GB CMA is a sponsor of the Program)
- October** Broken Boosey Conservation Management Network is a finalist in Australia's Regional Achievement and Community Awards
- Agricultural outlook changed dramatically since August due to low rainfall; many grain crops cut for fodder and water market stabilises at \$500-\$600 per megalitre
- Locusts emerge as a major threat to agriculture
- DSE releases Draft Northern (Victoria) Region Sustainable Water Strategy for public consultation
- Continuous monitoring of dissolved oxygen and temperature begins in a Broken Creek weir pool
- Victorian Catchment Management Council visits and is impressed by GB CMA's partnership model
- November** Victorian Government announces that it will again fund Drought Employment Program: \$2.8 million for 2008-09
- GB CMA hosts multi-agency workshop on resilience, with Dr Brian Walker and Dr Nick Abel from the Resilience Alliance
- High profile science and climate change communicator Rob Gell addresses staff at annual gathering
- Environmental watering (300 megalitres) of Gulf Creek in Barmah-Millewa Wetlands
- December** Broken Goulburn Implementation Committee meets for first time, servicing areas of former Mid Goulburn Broken and Upper Goulburn Implementation Committees
- One of the key risks associated with drought eliminated: minimum flows in the lower Goulburn River returns to normal following the lifting of the qualification of (water) rights
- Board endorses reviews of GB CMA's Strategic Plan for Integrating Native Biodiversity 2004 and Native Vegetation Management Strategy 2000 and endorses proposal to develop a single updated Goulburn Broken Catchment biodiversity strategy

## 2009

- January** Report on 2007-08 nutrient discharge is released: nutrient loads discharged from drains similar to record low of previous year; flows from drains a record low; nutrient loads exported from Goulburn Broken Catchment second lowest on record (after 2006-07) and well below targets
- Broken River stopped running as flow managers balance environmental and consumptive needs on a knife edge due to continued drought
- Substantial activity and collaboration with adjoining catchment management authorities to prepare strong joint bids for federal Caring for Our Country funding
- February** Black Saturday fires: Australia's worst natural disaster on record is a human and environmental tragedy, causing immense loss of life and property and burning 190,000 hectares (eight per cent) of Goulburn Broken Catchment, including 2,845 kilometres of streams; rebuilding and recovery will take years
- Climate change workshops equip landholders to address impacts of climate change
- Flood study on Lake Nillahcootie (commissioned by Rural City of Benalla as part of Lake Mokoan decommissioning) completed and well received
- Memorandum of Understanding (as part of North-South Pipeline) between Melbourne Water and GB CMA signed
- Board endorses Goulburn Broken Dryland Landscape Strategy
- Record low irrigation allocations: remain at zero per cent for Broken system and 29 per cent for Goulburn system
- March** Victorian Government response to Victorian Environmental Assessment Council's River Red Gum Forests Investigation Final Report
- Department of Sustainability and Environment gives GB CMA major roles in managing Barmah Millewa Wetlands Icon Site
- Shepparton Irrigation Region Implementation Committee Catchment partners' reporting day has a theme of linking Catchment programs to irrigation modernisation
- April** Bushfire recovery funds announced by Australian Government (\$5 million over two years) and Victorian Government (\$1.5 million); implementation will involve Landcare and local government
- GB CMA Chair Dr Huw Davies, CEO Bill O'Kane and Director Nick Roberts meet with The Hon Peter Garrett AM MP, Minister for the Environment, Heritage and Arts to discuss Landcare support
- Winton Wetlands Committee of Management announced and Water For Rivers seeks to buy back Broken River water from irrigators
- May** Reedy Swamp near Shepparton receives another environmental watering, making it 500 megalitres since August 2008
- June** GB CMA receives a Silver Award for its 2007-08 Annual Report from Australasian Reporting Awards, the highest level awarded to a natural resource management organisation
- Shepparton Irrigation Region Implementation Committee holds a combined research reporting day with Department of Primary Industries and Goulburn-Murray Water



Dr Huw Davies

## Chair's review

### Mother Nature's stark climate message

The Goulburn Broken Catchment is at risk of serious degradation following devastating bushfires and continuation of the longest dry period on record.

River and stream flows are less than the worst case scenarios predicted as recently as 2004, placing aquatic environments and the species they support under severe pressure.

Collectively, farmers are a large custodian of the Catchment's natural resources and the long dry is accelerating changes in farming demographics, structure and enterprises. For example, about eight per cent of the Catchment's 900 dairy farmers are leaving the industry each year and we risk a more rapid exit following severely reduced milk prices since late 2008.

After a promising start to 2008, late winter and spring rains failed to eventuate. This contributed to Australia's largest recorded natural disaster, the Black Saturday bushfires of February 2009. Most of this human and environmental tragedy occurred within the upper part of the Goulburn Broken Catchment.

The bushfires burnt 190,000 hectares or eight per cent of the Catchment, including riparian vegetation along 2,845 kilometres of streams. The fire-affected area contains rare ecological communities and 40 species of threatened flora and fauna.

Mother Nature could not have given us a starker message, reinforcing the Goulburn Broken Catchment Management Authority's shift in emphasis to helping the Catchment and its people adapt to a drying climate.

The Northern Region Sustainable Water Strategy, the Northern Victoria Irrigation Renewal Project and the decommissioning of Lake Mokoan are resulting in significant water savings that will be shared between urban consumption, the environment and irrigators.

The resilience of terrestrial biodiversity in the face of climate change will be strengthened by large-scale projects such as BushTender in box-ironbark woodlands across much of the Catchment and a joint approach with adjoining North East and Murray (New South Wales) Catchment Management Authorities focussed on a nationally threatened grassy woodland community.

### Funding environment and organisational and regional capacity

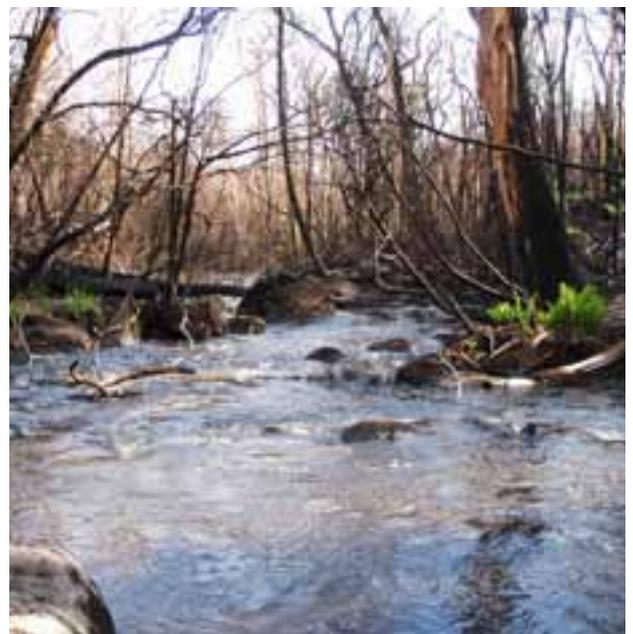
We have begun implementing a \$5.8 million natural resource bushfire recovery program and we are discussing further opportunities with the Victorian Bushfire Rehabilitation and Recovery Authority.

The Victorian and Australian Governments each committed \$1 billion to the Northern Victoria Irrigation Renewal Project and implementation began in 2007-08. The project will result in 450 gigalitres of water savings to be shared between Melbourne, the environment and irrigators, and will have complementary salinity and water quality benefits.

The regional community contributed about \$62 million (cash and in-kind) to natural resource management in the Catchment in 2008-09. This is almost double that which governments contributed (\$33 million).

However, government funding for natural resource management is generally under pressure. It is increasingly challenging to achieve the levels and types of funding needed to maintain the capacity and commitment of community groups, such as Landcare. The Board is actively seeking solutions via representations to the Victorian and Australian governments.

Ongoing decline in government funding for managing irrigation salinity is being partly offset by working closely with the Northern Victoria Irrigation Renewal Project.



Murrindindi River after Black Saturday bushfires. Photo: Mark Turner, GB CMA

## State and national strategic directions

The Department of Sustainability and Environment has deferred the update of our 2003 Regional Catchment Strategy to 2010. This is expected to allow major emerging State directions to be factored into the update, including those from:

- the Northern Region Sustainable Water Strategy (expected to be finalised late in 2009)
- changes to the status and management of large areas of public land that results from Victorian Environmental Assessment Council's River Red Gum Forests Investigation (expected in late 2009)
- the Victorian Climate Change Green Paper (released in June 2009)
- the Land and Biodiversity at a time of Climate Change White Paper (expected late in 2009)
- the Royal Commission into Victoria's Bushfires (interim report is expected in August 2009 and a final report is expected in July 2010)
- a renewed State Biodiversity Strategy (a draft is expected late in 2009).

Our updated Regional Catchment Strategy will also be influenced by national directions, including those from:

- the Australian Government's Water for Our Future program
- evolving climate change strategies
- the Murray-Darling Basin Authority, which will develop a proposed Basin Plan by mid 2010 and the first Basin Plan by 2011.

## Rejuvenating the Dryland

The Goulburn Broken Dryland covers 1,840,000 hectares, or 76 per cent, of the Catchment and faces very important and challenging natural resource management problems.

We have rejuvenated our approach through strategy development and reorganisation of regional stakeholder engagement.

The Dryland Landscape Strategy, finalised with stakeholder participation in late 2008, promotes a shift to an integrated approach at all levels, from planning to service delivery. It emphasises an increased scale of projects, a growth and diversity of investment, links to environmentally sustainable production systems, more targeted participation, and adaptation to climate change.

Implementation committees ensure that the community participates in decision making as the Regional Catchment Strategy is implemented.

Coinciding with finalising the Dryland Landscape Strategy, the Mid Goulburn Broken and Upper Goulburn Implementation Committees were wound up after more than ten years, and the Broken Goulburn Implementation Committee was formed to replace them. All members of the new Broken Goulburn Implementation Committee are linked to natural resource management groups and are able to provide pertinent community feedback. The new structure also provides a whole of Dryland perspective and administrative efficiencies.

The rejuvenated approach has already brought partners closer together, helping to identify opportunities that are better integrated and more widely impacting. Examples of early benefits of the approach include large-scale river restoration projects and tighter coordination of partner agencies in delivering services.

## Strategic challenges for 2009-10

Our interdependent social and ecological systems are changing rapidly. We need to develop a more complete and common understanding of these changes so that we can strengthen resilience at desired and achievable states of the systems.

We have conducted extensive evaluations of much of our business in recent years, including biodiversity, dryland salinity, irrigation salinity and community engagement, and this establishes a solid base for improvement and updating our Regional Catchment Strategy in 2010.

A significant forecast decline in Goulburn Broken Catchment Management Authority revenue in 2009-10 will need to be managed.

## Thank you

I would like to thank our Implementation Committees, partners (landholders, Landcare and other community groups, Department of Primary Industries, Goulburn-Murray Water, Goulburn Valley Water, Department of Sustainability and Environment and local government) and employees for their contribution in what has been an extremely tough year, especially for those personally affected by bushfires in the devastated south of the Catchment.

Our staff, partner agencies and the wider community responded magnificently to the immediate human challenges of the tragic bushfires.

I look forward to tackling the enormous challenges ahead, acknowledging the outgoing directors for the past three years Neville Barwick, Yvonne Davies, Peter Fitzgerald, Anne McCamish and Nick Roberts.

**Dr Huw Davies**  
Chair



Reedy Swamp, Shepparton. Photo: Keith Ward, GB CMA



WJ O'Kane

# Chief Executive Officer's report

Despite the challenges of the Goulburn Broken Catchment's worst drought on record and the most devastating fires in Australia's recorded history, the Goulburn Broken Catchment Management Authority's works program exceeded targets.

## Bushfire response

The Goulburn Broken Catchment Management Authority does not see days like Black Saturday as a once in a lifetime event, rather a portent of things to come. Adapting to changing weather conditions is a major challenge for our Catchment.

The fires horrifically illustrated the message that we have promoted in recent years: we must not separate the needs of the environment from the needs of people when making decisions.

I would like to acknowledge the important role our staff and the Drought Employment Program crews played during the fires. These people contributed almost 2,500 hours supporting frontline fire fighters.

The Goulburn Broken Catchment Management Authority's first response in the fire recovery phase was to provide assistance for stock containment areas. This support was expanded to providing fencing materials for waterways and wetlands, weed control and other practical assistance when Caring for Our Country funding (\$5 million over two years) was made available.

The Catchment was lucky that the autumn break was both dry and gentle and the debilitating water quality events experienced in the Ovens Catchment after the 2006 fires were not repeated in our Catchment.

Landcare's response to the fires was both strategic and effective. Landcare groups are uniquely positioned to respond to disasters of this magnitude and their leadership and community support role should not be underestimated.

## Drought

Water rights in the Catchment were again qualified because of water shortage. Minimum flows in the lower Goulburn River were reduced from 400 to 250 megalitres per day for 152 days beginning 1 July 2008, and from 350 to 300 megalitres per day for 30 days from 1 November 2008. Qualification of rights was lifted on 1 December 2008. Although reduced flows are not desirable, monitoring did not pick up any significant deterioration in ecological function. Ten gigalitres of the Goulburn water quality reserve was again sold to Coliban Water at market price and we hope to reinvest the proceeds of this sale back into the environment in 2009-10.

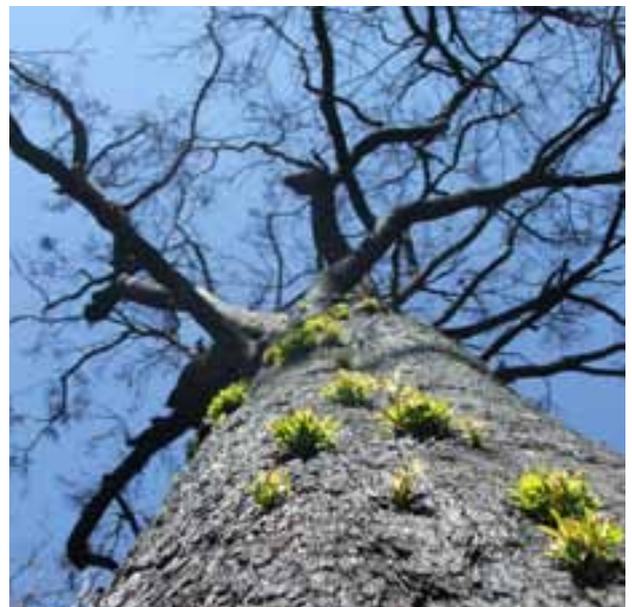
The Goulburn Broken Catchment Management Authority was able to maintain azolla populations and dissolved oxygen levels in the lower

Broken Creek at reasonable levels during some very difficult weather by using 2,817 megalitres of the water quality reserve and clever manipulation of inter-valley transfers of water. If it remains dry, the opportunities for similar releases next financial year will be greatly reduced, putting this critical Murray Cod breeding habitat at risk.

The Goulburn Broken Catchment Management Authority was active in providing drought refuge in the Catchment, with 840 megalitres of water delivered to Black Swamp, Reedy Swamp and Gulf Creek in the Barmah Wetland. This was remarkably successful in stimulating waterbird breeding, the growth and germination of aquatic plants (including the nationally threatened Ridged Water-milfoil) and maintaining threatened fish populations.

The Drought Employment Program was again a great success with 81 drought-affected farmers employed for an average of 20 weeks. The Drought Employment Program was one of the main reasons why we exceeded our targets. The Goulburn Broken Catchment Management Authority is working with Landcare in the upper Catchment to develop a fire employment program to assist with fire recovery but has not been able to attract the necessary funding to date.

Revenue from the 2007-08 sale of environmental water was allocated to rehabilitate Winton Wetlands (\$5 million) and to environmental water reserve activities in the Goulburn. A further \$400,000 was received from the 2007-08 sale and \$847,000 will be received in 2009-10 for the 2008-09 sale of environmental water.



Green shoots after Black Saturday bushfires. Photo: Tony Kubeil, GB CMA

## Resilience, water policy and evaluation

The drought is really testing the social, economic and ecological resilience of the Catchment. I would like to acknowledge Dr Brian Walker and Dr Nick Abel of the Resilience Alliance for helping us to operationalise resilience thinking at the catchment scale. The Authority continues to be excited by the possibilities of resilience thinking.

I was pleased to play a role in developing Victoria's Northern Region Sustainable Water Strategy, which has resulted in two key reforms: carry over and a modified allocation policy. These reforms are crucial for the Catchment as they allow water users to manage their own risk across years.

The steady improvement of strategic level evaluation is evident in our annual reports. Our Annual Reports were recognised with bronze and silver awards in the last two year's Australasian Reporting Awards. These awards are testament to a committed and thoughtful team within the Goulburn Broken Catchment Management Authority.

Our core focus is to deliver outputs and outcomes and my intent in this Chief Executive Officer's report is to communicate what we achieved. The annual and long-term scorecards and graphs on pages 14 to 17 expand on the achievements I have referred to.

## Business improvement and the future

Management's emphasis over several years on efficiency has placed us in good stead heading into an increasingly uncertain funding environment. We have the lowest percentage of overheads to onground works of all Victorian catchment management authorities.

This quest for increased efficiency continued this year with an update of our business system and further automation of our business processes. Our small but dedicated IT Team, supported by Goulburn Valley Water, continues to provide us with the opportunity to better utilise emerging technologies.

The Dryland Support Team was created to complement the Broken Goulburn Implementation Committee. This multi-skilled team lead by Sharon Lewis has done an excellent job developing and implementing the Dryland Landscape Strategy as well as supporting the Implementation Committee.

The alignment of Shepparton Irrigation Region Implementation Committee's Farm Program with Northern Victoria Irrigation Renewal Project's connection program has seen a huge increase in demand for whole farm plans. The Goulburn Broken Catchment Management Authority will play a bigger role in farm water recovery programs.

No days were lost because of workplace injuries. Occupational health and safety remains a key driver.

The statewide staff opinion survey reflected very well on our management and staff. The Goulburn Broken Catchment Management Authority was above the State average on all elements of the survey and was in the upper echelon for most. Staff have been placed under enormous pressure from internal and external forces and have risen to the challenge every time.

The Authority's revenue decreased seven per cent in 2008-09. A much greater cut was offset by drought and fire recovery funding. The outlook for 2009-10 is likely to be significantly down. Of particular concern to management is the increase in competitive and disaster funding as a percentage of our total budget.

However, funding opportunities are emerging. The recently announced \$300 million of Australian Government funding for farm water use efficiency, the rehabilitation of Winton Swamp, the sale of environmental water and the Melbourne Water investment in water quality upstream of Killingworth are all potential fund sources for 2009-10.

## Acknowledgements

This is my twelfth and final Annual Report. In this time the Goulburn Broken Catchment Management Authority has grown from an organisation with annual revenue of \$5.3 million and 23 staff, to \$31.2 million and 44 staff. Although the last three years were the most difficult we have experienced, we were still able to meet or exceed most of our targets in each of the three years and staff morale was remarkably high. I am very proud of what we have achieved over the last 12 years.

To the staff of the Goulburn Broken Catchment Management Authority, thank you for your loyalty, integrity and energy.

To the Goulburn Broken Catchment Management Authority's partners: Department of Primary Industries, Goulburn-Murray Water, Department of Sustainability and Environment, Goulburn Valley Water, local government and Landcare, thank you for your commitment to our shared vision for the Goulburn Broken Catchment.

Finally, I would like to pay tribute to our farmers who continue to demonstrate innovation and resilience. I am convinced our farmers can change faster than the climate, given half a chance.

I have worked in natural resource management in the Goulburn Broken Catchment Basin since 1986. During this period, I have had the privilege of working with outstanding community leaders.

The role played by the Foodbowl Group in attracting over \$2 billion of investment is another fine example of community leadership. These people understood that if you change nothing, nothing will change. I would like to acknowledge these community leaders and thank them for making my life more interesting.

### WJ O'Kane

Chief Executive Officer

# Annual scorecards

Summary scorecards below and on the following page are explained in more detail in individual investment area sections of this report.

Performance against output targets as set out in the Corporate Plan were generally achieved in 2008-09. There were some over and under achievements.

Under achievements were due to continuing dry conditions and diversion of resources to fire recovery activities.

Over achievements were due to the boost from the Drought Employment Program and additional work in the Shepparton Irrigation Region to modernise the irrigation system.

See page 16 for a description of how outputs targets are framed and what investment areas are.

## Investment and gross output performances in investment areas

Investment area <sup>i</sup>	Investment <sup>i</sup> (including partnership funds)				2008-09 performance <sup>iii</sup> Outputs	Details page
	2006-07 \$000	2007-08 \$000	2008-09 \$000	Forecast <sup>ii</sup> 2009-10		
<b>The Environment</b>						
1 Salinity: watertables and River Murray salinity						
1a Shepparton Irrigation Region	14,070	12,060	11,720	6,000	On target	96
1b Dryland	3,040	2,960	1,800	1,960	On target	100
2 River health	9,579	13,020	13,630 <sup>iv</sup>	7,280		
2a Environmental flows and water supply					On target	105
2b Riparian and instream habitat and channel form					On target	108
2c Water quality (nutrients) in rivers and streams					On target	111
3 Biodiversity	2,065	2,050	1,390	2,190	Exceeded target	114
4 Climate change	25	25	50	50	On target	118
5 Flood protection	379	400	440	340	On target	120
6 Pest plants and pest animals	1,100	1,140	1,100	0 <sup>v</sup>	Below target	123
<b>The Business</b>						
A Governance	1,709	1,700	1,519	1,520	On target	51
B Collaborations and communities <sup>vi</sup>	1,490	3,660	3,480	1,140	On target	18
C Planning and responding	Part of A				On target	37
D Human resources <sup>vii</sup>	-	4,200	4,346	4,520	On target	44
E Environmental footprint	n.a.	6	15	6	On target	42

<sup>i</sup> investment figures do not include interest before 2008-09 and includes funding to other partners

<sup>ii</sup> based on confirmed advice at August 2009

<sup>iii</sup> performance ratings are based on outputs achieved as listed under investment area details in this annual report

<sup>iv</sup> includes \$2.7 million for fire recovery for 2009-10 activities

<sup>v</sup> funding to DPI Pest Plants and Animal program not included in regional investment process for 2009-10

<sup>vi</sup> estimate does not include Shepparton Irrigation Region costs prior to 2007-08

<sup>vii</sup> includes all investment areas' human resources: total GB CMA payroll including staff, Board and committee members; \$4.1 million for GB CMA employees only; \$295,000 training expenditure, human resource and occupational health and safety support and activities; not recorded this way in 2006-07; 2009-10 forecast based on an estimated 4 per cent increase on 2008-09

## Aggregate output performance across all investment areas<sup>i</sup>

Output	Achieved	Target	Performance	
			% achieved	Rating
Remnant vegetation fenced, hectares	3,623	479	756	Exceeded target
Long-term conservation agreements, hectares	363	845	43	Well below target
Indigenous revegetation planted, hectares	945	640	148	Exceeded target
Irrigation drains built, kilometres	10.8	5	216	Exceeded target
Reuse systems installed, numbers	66	44	151	Exceeded target
Irrigation systems improved in SIR, hectares	21,083	7,500	281	Exceeded target
Groundwater pumps installed, numbers	12	13	92	On target
Weeds treated, hectares	36,990	34,200	108	On target
Rabbits and foxes treated, hectares	1,530	6,550	23	Well below target
River or stream erosion controlled, kilometres	111	182	61	Below target
Fishway structures installed and barriers modified, numbers	1	0	-	Exceeded target
Aquatic habitat works <sup>ii</sup> , numbers	59	11	536	Exceeded target
Threatened species projects, numbers	29	33	88	On target
Whole farm plans prepared, numbers	341	291	117	Exceeded target

i from funds received through Corporate Plan 2008-09

ii Significantly Enhanced Aquatic Refugia

## Third year of Drought Employment Program

by Carl Walters, Richard Warburton, Marli Kelly and Wayne Tennant

The region's drought-affected waterways and regional communities benefited from the injection of \$2.8 million from the State Government's Drought Employment Relief Package.

The Goulburn Broken Catchment Management Authority received the funds to employ drought-affected rural people to undertake works between November 2008 and June 2009.

High priority environmental projects were accelerated and 81 people were employed during the six months.

This built on the tremendous success of drought employment programs undertaken in 2007 and 2008 when similar numbers of people were employed.

Participants were selected from farmers, farm workers and farm service providers whose regular income was adversely affected by the drought.

They worked in small teams to apply their highly developed skills to tasks such as fencing 164 kilometres, spraying 8,000 hectares of weeds and planting 1,300 trees.

Formal training was offered to participants in occupational health and safety, chemicals use, first aid, and chainsaw operations. Participants were employed through workforce services company, Skilled.

Leon Doyle from Violet Town said, "I went to Myrtleford and Alexandra after Black Saturday and helped with fencing. I'm a fencing contractor so had seven guys that I taught in my team to fence. I enjoyed meeting new



Nathalia farmer, Laurie Hicks, plants a tree. Photo: Gary Deayton, Moira Shire

people and working in an area that had obviously had such a harrowing time."

"It was great to see the forest and the better state it was in after completion of the weed eradication program. It gave us all a sense of pride in our work," said Spud Florence from Tongala.

GB CMA's Richard Warburton said, "There's no doubt about it, rural and farming communities have provided high levels of skill and commitment and in some circumstances have made what have been tough assignments look easy."

## Notes about outputs

Outputs are achieved through integrated efforts of individuals and organisations across many different investment areas. Outputs shown in the table and the graphs on the previous two pages are from a more detailed set. For detailed outputs for each implementation committee area, see the 'Outputs – detailed list of achievements' table on page 126. Detailed outputs relating to each investment area are listed in sections devoted to each investment area throughout this report.

Outputs shown in this report are useful for decision making by government investors, GB CMA senior managers and the GB CMA Board. Monitoring finer scale outputs and inputs are more appropriate for individual project and subproject decision making and are not shown in this report.

The GB CMA negotiates investment amounts and output targets to be delivered each year with Victorian and Australian Governments. Outputs are often common to several investment areas and targets and achievements are aggregated from projects within those areas.

Annual targets and achievements data in this report do not include outputs delivered beyond GB CMA's direct control, especially by those landholders who voluntarily pay for and undertake onground works. However, data on these external outputs is also critical to inform long-term decisions and is captured by other means.

## Notes about investment areas and integration

The GB CMA focuses on 14 highly connected investment areas under 'The Environment' and 'The Business'. These investment areas relate closely to the different investment areas within government.

Service delivery is integrated across these investment areas to varying degrees and occurs at all levels. Integration is obvious at the scale of whole farm plans and is evident in the information in the 'Collaborations and communities' section, especially in the case studies. Integration is not so obvious at the strategic level because strategic approaches are usually required to focus on discrete investment areas framed by government investors. The Shepparton Irrigation Region Catchment Implementation Strategy and the Dryland Landscape Strategy provide a cross investment area perspective and help achieve strategic integration. Planning for large projects is increasingly integrated across the investment areas. Integration can add cost and complexity. The benefits of integration need to outweigh these costs.

## Notes about analytical framework

### Three levels of analysis

Decision makers need to know annually whether funded actions were achieved.

It is also critical for decision makers to compare progress in implementing actions listed in strategies with the change in condition of the issue of interest. This comparison can alert us to under or over achievement and force us to consider questions such as:

- Was the original strategy appropriate?
- Have circumstances (such as new knowledge or different weather patterns) changed sufficiently to warrant a revised strategy?
- Does the investment mix need to be modified?

Data is organised to inform three critical and connected levels of analysis, as shown in the table below.

### Justification and methodology of ratings

Details within sections of this report on each investment area justify the ratings in the tables on the following page. Further details, including graphs and reports, are on the GB CMA's website and in relevant sub-strategies of the RCS.

Further discussion on the methodology behind ratings of performance and long-term progress is described on pages 94 and 95.

### Evidence for three levels of analysis

Analysis level	Analysis terminology	Typical question used to assist analysis	Examples of evidence to inform analysis
1	Annual performance	1 How did we go this year against what we said we would do?	Outputs achieved and funds spent against targets set in the Corporate Plan
2	Long-term strategy implementation progress	2 How have we gone against what we said we would do when we wrote the (various) strategies?	Outputs and assumptions of their impact listed in strategies
3	Catchment condition change	3 What shape is the thing we are managing in now?	Resource condition; trends; tipping points; indicators of resilience, adaptation and transformation responses

# Long-term scorecard

Ratings in the following table are explained in the details sections of each investment area (as referenced in the right hand column).

## Long-term strategy implementation progress and Catchment condition

Investment area	Long-term strategy implementation progress <sup>i</sup>			Catchment condition <sup>i</sup>			Details page
	Strategy life <sup>ii</sup>	Progress	Gov't funding trend	1990 <sup>iii</sup>	2009	Trend	
<b>The Environment</b>							
1 Salinity: watertables and River Murray salinity							
1a Shepparton Irrigation Region salinity	1990-2020	On target	↓	Poor	Good	↑↑	96
1b Dryland salinity	1990-2050	Below target	↓	Poor	Satisfactory	↑	100
2 River health							
2a Environmental flows and water supply	2004-	On target	↑	Poor	Very poor	↓	105
2b Riparian and instream habitat and channel form	2005-2015	Below target	↑	Poor	Satisfactory <sup>iv</sup>	↑	108
2c Water quality (nutrients) in rivers and streams	1996-2016	Exceeding target	●	Very poor	Satisfactory	↑	111
3 Biodiversity	2000-2030 2004-2007	On target	↑	Poor	Poor	●	114
4 Climate change <sup>v</sup>	2007-2010	On target	●	Satisfactory	Poor	↓	118
5 Flood protection	2002-2012	Exceeding target	●	Very poor	Poor	↑	120
6 Pest plants and pest animals	2001-	Below target	●	Poor	Poor	●	123
<b>The Business</b>							
A Governance	Rolling 5 year Corporate Plan	On target	●	Poor	Satisfactory	↑	51
B Collaborations and communities	2005-	On target	↓	Poor	Poor	●	18
C Planning and responding	Rolling 5 year Corporate Plan	On target	↓	Poor	Satisfactory	↑	37
D Human resources	various	On target	●	Satisfactory	Satisfactory	●	44
E Environmental footprint	2007-10	On target	●	Very poor	Poor	↑	42

- i Strategy implementation progress considers evidence of outputs completed against targets, including onground works and tasks to improve management systems. Catchment condition ratings consider evidence of environmental or business condition, social and economic health and management systems. Catchment condition encompasses more than just biophysical condition.
- ii Strategies vary in formality and comprehensiveness. Refer to details sections for lists of strategies. Strategy life includes time taken for capacity building tasks to be completed in medium term (usually three-five years) and for 'The Environment' investment areas, time taken for changes to be achieved over the long-term (usually 10-50 years).
- iii Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990. 1990 is a useful reference year because it was about this time that integrated catchment management began and sufficient time has elapsed since for meaningful questions about long-term change to be asked.
- iv Almost 50 per cent of riparian vegetation impacted by 2006 and 2009 fires (impact is being assessed).
- v Climate change condition rating considers impact of climate change on Goulburn Broken Catchment's assets

# Collaborations and communities

Compiled by Rod McLennan, Sharon Lewis, Ken Sampson, Bill O’Kane, Tony Kubeil, Neville Atkinson, Wayne Tennant, Mark Cotter, Rick Felton, Terry Batey, Kate Pendergast and Megan McFarlane

## Annual performance, long-term strategy implementation progress and Catchment condition change<sup>i</sup>

Decision focus	Examples of evidence used to inform decisions	1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Outputs (against targets set as a result of funds received) Corporate Plan KPIs (see page 61)	n.a.		On target	Medium	n.a.
Long-term strategy implementation progress	Outputs (tasks scheduled to be completed in various engagement strategies)	n.a.		On target	Medium	↓ <sup>ii</sup>
Catchment condition <sup>iii</sup>	Surveys of strengths of relationships Memoranda of understanding Uniform regulations developed Joint forums Shared staffing Funds from various sources contributing to natural resource management Corporate memory Management systems	Poor	Low	Poor	Low	●

<sup>i</sup> Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

<sup>ii</sup> Assumed to parallel government funding trend.

<sup>iii</sup> The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.

## Background

### Government investment, \$000

2006-07	2007-08	2008-09	2009-10 <sup>i</sup>	Trend
1,490	3,660	3,480	1,140	↓

<sup>i</sup> Forecast based on funding advice at August 2009

Most natural resource management works are undertaken by individuals and organisations other than the GB CMA. Regional strategies define the roles and responsibilities of stakeholders.

The regional community invests about two dollars for every dollar of government funding despite continuing drought conditions. Influencing how others invest is therefore a very important activity for the GB CMA.

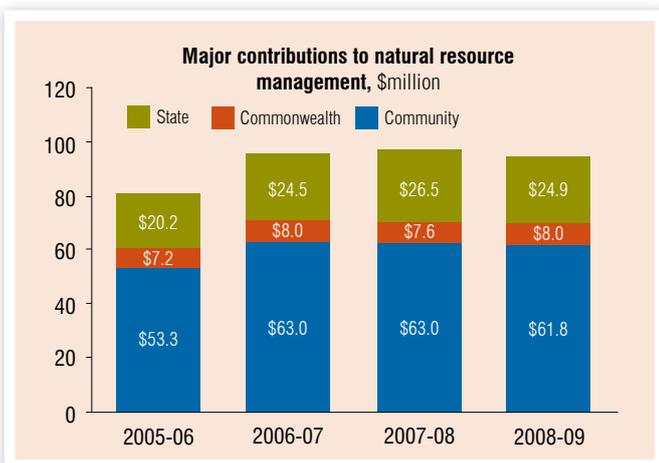
Stakeholders targeted include private landholders, Victorian and Australian Government funders, government agencies, corporate and philanthropic funders, local government, community groups (especially Landcare groups), individuals and politicians.

### Major strategic references

- Goulburn Broken Community Landcare Support Strategy 2005-2010
- Shepparton Irrigation Region Implementation Committee Communications Strategy
- GB CMA Communications Review 2009
- Dryland Landscape Strategy Community Document 2008
- Various memoranda of understanding

Nurturing relationships and partnerships can be challenging due to an extremely diverse population of 200,000 people including 6,000 Indigenous Australians. See also 'Goulburn Broken profile' on page 5.

This section includes case studies that show how the GB CMA is committed to stakeholder involvement, integration of disciplines and onground works.



### Stakeholder engagement via implementation committees

The Broken Goulburn Implementation Committee (BGIC) and Shepparton Irrigation Region Implementation Committee (SIR IC) play pivotal roles in engaging stakeholders within their communities and providing conduits to the GB CMA and its Board of Directors. (See map on page 5 for areas covered by the implementation committees.)

Ten skills based community representatives on BGIC and eight on SIR IC are appointed by the Board. Each implementation committee receives administrative and strategic support from non-voting members of partner agencies GB CMA, DSE, DPI and G-MW.

Implementation committees develop, oversee and implement an annual integrated natural resource management program within their areas and have charters with the Board for responsibilities such as:

- providing advice to the Board on GB CMA policy, the Regional Catchment Strategy and resource management objectives
- contributing to development of locally meaningful sub-catchment strategies which communicate natural resource management issues and priorities
- prioritising and providing comment on proposed works programs (based on the Regional Catchment Strategy) and to negotiate an annual business plan with the Board
- monitoring implementation performance of investment plans and works programs, which are delivered by the GB CMA and partner organisations notably DPI, DSE, G-MW, Landcare, natural resource based industries and local government. (See the quantities of work undertaken in the 'Outputs – detailed list of achievements' table on page 126.)

SIR IC also coordinates implementation of the Regional Catchment Strategy in the part of the SIR that is in the North Central Catchment.

The implementation committees were established under the provisions of section 122C of the Water Act 1989 and section 19J of the Catchment and Land Protection Act 1994.

SIR IC established a number of working groups to further engage skills and networks of the Catchment community. The Waterways, Surface Water Management, Farm and Environment, and Groundwater and Salinity Management working groups are made up of SIR IC members, additional community members with an interest in the particular program, and agency staff with relevant skills and responsibilities.

SIR IC also is supported by a strong technical process involving agency staff.

### Long-term strategies implementation progress

- GB CMA's strategies for engaging stakeholders and collaborative agreements are many and varied, reflecting the diversity of the natural resource management business.
- Most strategies are being implemented on schedule and are regularly reviewed and collaborative agreements are honoured.

### Catchment condition

- Government and regional communities' objectives are clearly aligned:
  - for every dollar invested by government, regional communities (including landholders) contribute two dollars, despite the continuing drought
  - Goulburn Broken regional community has a wide reputation for delivering onground changes to improve its natural resources, which reflects the strength of relationships between its many and varied individuals and organisations
  - GB CMA's Municipal Catchment Coordinator supported by municipalities in Shepparton Irrigation Region.
- Uniform regulatory backing has been developed across municipalities in Shepparton Irrigation Region, in the form of Uniform Planning Regulations and New Irrigation Development Guidelines.
- Targeting of landholders has improved markedly due to better knowledge of agency and landowner relationships.
- Capacity of landowners to deliver change has declined in many areas due to drought.
- Corporate memory at all levels is a major problem (consistent with the challenge that has emerged in western world since 1990 of rapid staff turnover in all jurisdictions): better information systems are being built to inform new staff quickly so they can more readily respond to needs.



Murrindindi River after Black Saturday bushfires. Photo: Mark Turner, GB CMA

## Summary of relationships between GB CMA, implementation committees and partners

Multiple agency, community groups, individuals	<p>Memoranda of Understanding (MoU)</p> <ul style="list-style-type: none"> <li>- 2006-07 Catchment Partnership MoU between GB CMA, G-MW, DSE, DPI and EPA Victoria</li> <li>- 2004 Irrigation Drainage and Water Quality MoU between GB CMA, DSE, EPA Victoria, North Central CMA and G-MW</li> </ul> <p>Multiple agency and community partnership projects include</p> <ul style="list-style-type: none"> <li>- RiverConnect in Shepparton-Mooroopna area (initiated by GB CMA in 2005)</li> <li>- The Mitchell Connection in the south (formerly known as the Mount Piper Biolink)</li> <li>- Landscape Logic multi-disciplinary research project (led by University of Tasmania)</li> <li>- Northern Victoria Irrigation Renewal Project</li> <li>- Rural Extension Program (pest plants and pest animals)</li> <li>- Various fire recovery committees</li> </ul>
Individuals	Extension advice and 743 incentives were provided to land managers via agency partners in 2008-09
Indigenous people	<p>GB CMA Indigenous facilitator appointed in 2005 is fostering increased trust between wider and Indigenous communities and increasing awareness of Traditional Owners' values through</p> <ul style="list-style-type: none"> <li>- liaison with planners and works supervisors to</li> <li>- increased Yorta Yorta and Taungurung peoples' representation on many forums</li> <li>- protecting Traditional Owner values through cultural heritage planning in partnership with other agencies, further staff appointed in 2008-09 to support traditional values and processes</li> </ul> <p>Yorta Yorta Joint Body Agreement signed by Victorian Government in 2004 is a land and water joint management agreement of designated areas of Yorta Yorta Country of the Goulburn and Murray Rivers</p>
Landcare and community groups	<p>Landcare support is a priority for the GB CMA</p> <p>Implementation of Community Landcare Support Strategy through 76 Landcare groups and seven networks; 14 natural resource management groups (climate change, biological farming, sustainable farming, etc)</p>
Local government	<p>Three local governments (City of Greater Shepparton, Moira and Campaspe Shires) contribute to, and are represented by, the municipal catchment coordinator on Shepparton Irrigation Region Implementation Committee and various forums. Each municipality is briefed annually.</p> <p>Broken Goulburn Implementation Committee invites local government representatives to attend its meetings (Benalla, Mansfield, Mitchell, Murrindindi and Strathbogie shire councils)</p>
Department of Primary Industries	<p>Represented on both implementation committees and provide technical support</p> <p>Service agreement and partnership Memorandum of Understanding with GB CMA</p> <p>Deliver most extension and grant assessment services such as whole farm planning, stock containment area program and pest plant and pest animal activities and research</p>
Goulburn-Murray Water	<p>Technical and program support</p> <p>Represented at all SIR IC, Waterway and Wetlands working groups and GB CMA Partnership Team meetings and as required at BGIC meetings</p> <p>Service agreement and partnership Memorandum of Understanding with GB CMA</p> <p>Project manage and deliver most Surface and Sub-surface Water Management Program projects in Shepparton Irrigation Region including research</p>
Department of Sustainability and Environment – Regional	<p>Service agreement and partnership Memorandum of Understanding with GB CMA</p> <p>Manage extensive areas of public land in the Catchment – especially forests in the upper Goulburn and the Barmah Wetlands</p> <p>Deliver projects that assist threatened species such as Woodland Birds, Barred Galaxias, Mountain Pygmy Possum, Striped Legless Lizard, and Spotted Tree Frog</p>
Department of Sustainability and Environment – Head Office and Australian Government	<p>GB CMA's Regional Investment Plan funding proposal is developed for DSE and GB CMA's Caring for our Country is developed for Australian Government</p> <p>Collaborate with DSE programs such as River Health, Irrigation and Landcare</p>
Other groups	Implementation committees develop close relationships as needs arise during research, planning and implementation with many organisations, including Parks Victoria, Victorian Farmers Federation, Goulburn Valley Environment Group, and other local environment groups (Mansfield, Alexandra, Broadford), Goulburn Valley Water, Murrindindi Climate Network, Goulburn Valley Greenhouse Alliance and Trust for Nature



Jade Miller, Chief Executive Officer Yorta Yorta Nations Aboriginal Corporation; Gaye Sutherland, Indigenous Natural Resource Management Coordinator GB CMA; Neville Atkinson, Indigenous Natural Resource Management Facilitator GB CMA and Chair Yorta Yorta Nations Aboriginal Corporation. Photo: Vicki Mackenzie, GB CMA



Azure Kingfisher. Photo: Di Huber



Common Brushtail Possum. Photo: Tony Kubeil, GB CMA



Koala. Photo: Tony Kubeil, GB CMA

## What's next?

See also 'What's next?' sections under BGIC and SIR IC reports for implementation committee specific points (pages 22 and 30).

Challenges that apply across both implementation committee areas with respect to collaborations and communities include:

- Victorian Environmental Assessment Council's River Red Gum Forests Investigation Final Report 2008
  - GB CMA Board and SIR IC expect to be heavily involved in providing links with stakeholders as recommendations are implemented
- Implementing new Goulburn Broken Landcare Support Strategy
- Involving community in large scale river restoration projects and demonstration initiatives
- Review of Second Generation Landcare program
- Review of expression of interest funding process
- Ramping up fire recovery works (subject to funding confirmation)
- Victorian Government's white paper Land and Biodiversity at a Time of Climate Change (expected late 2009)
  - helping communities and individuals respond to it
- Ongoing liaison with government funders
  - local community priorities are considered in programs such as Caring for Our Country
  - likely to be major gaps in funding of several regional priorities because of markedly changed processes for gaining 2009-10 State and Australian Government funding (see Chair's review on page 10)
  - emphasis will be on helping to minimise problems caused by funding changes, especially priorities that have reduced funding.

# Broken Goulburn Implementation Committee

Compiled by Sharon Lewis, Tony Kubeil, Mark Cotter, Dave Smith and Rod McLennan



**Broken Goulburn Implementation Committee members** (left to right): David Scott (Mansfield), David Dore (Benalla - Chair), Craig Madden (Avenel), Neil Devanny (Euroa), Heather Ingpen (Merton), Margaret Hatton (Kilmore), Rita Seethaler (Alexandra), Sally Abbott-Smith (Glenburn), Bill Wells (Strathbogrie). Absent: Chris Doyle (Tallarook). Committee support staff: Tony Kubeil, Sharon Lewis, Christopher Burnett. Photo: Tony Kubeil, GB CMA

The Broken Goulburn Implementation Committee (BGIC) met for the first time in December 2008. BGIC replaces the Mid Goulburn Broken and Upper Goulburn Broken Implementation Committees that were established following the formation of the GB CMA in 1997.

BGIC covers the Dryland area of the Goulburn Broken Catchment. Community stakeholders in the BGIC area are extremely diverse and this is reflected by BGIC membership.

The newly merged committee aims to represent and integrate diverse stakeholder views more efficiently, provide strategic advice to the GB CMA and oversee implementation of GB CMA, DSE and DPI programs.

BGIC and its former committees oversaw delivery of a \$12.5 million program in 2008-09, funded by the Victorian and Australian governments through programs including Caring for Our Country, Natural Resources Investment Program, National Action Plan for Salinity and Water Quality and Second Generation Landcare.

## Email sent by landholders to Landcare facilitators who helped with bushfire recovery

*Hi Bridget and Janet,*

*Thank you Janet for coming through <address withheld> with your wonderful team today. You have no idea what a lift it has given us to see something positive actually happening.*

*Your cheery team has lifted our spirits and we would like you to thank them so much for us.*

*The fencing was weighing heavily on our minds as it would have been beyond us to do it on our own. We hope the weather is kind to you now and that you are able to give us a few more hours of your time. Your efforts are greatly appreciated.*

*Kind regards,*

*Brenda and Peter Purtell*

## Pasture cropping

by Charlie Sexton, Mid Goulburn Broken Catchment Landcare Network

In late 2008 the Mid Goulburn Broken Catchment Landcare Network (MGBCLN) commenced the pasture cropping project as a result of overwhelming farmer interest.

The project is trialling the use of pasture cropping principles as a method of increasing ground cover, improving soil health, soil organic carbon and water retention and providing more feed on the ground for more of the year.

Five local farmers participated in the trials and sowed oats and triticale into their pasture while some also hand broadcast native grass seed.

Within the first year we have already seen improvements in ground cover over early summer and the reintroduction of some native grass species including windmill grass and spear grass.

Although these grasses don't have much production benefit, we have seen native species return to paddocks that had been cropped quite hard.

Soils will be compared at a later stage.

The MGBCLN has gained funding through Caring for Our Country to continue this project over the next two years.

This funding will complement the current project and emphasis will be on grazing management principles, soil organic carbon, increases in ground cover and paddock biodiversity.



Members of MGBCLN visit Winona in Gulgong NSW on the pasture cropping bus trip in October 2008. Photo: Charlie Sexton, Landcare

## Beyond the Fauna Bridges

by Helen Repacholi, Department of Primary Industries

Beyond the Fauna Bridges is a whole of landscape approach to the conservation of two Victorian threatened species, the Squirrel Glider and Brush-tailed Phascogale.

Through remnant protection and revegetation, the project aims to provide better connected, larger and more resilient white box woodlands and grassy ecosystems across the Strathbogie and Violet Town Landscape zones in the Mid Goulburn Broken Catchment.

These improved connections will link fragmented woodland remnants and grasslands with our rivers and creeks and connect to the Hume Freeway wildlife crossing structures in the Baddaginnie, Violet Town and Longwood areas.

The loss and fragmentation of habitat is a major cause of biodiversity loss in plant and animal communities.

The movement of animals across the landscape is critical for populations to maintain genetic diversity, which better prepares populations for climate change and other stresses.

Habitat fragmentation and the Hume Freeway are two major barriers to wildlife movement. Beyond the Fauna Bridges aims to address these threats.

Beyond the Fauna Bridges is an extension of a successful on-going nest box construction and monitoring program managed by the Warrenbayne Boho Land Protection Group.

It is a collaborative project based on scientific research, community engagement and DPI support, in targeting on ground works that provide habitat for hollow dependant mammals and ecological connectivity across the landscape.



"Who's home?" Landcare member and local landholder Dru Green checking for Squirrel Gliders. Photo: Helen Repacholi, DPI



"No vacancy" Sugar Gliders tucked up inside their new home. Photo: Helen Repacholi, DPI

## 2008-09 performance

It was an exceptionally difficult year in the Broken Goulburn with continued drought, record low levels of water allocations, stream flow and groundwater available in many areas and a significant commitment of resources to fire suppression and recovery in the second half. Although some targets were not met, levels of achievement were excellent given the circumstances, thanks largely to the Drought Employment Program.

### Collaborations and communities

The Black Saturday bushfires that began on 7 February became Australia's worst disaster on record and this resulted in collaborations between government and non-government agencies and communities at a scale not seen before in the BGIC area (see case study on page 26). Four weeks after the Black Saturday bushfires, the Upper Goulburn Landcare Network took on a huge additional role of coordinating volunteers:

- tasks have been performed by over 230 volunteers from 13 organisations include demolishing burnt fences and out buildings, constructing fences and controlling blackberries
- volunteers are from very diverse organisations, including finance, information technology, Landcare and church groups
- Upper Goulburn Landcare Network is also a major GB CMA partner in developing fire recovery funding bids, ensuring that projects factor in local community priorities.
- GB CMA won the Banksia Environmental Foundation's Water Award for Vision for the Broken River Basin (entered in 2007-08, awarded in 2008-09; a project to enhance the Broken River system through improved environmental flows, rehabilitating habitat, implementing existing catchment management and water quality strategies and providing fish passage past instream barriers).
- Eight community education grants totalling \$16,000 were provided, including for a river health and water quality brochure for the Strathbogies, signage for Hollands Creek, an educational tour to Bridgewater to assist conservation work on Mollisons Creek, an environmental website for a new Landcare Group, and three Gecko CLaN (Catchment Landcare Network) soil conservation workshops.
- Representatives from Strathbogie and Mansfield shires presented local issues at BGIC meetings.



Gary Hendy (landholder from Strath Creek) with Conservation Volunteers Australia helping out with tree planting. Photo: Bridget Clarke, Upper Goulburn Landcare Network

- BGIC is represented on Murrindindi, Mansfield and Mitchell shire environment committees and discussions were held with Benalla and Strathbogie shires about roadside vegetation management, weeds, floodway issues, and joint activity to support Landcare and climate change action.
- The Landcare Support Strategy was revised by GB CMA with help from the Goulburn Broken Landcare community and staff. It includes five year targets and Landcare facilitators and the Regional Landcare Coordinator will use it to develop annual works plans.
- Gecko CLaN and Upper Goulburn Landcare Network were funded by Australian Government's National Landcare Program to undertake sustainable farming and innovation projects, including:
  - pasture cropping: sowing crop into perennial pastures to provide continuous ground cover (it relies on good grazing management to maintain perennial species; is a crucial tool for farmers in Mid Goulburn Broken part of Catchment to become more drought resilient; may be able to increase soil organic carbon by two to five per cent; and is promoted in the northern part of the Broken Goulburn area by field days, presentations, training courses, farm trials and networks of farmers practising it)
  - steep hills management: using water, wire and wisdom is highlighted in the case study on page 29
  - history of two decades of Landcare in the Goulburn Broken Catchment: the book Milestones, Memories and Messages, was prepared and distributed by GB CMA, Landcare groups and networks (major learning included adaptability of Landcare to fill many community roles).

### Works and operations

- DPI contacted over 200 fire-affected landholders by telephone in the upper Catchment and visited over 100 sites:
  - mostly water quality, erosion and stock containment issues
  - 11 containment areas were built and 551 hectares of land were protected.
- DPI staff helped build 25 stock containment areas for drought-affected landholders in irrigation and dryland regions and 3,390 hectares of land were protected from overgrazing.
- The Drought Employment Program crew managed by DPI fenced over 100 hectares of priority remnant vegetation and revegetated, collected native seed and removed environmental weeds.
- Landholders received 291 incentives and 424 hectares of terrestrial remnant native vegetation were fenced and 814 hectares were revegetated.
- Bush Returns annual stewardship payments were provided to eight landholders covering 324 hectares: \$409,500 is available over five years to these landholders, subject to them satisfying management obligations over ten years.
- Significant works were undertaken by the Regent Honeyeater project and in the Longwood Plains Biodiversity Action Planning areas.
- Key threats to the threatened Macquarie Perch were targeted (see case study on page 25).
- See also 'Outputs – detailed list of achievements' table on page 126.

## Mitchell Connection

by Mark Cotter, GB CMA

The Mitchell Connection is a coming together of community and Goulburn Broken Catchment Management Authority and other agency staff to restore ecological function to a significant part of the Shire of Mitchell.

The Mount Piper Biodiversity Action Plan describes how separate biodiversity features could become a large-scale biolink.

The biolink will mean a joining of vegetation corridors and islands running east and west and forested public land in the west of the Goulburn Broken Catchment and the Goulburn River.

The Mitchell Connection is implementing the Plan by integrating mainstream community aspirations and networks.

A wide ranging assessment of the community is helping to tailor communication and marketing messages. The assessment includes:

- community attitudes and appreciation of environmental issues
- the impact of the environment on community health
- use of the environment for recreation activities
- use of the environment for creating natural landscapes.

Community commitment over many years will be needed to build the biolink.

Reliance on financial support from government will decline as community appreciation and ownership grows.



More than 100 planters attended the Glenaroua Planting Day in June 2009. These plantings on the properties of Bob Webster (on right) and his neighbour Rod Caplehorn over several years have linked Mount Piper to the Dry Creek corridor in Broadford. The plantings are organised by Glenaroua Land Management Group, Manningham Rotary Club and local DPI staff. Photo: Peter Mitchell

## Protecting the Maccas

by Wayne Tennant, GB CMA

The Hollands Creek Demonstration Reach project protects and expands habitat for Macquarie perch.

A site with a remnant population of the fish was a priority for works in 2008-09. This built on works undertaken the year before by the GB CMA and the community.

Threats from loss of instream habitat, degraded stream frontage and poor water quality are targeted.

The Arthur Rylah Institute, with the support of a community and agency reference group, monitors the impact of works.

At a community and agency field day, participants saw stream improvement works and an electrofishing demonstration, were entertained by a Taungurung storyteller, and were fascinated by 'the bug man's' knowledge of stream life. An historic photo display and children's activities rounded out the day.

The project implements parts of the Goulburn Broken Regional River Health Strategy and Murray-Darling Basin Authority Native Fish Strategy.

Communities and individuals of the Tatong Valley and staff from the Department of Sustainability and Environment are crucial to the project's success.



Macquarie Perch. Photo provided by Murray-Darling Basin Authority, taken by Gunther Schmida



Joanne Kearns and Fern Hames electro fishing at the Hollands Creek Demonstration Reach site. Photos: GB CMA

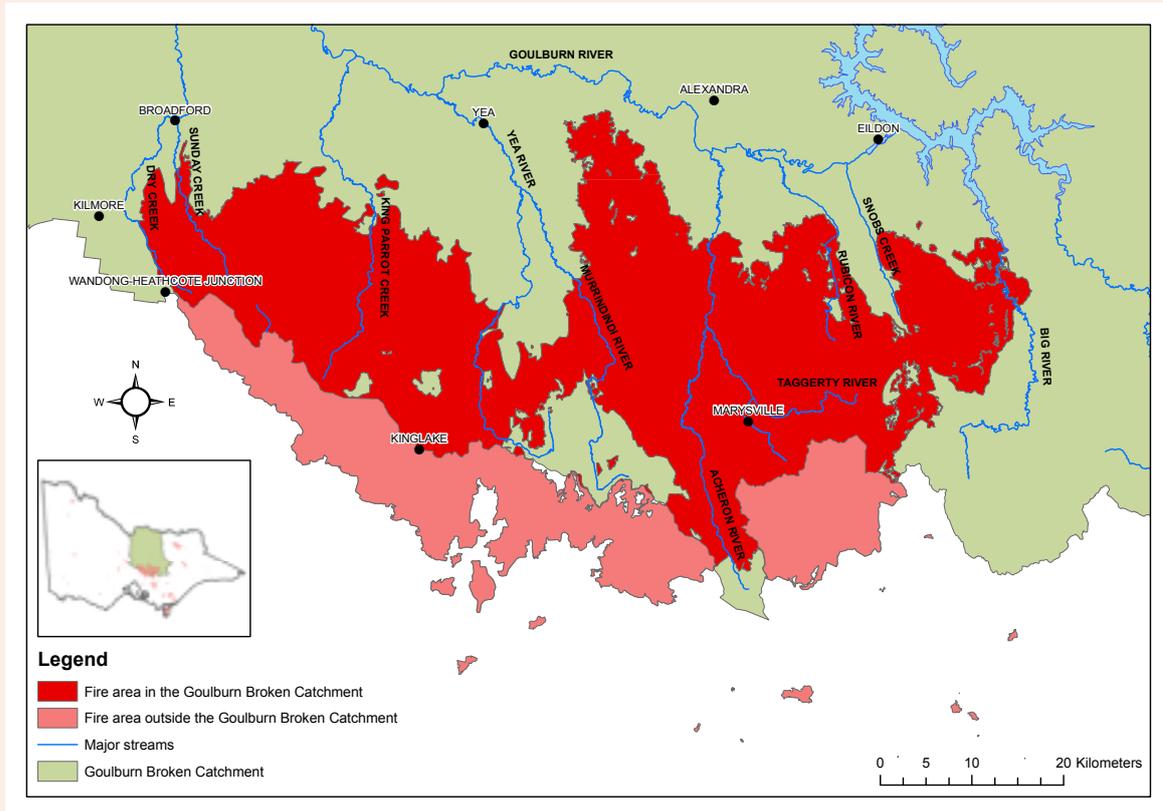
## Black Saturday bushfires and catchment management

by Carl Walters, Wayne Tennant, Rod McLennan, Bill O'Kane and Mark Cotter

The bushfires that began on Black Saturday, 7 February 2009, became Australia's worst natural disaster on record. Most of the bushfires were in the upper part of the Goulburn Broken Catchment and caused a tragic loss of human lives, loss of property and environmental devastation.

The fires burnt 190,000 hectares (eight per cent) of the Goulburn Broken Catchment, including 2,845 kilometres of stream frontage and 212 kilometres of major rivers.

Seventy per cent of the burnt area was public land, mainly native vegetation.



Map shows extent of bushfires in February 2009. Map compiled by Simon Casanelia, GB CMA

### Emergency response

As the bushfires took hold, Victoria's State Emergency Response Plan was invoked and the Goulburn Broken Catchment Management Authority played its part by providing staff and equipment in both the North East and Goulburn Broken Catchments.

The GB CMA's Drought Employment Program was redirected and 27 personnel provided more than 220 days and nights of support, performing tasks such as refuelling helicopters, distributing food packs, erecting tents, cleaning showers, gate security and transporting important visitors and documents.

For four weeks, 17 GB CMA staff volunteered or worked with the Country Fire Authority, State Emergency Service and the Department of Sustainability and Environment in roles such as logistics, plant deployment, direct fire fighting, communications and information technology support.

Senior managers in partner organisations said that GB CMA staff had shown outstanding commitment to task including donating many additional hours to get the job done.



Black Saturday bushfires were extremely intense.  
Photo: Christine Glassford, GB CMA

## Recovery

The region's Water and River Contingency Planning Team developed a response to the bushfires and is integrating activities to safeguard water quality.

The State Government provided \$800,000 for emergency works and immediate recovery activities identified in GB CMA's fire recovery plan for the Black Saturday bushfires.

Drought Employment Program crews were directed to implement emergency works in the fire-affected area. Works undertaken included reinstatement of fire damaged fencing and public assets. All major fire-affected catchments were assessed.

GB CMA staff helped the American Burnt Area Emergency Response team develop their report on the Kilmore East Murrindindi Complex North Fire. This report is being used in GB CMA's recovery planning including a rerun of the Goulburn Broken SedNet model to identify potential sources of increased sediment loads.

Real time water quality monitoring of key unregulated streams was initiated and a post-fire waterways fact sheet was prepared to help staff and communities.

## Preparing for the future

The past 12 years have been the Catchment's driest on record and when this was combined with extreme heat, very low humidity and high winds on 7 February, the Catchment was very susceptible to a catastrophic bushfire.

South east Australia is predicted to get hotter and drier and so Black Saturday is not likely to be a one-off event. We must adjust the way we live in response to climate change and the associated increased fire risk. The Royal Commission into Victoria's Bushfires which is underway will provide some guidance.

The GB CMA believes that planning schemes must balance the need to conserve biodiversity and other natural resources with managing risk, including where residences are built. Similarly, fire preparedness must include a suite of measures so that fuel reduction strategies are balanced and can satisfy biodiversity needs.

Given the threat of inefficient earthen dams to water supply security (as identified in the Northern Region Sustainable Water Strategy) and the need for rural residents to have adequate water supply for fire protection, we might need to invest in better systems such as rainwater tanks.

The Australian Government has committed \$5 million over two years to rehabilitate environmental assets in the fire-affected region via Landcare, DPI, GB CMA waterways and volunteers. The Victorian Government has also provided \$1.5 million for environmental works.

The Upper Goulburn Landcare Network submitted a proposal to the Victorian Bushfire Reconstruction and Recovery Authority to support community based employment aimed at environmental recovery over the next two years.



Volunteers from BP help to replace fencing around the Flowerdale area after the Black Saturday bushfires. Photo: Herald and Weekly Times

## Planning and responding (includes research and development)

### Dryland Landscape Strategy

- The Dryland Landscape Strategy was endorsed by the GBCMA Board in February 2009. This overarching strategy, covering the BGIC area, provided a chance to reassess the effectiveness of current policy and reshape future directions.
- The Strategy describes six major themes: lift scale of positive onground change across landscape, grow and diversify investment in natural resource management, promote environmentally sustainable and viable production systems, boost targeted participation in natural resource management, strive to be a leader in catchment management, and adapt to climate change.
- BGIC is overseeing implementation of actions and tasks.

### Post-fire property rehabilitation post-fire and low-flow planning

- Information sessions on property rehabilitation in the fire-affected region are being run by DPI in partnership with Landcare on a cyclic three week basis at five locations. They include field days and farm walks and provide the latest information from a range of specialists on problems to be faced as the seasons change.
  - Topics included pasture recovery, native vegetation recovery, protecting farm water supply and providing water for stock, siting and constructing stock containment areas and managing weeds.
    - The sessions provide opportunities to explore alternatives for setting up and managing property and informal gatherings at the close of each session provide an opportunity for social networking and rebuilding community relations.
      - Goulburn Broken Drought Water and River Contingency Planning Group continued to address potential river health and water quality hazards as a result of continuing drought and low flows.

## What's next?

- BGIC is consolidating its role by focusing on delivering initial tasks of the Dryland Landscape Strategy.
- Communities and individuals are being helped to respond to natural resource management implications from the Black Saturday bushfires, including:
  - responding to Royal Commission into Victoria's Bushfires (interim report due August 2009; see case study on page 26)
  - helping administer fire recovery activities
  - increased nervousness about the perceived threat native vegetation poses to property and life (the issue extends to landholders well beyond the immediate fire-affected area and farm planning sessions and onground works planning will need to accommodate it).
- The Regional Catchment Strategy will be more closely linked with local government, the Northern Region Sustainable Water Strategy, and Melbourne Water in the upper Catchment upstream of Killingworth.
- Issues arising from uncertainty of government funding for environmental works will need to be addressed. This uncertainty is beginning to impact significantly on current and future works. Projects normally started and sometimes completed by June have been put on hold until funding is clear.
- Declining financial capacity of landholders is impacting on works in many areas and needs to be addressed. (Costs of fencing and revegetating have risen significantly over the last two years and many landholders have increasingly uncertain incomes.)



Grey-crowned babbler at play. Photo: Peter Adam, Violet Town

## Revegetating steep slopes in Alexandra district

by Jim Begley, Department of Primary Industries

Landholders in the Alexandra district are fencing and revegetating steep slope sites to retain native grass cover, to retain soils and strategically increase biodiversity assets on their properties.

For germination to occur on steep slopes, native seed requires good seed to soil contact and moisture retention.

Ripping along contours on gentle, accessible slopes exposes the soil, helps to capture moisture and creates niches for seeds to germinate.

Direct hand sowing of local indigenous seed into the rip lines is being trialled.



Members of MGBCLN visit Winona in Gulgong NSW on the pasture cropping bus trip in October 2008. Photo: Charlie Sexton, Landcare

Conventional tube stock is also being planted to compare results.

Ten hectares of steep slopes seeding in 2008 has produced encouraging early results.

Fifty hectares is being direct seeded by hand in 2009 with the help of Greencorp and Drought Employment Program crews.

DPI Links Officer, Cathy Olive said that interest is so great it will take five years to implement all the sites that have been lined up.

It will be interesting to see the change in the landscape over time.



*Acacia implexa*, Lightwood, at 'Berdue', Alexandra district. Photo: Jim Begley, DPI

# Shepparton Irrigation Region Implementation Committee

Compiled by Ken Sampson and Rod McLennan



Committee members are (L-R): Peter Gibson (Chair), Nick Ryan, Ken Sampson (Executive Officer), John Gray, Helen Reynolds, Allen Canobie, Roger Wrigley (Deputy Chair), Terry Batey (DPI), James Burkitt (G-MW) and Steve Farrell. Absent: John Wenske, Tony Long (DPI)

The Shepparton Irrigation Region Implementation Committee (SIR IC) is a well credentialed and diverse group with a wide knowledge base and circle of influence.

Peter Gibson, Allen Canobie and Nick Ryan were reappointed on SIR IC for four years and John Wenske became a new member after half the positions were advertised this year.

Peter McCamish resigned from SIR IC because of commitments on boards of the Northern Victorian Infrastructure Renewal Project (NVRIP) and Water for Rivers.

Bruce Cumming resigned from DPI and therefore also from SIR IC to take a position with Regional Development Victoria. His position on SIR IC was filled by Terry Batey.

SIR IC is extremely grateful to Peter and Bruce for their contributions over many years.

The Shepparton Irrigation Region Implementation Committee (SIR IC) planned and delivered \$16 million program in 2008-09, funded by the Victorian and Australian governments through programs including Our Water Our Future, Water in a Climatically Challenged Environment, Natural Resources Investment Program, Caring for Our Country and National Action Plan for Salinity and Water Quality. In addition the program utilised over \$0.5 million of regional funds.

The continued success of SIR IC is due to strong community links, partnerships with other agencies, local, State and Australian Governments, Landcare, Goulburn Murray Landcare Network and via Local Area Planning.

The four program areas overseen by SIR IC are covered by working groups: Farm and Environment; Groundwater and Salinity Management; Waterways and Surface Water Management. The groups comprise agency staff and community members including representatives from G-MW, Water Services Committees, the Victorian Farmers Federation, local government and environment groups.

SIR IC receives support from an executive support team, and agency staff provide technical input through a technical support committee, the working groups and project teams.

## 2008-09 performance

The drought continues to have an impact on our works programs, especially the Environmental and Surface Water Management programs. Funding cuts have limited the Sub-surface and Surface water management programs.

### Collaborations and communities

#### Foodbowl Modernisation

- Through the Northern Victoria Irrigation Renewal Project (NVRIP), a \$2 billion works program is being undertaken to modernise Victoria's Foodbowl region by upgrading its ageing irrigation infrastructure. More than 800 gigalitres of water are being lost every year through leaks, system inefficiencies and evaporation, on average.
- Modernisation will improve efficiency and service to irrigators, underpin future economic growth and regional prosperity, providing confidence for communities which are facing significant challenges because of the drought, and recover an estimated 225 gigalitres of lost water by 2012, with water savings to be shared equally between irrigators, the environment and Melbourne.



Rabi Maskey (DPI Farm and Environment Team) makes an adjustment to the staff while surveying as part of a farm irrigation assessment on the East Goulburn Main number 8 channel. Photo: Chelsea Nicholson, DPI

- SIR IC has worked closely with NVIRP and other modernisation activities to ensure that water saving projects are consistent with and complementary to implementation of the Shepparton Irrigation Region Catchment Implementation Strategy (SIR CIS).
- Irrigators, senior management and technical, environmental and implementation staff are ensuring that both NVIRP and the SIR CIS are seamlessly implemented by providing input into wetland watering plans, farm irrigation assessments, environmental assessments, waterway watering plans, identifying backbones, connection processes, and farm works. Cost share agreements have been developed with NVIRP.
- A total of 782 landholders received an average of \$16,200 as a Murray Darling Basin irrigation management grant for water use efficiency projects.

## Revegetating an irrigated dairy farm

by Susan Janson, Denis Falkowski and Nickee Freeman

The 24 hectare former dairy property of Susan Janson and Denis Falkowski on the floodplains of Echuca Village demonstrates the landscape transformation possible through the Environmental Incentives project.

Originally heavily timbered, the property has been in Susan's family since the 1890s, with dairying and beef cattle the main farming activities.

For many years the paddocks were flood irrigated to maintain a permanent mix of sub clover and rye grass pasture. Tree cover was reduced until only a dozen or so mature black box and some younger river red gums remained.

Twenty years ago, a small number of trees were planted on the perimeter of the property, including along a decommissioned Goulburn-Murray Water channel, to provide shade for cattle and to attract birds.

Since 2005, larger scale earthworks prepared all 24 hectares for revegetation, with biodiversity the primary aim.

A converted vegetable planter is used to plant locally sourced indigenous species that have been grown in hiko cells.

Vegetation establishment includes deep ripping and discing before planting, spraying weeds before and after planting, guarding with milk cartons, watering for two months (due to drought), and controlling foxes, rabbits and feral cats.

Denis and Susan have seen many new bird species, including the common Bronzewing, White-fronted Chat, Buff-rumped Thornbill, Reed Warbler and Grey Falcon.

This property has inspired many others in the district to protect their remnant trees and revegetate areas of their farms.

The Department of Primary Industries administers the Environmental Incentives project for the Goulburn Broken Catchment Management Authority and provides a range of services, ensuring that environmental works complement agricultural and social objectives.



A diverse range of plants and forms from the Riverine Chenopod Woodland community are established at the site. Photo: Nickee Freeman, DPI

## Works and operations

- Whole farm plans on 247 properties covering 20,476 hectares were completed, including ten 'revised modernised' plans, bringing the total number of whole farm plans under this incentive to 3,716, covering 253,959 hectares or 80 per cent of the irrigated area.
- Farm irrigation systems: 485 were assessed to link with the irrigation modernisation process.
- Sixty six reuse systems draining 3,643 hectares were installed, bringing the total number of reuse systems constructed with assistance from this scheme to 549 serving 35,670 hectares.
- Fifteen automatic irrigation systems were installed under the scheme, serving 607 hectares, including seven for automating outlets from the G-MW delivery channel, bringing the total number of automatic irrigation systems constructed with assistance from this scheme to 142 serving 8,238 hectares.
- Fifteen landholders received support to undertake environmental projects and they fenced 29 hectares of remnant vegetation and revegetated 62 hectares.
- Implementation of many of the 94 waterways grants were supported by the Drought Employment Program and achievements included 87 kilometres of fencing, protecting 1,397 hectares of vegetation and 390 hectares of wetlands; establishment of 54 off stream watering points; and revegetation of 84 hectares of streamside zone.
- Environmental water was delivered to Reedy, Black and Kinnairds swamps and the Broken Creek.
- Five shallow groundwater pumps were installed and six upgrades were completed, with ten new and five upgrades in progress. Completed works have produced 1,595 megalitres and therefore 1,595 hectares of irrigated land have been protected from high watertables.
- Groundwater investigations were completed at 43 sites, and one was identified as suitable for private pumping. Three investigations are in progress. A new prioritisation process is being implemented and 11 sites are on the newly prioritised waiting list.
- There were 5.5 kilometres of primary drains and 5.3 kilometres of community drains constructed.

## Planning and responding (includes research and development)

- The SIR CIS continued to be reviewed.
- SIR IC was, and is, involved in several external processes:
  - major input continues to be provided into NVIRP (see Collaborations and communities above)
  - SIR IC's mid-term review of SIR's Surface and Subsurface water management programs fed into the Victorian Irrigation Drainage Program Review
  - DSE's review of Victorian Sustainable Irrigation Program
  - input was provided into Victoria's Northern Region Sustainable Water Strategy; the joint Rural Land Use Planning Addendum for the City of Greater Shepparton, Moira Shire and Shire of Campaspe; DSE's white paper on Land and Biodiversity at a time of Climate Change; the Australian Government's On-Farm Irrigation Efficiency Program; and water trading issues relating to environmental purchases.
- The Uniform Planning Regulations review commenced with the three Shepparton Irrigation Region municipalities.
- Waterways, Surface Water Management, Farm and Environment, and Groundwater and Salinity Management working groups each met regularly to develop works programs, report on progress and address implementation issues.
- An environmental watering plan for Reedy Swamp is being developed.

## What's next?

- SIR IC will continue to work closely with NVIRP, especially NVIRP's Technical Advisory Group and Environmental Committee, to ensure that NVIRP's water saving projects complement implementation of the SIR CIS.
- SIR IC is seeking new fund sources to deliver the irrigation program following completion of the National Action Plan for Salinity and Water Quality and the accompanying withdrawal of State and Australian Government funds. SIR IC is considering ways to build up its budget again to implement the SIR CIS.
- SIR IC will continue to work closely with DSE, NVIRP, G-MW, North Central CMA to attract the Australian Government's On-Farm Irrigation Efficiency program funds to the Goulburn Murray Irrigation District to link in with irrigation modernisation processes.
- SIR IC is considering the impact of the Northern Victoria Sustainable Water Strategy, Victoria's white paper on Land and Biodiversity at a Time of Climate Change, the joint Rural Land Use Planning Addendum (for the City of Greater Shepparton), the Australian Government's On-Farm Irrigation Efficiency program and the Victorian Irrigation Drainage Program review.
- See also the challenges that apply across both BGIC and SIR IC under 'What's next?' on page 21.



## Muckatah 4P community surface water management firsts

by John Bourchier, DPI

The Muckatah 4P community surface water management system in the Murray Valley Irrigation District was constructed over 3.3 kilometres, serving eight landholders and covering 243 hectares.

The boring under trees policy was implemented for the first time during construction, with removal of native vegetation being avoided by using a horizontal bore to dig underneath.

The effectiveness of the technique in preserving surface roots is being evaluated and further opportunities for using it are being identified.

The system is also the first to be constructed under the flexible spurs policy which allows for design flexibility at the end of the system to reduce costs and the area of land required for construction.

Landowner representatives on the Technical Liaison Group were Barry Miller, who chaired the Group, and Paulette McIntosh. Agency representatives were John Bourchier and Neil McLeod (both Department of Primary Industries) and Sam Green (Goulburn-Murray Water).

Reliance on financial support from government will decline as community appreciation and ownership grows.



The boring under trees policy was implemented for the first time during construction of the Muckatah 4P community surface water management system. Photo: John Bourchier, DPI

## Floodplain ecology course

by Nickee Freeman, DPI

The inaugural floodplain ecology course was held in Moama in November 2008.

Thirty five participants from northern Victoria gained an appreciation of how the Murray Fans floodplains originated, concentrating on the Barmah Forest and the Cadell Fault complex.

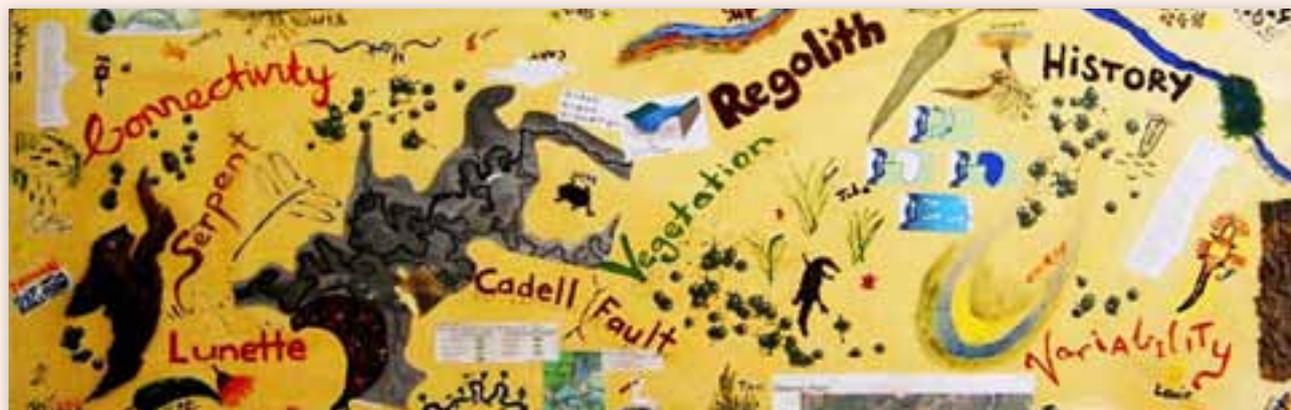
Topics included geomorphology, hydrology, soils, acid sulphate soils, flora and fauna, Ecological Vegetation Classes, invertebrates and regional Indigenous and European history.

The four day event, which included a field trip to Barmah Forest, was jointly hosted by DPI's Sustainable Irrigation Landscapes Goulburn Broken and the Goulburn Broken Catchment Management Authority.

The buzz and chatter during breaks indicated that participants were well engaged and feedback on the course was very positive.



Uncle Colin Walker, Yorta Yorta Nation Elder preparing eucalypt leaves for smoking ceremony. Photo: Vanessa Hughes, DPI



Canvas created by course participants, presented to GB CMA in acknowledgement of funding and support. Photo: Nickee Freeman, DPI

## Shepparton and Mooroopna's RiverConnect

by Rod McLennan, Ken Sampson, Dianne Hanna and Renee Warren

More and more Shepparton and Mooroopna residents are enjoying their stunning riverine environment because of the RiverConnect project.

RiverConnect links the goodwill and energy of many and varied groups and individuals, enhancing existing activities and creating the opportunity to develop bigger, whole of community projects.

People from vastly different backgrounds are interacting through educational, recreational, artistic, cultural heritage and environmental activities.

RiverConnect resulted from a ground swell in understanding that the time had come to embrace the Goulburn and Broken Rivers and the opportunities they present. The RiverConnect vision is for the riverine environment to be the heart and soul of Shepparton and Mooroopna.

RiverConnect encourages a sense of belonging to our place, fostering a sense of responsibility for this place and for each other.

The Goulburn Broken Catchment Management Authority drove RiverConnect from its inception in 2005 until 2008 when the Greater Shepparton City Council became the auspice body.

The Mayor chairs the strategic-level RiverConnect Community Advisory Committee, which includes representatives from Council staff, GB CMA, the Yorta Yorta Joint Body, education, Parks Victoria, Department of Primary Industries, Word and Mouth Project, Goulburn Murray Landcare Network and the general community.

Education, Aboriginal Participation, Land Management, and Communication Working Groups of RiverConnect involve more people and have a greater emphasis on more immediate actions.

A comprehensive strategic plan is being prepared to take RiverConnect to the next level.

For further information on RiverConnect contact Renee Warren at the City of Greater Shepparton on (03) 5832 9714



Students from St Mel's participate in a river audit. Photo thanks to Wendy Darveniza, St Mel's Primary School.

Eighteen of the nineteen schools in the RiverConnect area have 'adopted-a-reach'. Over 1,000 students participated in at least one activity on the banks of the Broken or Goulburn Rivers during semester 1 2009 and 39 teachers participated in a series of five workshops in 2009. Student activities included investigating water quality issues through the WaterWatch river rangers program, tree planting, the building, installing and monitoring of nesting boxes, cooking damper and learning from Aboriginal Elders.

## Land returned to Traditional Owners

by GB CMA's Gaye Sutherland and Wayne Tennant

Undera landholder Robin Knaggs handed over management of two hectares of Goulburn River frontage to the Yorta Yorta Nation Aboriginal Corporation (YYNAC) at a signing ceremony attended by 20 people in June 2009.

The area contains an Aboriginal burial site of great significance to the Yorta Yorta people.

The signed agreement represents the first Cultural Heritage Agreement to be reached with a private landholder in Victoria under the Aboriginal Heritage Act 2006 and will protect the area in perpetuity, allowing YYNAC to have a formal role in managing Yorta Yorta heritage.

The Goulburn Broken Catchment Management Authority worked with YYNAC, the Department of Sustainability and Environment, Aboriginal Affairs Victoria, and Robin to create a plan that was acceptable to all stakeholders.

The area has been under threat since skeletal remains were discovered in the 1960s when sand was removed to help create the Undera football oval. In recent times recreational vehicles have caused further damage, uncovering further remains.

The YYNAC will work with Goulburn Broken Catchment Management Authority to stabilise the area and prevent more remains from being

exposed. Activities will include controlling weeds and pest animals and revegetating.

Management on adjacent crown land parcels by the Department of Sustainability and Environment has also been improved because of the project.



Protected site... Property owner Robin Knaggs (left), Yorta Yorta elder Denise Morgan-Bulled and Department of Sustainability and Environment Forest Manager David Harvey. Photo: Ray Sizer, Shepparton News

## Farm irrigation assessments

by Terry Batey, DPI

Irrigation operations on 234 farms involving 545 outlets in the Central Goulburn number 4 channel system were assessed.

Farm irrigation assessments are a joint effort between DPI's Sustainable Irrigation Landscapes Goulburn Broken Team – Farm and Modernisation Team, the Future Flow Alliance and landholders.

Irrigation modernisation and its benefits are explained to landholders as part of the assessments.

A kit that includes information on unbundling and delivery share, the irrigation assessment process, how to use and read new meters, and Shepparton Irrigation Region Catchment Implementation Strategy projects was well received by landholders.

Data were collected to ensure that the new Magflow meters, which are replacing Dethridge meters, will give landholders the flows they need.

Survey skills were developed to ensure that data collected could be used in preparing a reporting system that meets Future Flow Alliance requirements, and in recommending new meters.

As part of farm visit, the DPI Team has been trialling an innovative approach to measure how the farm irrigation assessment impacts on farmers' decisions.

A goal attainment scale for informed decision making was developed and will be improved through use in farm irrigation assessments.

This goal attainment scale has five goals: understanding and defining issues, gathering facts relevant to the farm context, considering options, rating options, and making decisions.

Properties in the Kialla area's East Goulburn Main numbers 7 and 8 channel systems were also assessed and these present contrasting issues because both have a high number of lifestyle blocks rather than purely agricultural enterprises.



Water over a flume gate regulator. Photos: Chelsea Nicholson, DPI

## Community networks getting the job done

by Jim Castles, GB CMA

Works covering more than 115,000 hectares were undertaken through two conservation management networks (CMNs) in 2008-09.

CMNs are local partnerships between government agencies, community groups and individuals that cover public and private land.

The CMNs are proving a very successful model for linking high level policies to onground change because of the emphasis on understanding and integrating local needs.

The Broken Boosey CMN's achievements for the year included:

- 34 hectares of private and public land direct seeded
- 40,000 hectares of private land and State Park baited for foxes by 50 landholders and Parks Victoria
- 413 Squirrel Glider nest boxes built and installed by Drought Employment Program crew
- 450 seedlings of threatened species of native vegetation propagated and planted
- a biodiversity education calendar (6,000 copies)
- 15 biodiversity education days for schools
- a field day at Kinnaird's Wetland attended by 75 people.

The Broken Boosey CMN, which began in 2002, was one of four finalists in Parks Victoria's Environment and Sustainability Award as part of the Regional Achievement and Community Awards.

The Whroo Goldfields CMN has already achieved impressive results, despite only starting in 2008. Achievements for 2008-09 include:

- 24,000 hectares of private land baited for foxes by 46 landholders
- 50,000 hectares of public land baited by Parks Victoria, Puckapunyal Army Base and Department of Sustainability and Environment
- 346 Brush-tailed Phascogale nest boxes were built and installed by Drought Employment Program crew.

In addition, a bird identification booklet covering the two CMNs (Broken Boosey and Goldfields) was prepared and 4,000 copies were distributed.

Native animals are monitored annually and results help to inform landholders of the benefits of undertaking works and adjusting management.



Jaye Caldwell (DPI) with students from St Mary of the Angels Regional College at an Biodiversity Education Day. Photo: Lanie Pearce, Conservation Management Network member

# Planning and responding (including research and development)

Compiled by Megan McFarlane and Rod McLennan

## Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Corporate Plan KPIs related to planning and responding (see page 61) Strategies and plans developed, implemented, revised or updated	n.a.		On target	High	n.a.
Long-term strategy implementation progress	Strategies and plans developed, implemented, revised or updated	n.a.		On target	Medium	↓ <sup>ii</sup>
Catchment condition <sup>iii</sup>	Anecdotal <sup>iv</sup> Systems in place related to planning and responding	Poor	Medium	Satisfactory	Medium	↑

i Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

ii Assumed to parallel government funding trend.

iii The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.

iv Examples of anecdotal evidence include feedback from external experts, selection of Catchment for piloting approaches to emerging issues, adoption by other natural resource management regions of approaches developed within Catchment, inclusion of Catchment people in State, National and International knowledge forums.

## Background

Government investment: included as part of investment in 'Governance' (see page 51).

The first comprehensive integrated natural resource management strategies in Australia were developed by the Goulburn Broken community in 1990: the Shepparton Irrigation Region Land and Water Salinity Management Plan and the Goulburn Broken Dryland Salinity Management Plan.

Several pioneering efforts in emerging fields followed. These included the Goulburn Broken Water Quality Strategy (1996), Native Vegetation Management Strategy (2000), An Inventory of Ecosystem Goods and Services in the Goulburn Broken Catchment (2001), the Strategic Plan for Integrating Native Biodiversity (2004) and the Monitoring, Evaluation and Reporting Strategy (2004), Dryland Landscape Strategy (2008).

Our adaptive management (or learning by doing) approach has two main thrusts:

- developing and retaining plans and modifying them as new learning emerges (continuity of stakeholders including staff over the past two decades have greatly assisted this)
- exploring new ways of thinking about challenges (long and strong collaborations with internationally renowned academic institutions have greatly assisted this).

Our fit for purpose emphasis when planning enhances:

- organisational agility (strongly linking government funder requirements with operational realities)
- efficiency (tailoring levels of detail and involvement of stakeholders to the challenge).

### Major strategic references

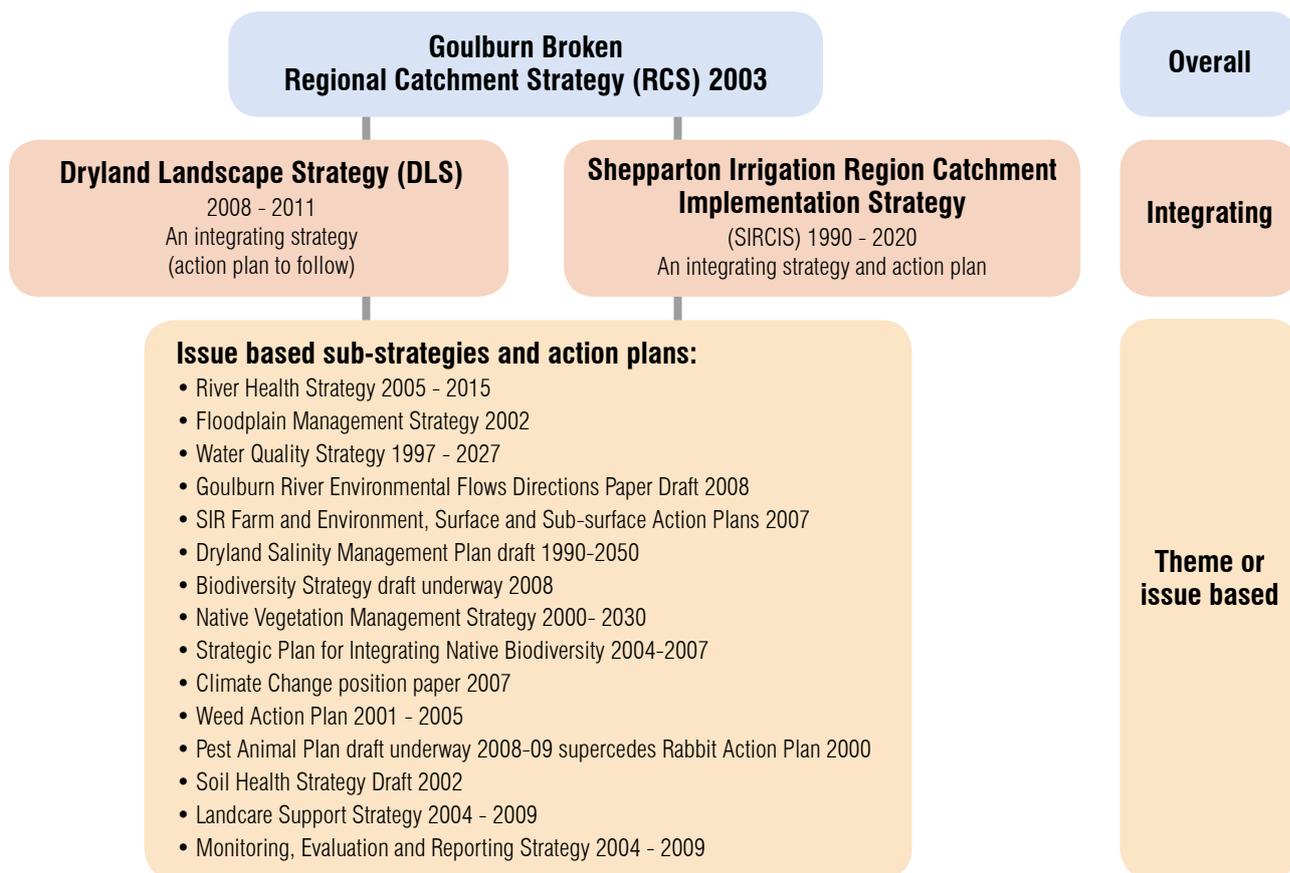
- Goulburn Broken Regional Catchment Strategy 2003 (update of 1997 RCS, due to be updated again in 2010)
- GB RCS 1997-2003 Process review 2004
- Goulburn Broken Corporate Plan 2008-09 to 2012-13
- Goulburn Broken Monitoring, Evaluation and Reporting Strategy 2004
- IT Strategic Plan 2009-11

### Goulburn Broken Regional Catchment Strategy

The Goulburn Broken Regional Catchment Strategy was first developed in 1997 as a requirement of the Catchment and Land Protection Act 1994. It provides a high level and integrated strategic direction for natural resource management in the region. The RCS was updated in 2003 and is expected to be updated in 2010 (the update has been delayed while the Victorian Catchment Management Council's RCS guidelines await release of the Victorian Government's white paper on Land and Biodiversity at a Time of Climate Change).

The Shepparton Irrigation Region Catchment Implementation Strategy and the Dryland Landscape Strategy inform the Regional Catchment Strategy. Both strategies integrate information from sub-strategies to articulate visions for the SIR and dryland landscapes. The Goulburn Broken region has a strong suite of theme or issue based sub-strategies. These are reviewed and updated continually and inform annual investment planning.

## RCS and sub-strategies structure



### Corporate Plan

The Corporate Plan is prepared annually in accordance with sections 19C and 19D of the Catchment and Land Protection Act 1994. It includes annual details on investment and expected achievements within programs. The Corporate Plan follows the high level directions set in the Regional Catchment Strategy and also satisfies new and emerging requirements from the regional community and government funders.

### Research and development (and evaluation)

Research and development activities are highlighted within each investment area section of this Annual Report.

The Goulburn Broken region follows a systematic process of reviewing and updating plans and strategies as set out in the 2004 Monitoring, Evaluation and Reporting Strategy. Progress is monitored regularly and sometimes strategies or plans need to be developed or updated early in response to emerging issues or critical drivers.

Integrated catchment management involves decisions based on information from different backgrounds and disciplines.

The GB CMA has placed a high priority on presenting information from these disciplines in a uniform way so that benefits and tradeoffs are better understood when decisions are made.

Better understanding helps build trust between the community, agencies and government investors.

The GB CMA's standardisation of outputs since 2002-03 (see page 126) and the long-term scoreboard since 2005-06 (see page 17) are

important in developing this uniformity and enabling comparisons over time. These provide an ongoing framework and language that helps clarify investment and progress while government funding frameworks and language change frequently.

The linking and aggregating of site specific actions (or outputs) to long-term outcomes via the McLennan/O'Kane equation,  $Outputs \times Assumptions = Outcomes$ , which has fostered common understanding between disciplines and identified priority knowledge gaps. This has helped drive many regional and national research and development projects over the last several years.

Information is reported to various audiences according to the timeframe and scale of the questions that need to be answered:

- reports on implementation are provided monthly, quarterly and annually to implementation committees, the Board and government funders
- implementation committees and the Board and some government program managers also receive periodic reviews on long-term sub-strategies
- this Annual Report satisfies the requirement of providing a catchment condition report to the Minister in accordance with the Catchment and Land Protection Act 1994.

A knowledge inventory listing State, National or international projects that GB CMA is involved with is available at [www.gbcm.vic.gov.au](http://www.gbcm.vic.gov.au).

The Shepparton Irrigation Region Implementation Committee has a research and development strategy for groundwater and salinity management. It also has a close relationship with DPI's Research and Practice Change groups and G-MW's research and development group in evaluating and seeking new knowledge for implementing the Shepparton Irrigation Region Catchment Implementation Strategy.

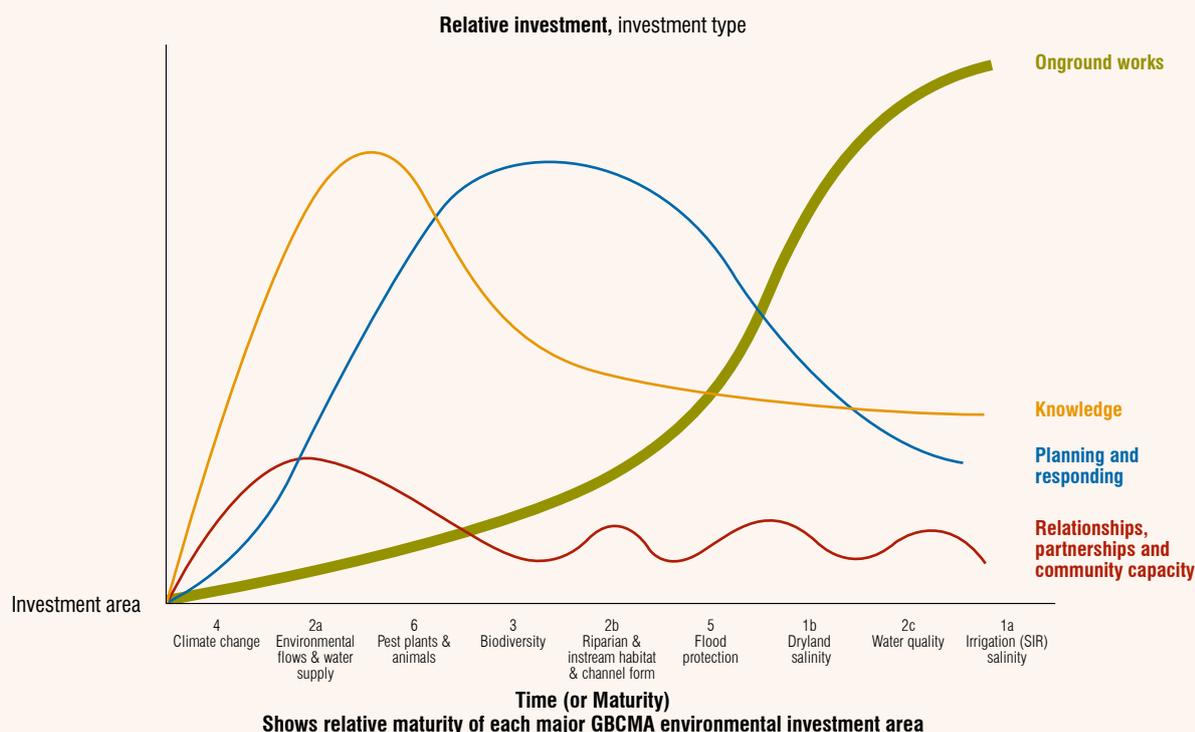
## Investment patterns and maturity of approaches<sup>i</sup>

The stylised investment patterns shown in this graph show we are at different stages of maturity of implementing approaches in our nine environmental investment areas.

For example, investment in irrigation salinity began much earlier than investment in biodiversity, which in turn is more mature than investment in climate change.

The time scale is different for each investment area. Investment in dryland salinity is not likely to follow an exponential uptake because information has emerged that requires us to revisit our plans.

Government investment often dictates the levels of investment in each investment type (onground works; knowledge; planning and responding; and relationships, partnerships and community capacity) although the GB CMA attempts to ensure the balance of investment between the different types is appropriate for the issue.



<sup>i</sup> Adapted from the GB CMA's From the fringe to mainstream - A strategic plan for integrating native biodiversity 2004-07.

## Long-term strategies implementation progress

- The first comprehensive integrated natural resource management strategies in Australia were developed by Goulburn Broken communities in 1990: the Shepparton Irrigation Region Land and Water Salinity Management Plan and the Goulburn Broken Dryland Salinity Management Plan.
- Several pioneering strategic approaches in emerging fields followed, including for water quality (1997), native vegetation (2000), ecosystem services (2001), native biodiversity (2004) and monitoring, evaluation and reporting (2004).

## Catchment condition

- For over two decades, comprehensive strategies have been developed and implemented for many issues including integrated catchment management, water quality, biodiversity, floodplain protection and river health.

- Evaluation and improvement have been critical parts of the planning cycle since 1990.
- The formal and informal systems (including for governance, collaborations and communities and human resources) that have been developed over two decades position the Catchment to respond rapidly to new issues such as drought and the 2009 Black Saturday bushfires.
- There is wide anecdotal recognition of regional community as a world leader in natural resource management: the GB CMA is widely regarded as a responsive, leading and action focussed natural resource manager.
- The Regional Catchment Strategy is overdue for updating although timelines are beyond the control of the GB CMA as guidelines are set by Victorian Catchment Management Council, which has devolved this responsibility to DSE. The update was due in 2008 and it is now expected to be in 2010. The impact of this is being minimised by having sub-strategies updated whenever they fall due so that the foundations of natural resource management in the Goulburn Broken remain current.

## 2008-09 performance

Planning and responding highlights are reported in individual investment area sections. The following includes highlights of planning and responding that are new or which result from high level integrating documents.

Plan or strategy	Progress	Further details
Corporate plan	<p>Corporate Plan key performance indicators were satisfied appropriately</p> <p>The original Corporate Plan budget for 2008-09 of \$27.0 million, including partnership funds, exceeded by 35 per cent or \$7.8 million to \$34.8 million; this was due largely to the additional funding of the Drought Employment Program of \$2.8 million and funds from the Australian and Victorian Governments following the Black Saturday bushfires</p>	Key performance indicator progress report page 61
Regional Catchment Strategy (updated 2003)	<p>Most actions progressed subject to funding availability Due for updating (guidelines being developed by Victorian Catchment Management Council and DSE in 2009); this Annual Report lists issues to be addressed when updating (under 'What's next?' sections). Achievements report to be completed during 2009-10</p>	
	Resilience workshop held in December a primer for high level thinking to update Regional Catchment Strategy	Workshop papers at <a href="http://www.gbcma.vic.gov.au">www.gbcma.vic.gov.au</a>
Dryland Landscape Strategy	<p>Finalised 2008 (development began 2006, public consultation 2008)</p> <p>Implementation has begun</p>	See Broken Goulburn Implementation Committee report page 22
Shepparton Irrigation Region Catchment Implementation Strategy (updated 2007)	<p>Began as salinity plan and evolved into multi-disciplinary integrated strategy</p> <p>Implementation began 1990</p> <p>30 year salinity actions on track (farm works ahead, public infrastructure behind giving overall on target rating)</p>	pages 30 and 96
	<p>Reviewed 1995, 2000, 2003, 2007 (in press)</p> <p>Most recent review in context of declining funding, Northern Victoria Irrigation Renewal Project and probable drying climate</p> <p>Constantly adapting in response to new information and political climate</p>	<a href="http://www.gbcma.vic.gov.au">www.gbcma.vic.gov.au</a>
GB CMA Monitoring, Evaluation and Reporting Strategy 2004	<p>Actions 90 per cent completed</p> <p>Review and renewal in 2009-10</p>	<p>At <a href="http://www.gbcma.vic.gov.au">www.gbcma.vic.gov.au</a>:</p> <ul style="list-style-type: none"> <li>- Monitoring, Evaluation and Reporting Strategy Implementation summary</li> <li>- Knowledge inventory: state, national or international projects that GB CMA is involved with</li> <li>- Targets information gap summary</li> <li>- Biodiversity monitoring action plan</li> <li>- KPI annual report for sub-surface water management program in SIR</li> <li>- further details on each investment area</li> </ul>
IT Strategy 2008-11	An external review of GB CMA's information and communication technology services resulted in relatively high ratings in much of the planning, sourcing, build and support activity and groups; minor gaps in IT policy are being addressed and existing procedures are being documented to aid future reviews and succession planning	

## What's next?

See also planning and responding sections in other investment areas.

- GB CMA was allocated \$5 million in 2009 for bushfire recovery by the Australian Government over two years and \$1.5 million by the Victorian Government and the response is well underway.
- The Regional Catchment Strategy update in 2010 will reflect:
  - Victorian Government's Land and Biodiversity at a Time of Climate Change White Paper (expected to be released late 2009)
  - the Royal Commission into Victoria's Bushfires (interim findings expected about August 2009 and full report due around August 2010)
  - prevailing climatic conditions
  - other issues identified in sub-strategy reviews
  - emerging resilience thinking; with support of internationally renowned academics (GB CMA is at the forefront of regional organisation thinking on resilience and is seeking answers to questions such as: where and when must we accept change and what is near a tipping point?).
- A mid-term review of the Goulburn Broken Regional River Health Strategy is expected to be completed late 2009.
- An updated Goulburn Broken Biodiversity Strategy will be completed in late 2009.
- A strengthened duty of care approach to managing natural resources is being explored because it has the potential to provide greater certainty for land managers while achieving locally determined levels of resilience for communities and natural resources.
- Salinity targets are under review as the threat of salinity is likely to be reducing as a result of drier conditions and government support for salinity management is declining dramatically.
- We will continue to be vigilant in minimising transaction costs as demands are increasing from funding process changes.
- Implications of the National Climate Change Adaptation Risk Assessment will be considered further.
- DSE is developing headline themes under which each catchment management authority will provide data to improve consistency in annual reporting across Victoria. We will need to explore how reports on this data relate to the regional plans and strategies already prepared and existing data capture systems. The table below shows how GB CMA's investment areas translate.

### Translation of DSE's proposed headline themes (August 2009) to GB CMA's investment areas

DSE headline theme	GB CMA investment area	Details page
Community capacity	Collaborations and communities	18
	Planning and responding	37
Biodiversity	Biodiversity	114
Inland aquatic ecosystems	River health	104
Land health	Salinity	96,100
	Pest plants and animals	123
Environmental stewardship	River health	104
	Biodiversity	114
Marine biodiversity	Not applicable	
None applicable	Human resources	44
None applicable	Environmental footprint	42
None applicable	Flood protection	120

# Environmental footprint

Compiled by Kate Pendergast, Bill O’Kane and Rod McLennan

## Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>ii</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Outputs (against targets set as a result of funds received)	n.a.		On target	High	n.a.
Long-term strategy implementation progress	Outputs (scheduled to be progressed between 2007 and 2009)	n.a.		On target	High	● <sup>iii</sup>
Catchment condition <sup>i</sup>	Energy consumption Paper consumption Management systems	Very poor	Very low	Poor	Low	↑

<sup>i</sup> The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.

<sup>ii</sup> Assumed to parallel government funding trend.

<sup>iii</sup> Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

## Background

### Government investment, \$000

2006-07	2007-08	2008-09	2009-10 <sup>i</sup>	Trend
n.a.	6	15	6	●

<sup>i</sup> Forecast based on funding advice at August 2009

After minimising the environmental impacts of its workplace for several years, the GB CMA formalised its approach in 2007-08 through the Reducing our Footprint project.

Three GB CMA staff are voluntary members of the environmental working group whose prime responsibility is to oversee the project.

The project involves analysing current practices and behaviours and identifying areas for reducing environmental impacts such as waste management, energy and water consumption and carbon dioxide emissions. A complementary benefit of the project is increased awareness among staff, their families and local communities.

Complying with Victoria’s Environmental Sustainability Framework is now a requirement for public sector organisations with specific deliverables, monitoring and reporting requirements. This marks a change from the voluntary program that the GB CMA chose to be involved in during 2007.

### Major strategic references

- GB CMA Reducing our Footprint Action Plan 2007
- Energy Audits of GB CMA 2008
- ResourceSmart



## Actions 2008-09

Priority	2008-09 progress
Office energy usage <sup>i</sup>	<p>Target to reduce energy by 10 per cent in Shepparton and Yea offices:</p> <ul style="list-style-type: none"> <li>- seven per cent reduction achieved (to 158,000 kilowatt hours)</li> </ul> <p>Shepparton office:</p> <ul style="list-style-type: none"> <li>- lighting reduced by 30 per cent</li> <li>- air conditioning               <ul style="list-style-type: none"> <li>* cooling: increased temperature by 1.5 degrees</li> <li>* heating: reduced temperature by 1 degree</li> </ul> </li> </ul> <p>Shepparton and Yea offices' hot water temperature reduced</p>
Develop monitoring and reporting framework (using Carbonmetrix) <sup>i</sup>	<p>Did not proceed with Carbonmetrix</p> <ul style="list-style-type: none"> <li>- manual system in operation</li> <li>- a reporting and monitoring system is being developed to support ResourceSmart program which if appropriate will be adopted</li> </ul>
Expand program into field operations <sup>ii</sup>	<p>Environmental practices handbook</p> <ul style="list-style-type: none"> <li>- not yet done (lack of available resources)</li> <li>- to be developed with an occupational health and safety handbook; to be used by all field staff and contractors</li> </ul>
Education and awareness activity with staff <sup>ii</sup>	<p>Theme of annual GB CMA staff workshop held in November was: Climate change – threat or opportunity?</p> <ul style="list-style-type: none"> <li>- key note speaker Rob Gell and others described best practice in managing and reducing environmental impacts</li> <li>- staff were pleased to learn that although we are at the beginning of a journey, GB CMA actions to date have been appropriate</li> </ul>

i From Energy Audits for GB CMA 2008

ii From Reducing our Footprint Action Plan 2007

## 2008-09 performance

With a heavy reliance on voluntary staff to drive it, implementation of the Reducing our Footprint project has become challenging in its second year as we move beyond awareness raising and basic behaviour changing to larger scale implementation.

## Strategy implementation progress

- All tasks that were listed in Reducing our Footprint Action Plan or Energy Audits for the GB CMA and have a three year pay back period or less have been implemented. Tasks with a pay back period longer than three years are assessed case-by-case. A business case to perform tasks such as underfloor insulation in Shepparton office is being prepared.

## Catchment condition

- Since July 2006, 100 per cent of GB CMA's sedan vehicles have been in the top 15 per cent of greenhouse vehicle ratings. All sedans are either diesel, liquefied petroleum gas or four cylinders with a maximum allowable carbon dioxide emission of 240 grams per kilometre, which places GB CMA vehicles in the best 20 per cent for carbon dioxide vehicle emissions.
- Several information technology initiatives have been undertaken, including setting the printing default to double sided and applying power management settings to 50 per cent of computers.

- Energy costs in the new Shepparton office have declined in parallel with energy consumption. Costs per square metre have been reduced by 23 per cent per annum, representing a total saving of \$117 per year per staff member, which equates to approximately \$5,700 across the Shepparton office.
- The GB CMA is in the top ten per cent for an organisation of its type in terms of paper usage and recycling, with a Waste Wise audit undertaken in 2007 finding that 320 kilograms of paper is being recycled per annum.

## What's next?

- More organisational accountability for our environmental footprint is being required by the Victorian Government.
- The GB CMA is going to the next stage of implementing its Reducing our Footprint Action Plan and recommendations from Energy Audits of GB CMA.
- The Reducing our Footprint Action Plan will be revised in 2010.

# Human resources

Compiled by Kate Pendergast, Richard Warburton, Vicki McKenzie and Rod McLennan

## Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>ii</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Outputs (against targets set as a result of funds received)	n.a.		On target	High	n.a.
Long-term strategy implementation progress	Outputs (scheduled to be progressed between 2007 and 2008)	n.a.		On target	Medium	● <sup>iii</sup>
Catchment condition <sup>i</sup>	Workforce data Management systems	Satisfactory	Medium	Satisfactory	Medium	●

i The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.

ii Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

iii Assumed to parallel government funding trend.

## Background

### Government investment, \$'000<sup>i</sup>

2007-08	2008-09	2009-10 <sup>ii</sup>	Trend
4,200	4,346	4,520	●

i Includes all investment areas' human resources costs: total GB CMA payroll including staff, Board and committee members; \$4.1 million for GB CMA employees only; \$295,000 training expenditure, human resource and occupational health and safety support and activities

ii Forecast based on an estimated four per cent increase on 2008-09 figures

### A learning organisation

The GB CMA aims to create a sustainable, diverse, highly skilled, progressive and professional staff body.

The GB CMA fosters a staff culture of self management, flexibility, initiative and leadership by:

- supporting development of workplace skills through short courses, conference attendance and accredited training
- providing training and pathways for those who aspire to lead, have potential to grow and the judgement to succeed in senior roles
- tailoring diverse experiences for staff development
- encouraging peer support
- offering workplace arrangements that meet the needs of a broad staff demographic.

The small to medium size of the GB CMA fosters professional and supportive relationships between managers and staff. This enhances one on one staff coaching, mentoring, cross-disciplinary experiences and knowledge and career development.

### Major strategic references

- GB CMA Workforce People Strategy (2005)
- Public Sector Management Act 2004 (various guidelines)
- GB CMA Human Resources Policies and Procedures
- Occupational Health and Safety Act 2004
- Report on GB CMA Workforce Data Dec 2008 – benchmark report
- People Matter Survey 2008
- State of the Public Sector in Victoria 2006-07
- GB CMA Human Resources Review May 2008

The GB CMA is large enough to have a dedicated human resource function that provides support, advice and guidance to managers and staff, and is small enough for such services to be readily accessed and tailored with an intimate understanding of individual needs.

### A healthy and safe organisation

The GB CMA emphasises occupational health and safety across all aspects of the workplace, including in the office, in the field and contractor operations. Comprehensive policies and procedures were reviewed and refined in early 2009 to reflect best practice and changes to workplace consultation requirements as part of the Occupational Health and Safety Act 2004.

The GB CMA requires all staff to participate in occupational health and safety management and operations.

## 2008-09 performance

A continued decline in funding security presented the major human resource management challenge in 2008-09.

GB CMA's response has been to pay even closer attention to matching staffing levels and skills with the funding profile of the GBCMA. Staff were extremely willing to work flexibly across project areas and geographic regions. As a result, overall human resource capability was largely maintained, with no forced losses in personnel and turnover kept to within the healthy seven to ten per cent range.

### Human resources

- Highlights of staff training included participation by two GB CMA project coordinators in the Fairley Leadership Program; the fifth staff member completing the Graduate Certificate in River Health (it was introduced in 2007 with financial and study support and leadership provided by GB CMA); the graduate who was placed with Goulburn Broken, Corangamite and North Central CMAs will complete the Floodplain Graduate Program in 2009; and one member of staff gained Microsoft accreditation.
- Staff turnover was nine per cent, within the seven to ten per cent target range for a 'healthy' organisation.
- Results from the Victorian Public Sector wide people matter survey were again strong (see bar chart below), showing no statistically significant areas of concern or of improvement with respect to staff satisfaction.
- The parental leave communication kit was implemented and eight per cent of staff accessed the minimum 12 weeks paid parental leave in 2008-09.
- The Dryland community engagement and support team of five GB CMA staff formed in October 2008 to deliver the Dryland Landscape Strategy (2008).

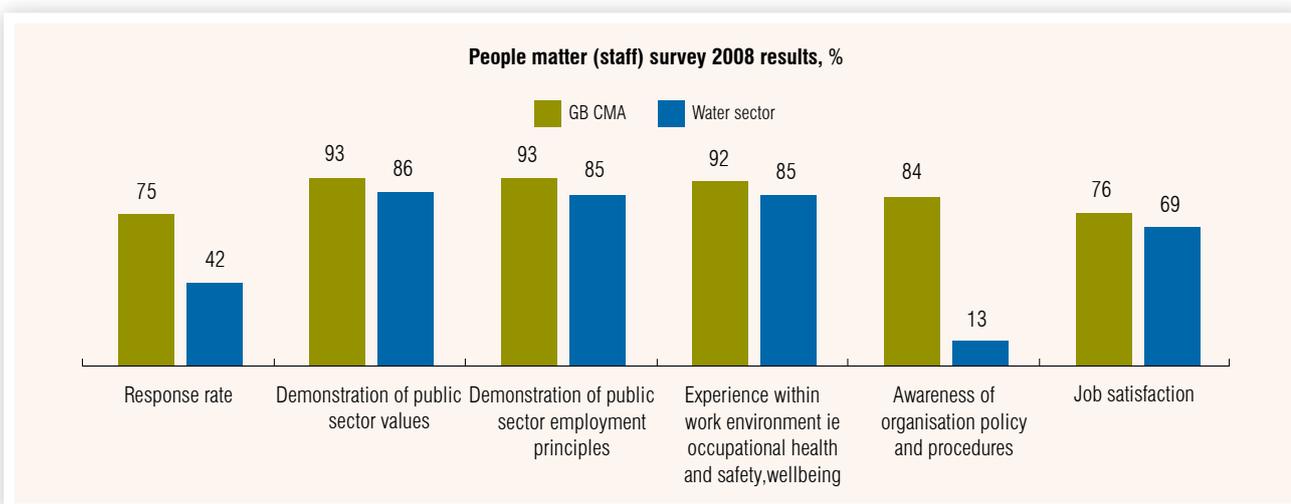
- Thirty four per cent of GB CMA staff helped with fire Black Saturday bushfire effort, including front line fire fighting, staffing call centres and providing food or shelter to those whose homes were destroyed (see also case study on page 26). Although the fires impacted on many GB CMA staff, none were injured. The Dryland team adjusted its focus to address immediate community priorities.

### Occupational health and safety

- All occupational health and safety policies and procedures were reviewed.
- An external occupational health and safety audit was conducted by consultants PKF Chartered Accountants and Business Advisers (see a concluding comment from the audit on page 47).
- ELearning training was introduced, including modules on manual handling, occupational health and safety awareness in the office and bullying and harassment.

*"The top of the list of positives of working for the GB CMA would have to be the people, and being part of natural resource management. There is a strong feeling of teamwork and co-operation amongst the staff and this is what impressed me when I commenced with the organisation. As a staff member who is mainly office bound, I enjoy Monday Couch Catch Up where I hear (in a relaxed and often humorous way) about activities around the Catchment and what people are busy with in and out of the office, and it reinforces that sense of being part of a team."*

**Vicki, Office Manager**  
(commenced November 2008)



### Occupational health and safety statistics summary

	2008-09	2007-08
Total incidents, no.	8	8
Days lost	0	0
Hazards reported, no.	2	1
Lost time injury frequency rate	0	0
Occupational health and safety committee meetings (excluding tool box meetings), no.	6	5

## General workforce statistics

	GB CMA					Comparable organisations 2008	Victorian public sector 2007	Comment
	2006-07	2007-08		2008-09				
		no.	%	no.	%			
<b>Gender and employment type<sup>i</sup></b>								
Male		27	51	28	51	44	34	GB CMA results more consistent with all Victorian workforces where 45 per cent are female
Female	no data	26	49	27	49	56	66	
Part time		13	25	12	22	25	39	Only nine per cent of employees in land and water sector work part time 22 per cent of staff working part time represents continued commitment to a flexible work place
Full time	no data	40	75	43	78	75	61	
Part time male	1	2	4	1	2	no data	no data	
Part time female	9	11	21	11	20			
Full time male	26	25	47	27	49			
Full time female	15	15	28	16	29			
<i>Total employees</i>	51	53	100	55	100	100	100	
<b>Total full time equivalents<sup>i</sup></b>		48.3		50.4				
<b>Employment status<sup>i</sup></b>								
Fixed term	17	18	34	20	36	no data	25	45 per cent fixed term employees are senior managers on performance based contracts
Ongoing	34	35	66	35	64		75	
<b>Age profile (years, by tally)<sup>i</sup></b>								
20-24	1	1	2	0	10	14	16	Higher representation in 30-55 age group is encouraging given trend in the public sector to an aging workforce Average age acceptable given workplace requires most employees to have undergraduate degree as a minimum
25-29	6	4	8	6				
30-44	26	25	47	26	74	53	56	
45-54	13	16	30	17				
55-59	4	3	6	2				
60-64	1	4	7	3	16	34	29	
65+	0	0	0	1				
Average age, years		42		43		43	49	
<b>Years of service<sup>ii</sup></b>								
12 months or less	11%		11	7	12	no data	no data	Results are on track with current retention objectives
1-3 years	32%		15	14	24			
3-5 years	14%		28	9	15			
5+ years	43%		46	29	49			
Average length of service, years		5.4 yrs		5.8 yrs		6 yrs		
<b>Salary distribution</b>								
<\$40,000		10	19	9	16	16	21	Remuneration packages remain competitive within local market
\$40,000 – 59,999		23	44	23	42	35	42	
\$60,000-79,999		10	19	12	22	27	31	
\$80,000+		10	18	11	20	21	8	
Average salary		-	-	\$67,608	-	\$63,641	-	
<b>Turnover</b>	19%	5	9	5	9	18		Target turnover seven-ten per cent
<b>Exit interviews completed</b>		3	60	4	80	no data	no data	
<b>Absenteeism</b>	2.1%	no data	1.8	no data	1.9	no data		
<b>Training expenditure (% of salary budget)</b>	1.5%	\$102,000	2.7	\$115,000	2.4	no data		Absenteeism extremely low - reflects flexible workplace practices and job satisfaction

i Active employees: any GB CMA employee included in payroll system whose status is not terminated

ii All employees including terminations (excludes Board and committee members)

## Long-term strategies implementation progress

- The Goulburn Broken Human Resources Review (May 2008) found that significant progress in implementing audit recommendations has been made. Tasks in progress relate to extending the succession policy to include workforce planning, and workforce planning and forecasting.
- Most of the tasks listed in the Workforce People Strategy have been completed (see the table below).
- Recommendations completed from the Occupational Health and Safety Review (April 2009) include establishment of an occupational health and safety risk register, implementation of a consistent risk assessment methodology, and an increased frequency of workplace inspections.
- GB CMA staff are extremely aware of, and satisfied with, occupational health and safety management and policy and procedure (averaging 99.75 per cent in the eight elements of the 2008 people matter survey). The internal audit by PKF included the conclusion:  
*"... nothing that came to their attention that causes us to believe that the GB CMA has not maintained in all material respects effective control procedures over the areas reviewed by PKF".*



GB CMA's Mary Dimit. Photo: Vicki Mackenzie, GB CMA

### Progress in implementing tasks listed in Workforce People Strategy

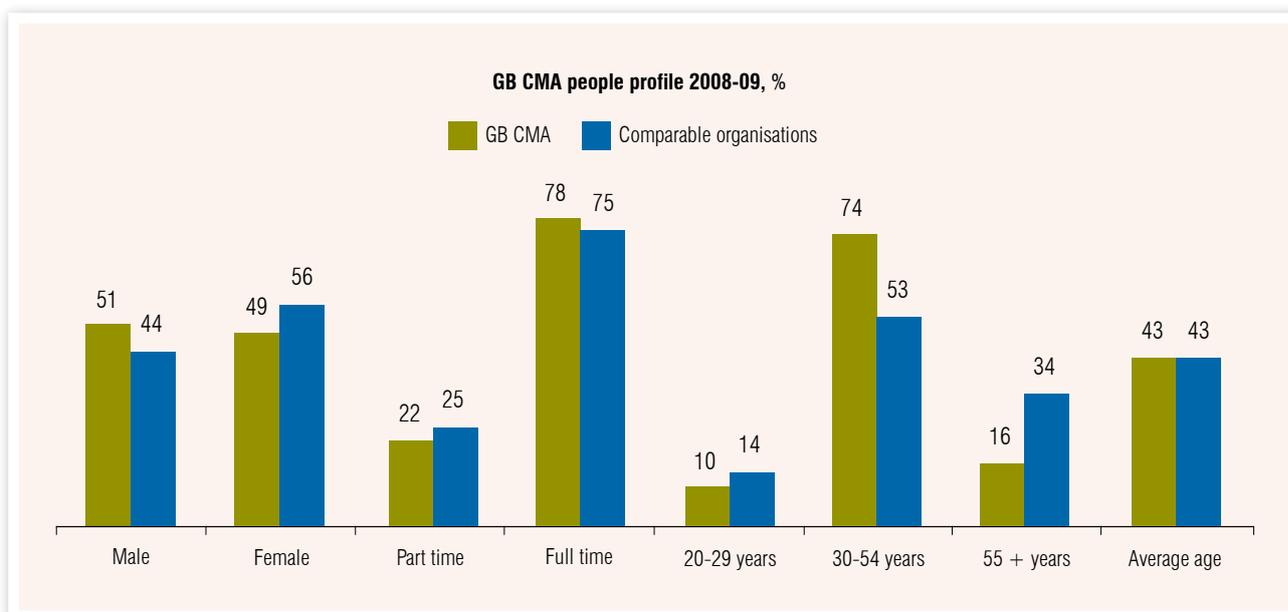
Program	Progress	
	Tasks scheduled to be completed by 2008-09, %	Progress since 2005
Workforce planning	80	Workforce reporting model developed and implemented Forecast staffing levels have remained within targets Succession planning and management has delivered a skilled and appropriate workforce
Developing people and leaders	80	GB CMA continues to spend about two per cent on training and development per annum Individualised training plans included in performance planning and reviews
Employee relations	90	Committed to working with staff and providing effective solutions to any workplace issue Staff workplace flexibility options systemised Availability of information to all staff on portal
Health and safety	90	Occupational health and safety legislative requirements reviewed Continued excellent occupational health and safety results Continued staff and management participation
Morale, reward and recognition	90	Increased opportunities for staff integration and sharing of project achievements Continued excellent people matter survey results

*"The beauty and attraction for me about working within the GB CMA was the encouragement to think outside of the square and to do the right thing in regards to improving the health of our catchment. The positive approach from the top towards development of staff and opportunities to interact on a broader stage with other like-minded people is a great advantage this organisation has over many of the other natural resource management agencies".*

**Carl, River Health Implementation Manager**  
(commenced November 2007, in the water sector for 20 plus years)

*"The biggest highlight for me has been the ability to balance my work and family life so that I am able to spend the most precious and valuable years with my toddler and also feel like I am contributing to GB CMA and the community."*

**Sam, Financial Accounting Support Officer**  
(commenced July 2006)



## Catchment condition

- GB CMA's exceptional occupational health and safety record includes a lost time injury frequency rate of zero since reporting was introduced.
- Staff turnover remains significantly below that for comparable organisations (see general workforce statistics table on page 46).
- Staff satisfaction is among the best in the Victorian public sector and water sector (see people matter survey table on page 45).
- Ten per cent of GB CMA staff have completed the intensive 12 month Fairley Leadership Program, a core building block for developing emerging leaders within the regional community.
- Industrial issues have not escalated and have been resolved to the satisfaction of the staff and management.
- Harassment and bullying (as reported in the people matter survey 2008) is not identified as an issue of concern.

*"Good people, good working environment and you feel like you're contributing in a small way to helping the environment – also you get paid every fortnight – not bad at all!"*

**Jason, Assistant Business Manager**  
(commenced January 2009)

*"The Authority although small in numbers has a highly skilled and diverse professional workforce. These staff come together as a team to help each other out and to develop strategic solutions to the issues the Catchment faces."*

**Geoff, Environmental Water Reserve Coordinator**  
(commenced August 2005, in the Water Sector for 30 plus years)

## What's next?

- The position of Chief Executive Officer is in transition, with a replacement expected to be appointed late in 2009.
- Staff expertise and capability will be better matched with funded opportunities.
- The Workforce Plan for 2010–2015 will be reviewed and implemented.
- More recommendations from the 2009 occupational health and safety review will be implemented, including establishment of occupational health and safety targets additional to those currently reported to Board and development of a records management procedure.



GB CMA's Carl Walters and Corey Wilson inspect works.  
Photo: Mark Turner, GB CMA

## Senior officers



**Annie Squires** - Information Technology (IT) Manager  
Oversees information and communication technology services.



**Richard Warburton** - Occupational Health and Safety Manager

In addition to his waterways role, Richard develops and maintains statutory obligations for compliance and maintenance of safety management system activities including policies, procedures and manuals.



**Bill O'Kane**, BSc, GAICD - Chief Executive Officer  
Accountable Officer under the Financial Management Act and directly responsible to the Board for day to day operations.



**Rosalba Camera**, AssDip Frontline Man't, Cert IV Assessment and Workplace Training - Executive Assistant

Provides administrative support to the CEO and the Board and its sub-committees, including significant liaison with senior managers and members of the Board.



**Carl Walters**, Assoc Dip (Civil), MIEAust - River Health Implementation Manager  
Oversees implementation of the waterways works programs.



**Mark Cotter**, BAgSc (Hons), Dip Proj Man't, GradCertAppSc (Maths) - Dryland Strategy Manager

Supports Dryland Manager with policy advice and technical support and implements strategic projects in the Dryland



**Geoff Earl**, BE (Civil) - Environmental Water Flow Coordinator

Works closely with environmental water resources officers in North East, Goulburn Broken and North Central Catchment Management Authority regions and provides strategic advice on managing stream flow to meet regional ecological and environmental flow targets.



**Sharon Lewis**, BSc, BAppSc (Hons) - Dryland Manager

Provides executive support to Broken Goulburn Implementation Committee and oversees implementation of Dryland Landscape Strategy, managing the Dryland Team (responsibilities include Landcare, dryland salinity, local government and community engagement programs).



**Guy Tierney**, BE (Civil) - Statutory Planning and Floodplain Manager

Manages the floodplain program and statutory planning activities across the Goulburn, Broken and part of the River Murray basins.



**Stan Gibney**, BA, FCA (Ireland), CA, CIA, MIIA - Business Manager and Freedom of Information Officer

Ensures efficient administration of the Authority and the provision of prompt and timely financial advice to the CEO and Board.



**Kate Pendergast**, BBus (Marketing), Cert IV Assessment and Workplace Training - Strategic Human Resource Manager

Coordinates and delivers the Human Resource function, providing support and advice to all levels of management and staff on human resource issues.



**Tim Barlow**, BSc - Biodiversity Manager

Manages and coordinates biodiversity program, including investment and strategic planning, monitoring and reporting and integration of climate change responses.



**Ken Sampson**, BAgSc, MAgSt - Shepparton Irrigation Region Implementation Committee Executive Officer

Provides executive liaison with the Shepparton Irrigation Region Implementation Committee to ensure works program targets are met in line with the Corporate Plan. Provides input to statewide Salt Disposal and Sustainable Irrigation Program working groups.



**Tony Kubeil**, BSc - Regional Landcare Coordinator

Provides support to the Landcare groups in the region and coordinates a number of projects including the development and implementation of the Regional Landcare Strategy.



**Megan McFarlane**, BAgSc (Hons), MNatRes, GAICD - Business Development Manager

Responsible for funding and investment processes and provides strategic advice to the CEO on monitoring, evaluation and reporting and managing the update of the Regional Catchment Strategy.



**Wayne Tennant**, Cert of Technology (Civil Engineering), GradDipEM, GAICD - Strategic River Health Manager

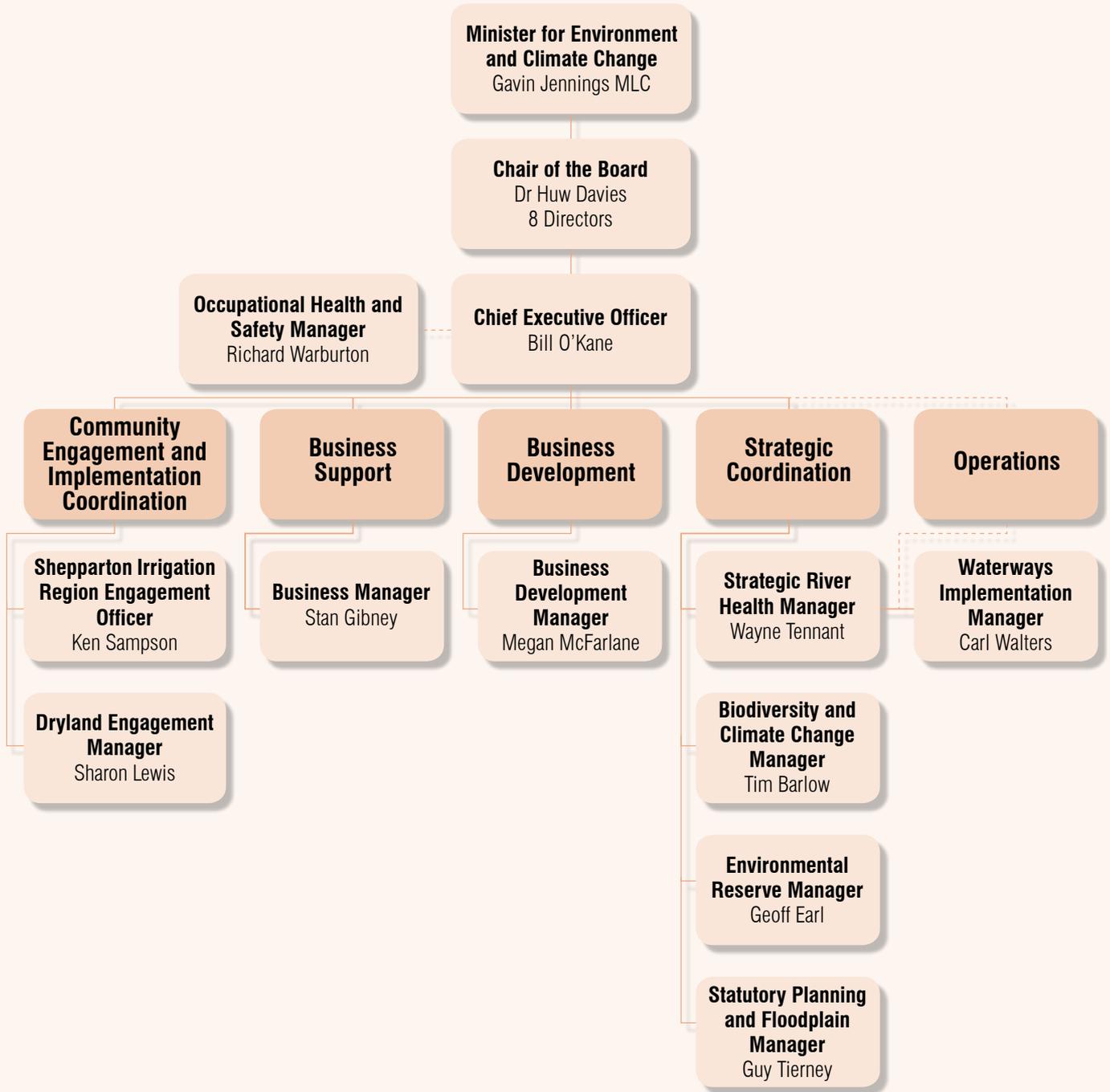
Provides senior professional advice and guidance to the CEO and Board on policies, programs, implementation strategies, research activities, monitoring, and related projects on river health.



**Neville Atkinson** - Indigenous Facilitator

Coordinates cultural heritage matters related to natural resource management across the Goulburn Broken Catchment, providing strategic direction and advice to the GB CMA and its partners including local government, the community and Traditional Owners.

## GB CMA management structure



# Governance

Compiled by Stan Gibney, Bill O’Kane, Megan McFarlane and Rod McLennan

## Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>ii</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Corporate Plan key performance indicators <sup>iii</sup> Compliance <sup>iv</sup>	n.a.		On target	High	n.a.
Long-term strategy implementation progress	Corporate Plan key performance indicators <sup>v</sup> Compliance <sup>v</sup>	n.a.		On target	Medium	● <sup>vi</sup>
Catchment condition <sup>i</sup>	Efficiency ratios Management systems: - legislative and funding backing - policies and procedures - communities’ capacity <sup>vii</sup>	Poor	Medium	Satisfactory	Medium	↑

i The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.  
 ii Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.  
 iii See Corporate Plan performance areas, indicators, targets and progress table page 61  
 iv See performance of statutory responsibilities as a Victorian State Authority and Employer page 54  
 v Aggregated performance over the years GB CMA has been in existence (since 1997)  
 vi Assumed to parallel government funding trend  
 vii Evidence listed in ‘Collaborations and communities’ section page 18

## Background

### Government investment, \$000

2006-07	2007-08	2008-09	2009-10 <sup>i</sup>	Trend
1,709	1,700	1,519	1,520	●

i Forecast based on funding advice at August 2009

This section includes:

- the legislative and funding context of the GB CMA to establish its corporate governance practices
- a scorecard (above) as a summary of annual and long-term performance (including compliance) and the capacity of the Catchment’s people to undertake sound and ethical natural resource management
- an overview of the GB CMA’s governance practices
- a risk management attestation
- GB CMA’s performance of statutory responsibilities as an employer and a Victorian State Authority
- performance against key performance indicators listed in the GB CMA’s Corporate Plan.

Benchmarking results in relation to corporate funding charge against projects, according to DSE’s assessment tools, indicate that the GB CMA compares extremely favourably with its peers.

### Major references

- Goulburn Broken Catchment Management Authority Corporate Plan 2008-09
- DSE Assessment of Corporate and Statutory Costs 2005
- Governance Guidelines for DSE Portfolio Statutory Authority Board

### GB CMA’s legislative and funding context

The GB CMA operates principally under the Catchment and Land Protection Act 1994 (CaLP Act), and has additional responsibilities for waterway management, floodplain management and regional drainage functions under Part 10 of the Water Act 1989.

The Victorian Government funds the GB CMA to fulfil its duties as detailed in the Statement of Obligations.

Costs that enable the GB CMA to fulfil its corporate and statutory obligations are funded from a direct corporate allocation plus interest earned with the balance recovered from a variable corporate charge to internal only projects of up to a maximum of three per cent. Corporate charges are not applied to funding to community groups or other partners.

GB CMA received \$31.2 million from regional, State and Australian Government sources in 2008-09. The regional community contributes (in-kind and via products and services) up to about double that which governments contribute. An increasing amount of government funding received is from initiative funding sources. Benefit cost analysis is undertaken on parts of the business where it is possible, such as major infrastructure work.

All works undertaken comply with State, Murray Darling Basin and National strategies.

## Objectives, functions, powers and duties of the GB CMA

Under section 12 of the CaLP Act:

- 1 The Authority has the following functions in respect of the region for which it has been appointed:
  - a To prepare a Regional Catchment Strategy for the region and to coordinate and monitor its implementation
  - b To prepare special area plans for areas in the region and to coordinate and monitor its implementation
  - c To promote the co-operation of persons and bodies involved in the management of land and water resources in the region in preparing and implementing the Strategy and special area plans
  - d To advise the Minister, and, if requested by any other Minister, that other Minister
    - i on regional priorities for activities by land resource allocations to bodies involved in the management of land and water resources in the region
    - ii on guidelines for integrated management of land and water resources in the region
    - iii on matters relating to catchment management and land protection
    - iv on the condition of land and water resources in the region.
  - e To promote community awareness and understanding of the importance of land and water resources, their sustainable use, conservation and rehabilitation
  - f To make recommendations to the Minister about the funding of the implementation of the Regional Catchment Strategy and any special area plan
  - g To make recommendations to the Minister and the Secretary about actions to be taken on Crown land managed by the Secretary to prevent land degradation
  - h To advise the Minister and provide information to the Minister on any matter referred to it by the Minister
  - i To carry out any other functions conferred on the Authority by or under this Act or any other Act.
- 2 Each Authority has power to do all things that are necessary or convenient to be done for or in connection with, or as incidental to, the performance of its functions, including any function delegated to it.
- 3 Subsection (2) is not to be taken to be limited by any other provision of this Act that confers a power on the Authority.
- 4 Each Authority has the duties conferred on it by or under this or any other Act.

### GB CMA Board

Members of the GB CMA Board of Directors are appointed by the Minister for Environment and Climate Change. They are drawn from within the region and together have extensive experience and knowledge of primary industry, land protection, water resource management, waterway and floodplain management, environmental conservation, local government, business and financial management.

Under the direction of the Board, the GB CMA develops detailed environmental management strategies under the umbrella of the overarching Regional Catchment Strategy.

## GB CMA's corporate governance practices

Sound and ethical corporate governance practices underpin GB CMA's overall performance including compliance with what is required and expected of it.

The GB CMA aims to fulfil its corporate and statutory operations efficiently and effectively.

### Benchmarking

Costs and achievements are benchmarked regularly against those of peer organisations and similar industries and the ratio of tasks performed by employees in-house to those outsourced is also closely monitored.

### Board committees

The GB CMA has established an Audit Risk and Compliance Committee and a Remuneration Committee. Both committees operate under the terms of their respective charter.

The Chairman is ex-officio of the Remuneration Committee and is able to attend all meetings.

#### *Audit, Risk and Compliance Committee*

*(all members meet the criteria of 'independent' member)*

- John Pettigrew (Chair)
- Yvonne Davies
- Michael Hall (Chartered Accountant with MB&M - Consultant)
- Neville Barwick
- Peter Fitzgerald

#### *Remuneration Committee*

- Anne McCamish (Chair)
- John Pettigrew
- Lyn Gunter
- Nick Roberts

#### *Implementation committees*

The Shepparton Irrigation Region Implementation Committee and the Broken Goulburn Implementation Committee drive implementation of projects including onground works to ensure the activities of the GB CMA reflect the views of local communities. (See 'Collaborations and communities' section for lists of committee members.) The GB CMA and partner agencies offer an array of incentives to landholders wishing to undertake environmental works.

Priority integrated environmental works are achieved by combining the best available science with practical challenges such as running a productive farm or maintaining a waterway for environmental and tourism benefits.

### Planning framework

The GB CMA's planning framework is described within the 'Planning and responding' section from page 37.

### Risk management

The Authority reviewed its risk profile during the year and it was considered by the Audit and Compliance Committee and endorsed by the Board in June 2009. The Risk Management processes of the Authority were also reviewed by the Victorian Managed Insurance Authority during the year.

#### **Risk management attestation**

I, Huw Davies certify that the Goulburn Broken Catchment Management Authority has risk management processes in place consistent with the Australian/New Zealand Risk Management Standard and an internal control system is in place that enables the executive to understand, manage and satisfactorily control risk exposures.

The audit committee verifies this assurance and that the risk profile of the Goulburn Broken Catchment Management Authority has been critically reviewed within the last 12 months.



**Dr Huw Davies**

Chair

14 September 2009

## Board directors



### **Dr Huw Davies - Chair (Benalla)**

Huw has over 20 years senior executive experience in the private sector covering a diverse range of industries in Australia and overseas after having started his career as a geologist.

Huw has 15 years experience as both an executive and non-executive director of public, private and government entities. Currently he is the Administrator of the State Electricity Commission of Victoria and Chair of its Executive Committee and a non-executive director of Boom Logistics Limited.



### **Peter Fitzgerald (Tongala)**

Peter's background is in water policies, irrigation usage and the dairy industry. He is currently a director on the Goulburn-Murray Water Board and involved with the Victorian Farmers Federation.

He is a former councillor for the United Dairy Farmers of Victoria and a graduate of the Australian Rural Leadership Program. Peter runs a dairy and beef operation at Tongala and Kotupna.



### **Neville Barwick (Lancefield)**

Neville has a background in architecture which involves management of large construction and disaster recovery projects. He also brings to the board experience as a top level government administrator and a consultant to the corporate sector on strategy formulation and organisational development and review.

Neville has held leading roles in the fields of homelessness, drug addiction and intellectual disability, local government and Landcare and is chairman of two organisations assisting the development of East Timor.



### **Anne McCamish (Ardmona)**

Anne has a background in teaching, flood recovery, leadership training and local government. Anne is a member of the The Living Murray's community reference group and a member of the La Trobe University regional advisory committee. Anne's other interests include community engagement and governance.



### **Yvonne Davies (St James)**

Yvonne is a dryland Primary Producer and is also a local government Councillor.

Yvonne has served nine years as a GB CMA Board member.

Yvonne is formerly a board member of the Tungamah Shire Water Board, a Councillor of Tungamah Shire, Bail Justice and on the Moira Tourism Board. Yvonne is also part of the Association of Victorian Regional Waste Management Group and was president of this group for three years. Her many other roles include Director (eight years) and Chair (five years) of the Goulburn Valley Regional Waste Management Group, Inaugural Mayor of Moira Shire and a Councillor of Moira Shire for 12 years.



### **Nick Roberts (Shepparton)**

Nick has worked for the Victorian National Parks Association for seven years and has been involved with Landcare organisations for over a decade. Nick is the conservation representative on the Murray Darling Basin Ministerial Council Community Advisory Committee and a former member of the Shepparton Irrigation

Region Implementation Committee.

Nick works closely with aboriginal Traditional Owners and other community groups to ensure biodiversity, river health and sustainable land use is achieved in the Catchment.



### **Lyn Gunter (Flowerdale)**

Lyn is currently Mayor of Murrindindi Shire and a member of North East Victoria Area Consultative Committee.

Lyn has also held positions as a board member of Murrindindi Construction, State Emergency Services Controller for 10 years (especially floods), a member on the Mitchell and Murrindindi Floodplain Mapping, the Yea Floodplain Management Study, the Goulburn Drought Recovery Committee, State Rural Zones Review Committee and the Goulburn-Murray Water Quality Reference Committee.

Lyn has an interest in trying to implement and ensure there is a holistic approach to land use planning which includes water-use, climate, soil and rainfall and also the integration and implications of ground and surface water within the Catchment.



### **John Pettigrew - Deputy Chair (Bunbartha)**

John is currently a member of the Goulburn Valley Environment Group, Chair of Environmental Farmers Network and a member of Landcare and the Victorian Farmers Federation. John was previously a director of Goulburn-Murray Water, SPC Limited and the Goulburn Broken Catchment and Land Protection Board.

John was a former member of the State Rivers Shepparton Advisory Board and Chair of Goulburn-Murray Waters State Rivers Shepparton Advisory Board.

John has a background in horticulture and farming and his other interests include resource management, protection and enhancement of the natural environment, pine plantations and irrigation.

Don Cummins was a Director who resigned on 29 October 2008.

## Compliance

The following table includes several summaries of GB CMA's compliance that are discussed in more detail elsewhere in this Annual Report.

### GB CMA's performance of statutory responsibilities as a Victorian State Authority and Employer

Act or policy	Board's major tasks	2008-09 issues and status
<b>Statutory Authority</b>		
Catchment and Land Protection Act 1994	Prepare, coordinate, monitor and review of Regional Catchment Strategy.	Review to be finalised June 2009. Currently reviewing sub-strategies. On track.
	Submit to Minister and Council by the prescribed date: <i>"A report on the condition and management of land and water resources in the region and carrying out of its functions."</i>	Annual Report on schedule. Victorian Catchment Management Council annual report on schedule.
	Corporate Plan to be submitted to Minister under the CALP Act by 30 April.	Submitted to Minister 29 April 2009. Approved under Section 19C (3) of the CALP Act.
	Members declare new interests at each (monthly) Board meeting and document it in Pecuniary Interests Register. Members must submit a primary return and an annual return.	Declarations of Pecuniary Interests have been duly completed by all relevant directors or officers of the Authority and are available for inspection.
Water Act 1989	Corporate Plan available for inspection.	Copy is available for inspection during business hours and is on website <a href="http://www.gbcma.vic.gov.au">www.gbcma.vic.gov.au</a> .
	Review funds at each (monthly) Board meeting. Policy for investment as per the Trustee Act 1958.	During the year, the GB CMA opened a deposit account with Treasury Corporation Victoria and minimised its cash holdings with commercial banks, thereby avoiding the need to pay insurance on the Australian Government's guarantee on bank deposits over \$1 million. Interest earned is included in this Annual Report.
	Submit statement of borrowings. Review borrowings at each (monthly) Board meeting. Finance leases are borrowings and subject to Treasurer's approval.	Included as part of Corporate Plan.
	Meeting Procedures of Authorities.	Policy adopted similar to Schedule 2 of the Water Act – General Provisions About Procedures of Authorities. Minutes are only available through application under Freedom of Information. GB CMA adopted Governance Guidelines for Statutory Authority Board Members, DSE 2004 and conducted a training program for all directors. New code of conduct for public sector - employees adopted.
Public Administration Act 2004	Waterway management responsibilities	GB CMA was established as a body corporate under the Catchment and Land Protection Act and then established as an Authority under the Water Act and given waterway management, floodplain management and drainage functions under Part 10 of the Water Act.
	Ensure operations of Board comply with Part 5.	The State Services Authority has developed a range of guidelines to be adopted by public sector organisations. Guidelines cover employment principles, ethics, merit and equity. The GB CMA has reviewed processes to ensure compliance. A recruitment kit has been developed and reviews undertaken of equal opportunity, harassment and bullying policies.

Act or policy	Board's major tasks	2008-09 issues and status
Statutory Authority		
Environmental Protection and Biodiversity Conservation Act 1999	Provide for the protection of the environment and promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources and promote the conservation of biodiversity.	All works have a process which assesses the works against this Act. The GB CMA and its partners have complied with all requirements. Although the GB CMA has not referred any projects to the Minister in its own right, projects associated with the Minister's decommissioning of Lake Mokoan, the Deakin Drain 16 Extension project and Broken Creek surface water management were all referred.
Freedom of Information Act 1982	<p>Report requests for access to documents in Annual Report. Report requests at each (monthly) Board meeting. The Act gives persons the right to request certain types of information (which are not exempt documents) held by the Authority. The Authority's Freedom of Information Officer is authorised to make decisions about access to documents under the Freedom of Information Act. The officer has 45 days from the date of receiving a valid request to accede to or reject the applicant's request. There are two costs associated with making a Freedom of Information request, the:</p> <ul style="list-style-type: none"> <li>- application Fee of \$22.70 (\$23.40 from 1 July 2009) which is non-refundable and an</li> <li>- access cost which covers the cost to Authority for providing the information.</li> </ul>	<p>The Freedom of Information Act 1982 allows the public a right of access to documents held by the GB CMA.</p> <p>Freedom of Information requests are made in writing describing the documents requested and including payment of the \$22.70 application fee (\$23.40 from 1 July 2009). Further charges may be payable. Freedom of Information fees and charges are not subject to GST.</p> <p>Requests to the GB CMA should be sent to Freedom of Information Officer, PO Box 1752, Shepparton, Vic 3632. The telephone contact number is (03) 5820 1100; enquiries can be emailed to <a href="mailto:reception@gbcma.vic.gov.au">reception@gbcma.vic.gov.au</a></p> <p>Three applications were received during the year. Access to the requested documents was provided in full in response to one application and access provided in part, due mainly to the non-disclosure of personal information, in response to the other two applications. There were no internal reviews nor appeals to the Victorian Civil and Administrative Tribunal.</p>
Whistleblowers Protection Act 2001	Report actions in Annual Report. Report actions at each (monthly) Board meeting.	<p>No issues reported.</p> <p>Disclosures of improper conduct by the GB CMA or its employees may be made to Vicki Mackenzie (Protected Disclosure Coordinator) or alternatively to the Ombudsman. (See details on page 58.)</p>
Planning and Environment Act 1987	GB CMA is the Floodplain Management Authority under Part 10 of the Water Act and is a Section 55 Referral Authority under the Planning and Environment Act.	The GB CMA receives more referrals than any other CMA in the State (around one thousand).
	<p>As per the Act and Victorian Planning Provision Practice Notes. Board is advised of application refusals at each (monthly) meeting.</p> <p>Local government can request advice but are not required to implement it.</p>	<p>Decisions are made in accordance with the Victoria Flood Strategy, the GB Regional Floodplain Management Strategy, the Victorian Planning Provisions Practice Notes and Authority Policy, all of which have largely been incorporated into respective municipal planning schemes as performance based criteria.</p> <p>Advice was provided as appropriate.</p>
Privacy Act 2000	Ensure details of individuals are protected.	GB CMA has developed a privacy policy (in accordance with the Act) on how information is stored and under what circumstances it can be accessed or released to third parties.
Flora and Fauna Guarantee Act 1988	Conserve the Catchment's communities of flora and fauna and manage potentially threatening processes and educate the community in the conservation of flora and fauna.	The GB CMA continues to support the implementation of action statements and recovery plans for threatened flora and fauna by the Department of Sustainability and Environment.

Act or policy	Board's major tasks	2008-09 issues and status
<b>Statutory Authority</b>		
Environmental Protection Act 1970	Protection agencies need to report in their annual reporting processes, actions taken to implement the Policy (as per their responsibilities in State Environment Protection Policy (Waters of Victoria) and Schedules), so that Environment Protection Authority can then report to the community.	A process was initiated to conduct priority ecological risk assessment, using Guidelines for Environmental Management Risk-based Assessment of Ecosystem Protection to determine further work required. Participated in the development of the Regional Goulburn Broken Waterway Incident Agreement. Staff attended training with respect to emergency and incident response. (Australian inter-service incident management system.)
	Outlines CMA's roles with respect to set goals, priorities and targets.	
	Refers to water allocations and environmental flows.	
	Relates to responsibilities of various agencies for ensuring sustainable agricultural activities with the catchment	
	Relates to the management of irrigation channels and drains.	
	Refers to vegetation protection and rehabilitation.	
Forest Act 1958	Liaise with DSE as required.	Waterways in areas managed by DSE under the Act, the Authority complied with elements of the code which deal with access to waterways and crossings.
Financial Management Act 1994	Undertake review of its annual operations and advise Minister regarding compliance with Financial Compliance Management Framework.	Information listed in Part 9.1.3 (iv) is available on request.
Cultural Heritage Act 1986	Ensure the use of cultural heritage management plans for certain development plans or activities and interact with registered Aboriginal parties to evaluate management plans, advise on permit applications and enter into cultural heritage agreements.	GB CMA complied with requirements. Also growing capacity in this area. The Authority is committed to policies, programs and strategies aimed at delivering culturally appropriate services to all Victorians. Current practices of inclusive and thorough public consultation ensure that all persons who have an interest in investigations are kept informed and have the opportunity to have input into the Goulburn Broken Catchment Management Authority deliberations.
	Comply with standards for the construction and maintenance of buildings.	GB CMA complied with building and maintenance provisions of this Act.
National Competition Policy	Ensure fair competition	Competitive neutrality seeks to enable fair competition between government and private sector businesses. Any advantages or disadvantages that government businesses may experience as a result of government ownership should be neutralised. The GB CMA continues to implement and apply this principle in its business undertakings.
Marine Act 1988	The GB CMA is the Boating Authority for the Goulburn River downstream from the Eildon Weir pondage and upstream of Hughes Creek.	GB CMA reviews boating speed limits and audits signage and access in its area of responsibility. Published the Boating Guide for the Goulburn River. Erected signs at boat ramps on the river advising boaters of their obligations.
Country Fire Authority Act 1958	Work with other related organisations to assist in the control, prevention and suppression of fires within the Catchment.	GB CMA has developed policies particularly relating to waterway operations which comply with the Act and reduce fire risk. Fire suppression equipment has been purchased.
Victorian Industry Participation Policy	The Victorian Industry Participation Policy is a Victorian Government initiative designed to promote greater access for small to medium enterprises to work with major projects.	Nil for contracts over \$1 million.

Act or policy	Board's major tasks	2008-09 issues and status
Employer		
Workplace Relations Act 1996	Comply with the award system which provides a minimum set of terms and conditions for employment of GB CMA employees.	GB CMA's policies have been evaluated for alignment against the Act. These policies have been reformatted and are on the Authority's portal (intranet). Current agreement is Professional, Administrative and Technical Staff Enterprise Agreement 2007-2009.
Equal Opportunity Act 1995	Annual data return reporting gender, diversity and complaints lodged and investigated.	The GB CMA is an equal opportunity employer. Kate Pendergast is the sexual harassment contact officer. No complaints were received in the reporting period. Of the GB CMA staff 49 per cent are female and 51 per cent male.
Long Service Leave Act 1992 Victorian Long Service Leave Regulations 2005 Water Long Service Leave Regulations 2001	Long service leave liability is updated monthly to the Board.	Policies comply with Act. Liability is reflected in financial provisions and calculation explained in the notes to the financial statements.
Occupational Health and Safety Act 2004, amended 2005	Report Occupational Health and Safety issues at each (monthly) Board meeting and in Annual Report.	GB CMA has comprehensively reviewed its policies and procedures and inducted all staff. Manuals were developed and distributed and made available for contractors. Designated work groups and health and safety representatives are part of the consultative processes reflecting updates of the Act. Policies and procedures are available on the portal (intranet).
Victorian Government Risk Management Framework	The Victorian Government Risk Management Framework provides for a minimum risk management standard across public sector entities. Attestation by accountable officer in annual report which ensures that requirement is built into corporate planning and reporting processes.	During the year Victorian Managed Insurance Authority undertook a review of GB CMA's risk framework and made several recommendations as part of continuous improvement. Attestation that the GB CMA has risk management processes in place consistent with the Australian/New Zealand Risk Management Standard has been made by the accountable officer.



Dragonfly. Photo: Di Huber



Emperor Gum Moth. Photo: Di Huber



Cicada shell. Photo: Di Huber

## Details of compliance with Whistleblowers Protection Act 2001

The Authority has established a Whistleblowers Protection Policy in line with its obligations under the Whistleblowers Protection Act 2001.

### **a Contact persons within the Goulburn Broken Catchment Management Authority**

Disclosures of improper conduct or detrimental action by the Goulburn Broken Catchment Management Authority or its employees, may be made to the following officers:

- Protected Disclosure Coordinator  
Vicki Mackenzie (03) 5820 1100
- Protected Disclosure Officers  
Carl Walters (03) 5820 1100  
Wayne Tennant (03) 5820 1100  
Peter Howard (03) 5833 5343

All correspondence, phone calls and emails from internal or external whistleblowers will be referred to the Protected Disclosure Coordinator.

Where a person is contemplating making a disclosure and is concerned about approaching the Protected Disclosure Coordinator or a Protected Disclosure Officer in the workplace, he or she can call the relevant officer and request a meeting in a discreet location away from the workplace.

### **b Alternative contact persons**

A disclosure about improper conduct or detrimental action by the Goulburn Broken Catchment Management Authority or its employees, may also be made directly to the Ombudsman.

The Authority operates the current procedures in line with its Whistleblowers Protection Policy.

### **c Protected Disclosure Officers**

Protected Disclosure Officers will:

- be a contact point for general advice about the operation of the Act for any person wishing to make a disclosure about improper conduct or detrimental action
- make arrangements for a disclosure to be made privately and discreetly and, if necessary, away from the workplace
- receive any disclosure made orally or in writing (from internal and external whistleblowers)
- commit to writing any disclosure made orally
- impartially assess the allegation and determine whether it is a disclosure made in accordance with Part 2 of the Act (that is, a protected disclosure)
- take all the necessary steps to ensure the identity of the whistleblower and the identity of the person who is the subject of the disclosure are kept confidential
- forward all disclosures and supporting evidence to the Protected Disclosure Coordinator.

### **d Protected Disclosure Coordinator**

The Protected Disclosure Coordinator has a central clearinghouse role in the internal reporting system. The Protected Disclosure Coordinator will:

- receive all disclosures forwarded from the Protected Disclosure Officers
- receive all phone calls, emails and letters from members of the public or employees seeking to make a disclosure
- impartially assess each disclosure to determine whether it is a public interest disclosure
- refer all public interest disclosures to the Ombudsman
- be responsible for carrying out, or appointing an investigator to carry out, an investigation referred to the public body by the Ombudsman
- be responsible for overseeing and coordinating an investigation where an investigator has been appointed
- appoint a welfare manager to support the whistleblower and to protect him or her from any reprisals
- advise the whistleblower of the progress of an investigation into the disclosed matter
- establish and manage a confidential filing system
- collate and publish statistics on disclosures made
- take all necessary steps to ensure the identity of the whistleblower and the identity of the person who is the subject of the disclosure are kept confidential
- liaise with the Chief Executive Officer of the public body.

## Available information

- declarations of pecuniary interests have been duly completed by all relevant officers of the GB CMA
- details of publications produced by the GB CMA about the activities of the Authority and where they can be obtained
- details of changes in prices, fees, charges, rates and levies charged by the GB CMA for its services, including services that are administered
- details of any major external reviews carried out in respect of the operation of the GB CMA
- further details of any other research and development activities undertaken by the GB CMA that are not otherwise covered either in the report of operations or in a document which contains the financial report and report of operations
- summary of the objectives and outcomes of each visit
- details of major promotional, public relations and marketing activities undertaken by the GB CMA to develop community awareness of the services provided by the Authority
- details of assessments and measures undertaken to improve the occupational health and safety of employees, not otherwise detailed in the report of operations
- a general statement on industrial relations within the GB CMA and details of time lost through industrial accidents and disputes, which is not otherwise detailed in the report of operations
- a list of major committees sponsored by the GB CMA, the purpose of each committee and the extent to which the purposes have been achieved
- information relevant to the headings listed in Financial Reporting Direction 22B of the Financial Management Act 1994 is held at the Authority's office and is available on request subject to the Freedom of Information Act 1982

## Other information

Other information such as publications, major external reviews, overseas travel or promotional and public relations activities are available on request, subject to the Freedom of Information Act 1982

# Disclosure index

The following index references the GB CMA's compliance with statutory disclosure requirements.

Disclosure	page	
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22B	Nature and range of services provided	2
22B	Organisational structure, names and functional areas of responsibility of senior officers	49-50
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<b>Financial statements required under Part 7 of the Financial Management Act 1994; Standing direction:</b>		
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<b>Other financial reporting direction disclosures in notes to the financial statements</b>		
9A	Disclosure of administered assets and liabilities	n.a.
11	Disclosure of ex-gratia payments	n.a.
13	Disclosure of parliamentary appropriations	76
21A	Responsible person and executive officer disclosures	90

<sup>i</sup> Information relevant to the headings listed in Financial Reporting Direction 22B of the Financial Management Act 1994 is held at the Authority's office and is available on request, subject to the Freedom Information Act 1982.

# Corporate Plan key performance indicators

The GB CMA Board set the following performance areas and indicators for 2008-09 in the GB CMA's 2008-09 to 2012-13 Corporate Plan.

## Corporate Plan performance areas, indicators, targets and progress

Performance area	Key performance indicator	Target	Progress
<b>A Governance</b>			
Develop, implement and review corporate and business plans	Corporate Plan submitted to responsible Ministers and Treasurer (including statement of corporate intent, business plan and financial statement)	By 30 April annually	Completed
	Regular monitoring of Corporate Plan implementation	Enhanced board awareness of the CMAs strategic outcomes and emerging issues	Reported monthly and quarterly
Completion and submission of the Annual Report to the responsible Minister	Annual report submitted to the responsible Minister including assessment against KPIs & targets	By 10 October annually (unless varied by Minister)	2007-08 completed; 2008-09 on track
	Audited financial statements	Opinion from the Auditor General Victoria that the financial report presents fairly the financial position of the Authority	2007-08 completed; 2008-09 on track
Board performance	Complete and submit CMA board performance assessment report according to the guidelines issued by Minister	By 31 August annually	On track
	Participation by Board members in development activities	Number of members participating in development activities	On track
	Authority delegations (CaLP Act s19F) reviewed	By 30 September annually	Completed
	Monitor Authority financial, social and environmental performance	At each meeting and annual summary to 30 June	Completed monthly and on track for annual summary
	All policies adopted by or relevant to the CMA are readily available to all Board members (Public Administration Act s80)	Amended and new policies are placed on web portal within seven days of approval.	Completed
Establish and implement policies and procedures to comply with risk and financial management.	Develop and implement risk management plans and systems including reporting and effectively manage strategic, project, operational, environmental, climate and financial risks	Implement and monitor risk mitigation according to risk plans. Report monthly on top ten risks to Authority and record actions taken to mitigate.	Completed. Four audits undertaken covering risk management framework, financial reporting and project management
	Compliance to risk management plans for each program	Risks identified for each program with ongoing monitoring.	Completed
	Review of governance policies and procedures	Review all governance policies and procedures by 30 June annually.	Completed
Provide advice to Government on regional priorities and programs for implementation of the agreed Regional Catchment Strategies	Provide briefings, advice and reports within the timelines required	100% delivery achieved within timelines	Achieved
Develop strategies to (reduce, sic) the environmental footprint of the Authority.	Reduction in energy, water, paper, transport fuel consumption and greenhouse gas emissions	Strategy developed, implemented and monitored (ResourceSmart Program)	Completed
		Reduce our greenhouse gas emissions by 15% by December 2010	Progressing

Performance area	Key performance indicator	Target	Progress
Climate change and adaptation	Ensure that all natural resource management relevant policies and strategies etc. incorporate climate change and adaptation into their assessments	All new published policies and strategies include climate shift and adaptation strategies.	Achieved
		All existing strategies include climate shift and adaptation when reviewed.	Achieved
<b>B Financial management</b>			
CMA business processes	Improve capacity to produce financial reporting to Board and investors	Financial reports tabled at each Board meeting in a form that provides clear monthly and year to date comparisons, including variances, in a transparent form that is easily understood by Board members	Completed
	Variation of actual to budgeted expenditure shown in reports		
Financial Management Compliance Framework	Financial Management Compliance Framework reported electronically to Minister for Finance via DSE	Financial Management Compliance Framework assessment information is submitted electronically by 30 September annually	Completed
		Demonstrate how previous non or partial compliance issues have been addressed	Completed
Asset Management	Assets managed according to Financial Reporting Direction and in a sustainable manner	Report to Board quarterly	Completed
<b>C Community engagement</b>			
Establish open and transparent processes to engage the community in development and implementation of the RCS and supporting plans	Community Engagement Plan developed and implemented at a regional level	By 30 December 2008	Completed June 2009
	Encourage community discussion and contribution into the Land and Biodiversity White Paper development process and implementation	CMA provide green and white paper contributions via DSE	Completed
Maintain standing community engagement structures to develop and review implementation of strategies and action plans	Standing community engagement structures reviewed for effectiveness and inclusiveness	By 30 December 2008	Completed new implementation committee structure in place for Dryland
<b>D Integrated regional planning and coordination</b>			
Coordinate and monitor the implementation of the RCS	Implementation is reviewed for effectiveness and key priorities	Through the annual report by 30 October annually	Achieved
Co-ordinate the development and implementation of a Regional Catchment Investment Plan (RCIP) Administration of State and Australian Government investment in natural resource management program funds in the CMA region	RCIP documentation developed and negotiated annually, within timelines	Documents provided to DSE according to RCIP process timetable	Achieved
	Program management monitoring processes are in place	Monitoring, Evaluation and Reporting Strategy actions reviewed six monthly.	Achieved
	Quarterly financial reporting	Reports provided on time and in agreed format	Achieved
	Annual RCIP Reporting	Annually at 15 August	Achieved
	Funds acquitted	Annually at 30 September	Achieved
Partnership and service delivery agreements	Agreements documented and signed (i.e. Service Level Agreements)	Documentation completed within two months from funding approval	Completed
<b>E Caretaker of river health</b>			
Development and implementation of onground river restoration works programs	Per cent of projects/studies etc delivered to time, quality and cost parameters	Not less than 90 per cent	Achieved
Authorisation of works on waterways permits	Number of days to process permits	Not applicable	Not applicable

Performance area	Key performance indicator	Target	Progress
Referral authority for any works on or in relation to a dam	Number of days to process referrals	90 per cent processed in no more than 28 days	Achieved
Integrated management of the Environmental Water Reserve into the river works program	Per cent of planning for integration complete	100 per cent complete	Achieved
Management of the environmental entitlement included in the Environmental Water Reserve	Provide advice to G-MW on bulk entitlement	Provide advice as appropriate	Achieved
Provide advice about flooding and controls on scheme amendments, planning and building approvals to local councils in the capacity as a referral authority.	Number of days to process a referral	Not more than 28 days	Achieved
Provide technical advice to councils and the community on flooding	Number of days to process floodplain enquiries	Not more than 28 days	Achieved
<b>F Land management</b>			
Strategic coordination and support for regional Landcare groups, networks and other community groups	Deliver the Regional Landcare Support Strategy, including coordination of Landcare at a regional scale	Progress report by 30 September each year, and evaluation and revision of the strategy every five years	Progressing
Coordinate the development of a Regional Native Vegetation Plan (RNVP)	Percentage of actions within the RNVP implemented	90% of actions within the RNVP implemented over the life of the Plan	Achieved
Land stewardship relating to pest management	Develop Regional Pest Plans applicable to all land tenures in the catchment	Pest plans revised by 30 June every five years as appropriate and resourced	Not completed insufficient resources
		Monitor implementation over the life of the plans subject to funding.	Achieved within resources available
Contribute to regional and statutory planning	CMA to respond to planning referrals from the Environment Protection Authority (EPA) in accordance with relevant legislation	EPA to receive all responses to planning referrals within the legislated timelines	None received
	Provide advice on dryland salinity, irrigation management, soil erosion, or any other land management issue identified in the local Municipal Strategic Statement as the referral body	Provide numbers of referral responses according to issue provided and trends over time	None received
	CMA to guide public land management	Changes to licence conditions for crown frontages	Progressing, involved in crown land frontage licence project
Salinity management	Implementation and periodic review of regional salinity management plans and land and water management plans	Regional salinity management plans and land and water management plans are available, incorporating annual actions to be implemented	Progressing
	Progress against annual action targets for 2007-08 (sic, 2008-09)	All regional salinity management plans and land and water management plans actions and targets achieved	Achieved within levels of funding available
	Develop regional salinity targets and corresponding works programs in accordance with the Murray Darling Basin Salinity Agreement	All annual salinity targets and works programs achieved by applicable CMAs	Achieved within levels of funding available
	Annual Report on the allocation and update of salt disposal entitlements submitted to the responsible Minister	By 31 July annually or as otherwise requested by the responsible Minister	Completed
<b>G Innovation and knowledge sharing</b>			
Research and capability management in areas that support the RCS or sub-strategies' priorities	Support investment in research and capability building aligned with RCS priorities	Research and development projects identified annually and reviewed quarterly.	Achieved

# Financial report

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Tree fern shoots emerge after Black Saturday bushfires. Photo: Mark Turner, GB CMA

## Report of operations

In accordance with the Financial Management Act 1994, I am pleased to present the Report of Operations for the Goulburn Broken Catchment Management Authority for the year ending 30 June 2009.

Dr Huw Davies  
Chair  
14 September 2009

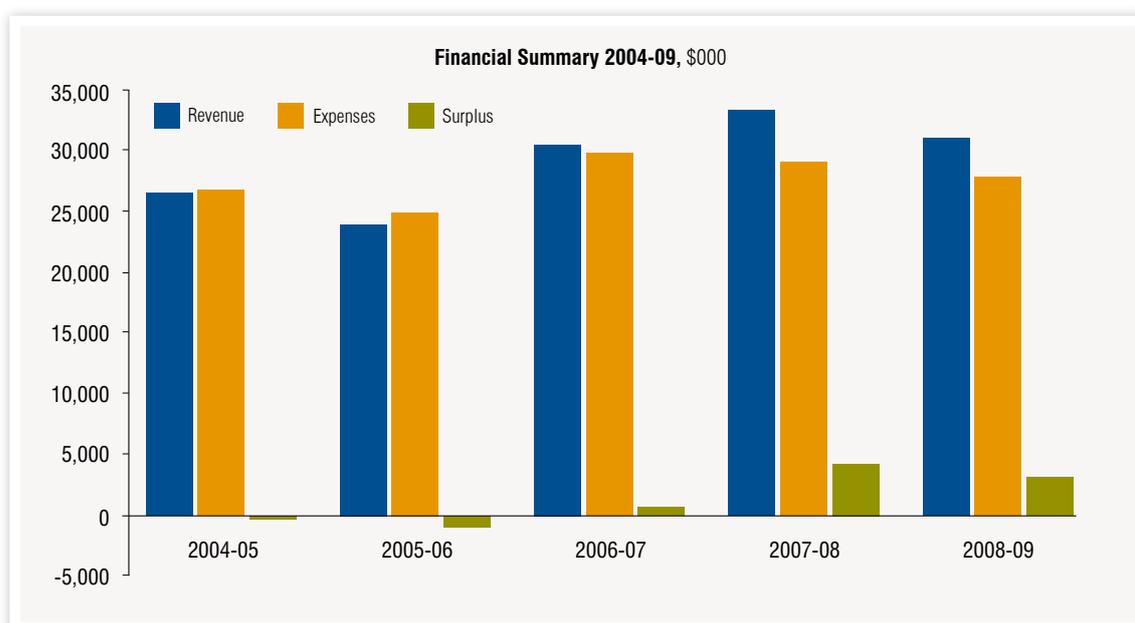
# Financial results summary: current plus past four years

	2004-05 \$000	2005-06 \$000	2006-07 \$000	2007-08 \$000	2008-09 \$000
<b>Income and expenditure</b>					
State Government	12,051	10,026	15,851	19,879	20,793
Australian Government	2,078	2,072	2,255	3,072	7,170
Murray Darling Basin Commission/Authority	181	391	475	319	329
Nation Action Plan	11,246	10,650	10,628	8,568	1,095
Government contributions	25,556	23,139	29,209	31,838	29,387
Other revenues	1,077	931	1,445	1,657	1,783
<b>Total income</b>	<b>26,633</b>	<b>24,070</b>	<b>30,654</b>	<b>33,495</b>	<b>31,170</b>
<b>Expense</b>	<b>26,883</b>	<b>25,030</b>	<b>29,938</b>	<b>29,189</b>	<b>27,974</b>
Interest	6	18	10	7	7
<b>Total expenses</b>	<b>26,889</b>	<b>25,048</b>	<b>29,948</b>	<b>29,196</b>	<b>27,981</b>
<b>NET RESULT</b>	<b>(256)</b>	<b>(978)</b>	<b>706</b>	<b>4,299</b>	<b>3,189</b>

## Balance sheet items

<b>Current assets</b>					
Cash	8,357	8,102	6,882	11,393	10,434
Receivables	981	1,261	540	1,060	6,112
Prepayments	156	104	47	60	47
<b>Total current assets</b>	<b>9,494</b>	<b>9,467</b>	<b>7,469</b>	<b>12,513</b>	<b>16,593</b>
Fixed assets	1,329	1,471	1,513	1,938	1,679
<b>Total assets</b>	<b>10,823</b>	<b>10,938</b>	<b>8,982</b>	<b>14,451</b>	<b>18,272</b>
<b>Current liabilities</b>					
Trade creditors	1,255	2,582	1,220	2,256	1,690
GST liabilities	116	-	-	-	-
Borrowings	63	77	74	57	46
Accruals	3,214	3,012	1,639	1,434	2,322
Provisions	165	448	558	867	1,133
<b>Total current liabilities</b>	<b>4,813</b>	<b>6,119</b>	<b>3,491</b>	<b>4,614</b>	<b>5,191</b>
<b>Non-current liabilities</b>					
Borrowings	77	103	70	46	43
Other	295	56	55	51	109
<b>Total non-current liabilities</b>	<b>372</b>	<b>159</b>	<b>125</b>	<b>97</b>	<b>152</b>
<b>NET ASSETS</b>	<b>5,638</b>	<b>4,660</b>	<b>5,366</b>	<b>9,740</b>	<b>12,929</b>

	2004-05 \$000	2005-06 \$000	2006-07 \$000	2007-08 \$000	2008-09 \$000
<b>Equity items</b>					
Contributed capital	4,134	4,134	4,134	4,209	4,209
Reserves	1,504	526	1,232	5,531	8,720
<b>TOTAL EQUITY</b>	<b>5,638</b>	<b>4,660</b>	<b>5,366</b>	<b>9,740</b>	<b>12,929</b>
<b>Cash flow items</b>					
Net operating activities	634	216	(775)	5,378	(679)
Net investing activities	(435)	(415)	(365)	(862)	(211)
Net financing activities	(52)	(56)	(80)	(5)	(69)
<b>Net cash movement</b>	<b>147</b>	<b>(255)</b>	<b>(1,220)</b>	<b>4,511</b>	<b>(959)</b>



## Significant changes in financial results for 2008-09

Revenue and expenditure were impacted by changes that were unforeseen at the date of finalising the Corporate Plan. These changes include:

- \$2.7 million of funding from the Australian Government and \$1.5 million from the State Government following the Black Saturday bushfires in February. (The Australian Government's total will be \$5 million over two years.)
- \$2.8 million from the Victorian Government for the Drought Employment Program.

	Corporate Plan \$000	Actual \$000
<b>Statement of financial performance</b>		
Total revenue	23,696	31,170
Total expenditure	23,469	27,981
Net profit/(deficit)	227	3,189
<b>Statement of financial position</b>		
Cash and receivables	8,595	16,546
Other	50	47
Non-current assets	1,475	1,679
Total assets	10,120	18,272
Liabilities		
Current	(4,292)	(5,191)
Non-current	(125)	(152)
Total liabilities	(4,417)	(5,343)
Net assets	5,703	12,929

## DSE program fund source

DSE program	Budget Revenue \$000	Variance \$000	Actual revenue \$000	Plus funds brought forward \$000	Expended \$000	Funds carried forward \$000
Biodiversity	1,280	444	1,724	1,783	1,895	1,612
Catchment Planning	3,431	-170	3,261	570	3,341	490
Sustainable Dryland Landscapes	1,420	-151	1,269	704	1,879	94
Sustainable Irrigation	8,386	2,379	10,765	1,909	10,408	2,266
River Health	9,179	4,972	14,151	4,774	10,458	8,467
	23,696	7,474	31,170	9,740	27,981	12,929

## Consultancies

	2005-06	2006-07	2007-08	2008-09
Cost, \$	1,183,409	2,209,698	1,654,699	1,871,307
Number of consultants	15	23	30	24
Consultancies in excess of \$100,000	1	1	3	3

## Consultants over \$100,000 (2008-09)

Name	Summary of project	Total cost excluding GST \$	Expenditure for 2008-09 \$	Future commitments \$
Fugro Spatial Solutions P/L	Broken Creek ALS project	203,900	203,900	-
Thiess Services	Turbidity monitoring	100,000	49,455	50,545
Water Technology	Murray River regional flood study	210,000	195,815	14,185

# VAGO

Victorian Auditor-General's Office

## INDEPENDENT AUDITOR'S REPORT

### To the Members of the Board, Goulburn Broken Catchment Management Authority

#### *The Financial Report*

The accompanying financial report for the year ended 30 June 2009 of the Goulburn Broken Catchment Management Authority which comprises the operating statement, balance sheet, statement of changes in equity, cash flow statement, a summary of significant accounting policies and other explanatory notes to and forming part of the financial report, and the certification to the financial statements has been audited.

#### *The Board Member's Responsibility for the Financial Report*

The Board Members of the Goulburn Broken Catchment Management Authority are responsible for the preparation and fair presentation of the financial report in accordance with Australian Accounting Standards (including the Australian Accounting Interpretations) and the financial reporting requirements of the *Financial Management Act 1994*. This responsibility includes:

- establishing and maintaining internal controls relevant to the preparation and fair presentation of the financial report that is free from material misstatement, whether due to fraud or error
- selecting and applying appropriate accounting policies
- making accounting estimates that are reasonable in the circumstances.

#### *Auditor's Responsibility*

As required by the *Audit Act 1994*, my responsibility is to express an opinion on the financial report based on the audit, which has been conducted in accordance with Australian Auditing Standards. These Standards require compliance with relevant ethical requirements relating to audit engagements and that the audit be planned and performed to obtain reasonable assurance whether the financial report is free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial report. The audit procedures selected depend on judgement, including the assessment of the risks of material misstatement of the financial report, whether due to fraud or error. In making those risk assessments, consideration is given to the internal control relevant to the entity's preparation and fair presentation of the financial report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of the accounting policies used, and the reasonableness of accounting estimates made by the Board Members, as well as evaluating the overall presentation of the financial report.

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

1

Level 24, 35 Collins Street, Melbourne Vic. 3000

Telephone 61 3 8601 7000 Facsimile 61 3 8601 7010 Email [comments@audit.vic.gov.au](mailto:comments@audit.vic.gov.au) Website [www.audit.vic.gov.au](http://www.audit.vic.gov.au)

*Auditing in the Public Interest*

# VAGO

Victorian Auditor-General's Office

## Independent Auditor's Report (continued)

### *Matters Relating to the Electronic Presentation of the Audited Financial Report*

This auditor's report relates to the financial report published in both the annual report and on the website of the Goulburn Broken Catchment Management Authority for the year ended 30 June 2009. The Board Members of the Goulburn Broken Catchment Management Authority are responsible for the integrity of the website. I have not been engaged to report on the integrity of the website. The auditor's report refers only to the statements named above. An opinion is not provided on any other information which may have been hyperlinked to or from these statements. If users of this report are concerned with the inherent risks arising from electronic data communications, they are advised to refer to the hard copy of the audited financial report to confirm the information included in the audited financial report presented on the Goulburn Broken Catchment Management Authority website.

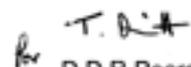
### *Independence*

The Auditor-General's independence is established by the *Constitution Act 1975*. The Auditor-General is not subject to direction by any person about the way in which his powers and responsibilities are to be exercised. In conducting the audit, the Auditor-General, his staff and delegates complied with all applicable independence requirements of the Australian accounting profession.

### *Auditor's Opinion*

In my opinion, the financial report presents fairly, in all material respects, the financial position of the Goulburn Broken Catchment Management Authority as at 30 June 2009 and its financial performance and cash flows for the year then ended in accordance with applicable Australian Accounting Standards (including the Australian Accounting Interpretations), and the financial reporting requirements of the *Financial Management Act 1994*.

MELBOURNE  
17 September 2009

  
for D D R Pearson  
Auditor-General

# Financial statements

Goulburn Broken Catchment Management Authority

ABN 89 184 039 725

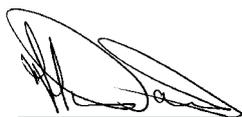
## Certification to the financial statements

We hereby certify that the financial statements of the Goulburn Broken Catchment Management Authority, have been prepared in accordance with Part 7 of the Directions of the Minister for Finance under the Financial Management Act 1994, applicable Australian Accounting Standards, Interpretations and other mandatory professional reporting requirements.

We further state that, in our opinion, the information set out in the Operating Statement, Balance Sheet, Statement of Changes in Equity, Cash Flow Statement and notes to and forming part of the financial statements, presents fairly the financial transactions during the year ended 30 June 2009 and the financial position of the Authority as at 30 June 2009.

We are not aware of any circumstances which would render any particulars included in the financial statements to be misleading or inaccurate.

Signed in accordance with a resolution of the Board of Management dated 14 September 2009.



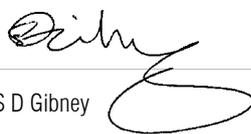
Dr Huw Davies

Chairperson, Board of Directors



W J O'Kane

Chief Executive Officer



S D Gibney

Business Manager

## Operating statement for the financial year ended 30 June 2009

	Note	2009 \$000	2008 \$000
<b>Revenue from operating activities</b>			
Government contributions	3	29,387	31,838
Revenues from non-operating activities	3	1,783	1,657
<b>TOTAL REVENUE</b>		<b>31,170</b>	<b>33,495</b>
<b>Expenses from operating activities</b>			
Operating costs to works programs	4a	(26,008)	(27,160)
Amortisation of leased assets	4c	(49)	(79)
Depreciation	4b	(431)	(397)
Administration expenses	4d	(1,296)	(1,352)
Interest		(7)	(7)
Provision for doubtful debt		3	-
Occupancy expenses		(193)	(201)
<b>TOTAL EXPENSES</b>		<b>(27,981)</b>	<b>(29,196)</b>
<b>NET RESULT FOR THE PERIOD</b>		<b>3,189</b>	<b>4,299</b>

The accompanying notes form part of these financial statements.

## Balance sheet as at 30 June 2009

	Note	2009 \$000	2008 \$000
<b>Assets</b>			
Current assets			
Cash and cash equivalents	5	10,434	11,393
Receivables	6	6,112	1,060
Prepayments		47	60
Total current assets		16,593	12,513
Non-current assets			
Property, plant and equipment	7	1,679	1,938
Total non-current assets		1,679	1,938
Total assets		18,272	14,451
<b>Liabilities</b>			
Current liabilities			
Payables	8	4,012	3,690
Interest bearing liabilities	9	46	57
Employee benefits	10	1,133	867
Total current liabilities		5,191	4,614
Non-current liabilities			
Interest bearing liabilities	9	43	46
Employee benefits	10	109	51
Total non-current liabilities		152	97
Total liabilities		5,343	4,711
Net assets		12,929	9,740
<b>Equity</b>			
Contributed equity	12	4,209	4,209
Accumulated funds	13	-	-
Reserve	14	8,720	5,531
Total equity		12,929	9,740

The accompanying notes form part of these financial statements.

## Statement of changes in equity for the year ended 30 June 2009

	Note	2009 \$000	2008 \$000
Opening equity balance		9,740	5,366
Contributed capital received in the period	12	-	75
Net result for the period		3,189	4,299
Closing equity balance		12,929	9,740

The accompanying notes form part of these financial statements.

## Cash flow statement for the financial year ended 30 June 2009

	Note	2009 \$000	2008 \$000
<b>Cash flow from operating activities</b>			
Government contributions		24,921	31,721
Payments to suppliers and employees		(29,352)	(29,467)
GST (remitted to) received from Australian Tax Office		1,718	1,384
Interest received		787	678
Interest paid		(7)	(7)
Other revenue		1,254	1,069
Net cash provided by (used in) operating activities	20b	(679)	5,378
<b>Cash flow from financing activities</b>			
Proceeds from contributed capital		-	75
Borrowings repaid		(69)	(80)
Net cash provided by (used in) finance activities		(69)	(5)
<b>Cash flow from investing activities</b>			
Proceeds from sale of property, plant and equipment		199	296
Payment for property, plant and equipment		(410)	(1,158)
Net cash provided by (used in) investing activities		(211)	(862)
Net (decrease) / increase in cash held		(959)	4,511
Cash at beginning of year		11,393	6,882
Cash at end of year	20a	10,434	11,393

The accompanying notes form part of these financial statements.

## Notes to the financial statements for the year ended 30 June 2009

## Note 1: Significant accounting policies

**a Basis of accounting***General*

This financial report of Goulburn Broken Catchment Management Authority is a general purpose financial report that consists of an Operating Statement, Balance Sheet, Statement of Changes in Equity, Cash Flow Statement and notes accompanying these statements. The general purpose financial report complies with Australian Accounting Standards, interpretations and other authoritative pronouncements of the Australian Accounting Standards Board and the requirements of the Financial Management Act 1994 and applicable Ministerial Directions. This financial report has been prepared on an accrual and going concern basis.

*Accounting policies*

Unless otherwise stated, all accounting policies applied are consistent with those of the prior year. Where appropriate, comparative figures have been amended to accord with current presentation and disclosure made of material changes to comparatives.

*Classification between current and non-current*

In the determination of whether an asset or liability is current or non-current, consideration is given to the time when each asset or liability is expected to be realised or paid. The asset or liability is classified as current if it is expected to be turned over within the next twelve months, being the Authority's operational cycle, see 1(i) for a variation in relation to employee benefits.

*Rounding*

Unless otherwise stated, amounts in the report have been rounded to the nearest thousand dollars.

*Historical cost convention*

The financial statements have also been prepared under the historical cost convention, except where specifically stated in Note 1(d).

*Critical accounting estimates*

The preparation of financial statements in conformity with Australian Accounting Standards requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the entity's accounting policies.

**b Revenue recognition***Government contributions*

Government grants are brought to account on the earlier of receipt or the right to receive the contributions. The full grant receivable is reflected in the operating statement as government contributions. Instalment receipts on the grant are credited to the receivable account. Consequently, at year-end outstanding instalments on these grants are reflected as receivable from Government.

The value of all goods and services received free of charge are recognised as revenue when the authority gains control of them. The benefits derived from these goods and services are recorded at their fair values in the financial statements.

Grants and contributions for capital works from all sources are disclosed in the operating statement as operating revenue as these grants and contributions relate to expenditure on works written off in the year the expenditure is incurred. Any grants and contributions received from the Victorian State Government which the relevant Ministers have indicated are in the nature of owners' contributions, are accounted for as Equity – Contributed Capital. Gains or losses on disposal of non-current assets are calculated as the difference between the gross proceeds on sale and their written down value.

*Interest and rents*

Interest and Rentals are recognised as revenue when earned or the service provided.

**c Borrowing costs**

Borrowing costs are recognised as expenses in the period in which they are incurred. Borrowing costs include interest on finance lease charges.

**d Recognition and measurement of assets**

Property, plant and equipment represent non-current assets comprising infrastructure, buildings, plant, equipment and motor vehicles, used by the Authority in its operations. Items with a cost or value in excess of \$1,000 and a useful life of more than one year are recognised as an asset. All other assets acquired are expensed.

*Acquisition*

The purchase method of accounting is used for all acquisitions of assets. Cost is measured as fair value of the assets given, at the date of exchange plus costs directly attributable to the acquisition.

Assets acquired at no cost or for nominal consideration by the Authority are recognised at fair value at the date of acquisition.

*Repairs and maintenance*

Routine maintenance, repair costs and minor renewal costs are expensed as incurred. Where the repair relates to the replacement of a component of an asset and the cost exceeds the capitalisation threshold, the cost is capitalised and depreciated.

*Leases*

Leases of fixed assets, where substantially all the risks and benefits incidental to the ownership of the asset, but not the legal ownership, are transferred to the Authority, are classified as finance leases. Finance leases are capitalised, recording an asset and a liability equal to the present value of the minimum lease payments, including any guaranteed residual values. Leased assets are amortised on a straight line basis over their estimated useful lives where it is likely that the Authority will obtain ownership of the asset at the end of the lease. Lease payments are allocated between the reduction of the lease liability and the lease interest expense for the period.

Lease payments for operating leases, where substantially all the risks and benefits remain with the lessor, are charged as an expense in the periods in which they are incurred.

*Valuation of noncurrent physical assets*

Infrastructure and buildings are measured at cost.

*Plant and equipment*

Plant equipment and motor vehicles are measured at fair value.

## Notes to the financial statements for the year ended 30 June 2009

## Note 1: Significant accounting policies (continued)

*Leasehold improvements*

Leasehold improvements are recognised at cost and are amortised over the unexpired period of the lease or the estimated useful life of the improvement, whichever is the shorter. At balance date, leasehold improvements are amortised over a 5 year period.

*Impairment of assets*

All assets are assessed annually for indicators of impairment.

If there is an indication of impairment, the assets concerned are tested as to whether their carrying value exceeds their recoverable amount. Where an asset's carrying amount exceeds its recoverable amount, the difference is written-off by a charge to the operating statement except to the extent that the write down can be debited to an asset revaluation reserve amount applicable to that class of asset.

The recoverable amount for most assets is measured at the higher of depreciated replacement cost and fair value less costs to sell. Recoverable amount for assets held primarily to generate net cash inflows measured at the higher of the present value of future cash flows expected to be obtained from the asset and fair value less costs to sell. It is deemed that, in the event of the loss of an asset, the future economic benefits arising from the use of the asset will be replaced unless a specific decision to the contrary has been made.

**e Depreciation and amortisation of non-current assets**

Where assets have separate identifiable components that have distinct useful lives and/or residual values, a separate depreciation rate is determined for each component.

Depreciation is calculated using the straight-line method to allocate their costs, net of their residual values, over their estimated useful lives, commencing from the time the asset is held ready for use. The assets' residual values and useful lives are reviewed and adjusted, if appropriate, at each balance sheet date. Major depreciation rates used are listed below and are consistent with prior year, unless otherwise stated:

Asset class	Depreciation rate %
Buildings	2.5
Plant and equipment	10 to 40
Motor vehicles	20
Infrastructure assets	2

**f Cash and cash equivalent assets**

For the purposes of the Cash Flow Statement, cash and cash equivalents include cash on hand, deposits held at call with financial institutions, other short-term highly liquid investments with original maturities of three months or less that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value and bank overdrafts. Bank overdrafts are shown within interest bearing liabilities on the balance sheet.

**g Receivables**

Receivables are brought to account at fair value and subsequently measured at amortised cost, less allowance for doubtful debts. Receivables due from the government are due within 14 days; other receivables are due within 30 days. Collectability of debtors is reviewed on an ongoing basis. Debts which are known to be uncollectible are written off. A provision for doubtful debts is recorded when some doubt as to collection exists.

**h Trade and other payables**

These amounts represent liabilities for goods and services provided to the Authority prior to the end of the financial year, which are unpaid. The amounts are unsecured and are usually paid within 30 days of recognition.

**i Employee benefits***Wages and salaries and annual leave*

Liabilities for wages and salaries and annual leave to be settled within 12 months of the reporting date are recognised in employee benefits liabilities in respect of employees' services up to the reporting date and are measured at the amounts expected to be paid when the liabilities are settled at their nominal values. Employee benefits which are not expected to be settled within 12 months are measured as the present value of the estimated future cash outflows to be made by the entity, in respect of services rendered by employees up to the reporting date. Regardless of the expected timing of settlements, provisions made in respect of employee benefits are classified as a current liability, unless there is an unconditional right to defer the settlement of the liability for at least 12 months after the reporting date, in which case it would be classified as a non-current liability.

*Long service leave*

Current liability – unconditional long service leave (representing seven or more years of continuous service) is disclosed as a current liability even where the Authority does not expect to settle the liability within 12 months because it does not have the unconditional right to defer settlement of the entitlement should an employee take leave within 12 months.

The components of this current long service leave liability are measured at

- present value – component that the Authority does not expect to settle within 12 months; and
- nominal value – component that the Authority expects to settle within 12 months.

Non-current liability – conditional long service leave (representing less than seven years of continuous service) is disclosed as a non-current liability. There is an unconditional right to defer the settlement of the entitlement until the employee has completed the requisite years of service. Conditional long service leave is required to be measured at present value.

In calculating present value, consideration is given to expected future wage and salary levels, experience of employee departures and periods of service. Expected future payments are discounted using market yields, at the reporting date on national government bonds with terms to maturity and currency that match, as closely as possible, the estimated future cash outflows.

## Notes to the financial statements for the year ended 30 June 2009

## Note 1: Significant accounting policies (continued)

*Superannuation*

The amount charged to the operating statement in respect of superannuation represents the contributions made by the Authority to the superannuation plan in respect to the current services of current entity staff. Superannuation contributions are made to the plans based on the relevant rules of each plan.

The Authority does not recognise any defined benefit liability in respect of the superannuation plan because the Authority has no legal or constructive obligation to pay future benefits relating to its employees, its only obligation is to pay superannuation contributions as they fall due. The Department of Treasury and Finance administers and discloses the State's defined benefit liabilities in its financial report.

*Employee benefit on-costs*

Employee benefit on-costs, including payroll tax and workcover costs are recognised and included in employee benefit liabilities and costs when the employee benefits to which they relate are recognised as liabilities.

*Performance bonus*

Performance payments for the Authority's Executive Officers are based on a percentage of the annual salary package provided under their contracts of employment. A liability is recognised and is measured as the aggregate of the amounts accrued under the terms of the contracts to balance date.

**j Goods and services tax**

Revenues, expenses and assets are recognised net of goods and services tax (GST), except where the amount of GST incurred is not recoverable from the Australian Taxation Office (ATO). In these circumstances, the GST is recognised as part of the cost of acquisition of the asset or as part of an item of expense.

Receivables and payables are stated inclusive of GST. The net amount of GST recoverable from, or payable to, the ATO is included as a current asset or liability in the balance sheet.

Cash flows arising from operating activities are disclosed in the Cash Flow Statement on a gross basis i.e. inclusive of GST. The GST component of cash flows arising from investing and finance activities which is recoverable or payable to the taxation authority is classified as operating cash flows.

*Government appropriations*

The Department of Sustainability and Environment treat grant contributions to the Authority for the agreed works program to be government appropriations. Consequently as this does not constitute a taxable supply, the Authority receives no GST on amounts paid by the Department.

**k Contributed capital**

Grants and contributions received from the Victorian State Government which were originally appropriated by the Parliament as additions to net assets or where the Minister for Finance and the Minister for Environment have indicated are in the nature of owners' contributions, are accounted for as Equity – Contributed Capital.

**l Changes in accounting policy**

The accounting policies are consistent with those of the previous year, unless stated otherwise.

**m Financial instruments***Recognition*

Financial instruments are initially measured at fair value, plus in the case of a financial asset or financial liability not at fair value through profit and loss, transaction costs that are directly attributable to the acquisition or the issue of the financial asset or liability. Subsequent to initial recognition, the financial instruments are measured as set out below:

*Financial assets at fair value through profit or loss*

Financial assets at fair value through profit or loss are financial assets held for trading. A financial asset is classified in this category if acquired principally for the purpose of selling in the short term. Assets in this category are classified as current assets.

*Receivables*

Receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. They are included in current assets, except for those with maturities greater than 12 months after the reporting date which are classified as non-current assets. Receivables are included in trade and other receivables in the balance sheet.

*Held-to-maturity investments*

These investments have fixed maturities and it is the Authority's intention to hold these investments to maturity. Any held-to maturity investments held by the Authority are stated at cost.

*Impairment*

At each reporting date, the Authority assesses whether there is objective evidence that a financial instrument has been impaired. Impairment losses are recognised in the Operating Statement.

**n Comparative amounts**

Where necessary, figures for the previous year have been reclassified to facilitate comparison.

**o Interest bearing liabilities**

Borrowings are initially recognised at fair value, net of transaction costs incurred. Borrowings are subsequently measured at amortised cost. Any difference between the proceeds (net of transaction costs) and the redemption amount is recognised in the operating statement over the period of the borrowings, using the effective interest method.

Borrowings are classified as current liabilities unless the Authority has an unconditional right to defer settlement of the liability for at least 12 months after the balance sheet date.

**p New accounting standards and interpretations**

Certain new accounting standards and interpretations have been published that are not mandatory for the 30 June 2009 reporting period. As at 30 June 2009, the following standards and interpretations had been issued but were not mandatory for financial year ending 30 June 2009. The Authority has not and does not intend to adopt these standards early.

## Notes to the financial statements for the year ended 30 June 2009

## Note 1: Significant accounting policies (continued)

Standard / Interpretation	Summary	Applicable for annual reporting periods beginning or ending on	Impact on Authority's financial statements
AASB 8 Operating Segments	Supersedes AASB 114 <i>Segment Reporting</i>	Beginning 1 January 2009	Not applicable
AASB 2007-3 Amendments to Australian Accounting Standards arising from AASB 8 [AASB 5, AASB 6, AASB 102, AASB 107, AASB 119, AASB 127, AASB 134, AASB 136, AASB 1023 and AASB 1038].	An accompanying amending standard, also introduced consequential amendments into other Standards.	Beginning 1 January 2009	Impact expected to be not significant.
AASB 123 Borrowing Costs	Option to expense borrowing cost related to a qualifying asset had been removed. Entities are now required to capitalise borrowing costs relevant to qualifying assets.  In February 2009, the AASB decided that not-for-profit public sector entities could continue to expense borrowing costs attributable to qualifying assets pending the outcome of various IPSASB/AASB projects.	Beginning 1 January 2009	The Authority continues to expense borrowing costs.
AASB 2007-6 Amendments to Australian Accounting Standards arising from AASB 123 [AASB 1, AASB 101, AASB 107, AASB 111, AASB 116 & AASB 138 and Interpretations 1 & 12]	An accompanying amending standard, also introduced consequential amendments into other Standards.	Beginning 1 January 2009	Same as AASB 123 above.
AASB 2008-3 Amendments to Australian Accounting Standards arising from AASB 3 & AASB 127 [AASB 1, 2, 4, 5, 7, 101, 107, 112, 114, 116, 121, 128, 131, 132, 133, 134, 136, 137, 138 & 139 and Interpretations 9 & 107]	This Standard gives effect to consequential changes arising from revised AASB 3 and amended AASB 127. The Prefaces to those Standards summarise the main requirements of those Standards.	Beginning 1 July 2009	Impact expected to be insignificant.
AASB 2008-5 Amendments to Australian Accounting Standards arising from the Annual Improvements Project [AASB 5, 7, 101, 102, 107, 108, 110, 116, 118, 119, 120, 123, 127, 128, 129, 131, 132, 134, 136, 138, 139, 140, 141, 1023 & 1038]	A suite of amendments to existing standards following issuance of IASB Standard Improvements to IFRSs in May 2008. Some amendments result in accounting changes for presentation, recognition and measurement purposes.	Beginning 1 January 2009	Impact is being evaluated.
AASB 2008-6 Further Amendments to Australian Accounting Standards arising from the Annual Improvements project [AASB 1 & AASB 5]	The amendments require all the assets and liabilities of a for-sale subsidiary's to be classified as held for sale and clarify the disclosures required when the subsidiary is part of a disposal group that meets the definition of a discontinued operation.	Beginning 1 July 2009	Not applicable.
AASB 2008-7 Amendments to Australian Accounting Standards - Cost of an Investment in a Subsidiary, Jointly Controlled Entity or Associate [AASB 1, AASB 118, AASB 121, AASB 127 & AASB 136]	Changes mainly relate to treatment of dividends from subsidiaries or controlled entities.	Beginning 1 January 2009	Not applicable.
AASB 2008-8 Amendments to Australian Accounting Standards – Eligible Hedged Items [AASB 139]	The amendments to AASB 139 clarify how the principles that determine whether a hedged risk or portion of cash flows is eligible for designation as a hedged item should be applied in particular situations.	Beginning 1 July 2009	Impact is being evaluated.
AASB 2008-9 Amendments to AASB 1049 for Consistency with AASB 101	Amendments to AASB 1049 for consistency with AASB 101 (September 2007) version.	Beginning 1 January 2009	Not applicable to public sector entities except for certain presentation formats.

## Notes to the financial statements for the year ended 30 June 2009

## Note 2: Financial risk management objectives and policies

The Authority's activities expose it to a variety of financial risks: market risk, credit risk and liquidity risk. This note presents information about the Authority's exposure to each of these risks and the objectives, policies and processes for measuring and managing risk.

The Authority's Board has overall responsibility for the establishment and oversight of the Authority's risk management framework. The Authority's overall risk management program focuses on the unpredictability of financial markets and seeks to minimise potential adverse on the financial performance of the Authority. The Authority uses sensitivity analysis in the case of interest rate risks.

Risk Management is carried out by a risk management committee under policies approved by the Board of Directors. The corporate division identifies, evaluates and hedges financial risks in close cooperation with the Authority's operating units. The Board provides written principles for overall risk management, as well as policies covering specific areas, such as interest rate risk, credit risk and investment of excess liquidity.

**2.1 Risk exposures**

The main risks the Authority is exposed to through its financial instruments are as follows:

**a Market risk**

Market risk is the risk that changes in market prices will affect fair value of future cash flows of the Authority's financial instruments. Market risk comprises of interest rate risk and other price risk. The Authority's exposure to market risk is primarily through interest rate, there is no exposure to foreign exchange risk and significant exposure to other price risks.

Objectives, policies and processes used for these risks are disclosed in the paragraphs below:

*Interest rate risk*

The Authority has minimal exposure to interest rate risk through its holding of cash assets and other financial assets. The Authority manages its interest rate by maintaining a diversified investment portfolio.

*Other price risk*

The Authority has no significant exposure to other price risk.

*Market risk sensitivity analysis*

The sensitivity analysis below has taken into consideration past performance, future expectations, economic forecasts and management's knowledge and experience of the financial markets: the Authority believes that a movement of one per cent in interest rates is reasonable over the next 12 months.

30 June 2009	Carrying amount \$000	Interest rate risk			
		-1 per cent		+1 per cent	
		Result \$000	Equity \$000	Result \$000	Equity \$000
Financial assets					
Cash at bank	10,434	(104)	(104)	104	104
Receivables	6,112	-	-	-	-
Financial liabilities					
Payables	(4,012)	-	-	-	-
Total increase/(decrease)	12,534	(104)	(104)	104	104

30 June 2008	Carrying amount \$000	Interest rate risk			
		-1 per cent		+1 per cent	
		Result \$000	Equity \$000	Result \$000	Equity \$000
Financial assets					
Cash at bank	11,393	(114)	(114)	114	114
Receivables	1,060	-	-	-	-
Financial liabilities					
Payables	(3,690)	-	-	-	-
Total increase/(decrease)	8,763	(114)	(114)	114	114

## Notes to the financial statements for the year ended 30 June 2009

### Note 2: Financial risk management objectives and policies (continued)

#### **b Credit risk**

Credit risk is the risk of financial loss to the Authority as a result of a customer or counterparty to a financial instrument failing to meet its contractual obligations. Credit risk arises principally from the Authority's receivables and financial assets available for sale.

The Authority's exposure to credit risk is influenced by the individual characteristics of each customer. The receivable balance consists of business customers which are spread across a diverse range of industries. Receivable balances are monitored on an ongoing basis to ensure that exposure to bad debts is not significant. The Authority has in place a policy and procedure for the collection of overdue receivables.

#### **c Liquidity risk**

Liquidity risk is the risk that the Authority will not be able to meet its financial obligations as they fall due. The Authority's policy is to settle financial obligations within 30 days and in the event of dispute make payments within 20 days from the day of resolution.

The Authority manages liquidity risk by maintaining adequate reserves and banking facilities by continuously monitoring forecasts and actual cash flows and matching the maturity profiles of financial assets and financial liabilities.

The Authority's financial liability maturities have been disclosed in Note 21.

#### **2.2 Fair valuation estimation**

The carrying value less impairment provision of trade receivables and payables is a reasonable approximation of their fair values due to the short term nature of trade receivables. The fair value of financial liabilities for disclosure purposes is estimated by discounting the future contractual cash flows at the current market interest rate that is available to the Authority for similar financial assets.

The carrying amounts and aggregate net fair values of financial assets and financial liabilities at balance date have been provided in Note 21.

## Notes to the financial statements for the year ended 30 June 2009

## Note 3: Revenues

	Note	2009 \$000	2008 \$000
<b>Revenue from operating activities</b>			
Government contributions	3a	29,387	31,838
Revenues from non-operating activities			
Interest		644	709
Contributions from third parties		703	325
Workcover		64	104
Rent received		35	14
Seedbank funding		85	51
Joint activities with CMAs		45	216
Other		245	238
		1,821	1,657
<b>Non-Operating activities</b>			
(Loss) Gain on disposal of property, plant and equipment		(38)	-
Other revenues from ordinary activities		1,783	1,657
<b>Total Revenue</b>		<b>31,170</b>	<b>33,495</b>
<b>a Government contributions</b>			
<b>State Government of Victoria</b>			
Catchment Planning		1,519	985
Floodplain Administration		336	450
Environmental Flows Monitoring and Assessment		614	1,856
River Health and Water Quality		3,096	1,383
Salinity Infrastructure		3,724	2,663
Second Generation Landcare		530	525
Sustainable Irrigated Agriculture		3,020	1,527
Sale of Environmental Water		400	2,872
Victorian Water Trust and Water Smart Farms Initiative		1,076	2,272
White Paper – River Health Large Scale River Restoration		827	1,000
Broken Boosey Conservation Management Network		113	167
Recreational Fish Licence		-	152
Bushfire Recovery Funding		1,536	277
Water Savings		-	40
Drought Employment Program		2,750	2,853
Stock Containment Grants		-	90
Native Vegetation		326	-
Other		926	767
		20,793	19,879
<b>Australian Government</b>			
Caring for Our Country		4,450	-
Bushfire Recovery		2,720	-
Regional Grants		-	2,948
Other Agriculture Fisheries and Forestry Australia (AFFA)		-	52
National Landcare Program		-	72
		7,170	3,072
<b>Murray Darling Basin Commission/Authority</b>		329	319
<b>Victorian State and Australian Government</b>			
National Action Plan		1,095	8,568
<b>Total government contributions</b>		<b>29,387</b>	<b>31,838</b>

## Notes to the financial statements for the year ended 30 June 2009

## Note 4: Expenses

Net result for the period has been determined after:

	Note	2009 \$000	2008 \$000
<b>a Operating costs to works programs</b>			
Biodiversity and Landscape Change		2,009	1,825
Catchment Planning		1,295	2,354
Sustainable Dryland Landscapes		1,822	1,446
Engineering Options for Salinity Control		90	214
Sustainable Irrigation – Farm, Environment and Other		5,587	5,512
Sustainable Irrigation – Sub-Surface Drainage		4,788	5,219
River Health			
Drought Employment Program		3,145	2,883
General		4,262	4,143
Broken River		126	1,174
Strategic		1,344	896
Water Quality and Environmental Flows		1,031	931
Floodplain		509	563
Total operating costs to works program		26,008	27,160
<b>b Depreciation of non-current assets</b>			
Buildings		2	3
Plant and equipment		73	96
Motor vehicles		356	298
Total depreciation		431	397
<b>c Amortisation of leased assets</b>			
		49	79
<b>d Administration expenses</b>			
Implementation Committees		50	50
Audit fees – internal audit		33	22
Auditor General for audit of financial statements		11	10
Other		-	4
Board governance		106	48
Salaries and on-costs		1,013	969
Other		83	249
Total administration expenses		1,296	1,352
<b>e Employee related expenses</b>			
Total Employee related expenses		4,346	4,205
These expenses have been allocated to:			
i Operating costs to works program		3,333	3,236
ii Administration expenses		1,013	969

## Note 5: Cash and cash equivalents

Cash at bank and on hand		10,434	11,393
--------------------------	--	--------	--------

Cash at bank bears interest rates between 2.85% and 2.95% (2008: 6.75% and 7.15%). All of these funds are restricted in that they are held to be spent on a range of programs which the Authority currently has underway. (Note 15e).

## Notes to the financial statements for the year ended 30 June 2009

## Note 6: Receivables

	Note	2009 \$000	2008 \$000
Government grants receivable		4,749	250
Net GST amount due from Australian Tax Office		406	449
Trade debtors		925	244
Accrued interest		32	175
Tariff and charges		-	10
Provision for doubtful debts		-	(68)
<b>Total receivables</b>		<b>6,112</b>	<b>1,060</b>

**a Provision for impaired receivables**

As at 30 June 2009, current receivables of the Authority with a nominal value of nil (2008: \$72,206) were impaired.

The ageing of these receivables is as follows:

three to six months		-	-
Over six months		-	72
<b>Total</b>		<b>-</b>	<b>72</b>

As of 30 June 2009, government receivables of \$10,156 (2008: \$28,694) were past due but not impaired. These relate to entities for which there is no recent history of default. The ageing analysis of these receivables is as follows:

three to six months		-	-
Over six months		10	-
<b>Total</b>		<b>10</b>	<b>-</b>

The other amounts within receivables do not contain impaired assets and are not past due. Based on credit history, it is expected that these amounts will be received when due.

*Movements in the provision for impaired receivables are as follows:*

At 1 July		68	68
Provision for impairment recognised during the year		-	-
Receivables written off during the year as uncollectible		(65)	-
Unused amount reversed		(3)	-
<b>Total</b>		<b>-</b>	<b>68</b>

An amount of \$53,000.00 believed due from the Department of Sustainability and Environment was written-off during the year. The amount was the final of three EBA funding instalments believed due from the Department. However the Department was of the view that the amounts were not a separate claim ever payable, in any year, as the extra above the normal 2.5 per cent indexation was not funded as part of the department's indexation under the Departmental funding Model (DFM) and so was not available for on-passing to any entity.

In addition amounts of \$12,005.69 were written-off as bad debts in relation to tariffs raised on properties in areas affected by Bushfires.

## Note 7: Property plant and equipment

	Note	2009 \$000	2008 \$000
Buildings at cost		44	44
Less accumulated depreciation		(41)	(39)
Total buildings		3	5
Plant and equipment at cost		-	802
Less accumulated depreciation		-	(470)
Total plant and equipment at cost		-	332
Plant and equipment at fair value		853	-
Less accumulated depreciation		(540)	-
Total plant and equipment at fair value		313	-
Motor vehicles at cost		-	1,817
Less accumulated depreciation		-	(426)
Total motor vehicles at cost		-	1,391
Motor vehicles at fair value		1,798	-
Less accumulated depreciation		(640)	-
Total motor vehicles at fair value		1,158	-
Office and computer equipment acquired under finance lease at cost		-	254
Accumulated amortisation		-	(187)
Total office and computer equipment under finance lease at cost		-	67
Office and computer equipment acquired under finance lease at fair value		279	-
Accumulated amortisation		(213)	-
Total office and computer equipment under finance lease at fair value		66	-
Dowdle Swamp floodway at cost		170	170
Less accumulated depreciation		(31)	(27)
Total infrastructure assets		139	143
Total property, plant and equipment		1,679	1,938

## Notes to the financial statements for the year ended 30 June 2009

## Note 7: Property plant and equipment (continued)

**Movements during the reporting period**

Movement in the carrying amounts for each class of property, plant and equipment between the beginning and the end of the current financial year.

	Dowdle Swamp Floodway \$000	Buildings \$000	Plant and equipment \$000	Motor vehicles \$000	Equipment under finance lease \$000	Total \$000
<b>2008-09</b>						
Opening written down value at 1 July 2008	143	5	332	1,391	67	1,938
Additions	-	-	50	359	48	457
Disposals	-	-	-	(236)	-	(236)
Depreciation expense	(4)	(2)	(69)	(356)	-	(431)
Amortisation	-	-	-	-	(49)	(49)
Closing written down value at 30 June 2009	139	3	313	1,158	66	1,679
<b>2007-08</b>						
Opening written down value at 1 July 2007	146	7	378	875	107	1,513
Additions	-	1	47	1,110	39	1,197
Disposals	-	-	-	(296)	-	(296)
Depreciation expense	(3)	(3)	(93)	(298)	-	(397)
Amortisation	-	-	-	-	(79)	(79)
Closing written down value at 30 June 2008	143	5	332	1,391	67	1,938

## Notes to the financial statements for the year ended 30 June 2009

## Note 8: Payables

	Note	2009 \$000	2008 \$000
Trade creditors		1,631	2,256
Accruals		2,381	1,434
<b>Total payables</b>		<b>4,012</b>	<b>3,690</b>

## Note 9: Interest bearing liabilities

<b>Current</b>			
Secured			
Finance lease liability	15c	46	57
<b>Non-current</b>			
Secured			
Finance lease liability	15c	43	46
<b>Total interest bearing liabilities</b>		<b>89</b>	<b>103</b>

## Note 10: Employee benefits

<b>Current</b>			
Annual leave and unconditional long service leave entitlements representing seven years of continuous service:			
Employee benefits expected to be settled within 12 months, after the end of the period, measured at nominal value		319	223
Employee benefits expected to be settled after 12 months, after the end of the period, measured at present value		814	644
<b>Total current</b>		<b>1,133</b>	<b>867</b>
<b>Non-current</b>			
Conditional long service leave measured at present value		109	51
<b>Total employee benefits</b>		<b>1,242</b>	<b>918</b>
Number of full time equivalent employees at year end		43.9	48.8

All annual leave is treated as a current liability. Long service leave entitlement representing seven years plus continuous service is also treated as a current liability. Long service leave entitlement representing less than seven years continuous service is treated as a non-current liability.

The following assumptions were adopted in measuring the present value of long service leave entitlements:

Weighted average increase in employee costs		4.45%	4.08%
Weighted average discount rates		5.48%	6.54%
Weighted average settlement period		10 years	10 years

## Notes to the financial statements for the year ended 30 June 2009

**Note 11: Superannuation**

GB CMA makes employer superannuation contributions in respect of its employees to the Local Authorities Superannuation Fund (the Fund) in the absence of any employee declaration to direct contributions to an alternate complying Superannuation Fund.

Obligations for contributions are recognised as an expense in profit or loss when they are due. The Fund has two categories of membership, each of which is funded differently.

The Fund's accumulation category, Vision Super Saver, receives both employer and employee contributions on a progressive basis. Employer contributions are normally based on a fixed percentage of employee earnings (nine per cent required under Superannuation Guarantee Legislation). No further liability accrues to the employer as the superannuation benefits accruing to employees are represented by their share of the net assets of the Fund.

The Fund's Defined Benefit Plan is a multi-employer sponsored plan. As the Fund's assets and liabilities are pooled and are not allocated by employer, the Actuary is unable to reliably allocate benefit liabilities, assets and costs between employers. As provided under AASB 119, GB CMA does not use defined benefit accounting for these contributions.

GB CMA makes employer contributions to the defined benefit category of the Fund at rates determined by the Trustee on the advice of the Fund's Actuary. On the basis of the results of the most recent full actuarial investigation conducted by the Fund's Actuary as at 31 December 2008, the Trustee has determined that the current funding arrangements are adequate for the expected Defined Benefit Plan liabilities.

GB CMA makes the following contributions:

- 9.25 per cent of members' salaries (same as previous year)
- the difference between resignation and retrenchment benefits paid to any retrenched employees, plus contribution tax (same as previous year).

Fund surplus or deficit (i.e. the difference between fund assets and liabilities) are calculated differently for funding purposes (i.e. calculating required contributions) and for the calculation of accrued benefits as required in AAS 25 to provide the values needed for the AASB 119 disclosure in the Authority's financial statements. AAS 25 requires that the present value of the benefit liability which is calculated in respect of membership completed at the calculation date makes no allowance for future benefits that may accrue.

The actuarial investigation concluded that although the net market value of assets was in excess of accrued benefits at 31 December 2008, based on the assumptions adopted, there was a shortfall of \$71 million when the funding of future benefits was also considered. However the Authority has been advised that no additional contributions will be required as at 30 June 2009. The Actuary will undertake the next actuarial investigation as at 30 June 2010 to ascertain if additional contributions are required.

The Fund's liability for accrued benefits was determined by the Actuary at 31 December 2008 pursuant to the requirements of Australian Accounting Standard AAS25 as follows:

	31 Dec 2008 \$000
Net market value of assets	3,630,432
Accrued benefits (per accounting standards)	3,616,422
Difference between assets and accrued benefits	14,010
Vested benefits	3,561,588

**The financial assumptions used to calculate the accrued benefits for the defined benefit category of the Fund were:**

Net investment return	8.50% per annum
Salary inflation	4.25% per annum
Price inflation	2.75% per annum

**Contributions**

The Authority contributes in respect of its employees, to the following principal superannuation schemes: Vision Super, Colonial, and Government Superannuation Office. Contribution details are shown in the following table:

	Type of scheme	Rate %	2009 \$000	2008 \$000
Colonial	Accumulation	9.00	6	58
Government Superannuation Office	Accumulation	Various	69	52
Vision Super	Defined Benefits	9.25	12	14
Vision Super	Accumulation	9.00	162	178
Other funds	Accumulation	9.00	231	235
<b>Total contributions to all funds</b>			<b>480</b>	<b>537</b>

As at balance date, there were contributions payable of \$7,966 (2008: \$4,595)

## Notes to the financial statements for the year ended 30 June 2009

## Note 12: Contributed equity

	Note	2009 \$000	2008 \$000
Balance at the beginning of the reporting period		4,209	4,134
Contributed capital received		-	75
Balance at the end of the reporting period		4,209	4,209

## Note 13: Accumulated funds

Balance at the beginning of the reporting period		-	-
Net result for the year		3,189	4,299
Transfer from / (to) reserves		(3,189)	(4,299)
Balance at the end of the reporting period		-	-

## Note 14: Reserve

Committed funds reserve			
Balance at the beginning of the reporting period		5,531	1,232
Net transfers (to) / from accumulated funds		3,189	4,299
Balance at the end of the reporting period		8,720	5,531

The purpose of the Committed Funds Reserve is to hold funds allocated for expenditure on works programs which have either not yet commenced or have not been completed at balance date. The Committed Funds Reserve is necessary as grant monies are taken to revenue as soon as the Authority has the right to receive those funds and generally there is a time lag between the right to receive the funds and the commencement of the associated works program.

## Notes to the financial statements for the year ended 30 June 2009

## Note 15: Commitments

	Note	2009 \$000	2008 \$000
<b>a Operating lease commitments:</b>			
Office accommodation			
Within one year		159	155
One year to five years		330	490
		489	645
Photocopier			
Within one year		5	5
One year to five years		6	10
		11	15
Total			
Within one year		164	160
One year to five years		336	500
Total		500	660
<b>b Other commitments</b>			
At balance date the Authority had commitments for works expenditure payable as follows:			
Within one year		5,194	5,345
<b>c Finance leases commitments</b>			
At balance date that Authority had finance lease commitments payable as follows:			
Within one year		49	61
One year to five years		45	50
Less future finance charges		(5)	(8)
Total		89	103
Represented by:			
Current liability	9	46	57
Non-current liability	9	43	46
Total		89	103
<b>d Capital commitments</b>			
At balance date the Authority had commitments for capital expenditure payable as follows:			
Within one year		-	-

## Notes to the financial statements for the year ended 30 June 2009

## Note 15: Commitments (continued)

**e Contributions subject to restrictions**

The following table reflects major program funding contributions which are subject to restrictions on expenditure profiles which may only be varied with the agreement of the funding body.

Program	Revenue recognised			Outgoings	Unexpended program contributions	Outstanding program commitment	Variance
	Funds carried forward 1 July 2008 \$000	Funds current year \$000	Total \$000	Current year \$000	Funds carried forward 1 July 2009 \$000	\$000	\$000
Biodiversity	1,783	1,724	3,507	1,895	1,612	1,612	-
Catchment Planning and Community Engagement	570	3,261	3,831	3,341	490	490	-
Sustainable Dryland Landscapes	704	1,269	1,973	1,879	94	1,086	(992)
Sustainable Irrigation	1,909	10,765	12,674	10,408	2,266	3,208	(942)
River Health	4,774	14,151	18,925	10,458	8,467	9,516	(1,049)
<b>Total</b>	<b>9,740</b>	<b>31,170</b>	<b>40,910</b>	<b>27,981</b>	<b>12,929</b>	<b>15,912</b>	<b>(2,983)</b>

Variances under the Sustainable Dryland Landscapes, Sustainable Irrigation and River Health programs are in respect of grants approved in line with a two year approval cycle which shall be funded from 2009-10 program funding. Indicative three-year funding allocations are advised to the Authority to enable programs to be accommodated within the three-year cycle rather than limited only to the funding available for the particular year.

**Note 16: Contingent assets and liabilities**

At balance date, the Authority was not aware of any material assets not recorded or disclosed in the accounts.

**Note 17: Events occurring after balance**

No matters or circumstances have arisen since the end of the reporting period which significantly affected or may significantly affect the operations of the Authority, the results of those operations, or the state of affairs of the Authority in future financial years.

## Notes to the financial statements for the year ended 30 June 2009

## Note 18: Responsible persons related disclosures

**a Responsible persons**

The names of persons who were responsible persons at anytime during the financial year were:

Minister for Environment and Climate Change	Honourable Gavin Jennings MP	1 July 2008 to 30 June 2009
Minister for Water	Honourable Tim Holding MP	1 July 2008 to 30 June 2009

There were numerous transactions between the Authority and Department of Sustainability and Environment during the year under normal commercial terms and conditions.

<i>Position</i>		<i>Appointed</i>
Board Member	D Cummins	1 July 2003 (resigned 29 October 2008)
Board Member	J Pettigrew - Deputy Chair	1 July 2003
Board Member	L Gunter	1 July 2003
Board Member	Y Davies	1 July 2000
Board Member	N Barwick	1 July 2006
Board Member	A McCamish	1 July 2006
Board Member	N Roberts	1 July 2006
Board Member	P Fitzgerald	1 July 2006
Board Member	H Davies	27 March 2008
Chair	H Davies	28 March 2008
CEO	WJ O'Kane	4 October 1997
Acting CEO	S D Gibney	5-9 January 2009; 29-30 June 2009

**b Remuneration of responsible persons**

The number of responsible persons whose remuneration from the Authority was within the specified bands are as follows:

Income bands	2009 no.	2008 no.
\$1-\$9,999	7	8
\$10,000-\$19,999+	2	2
Total	9	10

The total remuneration of responsible persons referred to in the above bands was \$92,695 (2008: \$93,767) which includes \$7,653 (2008: \$7,742) paid in Superannuation contributions.

The relevant information of the Chief Executive Officer is reported under the Remuneration of Executives.

The relevant Ministers' remuneration is reported separately in the financial statements of the Department of Premier and Cabinet.

Other relevant interests are declared in the Register of Members' Interests which each member of the parliament completes.

**c Remuneration of executives**

The number of executive officers, other than responsible persons included under 'Remuneration of responsible persons' above, whose total remuneration exceeded \$100,000 during the reporting period are shown below in their relevant income bands:

Income bands	2009 no.	2008 no.
\$100,000 - \$109,999	-	-
\$110,000 - \$119,999	4	4
\$120,000 - \$129,999	2	2
\$130,000 - \$139,999	-	-
\$140,000 - \$149,999	1	1
\$180,000 - \$189,999	-	-
\$190,000 - \$199,999	-	1
\$210,000 - \$219,999	1	-
Total	8	8

The total remuneration including superannuation of executives whose remuneration was greater than \$100,000 referred to in the above bands was \$1,069,727 (2008: \$1,052,602)

## Notes to the financial statements for the year ended 30 June 2009

## Note 18: Responsible persons related disclosures (continued)

Remuneration bands	Total remuneration		Base remuneration	
	2009	2008	2009	2008
\$100,000 - \$109,999	-	-	1	2
\$110,000 - \$119,999	4	4	4	4
\$120,000 - \$129,999	2	2	1	-
\$130,000 - \$139,999	-	-	1	1
\$140,000 - \$149,999	1	1	-	-
\$170,000 - \$179,999	-	-	-	1
\$190,000 - \$199,999	-	1	1	-
\$210,000 - \$219,999	1	-	-	-
Total amount	\$1,069,727	\$1,052,602	\$1,008,735	\$988,841
Total numbers	8	8	8	8

**d Other related party transactions***Loans*

There were no loans in existence by the Authority to responsible persons or related parties at the date of this report.

*Shares*

There were no share transactions in existence between the Authority and Responsible Persons and their related parties during the financial year.

*Other*

Yvonne Davies and Lyn Gunter were councillors with the Shire of Moira and Murrindindi respectively. During the year, the Authority from time to time had dealings with those Municipalities on normal commercial terms and conditions.

Peter Fitzgerald is a board member of Goulburn-Murray Water and from time to time, the Authority had dealings with Goulburn-Murray Water on normal commercial terms and conditions. Don Cummins was a board member of Goulburn Valley Water and the Authority had dealings with Goulburn Valley Water on normal commercial terms and conditions.

Other than travel reimbursements there were no other transactions between the Authority and Responsible Persons and their related parties during the financial year.

There were no retirement benefits paid by the Authority in connection with the retirement of responsible persons of the Authority.

**e Board members attendance record at meetings**

Board member	Board meetings (11 held)	Special Board meetings (2 held)	Audit, Risk & Compliance Committee (7 held)	Remuneration Committee (5 held)
Neville Barwick	7	2	4	-
Don Cummins	1 (of 4)	-	-	-
Yvonne Davies	9	1	7	-
Huw Davies <sup>i</sup>	11	2	-	4
Peter Fitzgerald	11	2	7	-
Lyn Gunter	7	2	-	4
Anne McCamish	8	2	-	5
John Pettigrew	11	2	7	-
Nick Roberts	10	2	-	5

<sup>i</sup> Chair, Dr Huw Davies, is ex-officio of all Board Committees except the Audit, Risk and Compliance Committee.

**Note 19: Economic dependence**

To attain its goals as detailed in its Regional Catchment Strategy, the Authority continues to be dependent upon future funding commitments from both the State and Australian Governments.

## Notes to the financial statements for the year ended 30 June 2009

## Note 20: Cash flow information

	Note	2009 \$000	2008 \$000
<b>a Reconciliation of cash</b>			
Cash at the end of the financial year as shown in the cash flow statement is reconciled to the related items in the balance sheet as follows:			
Cash at bank and on hand	5	10,434	11,393
<b>b Reconciliation of cash flow from operations with net result for the year</b>			
Net result for the period		3,189	4,299
Non-cash flows in net result			
Depreciation		431	397
Amortisation		49	79
Net loss (gain) on disposal of non-current assets		38	-
Provision for bad debt write-off		(3)	-
Changes in assets and liabilities			
(Increase) / decrease in receivables		(5,042)	(520)
(Increase) / decrease in prepayments		13	(13)
Increase / (decrease) in provisions		324	305
Increase / (decrease) in payables		322	831
Cash flows from operating activities		(679)	5,378

**c Property plant and equipment**

During the financial year the Authority acquired computer equipment with an aggregate fair value of \$48,472 (2008: \$39,357) by means of finance leases. These acquisitions are not reflected in the cash flow statement.

## Note 21: Financial instruments

**Interest risk rate exposures**

The following table sets out the Authority's exposure to interest rate risk, including the contractual repricing dates and the effective weighted average interest rate by maturity periods. Exposures are predominantly from liabilities bearing variable interest rates as the Authority intends to hold fixed rate liabilities to maturity.

	Weighted average interest rate %	Floating interest rates \$000	Fixed interest rate maturing			Non-interest bearing \$000
			1 year or less \$000	1 to 2 years \$000	2 to 3 years \$000	
<b>2008-09</b>						
Financial assets						
Cash	2.9	10,432	-	-	-	2
Receivables	n/a	-	-	-	-	6,112
Total financial assets	-	10,432	-	-	-	6,114
Financial liabilities						
Lease liabilities	5.6	-	46	32	11	-
Payables	n/a	-	-	-	-	4,012
Total financial liabilities	-	-	46	32	11	4,012
Net financial liabilities	-	10,432	(46)	(32)	(11)	(2,102)

## Notes to the financial statements for the year ended 30 June 2009

## Note 21: Financial instruments (continued)

	Weighted average interest rate %	Floating interest rates \$000	Fixed interest rate maturing			Non-interest bearing \$000
			1 year or less \$000	1 to 2 years \$000	2 to 3 years \$000	
<b>2007-08</b>						
Financial assets						
Cash	7.09	11,391	-	-	-	2
Receivables	n/a	-	-	-	-	1,060
Total financial assets	-	11,391	-	-	-	1,062
Financial liabilities						
Lease liabilities	6.8	-	57	30	16	-
Payables	n/a	-	-	-	-	3,690
Total financial liabilities	-	-	57	30	16	3,690
Net financial liabilities	-	11,391	(57)	(30)	(16)	(2,628)

**Fair value**

The carrying amounts and fair values of interest bearing liabilities at balance date are:

	2009		2008	
	Carrying amount \$000	Fair value \$000	Carrying amount \$000	Fair value \$000
Financial assets				
Cash	10,434	10,434	11,383	11,383
Receivables	6,112	6,112	1,060	1,060
Total financial assets	16,546	16,546	12,443	12,443
Financial liabilities				
Lease liabilities	89	89	103	103
Payables	4,012	4,012	3,690	3,690
Total financial liabilities	4,101	4,101	3,793	3,793

Cash, cash equivalents and non-interest bearing financial assets and financial liabilities are carried at cost which approximates their fair value. The fair value of other financial assets and financial liabilities is based upon market prices, where a market exists or by discounting the expected future cash flows at current interest rates.

**Note 22: Authority details**

The registered office of the Authority and principal place of business is: 168 Welsford Street, Shepparton 3630, Victoria.

# The Environment

## - details of annual performance and long-term progress

This section provides further details on the ratings of annual performance and long-term progress for each investment area of 'The Environment' given in the scoreboards on pages 14, 15 and 17.

References to yet further levels of detail are also given in this section, with most able to be found at [www.gbma.vic.gov.au](http://www.gbma.vic.gov.au).

This ordering of information is part of implementing the 2004 Goulburn Broken Monitoring, Evaluation and Reporting Strategy. The Australian National Audit Office provided feedback that there is "...much in your (2006-07) annual report that would assist national reporting if applied more generally."

### Understanding progress and ratings

*"The lack of an environmental accounting framework is a fundamental weakness of Australian environment policy."* - from Accounting for Nature by the Wentworth Group of Concerned Scientists, May 2008.

The GB CMA understands that measuring progress in natural resource management is almost universally difficult, and that the quality of data systems used to inform whole-of-Catchment-scale decisions is often poor. Nevertheless, decisions have to be made and the GB CMA is at the forefront of communicating progress.

*"...you take a comprehensive approach using quantitative and qualitative data and measure performance over time. .... Your (annual) report is also well presented and easy to read."* - Australian National Audit Office letter to GB CMA, March 2008.

Ratings of annual performance and long-term progress help to focus investment decision makers such as the Board and government funding bodies. The use of these ratings for guiding decisions needs to be tempered by an understanding of the degree of objectivity.

### Annual performance and long-term progress

Annual performance is rated by measuring the outputs achieved against the target for the year. The target is determined by the funds available and usually varies from that identified or implied in the relevant long-term strategy. This is because we do not know what funds are available beyond one year and what funds are anticipated to be available at the time the strategy was written.

There is usually a high certainty of the rating for annual performance within a single investment area: funding is known, outputs and other indicators are well documented, and accounting mechanisms are sound.

Long-term progress ratings are needed for two separate areas of focus for decision-making:

- outputs achieved against what were intended to be achieved since the relevant strategy's inception (long-term strategy implementation progress)
- condition of the issue to be managed, such as water quality, native vegetation or community capacity

There are often several individual components to rate when determining an overall long-term progress rating within a single investment area. These individual ratings have varied data quality and this affects the certainty of the overall rating.

For example, there are several components within the investment area 'Collaborations and communities' and progress in implementing strategic approaches for each of these components varies as does the certainty. Similarly, the condition and certainty of rating the condition of the components that make up our 'Collaborations and communities' vary.

Where outputs and long-term strategies are well defined and where they are accompanied by solid data management systems, such as for 'Investment area 1a - Shepparton Irrigation Region salinity', then the certainty of our long-term progress ratings increase. Strategies for different investment areas vary in formality and comprehensiveness, which is appropriate, so our certainty of understanding progress varies considerably.

Complete implementation of a strategy does not necessarily translate to desired condition change, because of external factors and perhaps inaccurate assumptions used at the time the strategy was written, especially those related to funding levels, social and political circumstances and the weather.

### What does Catchment condition mean?

Measuring the condition of the Catchment has historically focussed on discrete themes, including biophysical investment areas such as salinity, water quality, river health and biodiversity, and non-biophysical investment areas such as community capacity.

The National Framework for Natural Resource Management Standards and Targets (2002, under review) lists ten of these types of themes as resource condition matters for target. It also recommends indicator headings and indicators of progress. Resource condition indicator examples are depth

to groundwater, soil acidity, total phosphorus levels and extent of native vegetation present by interim bio-geographical regionalisation of Australia sub-region.

'Resource' can be interpreted from the national framework as referring to biophysical assets such as rivers, as well as to, perhaps erroneously, threats such as salinity. Resource condition can therefore be interpreted as being the biophysical state of the biophysical theme (or matter for target).

Resource condition indicators have been very useful in ordering information for decision makers whose focus is within particular investment areas. However, these indicators only provide part of the picture and there has been wide variability in their interpretation and use.

We need more information on the investment areas in an integrated context to make better decisions. This means we need information on all of the elements that impact on particular investment areas in order to rate the condition of the Catchment for that investment area.

This Annual Report promotes a broadening of focus from environmental elements only to social and economic elements also within each investment area, including the relationships between all elements. Together, these elements form a complex, evolving, integrated socio-ecological system<sup>i</sup> in which humans are a part of nature. Ratings of Catchment condition for an investment area are therefore ratings of the socio-ecological system's condition related to that investment area.

The quality and availability of indicator data for the environmental (or resource condition) component varies considerably, and we are in the very early stages of formally documenting relevant social and economic indicator data. Despite the uncertainties that this presents, it is far more informative for decision making to present rolled up socio-ecological system ratings for Catchment condition rather than ratings based on resource condition indicators alone. Progress within investment areas is usually rated by considering more than one element. For example, threatened species and native vegetation are two component elements within the biodiversity investment area.

Resource condition indicators are usually not a major consideration in rating progress within investment areas under 'The Business' because these merely have supporting functions.

**Resilience, adaptability and transformability**

Resilience thinking<sup>i</sup> helps to expand our thinking to the whole of system. This approach has evolved out of our sustainability and ecosystem services thinking.

Characteristics of desired systems include:

- Resilience - the capacity to withstand shocks and rebuild without collapsing into a different system
- Adaptability - the capacity of participants to influence resilience
- Transformability - the capacity to create a fundamentally new system if necessary.

Together, these characteristics can be considered as part of the resilience package.

Thinking about resilience ensures that fundamental questions are at the forefront of our minds, such as:

- Are our systems sufficiently resilient to withstand a shock?
- Are our systems close to a threshold (or tipping point into a completely different regime)?
  - is it better to accept that our systems are transforming into a different regime and accept that we should just focus on managing the change?
  - what interventions can or should be made to build resilience?

Resilience, adaptability and transformability are important components of investment areas under both 'The Environment' and 'The Business'.

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<sup>i</sup> The above discussions on socio-ecological systems and resilience has drawn heavily from 'Resilience, Adaptability and Transformability in the Goulburn-Broken Catchment' (2009) by Walker, Abel, Anderies and Ryan; the Resilience Alliance website [www.resalliance.org](http://www.resalliance.org) and from 'Resilience Management – A Guide for Irrigated Regions, Communities and Enterprises' (2007) by Wolfenden, Evans, Essaw, Johnson, Sanderson, Starkey and Wilkinson.



Fungi at Budgee Creek. Photo: Keith Ward, GB CMA

# Investment area 1a - Shepparton Irrigation Region salinity: watertables and River Murray salinity

Compiled by Ken Sampson, Terry Hunter and Rod McLennan. See [www.gbcma.vic.gov.au](http://www.gbcma.vic.gov.au) for more details.

## Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Outputs (against targets set as a result of funds received)	n.a.	n.a.	On target	High	n.a.
Long-term strategy implementation progress	Outputs (scheduled between 1990 and 2009)	n.a.	n.a.	On target	High	↓ <sup>ii</sup>
Catchment condition <sup>iii</sup>	Watertable salinity and depths Salt disposed to Murray River Salinity of environmental features Management systems	Poor	Low	Good	Medium	↑↑

<sup>i</sup> Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

<sup>ii</sup> Assumed to parallel government funding trend.

<sup>iii</sup> The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.

## Background

### Government investment, \$000

2006-07	2007-08	2008-09	2009-10 <sup>i</sup>	Trend
14,070	12,060	11,720	6,000	↓

<sup>i</sup> Forecast based on funding advice at August 2009

Salinity has been the biggest natural resource challenge in the SIR over the last two decades.

The SIR community's resource condition targets to be achieved by 2020 are to:

- keep groundwater below two metres within the SIR (500,000 hectares) by improved irrigation management on farms, improved surface water management within drainage catchments and consistently pumping groundwater with appropriate reuse over 216,000 hectares
- keep increases to salinity levels of the River Murray at Morgan from the Shepparton Irrigation Region at or below 6.9 EC.

Managing salt within the SIR landscape and discharges of salt to waterways are high priorities in contributing to objectives of the Murray-Darling Basin's Basin Salinity Management Strategy 2001-2015. Actions to manage salinity have significant benefits for agriculture, water quality, water supply security and biodiversity.

Salinity program areas are overseen by SIR IC and each program is covered by a working group: Farm and Environment, Groundwater and Salinity Management, and Surface Water Management.

These working groups comprise agency staff and community members including representatives from G-MW, water services committees, the Victorian Farmers Federation, local government and environment groups.

Different farm sectors have different salinity management needs. Dramatically reduced water allocations in recent years are resulting in some farm sectors declining. Regional tertiary industries are also

### Major strategic references

- Shepparton Irrigation Region Land and Water Salinity Management Plan 1989 (and reviews 1995, 2000, 2003, 2007 in preparation), now called the Shepparton Irrigation Region Catchment Implementation Strategy

changing in response to changing supplies of primary produce and rapidly changing market conditions. Farms are also generally getting bigger as many farmers leave the industry. These changes affect the types and amount of benefit that investment in salinity management achieves.

## 2008-09 performance

Implementation of the Shepparton Irrigation Region Catchment Implementation Strategy (SIR CIS) continues at an exceptional rate despite the continued drought, the drop in commodity prices for our irrigator partners and the decline in Commonwealth and State core funding.

Our emphasis this year has been to link implementation of the SIR CIS with various modernisation programs, especially the Northern Victoria Irrigation Renewal Project (NVIRP), to optimise opportunities presented by changes to delivery systems. Much of our farm planning to date has been based on an unchanged regional delivery system. With channel modernisation, the delivery system is changing. This requires changes in the farm irrigation system to take full benefit of the improved delivery system.

Refer also to the 'Shepparton Irrigation Region Implementation Committee' section (page 30) for further achievements, especially those related to integration of complementary issues and community involvement.

## Works and extension

### Groundwater and Salinity Management Program

- Groundwater investigations were completed at 43 sites and one site was suitable for private pumping. Three investigations are in progress and a new prioritisation process based on rolling five-year watertable average depth is being implemented. There are 11 irrigators on the newly prioritised waiting list.
- Five new and six upgrades of shallow groundwater pumps were completed, and ten new and five upgrades are in progress. Completed private works have produced 1,595 megalitres of groundwater for irrigation and therefore 1,595 hectares of irrigated land has been protected from high watertables.
- One public pump (CG-24) was handed over to G-MW in 2008-09 and serves an estimated 199 hectares. The pump is not rated yet due to low watertable levels. Two feasibility investigations for public pumps that have been in progress were completed but considered unsuccessful due to lack of direct beneficiary support.
- The final report of public salinity control pump investigation related to the Millewa Conservation Reserve was completed and a salinity mitigation plan is to be developed in 2009-10 with a focus on protecting a remnant environmental site rather than agricultural land.

### Surface Water Management Program

- Seven kilometres of primary surface water management schemes were designed, including Mosquito 36 and Murray Valley Drain 11 stages 2 and 3. Construction totalled 5.5 kilometres and included Stanhope Stage 2, Murray Valley Drain 11 pump station, and Muckatah minor works.

- Three kilometres of community surface water management schemes were designed and 5.3 kilometres were constructed, protecting 342 hectares, including Muckatah 2/8P and 4P, which includes 2.1 kilometres of flexible spur.
- A total of 13.9 kilometres of community surface drains were transferred from the City of Greater Shepparton to G-MW, including Toolamba 1P, Ardmona 1BP and Ardmona 1CP.

### Farm and Environment Program

- Whole farm plans on 247 properties covering 20,476 hectares were completed, including ten revised modernised plans, bringing the total number of whole farm plans under this incentive to 3,716, covering 253,959 hectares or 80 per cent of the irrigated area.
- A total of 485 farm irrigation systems were assessed to link with the irrigation modernisation process.
- Sixty six reuse systems draining 3,643 hectares were installed, bringing the total number of reuse systems constructed with assistance from this scheme to 549, serving 35,670 hectares.
- Fifteen automatic irrigation systems were installed under the scheme, serving 607 hectares, including seven for automating the outlet from the G-MW delivery channel. This brings the total number of automatic irrigation systems constructed with assistance from this scheme to 142, serving 8,238 hectares.
- Fifteen landholders received support to undertake environmental projects, fencing 29 hectares of remnant vegetation and revegetating 62 hectares of indigenous plants.

## Actions 2006-07, 2007-08 and 2008-09

Action <sup>i</sup>		From funds received through Corporate Plan <sup>ii</sup>				
		Achieved			Target <sup>ii</sup>	% achieved
		2006-07	2007-08	2008-09		
<b>Surface water action</b>						
Land forming/laser grading	ha	4,490	8,525	20,476	7,000	293
Drain – primary built	km	0 <sup>iii</sup>	33 <sup>iv</sup>	5.5	2	275
Drain – community built	km			5.3	3	177
Farm reuse systems installed	no.	56	48	66	44	151
Drain – additional water diverted from regional drains <sup>v</sup>	ML	75	200	0	200	0
Irrigation systems – improved <sup>vi</sup>	ha	6,060	8,967	21,083	7,500	281
<b>Sub-surface water action</b>						
New groundwater pumps – public installed	no.		1	1	1	100
New groundwater pumps – private installed	no.	16	20	11	12	92
Increased volume of water able to be pumped	ML	3,302	3,237	1,794	1,400	128
<b>Planning for works action</b>						
Whole farm plans	no.	152	145	247	207	119

<sup>i</sup> Many actions primarily aimed at achieving salinity targets contribute to other targets also, such as those for water quality and biodiversity. Investment shown is for those funds dedicated primarily to achieving salinity outcomes.

<sup>ii</sup> Corporate Plan targets are adjusted as funding is confirmed.

<sup>iii</sup> 6.5 km were constructed during 2006-07 but none was formally handed over to Goulburn-Murray Water for it to manage.

<sup>iv</sup> 9 km were constructed during 2007-08 and 33 kilometres was formally handed over to Goulburn-Murray Water for it to manage.

Handed over drains not accounted for 2005-06 and 2006-07 were recorded in 2007-08

<sup>v</sup> High flow diversion

<sup>vi</sup> Improved systems include laser grading, automatic irrigation and micro-irrigation.

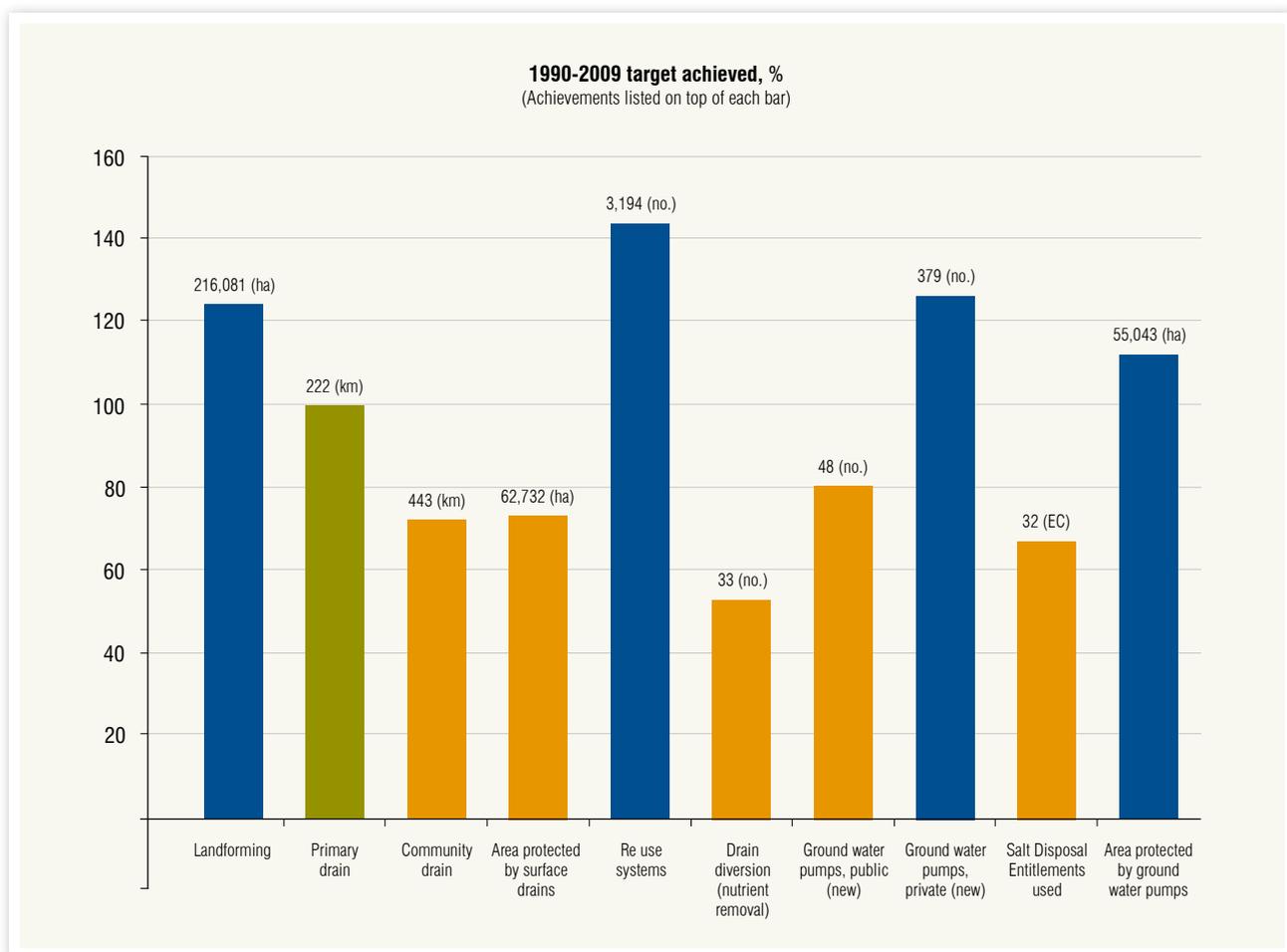
### Collaborations and communities

- A new environmental projects technical working group was established as part of the Groundwater and Salinity Management Program.
- SIR IC has worked closely with NVIRP and other modernisation activities to ensure that water saving projects are consistent with and complementary to implementation of the SIR CIS.
- See also the 'Shepparton Irrigation Region Implementation Committee' section on page 30.

### Planning and responding (includes research and development)

- Mid-term reviews of Surface and Subsurface programs were completed as part of Victorian Irrigation Drainage Program Review, resulting in reprioritised projects and helping develop a plan for the future of surface and sub-surface drainage.
- Documentation of the 2007 SIR CIS review continued to be finalised.
- A mid-term review of the strategic planning program resulted in changed priorities: protecting environmental assets in the SIR and adapting to future drier climate with variable seasonally conditions will be the focus.
- Water balance and salt mobilisation projects were initiated.
- The 'Review of potential impact of projected changes in groundwater levels and salinity' and the 'Procedures manual for salt administration and reporting in the GB CMA' were completed, and another nine projects are in progress.

- New cost sharing partnerships for research and development projects with DSE, the Northern Victoria Irrigation Renewal Project and G-MW were established to help compensate for declining federal funds.
- Monitoring bores were installed at nine priority high value environmental features to assess salinity risk.
- The key performance indicator report for 2007-08 was completed.
- The intensive groundwater and drain monitoring program continued and annual watertable depth and nutrient discharge reports were published.
- The review of monitoring requirements commenced.
- The 2007-08 annual report to the Murray Darling Basin Commission's Basin Salinity Management Strategy was completed.
- The 2007-08 report for the Irrigation Drainage Memorandum of Understanding was completed.
- The 2007-08 report on nutrient load from SIR surface drains was completed.
- The catchment and operation plan for the SIR was almost completed and catchment and operation plan for the Barmah Nathalia Catchment is well underway.



## Long-term strategy implementation progress

- Farm works (landforming, reuse systems, private groundwater pumps) are ahead of schedule.
- Regional infrastructure (public drains and public groundwater pumps) is behind schedule due to declining government investment.
- Works targets set in 1990 and reviewed in 1995, 2001 and 2006 are again being reviewed because of the likely large and unforeseen decline in salinity threat (see Catchment condition commentary).
- Tasks to establish management systems (stakeholder forums, partnerships, technical input, review processes etc) have been thoroughly completed.
- The SIR community's Foodbowl Modernisation project, which began implementation in 2008 through NVIRP, is also helping to reduce salinity threats (it is primarily aimed at achieving water savings for the benefit of the environment, irrigators and Melbourne's water supply).

## Catchment condition

- Threats of land salinisation, waterlogging and saline inflows into the River Murray have probably reduced significantly due to:
  - a probable drying climate (less water available to go through to watertable since the extended dry period began in 1996)
  - government supported salinity management works, particularly in the early 1990s, including surface water management projects that result in less water going through to the watertable and groundwater pumping projects that have the effect of lowering the watertable
  - complementary government supported water quality and water savings works that have water-use efficiency and often therefore salinity benefits, for example irrigation delivery infrastructure through the Foodbowl Modernisation project from 2008 means significantly less water is available to go through to watertable
  - the impact of environmental flows and water trade downstream from the Goulburn Broken Catchment (this reduces the SIR's impact on the River Murray's salinity).
- New and emerging issues can be accommodated by the regional institutional mechanisms such as stakeholder involvement forums that are in place and by the very strong relationships that exist.
- Changes since 1990 mean that the Shepparton Irrigation Region is likely to withstand an unlikely return to a run of wet years in terms of salinity.

## What's next?

- The operational priority is to continue working with irrigation modernisation designers so that salinity management objectives are also met as works proceed.
- Given that government support for salinity management is declining dramatically and that the salinity threat is likely to be reducing (as described above), implementation targets that were thought appropriate in 1990 are being reviewed. The review considers how resilient the SIR has become in terms of salinity: if, in the unlikely event, there was a run of wet years, would the infrastructure and management systems developed restrict levels of waterlogging, land salinisation and saline inflows into the River Murray to desirable levels? The review also takes into account the rapidly changing socio-economic context of landholders and flow on effects to the regional community.



Picking apricots at a Bunbartha orchard. Photo: Fleur Baldi, GB CMA

# Investment area 1b - Dryland salinity: watertables and River Murray salinity

Compiled by Mark Cotter, Pat Feehan, Ian Oppy and Rod McLennan. See [www.gbcma.vic.gov.au](http://www.gbcma.vic.gov.au) for more details.

## Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Outputs (against targets set as a result of funds received)	n.a.	n.a.	On target	High	n.a.
Long-term strategy implementation progress	Outputs (scheduled between 1990 and 2009)	n.a.	n.a.	Below target	Medium	↓ <sup>ii</sup>
Catchment condition <sup>iii</sup>	Watertable salinity and depths Salt disposed to Murray River Salinity of environmental features Management systems	Poor	Very low	Satisfactory	Low	↑

i Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

ii Assumed to parallel government funding trend.

iii The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.

## Background

### Government investment, \$000

2006-07	2007-08	2008-09	2009-10 <sup>i</sup>	Trend
3,040	2,960	1,800	1,960	↓

i Forecast based on funding advice at August 2009

Salinity has been seen as the biggest natural resource challenge in the Goulburn Broken Dryland over the last two decades.

Actions to manage salinity have significant benefits for agriculture, water quality, water supply security and biodiversity.

The Goulburn Broken Dryland Salinity Management Plan's (GBDSMP) target (set in 1990) was to achieve hydrological equilibrium (inputs of water from rain match outputs in stream flows and groundwater flows).

Achieving this target would mean a decline in the flow of salt from the Dryland Catchment. (In 1990, 187,000 tonnes of salt flowed from the Dryland Catchment.) The target was adjusted following the ten year review of the GBDSMP in 2001 and aligned with the (Murray Darling) Basin Salinity Management Strategy 2001-2015 (BSMS).

The BSMS's proposed interim end-of-valley targets (which are under review) are part of the agreement between Victoria and the Murray Darling Basin Authority (formerly Commission) and are enshrined in the Federal Water Act 2007. These are to:

- ensure no net increase in stream salinity in the Goulburn River upstream of Goulburn Weir
- limit salinity increase to 26 ECs in the Broken River upstream of Casey's Weir.

### Major strategic references

- Dryland Salinity Management Plan 1989 (and reviews 1995, 2001, 2008)
- (Murray Darling) Basin Salinity Management Strategy 2001-2015

The GBDSMP's adjusted targets, developed in 2000 and 2002 respectively, are to:

- maintain increases to salinity levels of River Murray at Morgan (in South Australia) from the Goulburn Broken Dryland at or below 1.3 ECs by 2050 (equates to 67,000 tonnes per year from the Dryland) by 2050
- save 1,500 hectares of foothills and river valleys of highland areas from salinisation by 2050

## 2008-09 performance

It was an exceptionally difficult year in the Dryland with continued dry weather and a significant commitment of resources to fire suppression and recovery in the second half. Although some targets were not met, levels of achievement were excellent given the circumstances, thanks largely to the Drought Employment Program.

Refer also to the Broken Goulburn Implementation Committee section on page 22 for further achievements, especially those related to integration of complementary issues and community involvement.

## Works and extension

- Remnant vegetation and revegetation outputs exceeded target, thanks to complementary investment areas.
- The main activity for managing dryland salinity is revegetation. The target for revegetation from funds received was not achieved in this investment area (exceeded target shown in table below includes contributions from the Bush Returns program). However a high level of landholder commitment should result in increased works in 2009-10 if good rain eventuates.
- A total of 2.5 times the projected target area of whole farm plans was achieved, but this was below target for the number of plans, with whole farm planning staff heavily involved in the fire recovery program.
- Continued attempts to increase discharge area management were not successful, largely due to the problem not being recognised as sufficiently important by landholders. Plans for irrigation drainage in the Dryland exceeded target by 247 per cent (1,200 hectares).

## Actions 2006-07, 2007-08 and 2008-09

Action <sup>i</sup>		From funds received through Corporate Plan				
		Achieved		Target	% achieved	
		2006-07	2007-08	2008-09		
Fence remnant vegetation	ha			1,660	385	431
Revegetation - plant natives <sup>ii</sup>	ha	581	460	814	515	158
Whole farm plans prepared-Level 2	no.	80	369	94	84	112
Whole farm plans-Level 1	no.			179	300	60
Irrigation drainage environment plans	no.			6	8	75
New irrigation referrals dryland zone	no.			8	10	80
Improved irrigation-dryland zone <sup>iii</sup>	ha			1,976	800	247

i Outputs include those achieved by complementary investment areas (Riparian and instream habitat and channel form and Biodiversity)

ii Includes 324 hectares achieved through Bush Returns (Investment area 3, Biodiversity) in 2008-09

iii An aggregate of properties/irrigated areas receiving intensive extension support for irrigation whole farm planning, system checks, soil moisture monitoring equipment/scheduling, and/or major system changes.

## Collaborations and communities

See the 'Broken Goulburn Implementation Committee' section for further achievements, especially those related to integration of complementary issues and community involvement

## Planning and responding (includes research and development)

- The low impact concept for identifying salinity priorities was recognised: salinity mitigation works need to coincide with preservation of water resources and activities to reduce deep drainage are only undertaken where there is high salt generation (measured in tonnes per square kilometre) and low catchment yield (measured in megalitres per square kilometre).
- The Salinity Management Plan desktop review confirmed the importance of reviewing salinity targets as part of a concerted Statewide response to end-of-valley targets and to ensure Catchment targets reflect local rather than Basin circumstances. The review also confirmed that local salinity management needs to be supported by improved information and decision making processes.
- The exploring tradeoffs for National Action Plan for Salinity and Water Quality resource condition change project in the south west Goulburn region highlighted the complexity of negotiating tradeoffs. Biophysical issues around water and salt tradeoffs are well understood yet scope for negotiating tradeoffs is hampered by lack of community and political representation of the breadth of issues.
- The engineering options project highlighted the importance of understanding local surface and sub-surface geology in assessing risk of dryland salt discharge and making decisions on the most

appropriate treatments. It requires a more detailed understanding of local conditions than that provided through groundwater flow conceptualisations.

- Salt register reporting is a requirement under the Federal Water Act (2007) and is needed to account, across jurisdictions, for contribution of salt from the Dryland to the River Murray. Development of a register to report debits and credits in the Dryland needs to be finalised by striking an agreement on what information is entered and how it is validated.
- The catchment modelling framework for Goulburn Broken Catchment will assist in estimating risks and impacts on salt and water yield across the Catchment. The development of a transient model will allow us to estimate the trajectory of changes in flows and groundwater responses and to make better informed decisions on the validity of remediation works.
- Groundwater salt governance arrangements are managed through the Groundwater Salt Management Coordinating Group. It is the appropriate forum for managing the groundwater resource on a catchment scale. A comparatively small investment in groundwater management in the Dryland reduced the imperative for the Dryland to be represented on the Groundwater Salt Management Working Group.
- A review of hydrograph data showed a marked change in trend in many bores though some hydrographs reflect little of the past ten years' below average rainfall. Falling water tables reduce baseflow and flow from springs and bogs into streams also reduce the risk of dryland salt discharge (though areas of active discharge may not change much). It will take a number of years of above average rainfall to reverse the falling trend.

## Long-term strategy implementation progress

- Works targets implied by original (1990) resource condition targets are not being met. Analysis since 2001 shows that the community cannot reasonably meet end-of-valley target obligations (the community believes that 50 per cent of the resource condition targets is more appropriate). A reassessment in 2002 found that the Catchment does not have the capacity to achieve works to meet proposed interim end-of-valley targets either, especially given the trend of declining government funding.
- Tasks to establish management systems (stakeholder forums, partnerships, technical input, review processes etc) have been thoroughly implemented. This has contributed significantly to an integrated approach, as described in the Dryland Landscape Strategy (2008). For example, revegetation guidelines were amended in the 1990s to achieve biodiversity as well as salinity benefits.
- The Goulburn Broken Catchment is widely recognised as one of the best researched in Australia in terms of dryland salinity and is often used to trial new approaches.

## Catchment condition

- Within the Goulburn Broken Catchment, contributions to River Murray salinity are mainly from the Goulburn River. Difficulties in measuring small changes in Goulburn River salt concentrations and flow volumes means that it is difficult to calculate changes in contributions to River Murray salinity.
- The long-term strategy target to reduce salt exports is likely to be met because of the extended dry period and despite falling investment, however achieving end-of-valley targets is now more likely to result from reduced stream flows than from salt loads.
- The reversal of the rising watertable trend in the uplands because of reduced rainfall since 1996 has lessened threats of land salinisation and waterlogging.
- There has been a mixed response to the drying climate in the riverine plains: groundwater levels in some areas continue to rise (and remain vulnerable) while in other areas increased groundwater use and lower inflows cause them to fall.

## What's next?

- A changing climate will characterise the future. Seasonal water supply will be reduced by up to 40 per cent and continued loss of flow into storages and unregulated streams will probably overwhelm the impact of salinity as a Catchment scale issue but intensify the effects of salinity locally. The 2009 Black Saturday bushfires in the south and south central Goulburn Catchment will aggravate the impact of climate change.
- Resolving significant variation in understanding of the salinity threat and mitigation measures with the Murray Darling Basin Authority and Victorian and Australian governments is a priority. The challenges are:
  - including size and timing of delayed impacts of salinity (legacy of history)
  - recognising the declining threat due to a probable drying climate, although base (regional groundwater) flows and saline discharge (at the surface) from isolated saline recharge sites remain significant concerns
  - recognising there is a need to manage development of the upland water resource: there is usually a tradeoff when revegetating especially between reducing groundwater accessions to control salinity and protecting the water resource (groundwater and surface water yields for irrigation flows, environmental health of upland streams and economic development), and low stream flows and water storage levels in recent years have heightened awareness
  - ensuring implications of understanding are reflected in implementation of Victorian Government's white paper on Land and Biodiversity at a Time of Climate Change (expected late 2009) and the Federal Water Act 2007
  - ensuring emerging understanding is reflected in resource condition and end-of-valley targets as they are revised.
- If salinity targets change, a transition in emphasis is expected to be smooth because management systems initiated through the salinity program are mature: complementary issues such as biodiversity and mechanisms such as incentives are well integrated.

## Goulburn Broken Dryland salinity bore hydrographs

by Mark Cotter, GB CMA

The 1999 summary of key hydrographs was redone in 2009.

Contrary to expectations and despite the long dry period, some bores continue to rise.

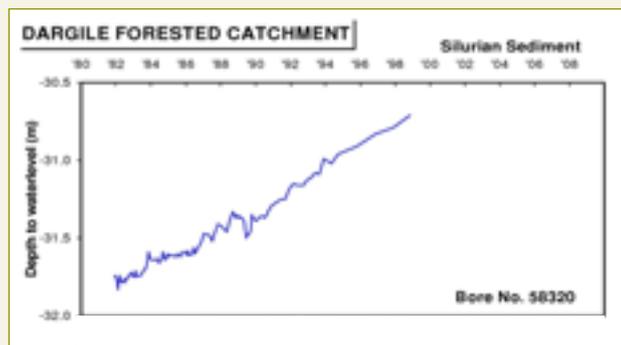
These bores are usually in areas to which groundwater from higher elevations continue to drain for many years, even after recharge ceases.

There are significant falls in upland areas and the subdued response of bores highlights a growing disconnect between groundwater levels and seasonal rainfall.

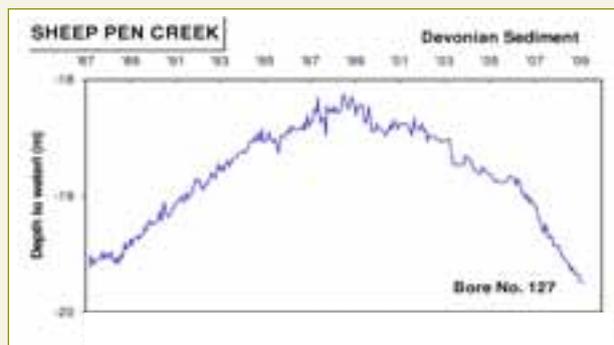
These sorts of analytical summaries are only possible because bore monitoring has been maintained in the Goulburn Broken for so long, which is very rare.

Severe financial constraints threaten the monitoring program and will undermine reporting of long term outcomes.

See [www.gbcma.vic.gov.au](http://www.gbcma.vic.gov.au) for the complete set of 1999 and 2009 selected bore hydrographs, examples of which are shown below.



Linear rising trend averaging 7 cm per year, indicating a system of continuing groundwater accumulation beneath the Dargile Forested Catchment. Unfortunately this bore has not been monitored since November 1998.



Steady rising water level trend averaging 11 cm per year up to 1998 with small seasonal fluctuation; strongly falling trend since then, typical of Caniambo Sedimentary Hills.

Hydrographs: thanks to Xiang Cheng, DPI



View of the Goulburn River from Acheron cutting, Maroondah Highway. Photo: Mark Turner, GB CMA

## Investment area 2 - River health

### Government investment<sup>i</sup>, \$000

2006-07	2007-08	2008-09	2009-10	Trend
9,579	13,020	13,630 <sup>ii</sup>	7,280 <sup>iii</sup>	●

- i Includes all three investment areas under River health
- ii Includes \$2.7 million for fire recovery for 2009-10 activities
- iii Forecast based on funding advice at August 2009

This section includes reports on three discrete but highly connected investment areas:

- 2a Environmental flows and water supply
- 2b Riparian and instream habitat and channel form
- 2c Water quality (nutrients) in rivers and streams.

Waterway management and general river health management in Victoria is the responsibility of catchment management authorities and Melbourne Water, as described in Part 10 of the Water Act 1989.

The Goulburn Broken Catchment provides major water resources for Victoria and the Murray Darling Basin, generating 11 per cent of the Basin's water despite covering only two per cent of its area.

Rivers and streams underpin our livelihoods, provide water for stock and domestic uses, are valued for recreation and aesthetic reasons, are habitat for flora and fauna, and are often central to the culture of Indigenous Australians.

The viability of our irrigation area, which generates 26 per cent of Victoria's rural export earnings, depends on water availability and quality. Communities over 500 kilometres downstream also rely on water generated in the Catchment.

River regulation, pollution, vegetation removal and other catchment disturbances have impacted on instream, riparian, wetland and floodplain health.

The Goulburn Broken Regional River Health Strategy 2005-2015 (GB RRHS) is the first attempt to combine all elements of river management under one umbrella.

The current extended drought adds urgency to undertake the works listed in the GB RRHS.

About fifteen per cent of over 1,000 statutory applications received annually by the GB CMA relate directly to protecting waterway health. This is carried out under GB CMA By law No. 1 and ensures that works and activities do not diminish waterway values. (See the 'Flood protection' section on page 120 for further information on the GB CMA's statutory planning activities.)



Checking depth at Reedy Swamp. Photo: Paul O'Connor, DSE

# Investment area 2a - Environmental flows and water supply

Compiled by Geoff Earl, Wayne Tennant, Simon Casanelia and Rod McLennan

## Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Outputs (against targets set as a result of funds received)	n.a.	n.a.	On target	High	n.a.
Long-term strategy implementation progress	Outputs (scheduled between 2004 and 2009) Environmental share of water supply Environmental watering	n.a.	n.a.	On target	Medium	↑ <sup>ii</sup>
Catchment condition <sup>iii</sup>	Water regimes of environmental features Management systems	Poor	Low	Very poor	Medium	↓

i Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

ii Assumed to parallel government funding trend.

iii The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.

## Background

### Government investment

Funding for the three investment areas under River health is not separately managed and reported (see previous page for details). These three discrete but highly connected investment areas are:

2a Environmental flows and water supply

2b Riparian and instream habitat and channel form

2c Water quality (nutrients) in rivers and streams.

The government funding trend rating for these investment areas is static.

The provision of environmental water is a key element in the protection of aquatic ecosystems.

Environmental water is the environment's share of water and is called the Environmental Water Reserve. The Environmental Water Reserve includes two types of water:

- water that is held in storage and actively managed to meet specific environmental needs (environmental entitlements)
- minimum and unregulated river flows made available as a result of rules on consumptive use (conditions on bulk entitlements and water licences, and caps on water use).

Environmental entitlements are held by the Minister for Environment, who delegates management responsibility to catchment management authorities and Melbourne Water. This complements the GB CMA's role as the caretaker of river health and the provision of waterway, regional drainage and floodplain management services.

Partner agencies are responsible for allocating water resources, river flow regulation, and the delivery of water, water use regulation and wastewater disposal services.

Catchment management authorities and Melbourne Water work with the holders of bulk entitlements and water licences to manage other environmental water.

### Major strategic references

- Victorian Government White Paper: Our Water Our Future (2004)
- Goulburn Broken Regional River Health Strategy 2005 (GB RRHS)
- Victorian River Health Strategy 2002 (VRHS)
- [www.thelivingmurray.gov.au](http://www.thelivingmurray.gov.au)

Since the mid 1990s, State and Australian Governments have progressively improved water management including providing water for environmental flows. The current string of drought years adds urgency to this work.

In 2002, the Murray-Darling Basin Ministerial Council established The Living Murray, which aims to achieve a healthy working River Murray system. In the Goulburn Broken Catchment this involves the Barmah Forest and the River Murray channel.

In its 2004 White Paper, Our Water Our Future, the Victorian Government launched a comprehensive program for using the State's scarce water resources wisely; providing for efficient, reliable, flexible water for urban, agricultural and business use; and increased flows to rivers and wetlands to restore and protect their health. Under the program, all elements of the water cycle are to be managed with a sustainable water allocation regime and environmental flows integrated with other catchment management activities.

The Regional River Health Strategy plans to improve river health by determining environmental flow needs and changing river flow regimes, particularly in the Goulburn River, Broken River, Yea River, Seven Creeks, Broken Creek and King Parrot Creek.

The Catchment contains thousands of wetlands, especially on the floodplains, which have undergone significant change since European settlement and the Regional Catchment Strategy recognises the need to improve them.

Water supply and delivery efficiency are critical to improved environmental and productive outcomes, but specific targets are not yet set for the Catchment. Targeting environmental flows and using the water supply system flexibility to deliver environmental benefits are key strategies.

## 2008-09 performance

Continuing low inflows are degrading river health. Localised declining water quality and low flows are affecting native fish health and some populations have been translocated to protect them.

Given the low river flows, emphasis was on maintaining water quality, minimum flow events and aquatic refuges as we attempt to manage drought conditions better.

### Works and operations

- Environmental water delivered to wetlands included:
  - 500 megalitres to Reedy Swamp between August and May and 40 megalitres to Black Swamp in spring from the Victorian River Murray Flora and Fauna Bulk Entitlement
  - 300 megalitres to the Gulf Creek in Barmah Forest in November from the The Living Murray account
  - winter flows to Moody Swamp during flow events along the Broken Creek.
- Goulburn and Broken bulk water entitlements were again qualified by the Minister for Water to conserve water for critical human needs:
  - McCoys Bridge minimum flows were reduced from 400 to 250 megalitres per day, although flows generally stayed above 330 megalitres per day, and reduced minimum flows were lifted on 1 December when the irrigation allocation was increased to 20 per cent
  - Broken River minimum flows were set to zero on 1 July 2008 and qualified rights remained in place until 30 June 2009 (and may continue).
- G-MW maintained some flow in the Broken River for most of the year:
  - 2,817 megalitres from the Goulburn Water Quality Allowance was released into Broken Creek in early spring
  - flows into the Broken Creek from early October to May were provided by passing Goulburn River water to the Murray River via Broken Creek.

### Collaborations and communities

- As part of the Northern Region Sustainable Water Strategy process, the River and Water Contingency Group continued meeting to discuss issues related to river health, flows and water quality and a Draft 2009-10 Dry Inflow Contingency Plan was circulated for comment.
- Barmah-Millewa Forest collaborations included:
  - cross state water management with Forests NSW, NSW Wetland Working Group, NSW Fisheries, River Murray Water, G-MW etc
  - monitoring red gum and giant rush with the Commonwealth Scientific and Industrial Research Organisation (CSIRO)
  - giant rush burning trials with Yorta Yorta
  - an inaugural meeting of The Living Murray Barmah-Millewa Community Reference Group.
- GB CMA is represented on the Northern Victoria Irrigation Renewal Project's (NVIRP) Environmental Technical Advisory Committee.
- The Waterways Working Group continued to provide community output in the SIR. A Wetland Working Group was established.

### Planning and responding (includes research and development)

- GB CMA, DPI, DSE, G-MW, Field and Game Australia and local bird enthusiasts monitored the ecological response of environmental watering.
- DPI conducted acoustic monitoring of wetlands.
- Fish surveys of suspected drought refuge pools were commissioned.
- The response to changes in the Shepparton Irrigation Region's irrigation system include:
  - plans being developed by GB CMA with help from DPI and G-MW to ensure environmental watering (for consistency, plans are following the format of NVIRP process)
  - the format of environmental watering plans for wetland and waterways has been developed with NVIRP
  - the environmental watering plan for Reedy Swamp is being developed with G-MW.
- Real time (website accessible) water quality monitoring of the Goulburn River started.
- The Lake Eildon to River Murray Goulburn Environmental Flow Hydraulics Study identified flows for environmental assets and potential conflicts with economic and social assets. Tributaries interactions with possible environmental flow releases were also assessed.
- The 2008-09 Dry Inflow Contingency Plan was completed.
- GB CMA staff supported development of the Victorian Government's Northern Region Sustainable Water Strategy, which is expected to be finalised mid-late 2009. This Strategy is important for environmental flows, particularly under climate change, and includes proposals to enhance the use of environmental water by including carryover, reserve policy and reuse or return flows.
- Water Quality Strategy review technical papers were accepted at key forums, including:
  - the International Conference on Integrated Diffuse Pollution Management, Thailand
  - the Research Center for Environmental and Hazardous Substance Management, Thailand
  - the International River Symposium, Brisbane
  - Australian Water Association's National Water Conference and Exhibition (Ozwater09), Melbourne.
- GB CMA is a partner and project leader in an eWater Cooperative Research Centre (CRC) project investigating how off-channel habitats might be affected under various water supply scenarios.
- Goulburn Broken, North East, Corangamite and West Gippsland CMAs and DSE ran a two day forum on managing wetlands in a drying climate.
- GB CMA funded and helped run a three day floodplain ecology course.

## Long-term strategy implementation progress

- Tasks implied in policy documents are being implemented on schedule, including development of plans for lower inflows under expected drier conditions and supplying water according to plans.
- The Victorian Government, with the support from the GB CMA and its partners, is increasing water availability by saving water in supply and delivery systems, through projects such as:
  - the decommissioning of Lake Mokoan (contributing to savings of 44 gigalitres)
  - the Northern Victoria Irrigation Renewal Project (Foodbowl Modernisation).
- Dramatically increased water use efficiencies in some sectors is contributing to water savings.
- In recent years the Goulburn Broken Catchment has delivered environmental entitlements to streams, wetlands and floodplains to improve water quality, promote the growth and germination of native vegetation, promote and support waterbird breeding, provide drought refuge for aquatic dependent species, provide habitat for native fish, and to reduce the growth of nuisance aquatic plants.

## Catchment condition

- High volume downstream streams (Goulburn River below Lake Eildon, Broken River below Nillahcootie and Broken Creek below the Broken River tributary) are regulated and require intensive management to integrate environmental watering needs. Most streams in the region are not regulated.
- Drought conditions since 1996 have placed the environmental health of the Catchment's rivers, floodplains and wetlands under stress, including the aquatic dependent species they support such as red gum, Macquarie Perch, Barred Galaxias and Murray Cod. A number of unregulated streams may not support existing native fish populations in future. There are some cases of large-scale vegetation changes due to a drier water regime, such as giant rush colonisation of Barmah Lake, red gum establishment in beds of now dry creeks and the death of red gums on higher parts of the floodplain.
- Realised water savings have been countered by reduced rainfall and hence water availability. Water availability for irrigation has been well below average and water availability for rivers and wetlands has also been very low. Minimum flows in regulated rivers have usually been maintained but there has been low to no winter or spring higher flows.
- Catchment management systems that will result in appropriate watering of the environment have been under development for well over a decade. Environmental Water Reserve funding started following release of the Victorian Government's white paper, Our Water Our Future, in 2004 and environmental water allocations were occurring prior to this. Research and monitoring has been initiated.

## What's next?

- There is again a very high risk of very low inflows to river systems in 2009-10. The GB CMA is involved in proposals to qualify rights and minimise risks to the river environment if river flows are reduced. Proposed increases in the Environmental Water Reserve will improve resilience. This includes active planning for environmental water allocation in strategic wetlands under a range of scenarios.
- Local, regional, state and national institutional mechanisms are improving rapidly and adding further to our capacity to respond.
- General river health should improve when, and if, normal conditions return.



The extended drought has dried Lake Mokoan before it has been decommissioned as a water storage! The only water remaining in late 2008 was in the borrow pits near the wall. The different soil of the original wetlands is clearly visible even though the whole area was covered for most of the time since Lake Mokoan became operational in 1972. Photo: David Pasztaleniec, DSE

# Investment area 2b – Riparian and instream habitat and channel form

Compiled by Wayne Tennant, Simon Casanelia, Meegan Davies and Rod McLennan

## Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Outputs (against targets set as a result of funds received)	n.a.	n.a.	On target	High	n.a.
Long-term strategy implementation progress	Outputs (tasks and works scheduled between 2005 and 2009)	n.a.	n.a.	Below target	High	↑ <sup>ii</sup>
Catchment condition <sup>iii</sup>	Index of stream condition Management systems	Poor	Low	Satisfactory	Medium	↑

i Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

ii Assumed to parallel government funding trend.

iii The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.

## Background

### Government investment

Funding for the three investment areas under River health is not separately managed and reported (see page 104 for details). These three discrete but highly connected investment areas are:

- 2a Environmental flows and water supply
- 2b Riparian and instream habitat and channel form
- 2c Water quality (nutrients) in rivers and streams.

The government funding trend rating for these investment areas is static.

Riparian management is a key investment area and individuals, communities and agencies actively participate.

The riparian zone is critical to river health. It provides inputs such as litter and debris to the river system, filters light and water, buffers streams from sediments and nutrients and influences the condition of the bed and banks of streams.

Actions focussed on improving the condition of rivers and streams will help achieve the Healthy Rivers, Healthy Communities vision set in 2003 as stated in the regionally and Ministerially endorsed Goulburn Broken Regional River Health Strategy (GB RRHS):

*“Healthy rivers, streams, wetlands, floodplains and adjacent land that support a vibrant range and abundance of natural environments, provide water for human use, sustain our native flora and fauna and provides for our social, economic and cultural values.”*

Resource condition targets for river condition listed in the GB RRHS act as reference points for measuring progress towards achieving this vision. Other results, such as those for environmental flows, biodiversity and water quality, should also be considered to understand the breadth of progress. Resource condition targets for river condition are:

- to prevent a decline in condition of all reaches in high value rivers and streams

### Major strategic references

- Goulburn Broken Regional River Health Strategy 2005-2015
- Victorian River Health Strategy 2002
- Our Water Our Future 2004
- Wetlands Strategy for the Goulburn Broken Catchment (Draft August 2003)
- Murray Darling Native Fish Management Strategy
- Threatened Species Recovery Plans

- to improve the condition of 30 per cent of river and stream reaches by 10 per cent by 2015.

These are modified versions of resource condition targets listed in the GB RRHS. (The form of these targets has been changed to help communication. The intent has not changed.)

## 2008-09 performance

The Drought Employment Program remained a major focus for the third year in a row. It employed 81 of the Catchment’s drought affected people during six months to again achieve exceptional levels of onground works.

Significant effort and resources are being invested in recovering what was damaged by the February 2009 Black Saturday bushfires along large areas of river frontage. Recovery will take years.

Works to improve instream habitat continued to be a priority.

GB CMA was awarded the Banksia and Environmental Foundation’s Water Award for the large-scale river restoration initiative, the Vision for the Broken River Basin.

## Works and operations

- The Tungamah weir pool was reshaped, extended and woody habitat was added. GB CMA supervised the project and it was co-funded by the Moira Shire and the Tungamah Fishing Club.
- The final year of 2006-07 fire recovery funding for the upper Goulburn catchment resulted in riparian zone recovery monitoring, riparian weed control, and fencing and revegetation activities on the Jamieson, Howqua, upper Delatite and upper Goulburn rivers. These activities were undertaken in partnership with other regional agencies.
- A project funded by Marine Safety Victoria focussed on the Goulburn River from Lake Eildon to Lake Nagambie. Three boat ramps were upgraded, a boating guide was developed and signs were erected.
- A joint Goulburn Valley Water and GB CMA project is protecting the Longwood water supply catchment through fencing and revegetation.
- A Recreational Fishing Licence project was completed on the Rubicon and Delatite Rivers. Access points were provided, instream habitat was installed, the riparian zone was revegetated and protected, advisory signage was erected and fishing guides were prepared.
- Modified designs for Irvine's and Reilly's weirs on Broken Creek were prepared.
- Activities along the Goulburn River between Nagambie and Shepparton included:
  - monitoring fish communities (a report is pending)
  - completing the Shepparton weir fishway upgrade, which allows for a greater range of fish species over a greater range of flows (minor modifications will be completed when base flows return to normal)
  - stabilising significant lateral erosion of the bank near Raftery Road using a low flow pipe and a high flow rock chute
  - ongoing weed management
  - installing the Tom Collins Drive gross pollutant trap (a co-investment in stormwater management with the Greater Shepparton City Council).
- Activities along the Goulburn River between Eildon and Nagambie included fencing, revegetating, managing weeds such as willows, and stabilising banks.

## Actions 2006-07, 2007-08 and 2008-09

Action		From funds received through Corporate Plan				
		Achieved <sup>i</sup>			Target	% achieved
		2006-07	2007-08	2008-09		
<b>Stock grazing action</b>						
Fence wetland remnant	ha	22	1,794	609	13 <sup>ii</sup>	4,681
Fence stream/river remnant	ha	725	2,536	2,563	76 <sup>ii</sup>	3,390
Off-stream watering	no.	73	95	122	77	158
<b>Nutrient-rich and turbid water and suspended solids action</b>						
Stormwater management projects	no.	3	0.5	1	2	50
<b>Instream and near-stream erosion action</b>						
Bank protection actions	km	12	13	8	12	69
Instream and tributary erosion controlled	km	19	543	102	170	60
<b>Changed flow-pattern action</b>						
Water delivered <i>eg</i> wetlands	ML			840	-	-
<b>Weed invasion action</b>						
Weeds - aquatic weeds controlled (managed)	ha	39 <sup>iii</sup>	53	26	70	37
<b>Habitat loss management</b>						
Vertical slot fishway	no.					
Rock ramp fishway	no.					
Fish barrier removal	no.		8	1	-	-
Establish Significantly Enhanced Aquatic Refugia	no.	2	30	59	11	536
Construct new wetland	ha					

<sup>i</sup> Achievements include those from complementary investment areas (SIR salinity, riparian and instream habitat and channel form, dryland salinity, water quality, biodiversity).

<sup>ii</sup> Targets do not include contributions from the Drought Employment Program. The Program was opportunistically directed towards these priorities by GB CMA.

<sup>iii</sup> Another 9,000 ha was achieved through the Drought Employment Program.

## Collaborations and communities

- Many GB CMA partners were involved in planning and supervising this year's Drought Employment Program.
- Crown licence frontages are being reviewed to improve practices. A river health officer was funded and employed through DSE's Crown Land Management section and the project is being managed through a regional agency committee involving GB CMA and DSE. Additional funds have been received to extend the project.
- A field trial was conducted to investigate *Cabomba caroliniana*, a potentially threatening aquatic weed. The Rural City of Benalla initiated the trial, GB CMA commissioned a literature review, and DPI and G-MW provided support.
- GB CMA is represented on the steering committee of the Seven Creeks riparian restoration experiment, which is part of a project evaluating the effectiveness of habitat reconstruction in the Murray-Darling Basin.
- Landholder and community attitudes toward the riparian zone of the mid-Goulburn River were studied and reported by Charles Sturt University.
- The GB CMA supported State related activities, including streamlining and forecasting projects and the review of RiVERS I. (RiVERS I is the River Value Environmental Risk System, a database that contains information on the values and threats within individual management units and reaches in the catchment. It was used to develop the Regional River Health Strategy in 2004.)
- The GB CMA participated in initiatives under Murray Darling Basin Authority's Native Fish Strategy.
- The GB CMA provided major input into Shepparton-Mooroopna's RiverConnect project, including preparing a Waterway Health Activity Plan for the RiverConnect area. The project is now managed by the City of Greater Shepparton.

## Planning and responding (including research and development)

- A design was completed to manage the most significant avulsion (stream realignment) risk on the lower Goulburn River (You You Creek).
- Goulburn River crown frontage assessments between Alexandra and Killingworth provided a comparison with 2000 assessments, helped to identify targets for a long-term works program, and informed crown frontage licence renewals.
- The instream habitat of the Goulburn River reach between Nagambie and Shepparton was assessed, and Arthur Rylah Institute (ARI) will research habitat characteristics and prioritise reaches in 2009-10. Lower Goulburn River Bathometric survey data were used to create a visual depth profile of the River to help target species-specific areas for habitat improvement.
- The Broken system and Goulburn River are two of eight rivers in the three year Victorian environmental flows monitoring and assessment program project. Monitoring started in 2008 and includes macro invertebrates, fish, vegetation, physical habitat and form.
- Floristic and hydrologic values are being assessed, spring discharge is being monitored and a hydrologic model of Seven Creeks is being developed as part of the Strathbogie Ranges and Highlands peatland and spring soak wetlands investigation. The efficacy of peatland management will continue to be assessed in 2009-10 following the sourcing of additional funds.

- Macquarie Perch populations around King Parrot Creek were assessed and a report is pending.
- The management plan for the Lower Cornella Creek was completed with the support of the Colbinabbin Local Area Planning Implementation Committee.
- The master plan for the Yielma property within the Barmah-Millewa Wetlands was prepared on behalf of the Yorta Yorta Nation Aboriginal Corporation and implementation began.
- Major waterways affected by the Black Saturday bushfires were assessed to guide short and long-term recovery programs.

## Long-term strategy implementation progress

- Implementation targets for works are about double that which have been funded and expectations might need to be revised down. Although links between actions and resource condition targets have not been quantified, targets are not expected to be achieved until well beyond 2015 at current implementation rates and funding levels. Many non-works tasks might also need to be revised down.

## Catchment condition

- The rating of condition does not consider water regime, which is considered in the 'Environmental flows and water supply' investment area.
- Extensive works programs have improved the state of the system for terrestrial and aquatic species and have contributed to improved water quality.
- The condition of waterways generally seems to have stabilised and overall stream condition no longer seems to be deteriorating. Sites targeted for works have generally improved in condition.
- Major impacts of the 2009 fires on riparian and instream health are being evaluated by the GB CMA.

## What's next?

- The GB CMA will continue to improve long-term capacity to deliver changes, especially the filling of knowledge gaps.
- Maintenance activities will need to be built into funding programs to ensure upkeep of structural works
- DSE will complete its audit of the Broken River Vision project, a GB CMA large-scale river restoration project, as part of a statewide review of large-scale projects. The GB CMA will continue to implement the Goulburn River – A National Icon project, a large-scale river restoration project that began in 2008-09.
- A major onground initiative in response to the Bushfire Recovery program will be undertaken.
- A mid-term review of the Goulburn Broken Regional River Health Strategy will be conducted in 2009-10.

# Investment area 2c - Water quality (nutrients) in rivers and streams

Compiled by Meegan Davies, Wayne Tennant and Rod McLennan. See [www.gbcma.vic.gov.au](http://www.gbcma.vic.gov.au) for more details.

## Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Outputs (against targets set as a result of funds received)	n.a.	n.a.	On target	High	n.a.
Long-term strategy implementation progress	Outputs (tasks and works scheduled between 1996 and 2009)	n.a.	n.a.	Exceeding target	High	● <sup>ii</sup>
Catchment condition <sup>iii</sup>	Phosphorus loads in rivers and streams Blue green algal blooms Management systems	Very poor	Low	Satisfactory	High	↑

<sup>i</sup> Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

<sup>ii</sup> Assumed to parallel government funding trend.

<sup>iii</sup> The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in 'excellent' condition.

## Background

### Government investment

Funding for the three investment areas under River health is not separately managed and reported (see page 104 for details). These three discrete but highly connected investment areas are:

- 2a Environmental flows and water supply
- 2b Riparian and instream habitat and channel form
- 2c Water quality (nutrients) in rivers and streams.

The government funding trend rating for these investment areas is static

Water quality became a prominent issue in the early 1990s.

Elevated nutrients have been identified as a high priority issue for water quality in the Goulburn Broken Catchment because of the potential to contribute towards excessive algal growth that impact on social, economic and environmental values within waterways. Phosphorus loads indicate for water quality in rivers and streams because it is a limiting factor in the development of toxic blue-green algal blooms and flow-dependant blooms of aquatic weed in the region.

The Goulburn Broken Catchment community's goal for water quality set in 1996 and reviewed in 2002 is to improve and maintain water quality at optimum levels within and downstream of the Catchment for native ecosystems, recreation, human and animal consumption, agriculture and industry.

Targets for phosphorus loads are therefore reference points for progress toward this goal.

The resource condition target set in 1996 is to reduce potential phosphorus loads by 65 per cent by 2016. This is to be achieved by reducing phosphorus loads from:

- irrigation drains by 50 per cent
- dryland and diffuse sources by 20 per cent
- wastewater management facilities by 80 per cent

### Major strategic references

- Goulburn Broken Water Quality Strategy 1996-2016
- Goulburn Broken Regional River Health Strategy 2005-15
- Review of Goulburn Broken Water Quality Strategy 1996-2016 (Brian Garrett and Associates 2001)
- Goulburn Broken Water Quality Strategy 1996-2016 review (in prep.)

- urban stormwater
- intensive agricultural industries and local water quality issues.

Targets were not set for nitrogen loads because the reduction of phosphorus and subsequent increase in nitrogen to phosphorus ratio was the strategy's emphasis. Opportunities to reduce nitrogen, particularly where they were associated with phosphorus reductions, were pursued if it was cost effective.

## 2008-09 performance

Continued dry inflow conditions and the potential impact on water quality and threatened species drove much of the efforts in this investment area.

### Works and operations

- A gross pollutant trap was installed at Tom Collins Drive in Shepparton. The City of Greater Shepparton and Murrindindi Shire have agreed to ongoing joint projects that improve control of pollutants in urban areas, particularly litter.
- The GB CM provided input to the City of Greater Shepparton's Urban Stormwater Strategy review.
- The Goulburn Broken dairy nutrient management case study project managed by DPI is in its second year. Activities such as soil testing and field days are encouraging farmers to sustainably use dairy effluent.

## Actions 2006-07, 2007-08 and 2008-09

Action		From funds received through Corporate Plan				
		Achieved <sup>i</sup>		Target	% achieved	
		2006-07	2007-08	2008-09		
<b>Stock grazing action</b>						
Fence wetland remnant	ha	22	1,794	609	13	4,681
Fence stream/river remnant	ha	725	2,536	2,563	76	3,390
Off-stream watering	no.	73	95	122	77	158
<b>Surface water<sup>ii</sup></b>						
Drain – primary <sup>iii</sup>	km		9	5.5	2	275
Drain – community	km			5.3	3	177
Farm reuse system <sup>iv</sup>	no.	56	48	66	44	151
Drain – divert water	ML	75	200	0	200	0
Irrigation systems – improved <sup>v</sup>	ha		8,967	23,059	8,300	278
<b>Nutrient-rich and turbid water and suspended solids</b>						
Stormwater management projects <sup>vi</sup>	no.	3	0.5	1	2	50
<b>Instream and near-stream erosion</b>						
Bank protection actions	km	12	13	8	12	69
Instream and tributary erosion controlled	km	19	543	102	170	60
<b>Habitat loss management – wetlands</b>						
Construct new wetland	ha					

- i Achievements include those from complementary investment areas (SIR salinity, riparian and instream habitat and channel form, dryland salinity, biodiversity).
- ii Surface water management enables the removal of excess rainfall run-off from irrigated lands, alleviating soil salinity. Nutrient loads collected by the drains are managed through drainage reuse and management plans, and monitored against the resource condition target.
- iii Fencing and laneways relocated along primary drains to control stock (such as Murray Valley Drain 13). Drains also hydro-mulched and seeded to provide vegetative cover on bare batters.
- iv Reuse dams allow for the collection and re-irrigation of high nutrient run-off, reducing the water and nutrient loads leaving the farm.
- v Improved systems include laser grading, automatic irrigation and micro-irrigation.
- vi Stormwater management projects are undertaken on a one-to-one funding basis with local government. Projects include gross pollutant traps at Asim Drive and Colliver Road in Shepparton and Lowry Street in Benalla.

### Collaborations and communities

- Regional agencies supported the national water quality workshop sponsored by Australian Government's Department of Water, Heritage and Arts.
- The Water Quality Committee was reinvigorated, involving a range of regional partners.
- The GB CMA and Monash University have partnered universities and agencies from Italy, United Kingdom, The Netherlands, France, Bulgaria and South Africa in preparing a proposal to study and test how water management researchers, policy makers and end users connect in the context of human induced climate change.
- The highly successful Goulburn Broken Waterwatch program funded by State and Australian governments continued. Further staff were trained and community actions were linked to the Goulburn Broken Regional River Health Strategy.
- GB CMA staff helped the American Burnt Area Emergency Response team develop a report on the Kilmore East – Murrindindi Complex North Fire.
- GB CMA staff supported the Goulburn Valley Water project that is investigating Seven Creeks water supply options.
- The GB CMA is partnering DPI in improving farm nutrient management in the Shepparton Irrigation Region, particularly on dairy farms.

### Planning and responding (including research and development)

- Early warning systems were set up to allow a quick response if heavy rain fell in the upper catchment following Black Saturday bushfires in February.
- The Goulburn Broken SedNet model was re-run to identify potential sources of increased sediment loads following the bushfires (see case study on page 26).
- Real time, website accessible, water quality monitoring of the lower Broken Creek system and the lower Goulburn River started.
- The GBCMA, G-MW, Goulburn Valley Water, the Environment Protection Authority, DPI and DSE are represented on the Goulburn Broken Drought Water and River Contingency Planning Group, which plans for potential hazards as a result of continuing drought and low flows and which has established the GovDex wiki page (a web based access site).
- Ecological risk assessments were undertaken because of a failure to meet State Environment Protection Policy (Waters of Victoria) water quality objectives. The upper Broken Creek between its origin and its confluence with Boosey Creek and the lower Broken River from its confluence with Holland Creek to its confluence with the Goulburn River were investigated. An assessment of Seven Creeks, funded by DSE, is underway.

- Water quality monitoring was upgraded to real time on several unregulated streams in the fire-affected area.
- Bathymetric data was used to develop a contour model of habitat character on the Goulburn River.
- Goulburn Broken Waterwatch commenced Ashwatch, a regional water quality monitoring program, to monitor streams and water as part of the 2006 fire recovery program. Ashwatch was extended in response to the 2009 fires.

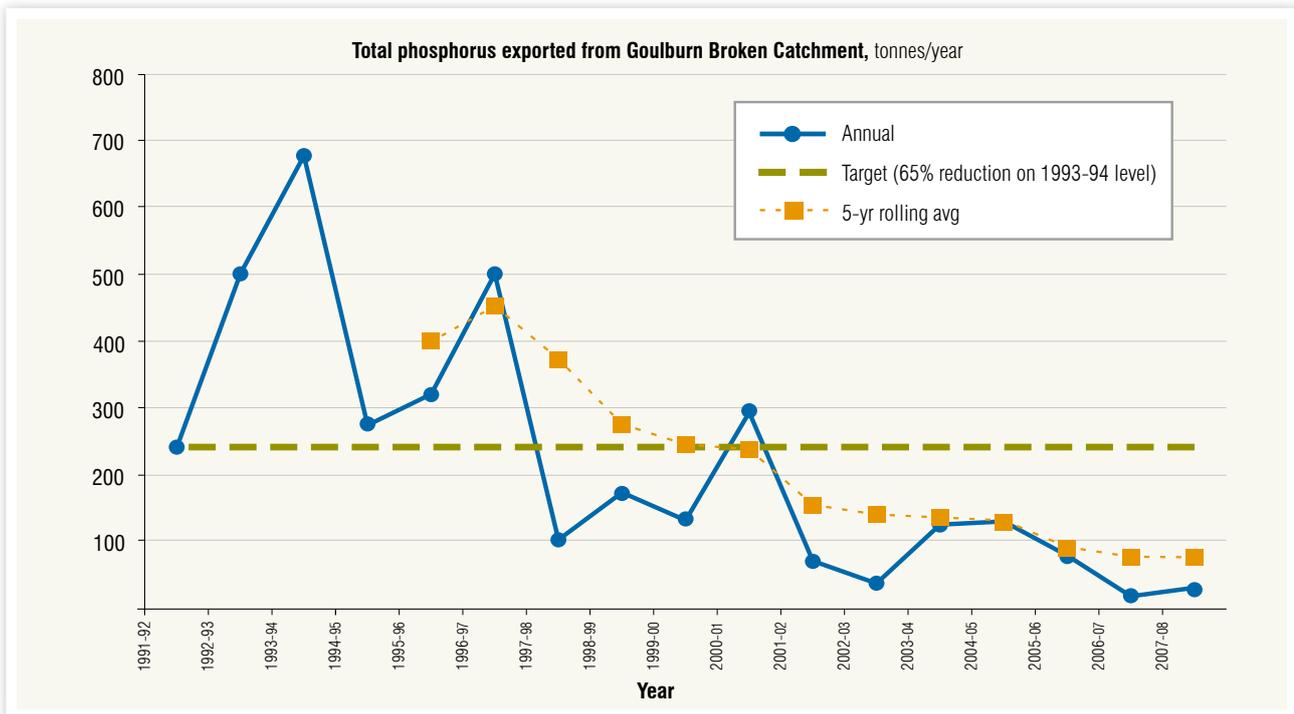
### Long-term strategy implementation progress

- The review of the 1996 Water Quality Strategy is being prepared. Targets have largely been met or exceeded. The region's wastewater management facilities upgrade targets were met by 2002. Irrigation system improvements are generally ahead of schedule (reuse systems are ahead of schedule and drains are on schedule). Significant levels of riparian and wetland grazing improvements such as fencing to buffer streams have been undertaken.
- Strategy development, implementation and review processes are closely aligned with best practices set out in the National Water Quality Management Strategy.
- Implementation has occurred in many ways. The keys have been to maintain coordination and a sense of purpose and to focus on objectives. Waterwatch has been a highly successful community

education program. Strong relationships between major stakeholders have been developed, including a multi-agency memorandum of understanding.

### Catchment condition

- The five year rolling average phosphorus load from the Goulburn Broken Catchment is below the long-term target, equating to a reduction of 80 per cent from the benchmark year of 1993-94. This has been influenced by extended drought since 1997-98. It is the seventh successive year that the Catchment has been below long-term nutrient targets, which is an excellent environmental result that means a reduced risk of algal blooms.
- The estimated total phosphorus load discharged from irrigation drains is still below the long-term target and the five year rolling average has levelled out and remains well below target. This correlates with substantially lower volumes of drain flows. Statistical and trend analysis of irrigation drainage water quality and quantity undertaken every two years shows significant declines in flows and nutrient loads leaving drains.
- Preliminary information indicates another low year for phosphorus from drains.
- Institutional arrangements to manage water quality threats have strengthened significantly.



### What's next?

- There is a major focus on fire recovery programs following the unprecedented February 2009 bushfires in the upper Goulburn Catchment. A major real-time monitoring initiative as part of the Bushfire Recovery program to safeguard water quality is underway.
- Preliminary work will be undertaken to prepare for a mid-term review of the Goulburn Broken Regional River Health Strategy.
- The Goulburn Broken regional water quality forum will continue to meet and the Water and River Contingency Planning Group will continue to be supported.
- Key waterways in the region will be aligned with the State Environment Protection Policy (Waters of Victoria) following ecological risk assessments.
- Likely impacts of climate change on waterway values, in particular water quality, will be investigated.
- The assessment of ecological and water quality responses to water efficiency projects will be finalised.

## Investment area 3 – Biodiversity

Compiled by Tim Barlow, Vanessa Keogh, Carla Miles, Jim Castles, Simon Casanelia, Wayne Tennant and Rod McLennan. See [www.gbema.vic.gov.au](http://www.gbema.vic.gov.au) for more details.

### Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Outputs (against targets set as a result of funds received)	n.a.	n.a.	Exceeded target	High	n.a.
Long-term strategy implementation progress <sup>ii</sup>	Tasks (scheduled between 2000 and 2009)	n.a.	n.a.	On target	Medium	↑ <sup>iii</sup>
Catchment condition <sup>iv</sup>	Native vegetation quality and extent Threatened species populations Water regimes of environmental features Management systems	Poor	Low	Poor	Medium	●

i Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

ii Evidence related to aquatic, including wetland, biodiversity such as environmental share of water supply and environmental water is described in 'Investment area 2a – Environmental flows and water supply' and 'Investment area 2b – Riparian and instream habitat and channel form'

iii Assumed to parallel government funding trend, which includes funding from investment areas to 2a and 2b

iv The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.

## Background

### Government investment, \$000<sup>i</sup>

2006-07	2007-08	2008-09	2009-10 <sup>ii</sup>	Trend
2,065	2,050	1,390	2,190	●

i Plus co-investment in biodiversity from investment areas

ii Forecast based on funding advice at August 2009

In accordance with the Australian and Victorian Government's commitment to reverse the decline in extent and quality native vegetation and biodiversity habitat, the GB CMA has a mission "...to secure the future of native species of plants, animals and other organisms within the Catchment" (Goulburn Broken Regional Catchment Strategy 2003).

The resource condition targets set to achieve this vision are to:

- maintain the extent of all native vegetation types at 1999 levels in keeping with the goal of net gain as stated in Victoria's Biodiversity Strategy
- increase the extent of all endangered and applicable vulnerable ecological vegetation classes to at least 15 per cent of their pre-European vegetation cover by 2030
- improve the quality of 90 per cent of existing (in 2000) native vegetation by 10 per cent by 2030
- increase the 2002 conservation status of 80 per cent of threatened flora and 60 per cent of threatened fauna by 2030.

The above targets are under review as part of the GB CMA's biodiversity strategy update in 2009. This update is being developed in alignment with the development of Victoria's white paper on Land and Biodiversity at a Time of Climate Change and the Victorian Biodiversity Strategy Renewal. Further targets relating to the health of aquatic (including wetland) biodiversity within the Catchment are discussed in 'Investment area 2b – Riparian and in stream habitat and channel form'.

### Major strategic references

- Victoria's Biodiversity: Our Living Wealth
- Victoria's Native Vegetation Management Framework
- Goulburn Broken Regional Catchment Strategy 2003
- Goulburn Broken Native Vegetation Management Plan 2003
- From the Fringe to Mainstream – A strategic plan for integrating native biodiversity 2004-07

## 2008-09 performance

The Drought Employment Program has again been a major contributor to the substantial level of biodiversity onground works, particularly along waterways. Bush Returns was reintroduced and resulted in additional outcomes. Key strategies were reviewed and a single, updated biodiversity strategy for the Catchment is being developed.

### Works and operations

- Biodiversity Action Planning projects included community education and participation: Carpet Python, Mt Piper Biolink, Superb Parrot, Grey-crowned Babbler, Golden Sun Moth, Bush Stone-curlew, Dookie Biolinks, Barmah Biodiversity Action Planning and Beyond the Bridges.
- Goldfields and Broken Boosey Conservation Management Networks (CMNs) produced a birds field guide, conducted fox control activities and installed nest boxes for arboreal mammals.
- Ongoing monitoring and management of threatened species included installation of nest boxes for Leadbeaters Possum and use of remote-sense cameras for Spot-tailed Quoll.

- Important sites were purchased or covenanted for conservation: 310 hectares were secured by Trust for Nature’s covenanting and revolving fund program, and 55 hectares of threatened ecological vegetation classes were purchased for conservation through the National Reserve System program.
- DPI rolled out Bush Returns to promote natural regeneration at the paddock scale using a market based incentive approach: 324 hectares were secured for management over ten years and there was good progress with existing Bush Returns and Green Graze sites, now into their fourth and second years respectively.
- A total of 3,623 hectares of remnant native vegetation were fenced through the Drought Employment Program and environmental management grants.
- A total of 621 hectares were revegetated through direct seeding and tubestock planting, although drought and funding shortages is contributing to lower levels of revegetation.
- Implementation of best practice in the Dryland during the year included:
  - direct seeding of large-scale hill country
  - detailed site management plans for landholders undertaking revegetation and remnant protection works

- a competitive expression of interest process to enable better prioritisation of investment.
- Goulburn Broken Indigenous Seedbank (based at the University of Melbourne, Dookie Campus) continues to be an essential resource: an increasing emphasis is being placed on the role of seed production areas as a long-term, secure, and reliable supply of seed, as well as a means of reducing pressure on the regeneration capacity of small remnant populations. The Euroa Arboretum is actively participating in this development.
- Macquarie Perch populations were protected (see case study on page 25).
- The fishway installed in Shepparton weir opened up 100 kilometres of Goulburn River, Broken River and tributaries for Murray Cod, Trout Cod and other native fish species.
- Barred galaxias recovery plans were implemented. Predator barriers were maintained and predators (trout) were controlled.
- Important isolated fish populations were relocated (by DSE’s Arthur Rylah Institute) from waterways impacted by the extended drought and from potential sediment slugs following rain in fire-damaged areas: Hughes Creek, King Parrot Creek, Luke Creek, Robertson Gully, Rubicon River, Keppel Hut Creek and upper Taggerty River.

### Actions 2006-07, 2007-08 and 2008-09

Action		From funds received through Corporate Plan				
		Achieved <sup>i</sup>			Target	% achieved
		2006-07	2007-08	2008-09		
<b>Stock grazing action</b>						
Fence terrestrial remnant vegetation	ha	769	710	451	390	116
Fence wetland remnant	ha	22	1,794	609	13	4,681
Fence stream/river remnant	ha	725	2,536	2,563	76	3,390
Binding management agreement (licence, Section 173, covenant)	ha	1625	373	363	845	43
Grazing regime change <sup>ii</sup>	ha	1,189				
<b>Habitat loss management</b>						
Revegetation – plant natives <sup>iii</sup>	ha	758	460	945	640	148

i Achievements include those from complementary investment areas (SIR salinity, riparian and instream habitat and channel form, dryland salinity)

ii Output of the Green Graze Program

iii Natural regeneration from Bush Returns are included in this: 40 ha for 2006-07, 0 ha for 2007-08 and 324 ha for 2008-09

### Collaborations and communities

- The Local Government Biodiversity Reference Group (convened by Moira Shire Council) continued to be a highly effective collaborative forum for local government environment officers.
- A floodplain ecology course focussing on the Barmah and Kanyapella floodplains was attended by 35 people.
- GB CMA supported the establishment of NatureWeb ([www.natureweb.org.au](http://www.natureweb.org.au)), an interactive website that allows open exchange of ideas and information on biodiversity management.
- The long standing and popular Box-Ironbark Ecology Course continued to be supported.

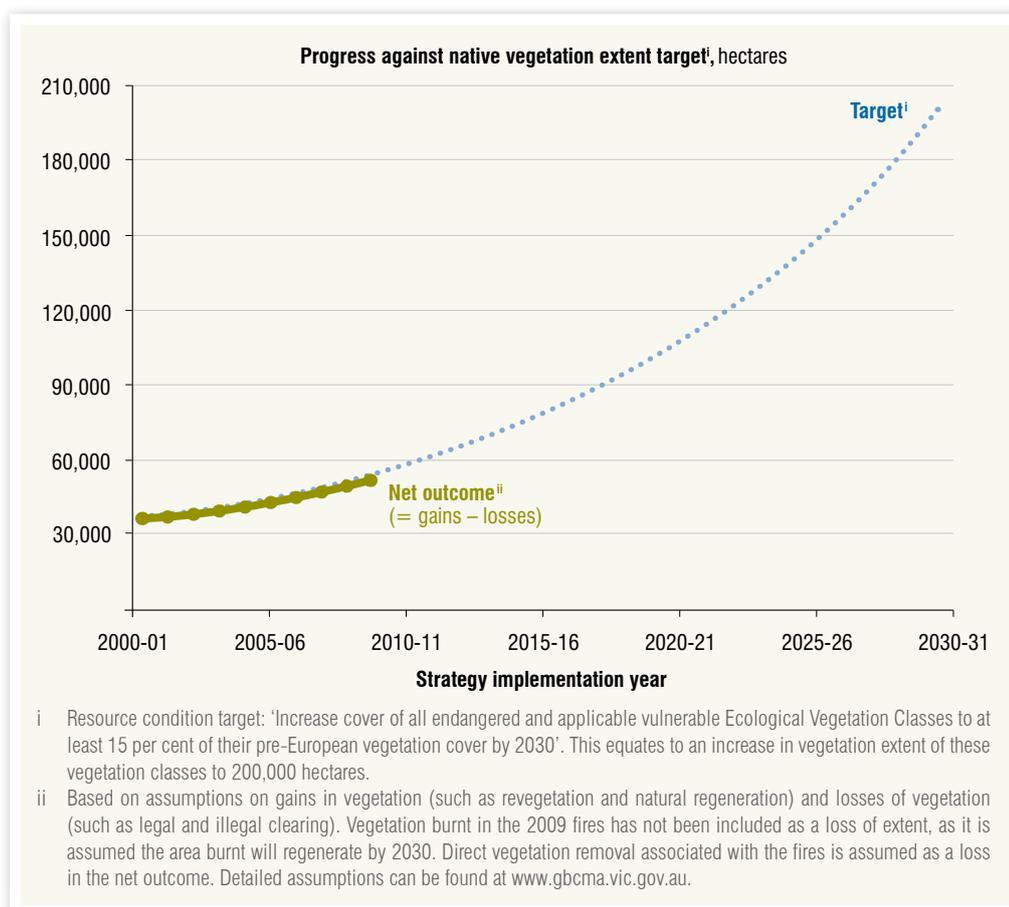
### Planning and responding (includes research and development)

- The Goulburn Broken Biodiversity Strategy is being prepared to set the direction for the next three years: two previous strategies (Native Vegetation Management Strategy 2000 and Strategic Plan for Integrating Native Biodiversity 2004-2007) were reviewed and a single strategy is being developed with stakeholders and is being aligned with State and Federal processes.
- GB CMA submitted a response to Australia’s Biodiversity Conservation Strategy 2010-2020 Consultation Draft.
- Findings of Victorian Environmental Assessment Council’s River Red Gum Investigation were released in December 2008. GB CMA is involved in discussions with the community engagement panel to encourage positive adoption by Government.

- GB CMA is liaising with the Sugarloaf Alliance, in association with DSE, to minimise impacts of pipeline construction on biodiversity.
- GB CMA is liaising with community and government agencies on fire recovery planning and action.
- GB CMA is a partner in the Landscape Logic project, a multi-agency Commonwealth Environment Research Facilities research hub. Results are expected in 2010.
- GB CMA collaborated with the Applied Environmental Decision Analysis project, a Commonwealth Environment Research Facilities hub to improve decision support systems.
- GB CMA supported modelling of landscape permeability for fauna species, a Monash University genetics project.
- GB CMA's 'times 2' project found that on private land, there is a 1:1 ratio of CMA funded works to privately funded works, supporting our current assumption (see report at [www.gbcma.vic.gov.au](http://www.gbcma.vic.gov.au): Privately funded contributions to natural resource management activities in the Goulburn Broken Catchment: testing the 'x2 Assumption').
- GB CMA was heavily involved with threatened species projects: implemented 'Actions for Biodiversity Conservation'; monitored aquatic species to support threatened species recovery plans (Trout Cod in Seven Creeks, Macquarie Perch in Hollands, King Parrot and Hughes Creeks and Broken River; and Barred Galaxias in the upper Goulburn River Catchment); assessed status of Victoria's most southerly population of Freshwater Catfish (at Tahbilk Lagoon); and commented on Draft Flora and Fauna Guarantee Action Statement for Macquarie Perch.
- The status of fish was reported in the Lower Goulburn Fish Communities project, part of a long-term monitoring program being undertaken by Arthur Rylah Institute.
- The effects of decommissioning Lake Mokoan and of turbidity on fish community structure in the Broken River are being researched.

## Long-term strategy implementation progress

- The review of the Strategic Plan for Integrating Native Biodiversity 2004-07 and the Native Vegetation Management Strategy 2003 found that the majority of major tasks were completed or are ongoing.
- Native vegetation achievements:
  - on target, however future targeted trajectory assumes present achievement rates will almost treble (a potentially unrealistic challenge)
  - assumptions for reporting on targets have been reviewed and documented
  - onground progress made through a range of mechanisms (market based approaches, Drought Employment Program, natural regeneration, conservation covenants, revegetation and remnant protection)
  - impacts of fire on targets are to be investigated, including impacts of post fire clearing and forest salvage.
- The threatened species target remains difficult to measure progress against and targets are being reviewed within the Catchment and at the statewide level.
- Progress related to implementation of aquatic (including wetland) biodiversity approaches is described in 'Investment area 2a – Environmental flows and water supply' and 'Investment area 2b – Riparian and instream habitat and channel form'.



## Catchment condition

- It is difficult to rate Catchment condition because of the uncertainty of measurement, we are in early stages of understanding what condition we desire and what a realistic reference point should be, and biodiversity is complex: there are many facets and response considerations for different ecosystems.
- Against a reference point of pre-European settlement, the Catchment condition is poor:
  - condition is no worse than it was in 1990 and despite being on target with respect to long-term strategy progress, there is a long way to go
  - unlikely to change in the medium term at the Catchment scale given the degree of landscape modification since European settlement
  - need to question usefulness of pre-European as a reference point, or may need to acknowledge that it will only ever be possible to work towards a rating of satisfactory
  - also need to assess whether achievement of current long-term strategy biodiversity targets would be sufficient in improving overall biodiversity condition.
- Long-term threats persist: evidence of extinction-debt, a result of broad-scale vegetation clearance following European settlement, requires sustained action to redress; many threatened species continue to decline; climate change impacts loom ominously (many ecosystems and species remain vulnerable) and long-term impacts of intense, broad-scale wildfire are unknown.
- Improvements in condition include:
  - reduced legal and illegal vegetation clearance rates (although impacts of post Black Saturday bushfire clearing need to be assessed)
  - important sites covenanted or purchased (Trust for Nature, National Reserve System)
  - increased natural regeneration of woodlands through land use change
  - considerable revegetation, remnant protection and stewardship such as market based approaches (Bush Returns, Green Graze, BushTender), large areas protected through incorporation into national reserve system (box-ironbark woodlands and river red gum forests), and environmental water allocations delivered to important wetlands and floodplains (but more is needed)
  - institutional relationships and mechanisms have strengthened, particularly with regard to environmental water allocations.
- The Kinglake-Murrindindi fires of February 2009 impacted on a substantial part of the forested catchment and recovery trajectories for individual species and vegetation types are not yet known.
- The condition of aquatic (including wetland) biodiversity is described in 'Investment area 2a – Environmental flows and water supply' and 'Investment area 2b – Riparian and instream habitat and channel form'.

## What's next?

- Fire recovery will remain a priority over the next few years.
- The updated Goulburn Broken Catchment Biodiversity Strategy will be finalised and implementation will begin in 2010.
- The white paper on Land and Biodiversity at a Time of Climate Change and the Victorian Biodiversity Strategy Renewal is expected to be released in 2009-10.
- Projects funded under the Australian Government's Caring for Our Country program such as the Grassy Woodlands Conservation project, in collaboration with North East CMA and Murray CMA (NSW), will continue to be implemented.
- There will be a general focus on building ecosystem resilience and landscape-scale projects.



Tree fern shoots emerge after Black Saturday bushfires.  
Photo: Tony Kubeil, GB CMA

## Investment area 4 - Climate change

Compiled by Kate Brunt and Tim Barlow

### Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Outputs (against targets set as a result of funds received)	n.a.	n.a.	On target	High	n.a.
Long-term strategy implementation progress	Tasks (scheduled in position paper to be completed between 2007 and 2009)	n.a.	n.a.	On target	Medium	● <sup>ii</sup>
Catchment condition <sup>iii</sup>	Impact of climate change on GBCMA investment areas Management systems in place related to climate change	Satisfactory	High	Poor	High	↓

<sup>i</sup> Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

<sup>ii</sup> Assumed to parallel government funding trend.

<sup>iii</sup> The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition. Climate change condition rating considers impact of climate change on Goulburn Broken Catchment's assets.

## Background

### Government investment, \$000

2006-07	2007-08	2008-09	2009-10 <sup>i</sup>	Trend
25	25	50	50	●

<sup>i</sup> Forecast based on funding advice at August 2009

*“During that last decade (1998 to 2007) average annual temperatures in the region were 0.4°C warmer than the 30 year (1961 to 1990) average. Between 1998 and 2007 the region's average rainfall was 17 per cent below the 1961 to 1990 average. The predictions for the region indicate that average annual temperatures by 2030 will be around 0.8°C warmer and reductions in total average rainfall of around 3 per cent is expected.”* (Climate Change in the Goulburn Broken by the Department of Sustainability and Environment, 2008)

The GB CMA is responding to challenges and opportunities of climate change. Opportunities are few, and challenges are immense. The past decade has been extremely hot and dry – indicative of conditions worse than worst case scenarios projected in the Fourth International Panel on Climate Change report. This may be just a phase, but it does provide the opportunity to understand and prepare for what lies ahead.

Strategic directions outlined in GB CMA's Climate Change position paper (available on request) are providing the framework for:

- helping the Catchment to adapt to a changing (drier and hotter) climate, with more extreme events
- engaging with carbon brokers to factor in broader natural resource management issues
- supporting broader community engagement in reducing greenhouse gas emissions through the Goulburn Broken Greenhouse Alliance, community groups and local government.

### Major strategic references

- GB CMA Climate Change position paper 2007
- Victorian Greenhouse Strategy 2002
- National Greenhouse Strategy 1998



The longest dry period on record contributed to Australia's worst natural disaster on record, the Black Saturday bushfires. Photo: Christine Glassford, GB CMA

## 2008-09 performance

The main focus was to implement key actions in the Goulburn Broken Climate Change position paper, particularly ensuring that climate change adaptation strategies are being incorporated in program planning.

Another focus was to support the Goulburn Broken Greenhouse Alliance and look for opportunities for the Catchment in the biosequestration market.

See other investment areas for climate change activities relevant to specific GB CMA programs.

### Works and operations

- The GB CMA is saving energy with measures including energy efficient vehicles and vehicle sharing.
- The revegetation of 945 hectares (including 324 hectares of natural regeneration through Bush Returns) via complementary GB CMA investment areas will result in significant quantities of carbon being captured. Up to two tonnes of carbon per hectare per year can be stored at the peak of the growing period (figures for the Catchment are yet to be modelled).
- Protection of 3,623 hectares of remnant vegetation through fencing will result in additional carbon being captured (figures are yet to be modelled).
- Increased carbon storage through revegetation activities, remnant vegetation and natural regeneration in the Catchment was offset to an unknown degree (at least temporarily) by the Black Saturday bushfires of February 2009.

### Collaborations and communities

- The GB CMA is supporting the establishment of the Goulburn Broken Greenhouse Alliance. The Alliance promotes partnerships including local government collaboration and provides peer and professional support to local government officers. A strategic directions paper and a constitution have been developed.
- The GB CMA has supported local government in preparing climate change risk assessments and has been involved with the Local Government Biodiversity Reference Group.

### Planning and responding (includes research and development)

- Adaptation strategies in GB CMA programs include:
  - refining strategy development and implementation
  - a climate change risk management assessment (based on the National Climate Change Risk Assessment framework) conducted during development of the updated biodiversity strategy
  - a climate change adaptation workshop (facilitated by Sinclair Knight Merz) which documented key climate change risks, adaptation methods and information gaps across all programs
- The above processes highlighted the fact that many climate change risks are unavoidable, hence the importance of priming the community for change and building ecosystem resilience to cope with change.
- The GB CMA investigated opportunities and challenges associated with the carbon market. Brokers were contacted to identify business models. Solicitors specialising in forestry rights agreements and carbon markets were consulted. The emphasis is on improving biodiversity outcomes of carbon sequestration plantings, including identification of potential revegetation sites.

## Long-term strategy implementation progress

- The emphasis of the GB CMA's approach is on adaptation.
- Tasks listed in the position paper are being completed on schedule.

## Catchment condition

- The period since 1996 is the driest on record. Many biophysical systems (particularly wetlands) are more stressed and there is less water available for agriculture, forcing agriculture to adapt or transform rapidly, which in turn is changing the nature of pressures on ecosystems and changing social structures of local and regional communities.
- The vulnerability of many biophysical systems is heightened by a lack of knowledge about what to do and immature institutional mechanisms to respond.
- Although climate change is a reality, it remains unknown how much of this extremely dry phase is due to a fundamental shift in climate and how much is due to climate variability.

## What's next?

- The GB CMA will communicate its climate change policy position to partners and the broader community to develop a better understanding of its role in the climate change response.
- The policy position is for the GB CMA to:
  - build adaptive capacity in all parts of business
  - identify and capture opportunities that may result from the carbon market to help achieve regional catchment targets
  - assist in building community capacity to respond to climate change challenges and opportunities.
- A more complete understanding of the impacts of climate change will be developed.
- Responses to biosequestration plantings in the Catchment will be developed by putting standards in place.
- An expected fully operational Greenhouse Alliance from 2009-10 will be supported. Funding opportunities are arising and mitigation activities are expected to follow.
- Implications of Australian Government's Carbon Pollution Reduction Scheme for natural resource management, particularly negative impacts on biodiversity, will be identified and acted on.
- The GB CMA will provide a response and identify opportunities and challenges associated with the Victorian Climate Change Green Paper.
- Implementation of the climate change adaptation risk assessment outcomes.

## Investment area 5 – Flood protection

Compiled by Guy Tierney and Rod McLennan. See [www.gbcma.vic.gov.au](http://www.gbcma.vic.gov.au) for more details.

### Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	Trend
2008-09 performance	Outputs (against targets set as a result of funds received) Corporate Plan KPIs related to flood protection (see page 63)	n.a.	n.a.	On target	High	n.a.
Long-term strategy implementation progress	Strategy tasks implemented (scheduled to be completed between 2002 and 2009)	n.a.	n.a.	Exceeding target	High	● <sup>ii</sup>
Catchment condition <sup>iii</sup>	Flood regimes provided for ecosystems from flood protection planning Financial savings from prevention of flood damage Systems in place related to flood protection	Very poor	Low	Poor	Medium	↑

<sup>i</sup> Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

<sup>ii</sup> Assumed to parallel government funding trend.

<sup>iii</sup> The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.

## Background

### Government investment, \$000

2006-07	2007-08	2008-09	2009-10 <sup>i</sup>	Trend
379	400	440	340	●

<sup>i</sup> Forecast based on funding advice at August 2009

The GB CMA provides advice about flooding, planning controls and scheme amendments to local councils in its capacity as a referral authority under Section 55 of the Planning and Environment Act 1987.

The GB CMA coordinates implementation of the Goulburn Broken Regional Floodplain Management Strategy (2002-12).

The vision to plan for and manage floods is:

*“...to achieve best practice floodplain management for the benefit of current and future generations...”*

Two long-term targets have been proposed to provide measurable reference points of progress towards achieving the vision:

- reduce the impact of flooding on the built environment
- provide ecosystems with natural flooding patterns where appropriate.

Engineering concepts such as hydrology (the study of rainfall run-off) and hydraulics (the study of water movement over land) help us understand impacts of flood on urban and rural communities.

Once the risks (likelihood and consequences) of flooding are known, mitigation and management techniques are explored with the community. Options include flood warning and emergency management arrangements and structural solutions such as levees and planning controls.

### Major strategic references

- Goulburn Broken Regional Floodplain Management Strategy 2002-12
- Planning and Environment Act 1987 (Section 55)

A technical model that shows the benefits of investing in flood management has been prepared and a new model is under development to better communicate with the community what targets have been set and progress made in reducing the cost of flood damage.

Implementation of the Regional Floodplain Management Strategy is opportunistic and is subject to funding under Australian and Victorian Government incentives. A review of the Strategy's nine programs is available at [www.gbcma.vic.gov.au](http://www.gbcma.vic.gov.au).

## 2008-09 performance

Of the many tasks undertaken (and summarised in the table below), highlights were:

- planning scheme amendments prepared for Murrindindi and Mansfield shire councils
- integrated flood level atlas finalised and uploaded onto website including current flood mapping and flood level information for 85 per cent of known floodplain areas
- approval of further funding for flood mitigation capital works at Nathalia and Euroa
- 98 per cent of statutory planning applications are determined within prescribed time limits.

Actions <sup>i</sup>		From funds received through GB CMA's Corporate Plan	
		Achieved	Performance <sup>i</sup> or progress in 2008-09
<b>Integrating knowledge into planning</b>			
Subdivisions	no.	130	Responded within statutory time frames to applications to the eight municipalities in the GB CMA.
Dwellings	no.	220	
Retail, shop or office buildings	no.	65	98.5% of the time.
Planning scheme amendments	no.	30	
Whole farm plans	no.	100	
Flood level enquiry	no.	24	
Planning other	no.	250	
Flood planning amendments gazetted	no.	2	90% completed. Two planning scheme flood amendments finalised for Mitchell and Campaspe planning schemes and awaiting Ministerial gazettal: includes new mapping, exemptions and incorporates performance based criteria documents.
Flood levels declared	no.	n.a.	Refer to flood atlas on website.
Victorian Civil Administration Tribunal and panel hearings attended	days	4	
Floodplain implementation	no.		Benalla Rural City Council finalised sensitive vegetation management under approved Ministerial Water (flood mitigation) Management Scheme for Benalla: Council is designing railway culvert enlargements. Moirra Shire Council has substantially designed levee upgrades for Nathalia and called for tenders for construction. Tenders also submitted for emergency management and flood warning system for Nathalia Greater Shepparton City Council finalised design and called for tenders of mitigation works at Tatura.
<b>Gathering new knowledge</b>			
Ground level information	no.	4	Digital bare earth terrain models for Broken Creek, Broken River, Murray River, Baddaginnie and Kyabram.
Urban flood studies and management plans	no.	2	Shepparton overland flood study investigation and Barmah Township preliminary detailed design funding approved.
Regional flood studies and management plans	no.	3	95% of tasks completed (Regional Murray, Goulburn River and Barmah Forest).
<b>Creating awareness</b>			
Flood education and awareness program	no.	2	Prepared revised technical summary and uploaded to Mokoan website. Uploaded flood level atlas. Statewide flood web portal is progressing given State Flood Policy agreement in May 2009.

i Most actions are performed reactively so no targets are set annually.



Flooding from the Broken River in the River Park Estate area of Shepparton, 1993. Photo: Shepparton News

## Long-term strategy implementation progress

- Most listed tasks were completed well ahead of schedule.
- It is assumed that tasks completed will result in reduced impact of flooding on the built environment (when it floods).
- Following completion of a number of floodplain management plans, responsible authorities are implementing recommendations including structural and non-structural works using local, State and Australian government grants.
- Improving the natural flooding patterns of ecosystems via sensitive floodplain protection planning is a task in progress.

## Catchment condition

- The built environment is in a better state with improved pre-development planning and flood response systems. Since 2002, the prolonged dry period has made flood damage negligible with the exception of significant flooding of Barmah-Millewa Wetlands during 2005-06.
- The GB CMA is beginning to align floodplain flood management with the Environmental Water Reserve program, such as for Goulburn and Murray Rivers (Barmah-Millewa wetlands). Large opportunities such as the lower Goulburn River floodplain remain uncaptured.

## What's next?

- Flood awareness and education programs regarding access to flood data will be conducted.
- Revised flood mapping using newly captured terrain elevation data against newly derived information contained in the 100 year flood level atlas will continually be improved.
- Planning scheme amendments to incorporate new mapping and performance based assessments will continue.
- Implementation of flood warning and emergency management arrangements with partners, particularly Victorian State Emergency Service and councils, will be supported.
- Implementation of capital works programs will be supported.

# Investment area 6 - Pest plants and pest animals

Compiled by Greg Wood, Rod McLennan, Wayne Tennant, Tony Kubeil and Tim Barlow

## Annual performance, long-term strategy implementation progress and Catchment condition change

Decision focus	Examples of evidence used to inform decisions	Pest plants				Pest animals				Overall Trend
		1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	1990 <sup>i</sup>	Certainty of rating	2009	Certainty of rating	
2008-09 performance	Outputs (against targets set as a result of funds received)	n.a.	n.a.	On target	High	n.a.	n.a.	Below target	High	n.a.
Long-term strategy implementation progress	Outputs (scheduled to be completed between 2001 and 2009)	n.a.	n.a.	Below target	Very low	n.a.	n.a.	Below target	Low	● <sup>ii</sup>
Catchment condition <sup>iii</sup>	Impact of pest plants and animals on assets. (Not available at Catchment scale.) Management systems	Poor	High	Poor	High	Poor	Medium	Poor	Medium	●

<sup>i</sup> Ratings for 1990 have been determined using our understanding in 2009 of what the situation was like in 1990.

<sup>ii</sup> Assumed to parallel government funding trend.

<sup>iii</sup> The reference point is taken to be the time just prior to European settlement, at which time the Catchment is considered to have been in excellent condition.

## Background

### Government investment, \$000

2006-07	2007-08	2008-09	2009-10 <sup>i</sup>	Trend
1,100	1,140	1,100	0 <sup>ii</sup>	●

<sup>i</sup> Forecast based on funding advice at August 2009

<sup>ii</sup> DPI pest plant and animal activities have been removed from the GB CMA's investment process from 2009-10

### Major strategic references

- Goulburn Broken Weed Action Plan 2001-05
- Goulburn Broken Pest Animal Plan (in preparation)
- Goulburn Broken Regional River Health Strategy 2005-15
- Catchment and Land Protection Act 1994
- Invasive Plants and Animals Policy Framework (in preparation)

Managing the impact of pest plants and animals on agriculture and the environment is a critical element of all natural resource management programs in the Goulburn Broken Catchment.

While private land managers make the most significant contribution to pest management, they receive strong support from DPI and public land managers such as Parks Victoria and DSE.

Private land managers target a wide range of pest species and typically focus on those that are well established.

The DPI pest program aims to:

- prevent the establishment of new and emerging weeds
- contain high priority established weeds
- manage the impact of pest animals such as wild dogs and rabbits.

In recent years DPI has increased emphasis on new and emerging and highly threatening weed species. DPI believes that preventing establishment of new species is by far the most cost effective use of government weed management resources.

## 2008-09 performance

Despite the impact of bushfires, pest management projects across the Catchment achieved excellent results during 2008-09. Projects continued to achieve high levels of voluntary compliance, and where necessary, DPI staff implemented effective enforcement operations.

### Works and extension

- Blackberry and gorse compliance programs involving 278 properties were conducted in the Creighton's Creek, Merton, Longwood East, Howqua and Swanpool areas. The program developed for 65 satellite infestations of Gorse north of the Kilmore-Broadford concentration was delivered.
- The Rural Extension Program delivered extension services to 178 landholders in the Glenaroua, Yea River and Ruffly areas, targeting blackberry, serrated tussock and gorse.
- DPI treated all known infestations (38 sites) of State prohibited weeds on private land and public land and the aim is to eradicate them.
- The Rabbit Compliance Program involved 65 landholders in the highlands.

- Six penalty infringement notices (\$440 fines) were issued to landholders for failing to comply with direction notices for weed and rabbit management. These were issued as part of community pest management programs.
- Blackberry works were initiated by DPI on two properties using the compliance entry process, ensuring that successful works programs on adjoining properties were not compromised.
- Treatment plans were implemented for all known sites of the regionally prohibited weeds artichoke thistle and serrated tussock.

### Actions 2006-07, 2007-08 and 2008-09

Action		From funds received through Corporate Plan				
		Achieved <sup>i</sup>		Target	% achieved	
		2006-07	2007-08	2008-09		
<b>Weed invasion</b>						
Weeds – woody weed management (ha)	ha					
Weeds – aquatic weeds controlled/eradicated (km)	km	39	53	26	70	37
Targeted infestations of weeds in high priority areas covered by control programs (ha) <sup>ii</sup>	ha	9,637	11,138	36,964	34,130	108
<b>Pest animals</b>						
Area of high priority rabbit infested land that are covered by control programs (ha)	ha		200	1,530	6,350	24
Area of high priority fox infested land covered by control programs (ha)	ha	94,410	45,570	0	200	0

i Pest Plant and Animal targets include those for the Second Generation Landcare program (mainly areas of pests treated), however achievements for the latter are not collected in time for the 4th quarter report or this annual report as community groups are usually still completing their projects. These outputs are collated every five years (the last time they were included was in 2004-05).

ii This includes 'Weeds - woody weed management'. Outputs include DPI, river health and Drought Employment Program works only.

### Collaborations and communities

- Two new community blackberry programs and one gorse program commenced as part of the Rural Extension Program.
- There are now 143 registered and trained weed spotters in the Goulburn Broken Catchment as a result of the DPI Weed Alert program.
- DPI is working with six municipalities across the Catchment to implement a weed hygiene training program for shire staff and to treat priority infestations of roadside weeds.
- Goulburn-Murray Water, Parks Victoria and DSE conducted a broad-scale treatment of blackberry in the Howqua Valley, including significant areas of public land.

### Planning and responding (including research and development)

- A surveillance program for identifying new regionally prohibited weed sites commenced.

## Long-term strategy implementation progress

- Goals to help stakeholders manage pest plants and pest animals were identified in strategic documents almost a decade ago. These goals were not clear or specific, which reflected the level of understanding around monitoring and recording of pest management outcomes at the time. While progress to date is probably less than what was expected when the documents were written, strategic approaches currently being developed (see 'What's next?') will provide stakeholders with a much more solid framework for evaluating and understanding strategy implementation progress.
- While funding provided for pest management in recent years has not enabled implementation of the entire strategy, all activities that were funded have been completed.

## Catchment condition

- Significant fire events in recent years, including the catastrophic February 2009 event, have provided opportunities for improved weed and pest animal management. Improved access to infestations, particularly along waterways, has resulted in dramatically more effective control programs. When landholders resume regular land management activities in recently burnt areas, we expect to see some remarkable control results.
- Terrestrial and aquatic environments remain vulnerable to new and emerging weeds.
- We have a better understanding of what and how to target now, although our capacity to deliver changes has declined in some areas.
- Our very successful local community-scale approach developed via the Rural Extension Program in the past few years provides a model for other catchments.

## What's next?

- The Goulburn Broken Integrated Pest Strategy, being revised during 2009-10 as a sub-strategy of the Regional Catchment Strategy, will advocate a new approach for managing invasive plants and animals across Goulburn Broken Catchment and will support a new state Invasive Plants and Animals Policy Framework (to be launched in late 2009).
- DPI pest plant and animal activities have been removed from the GB CMA's investment process from 2009-10, however DPI and the GB CMA will continue to work together on pest plant and animal issues; works will continue through existing GB CMA investment areas such as River health and Biodiversity.
- Additional staff and resources will be available to deliver DPI pest management programs in the Goulburn Broken Catchment during 2009-10.
- Blackberry and gorse programs are in the planning stage for fire-affected areas in the Yea River and King Parrot Creek areas.
- Land managers importing fodder and grain during the drought and post fire will need to remain vigilant with respect to weed hygiene given the potential to introduce new weed species.
- The surveillance program for identifying all regionally prohibited weed sites will continue and all properties adjoining known infestations will be inspected.

# Outputs - detailed list of achievements

Standard Goulburn Broken Threat or Impact Managed	Output	Shepparton Irrigation Region Implementation Committee		
		Target <sup>i</sup>	Achieved	% achieved
<b>Threat</b>				
Land and water use				
	Fence terrestrial remnant vegetation (ha)	50	27	53
	Fence wetland remnant (ha)	11	467	4,245
Stock grazing (ha = terrestrial; km = riparian)	Fence stream/river remnant (ha)	32	1,470	4,550
	Off-stream watering (no.)	37	54	146
	Binding Management Agreement (license, Section 173, covenant) (ha)	225	53	24
<b>Induced Threat</b>				
Saline water and high watertables				
	Landform/lasergrading (ha)	7,000	20,476	293
	Drain – primary (km) <sup>iii</sup>	2	5.5	275
	Drain – community (km)	3	5.3	177
<i>Surface water</i>	Weir – replace (no.)			
	Farm reuse system (no.)	44	66	151
	Drain – additional water diverted from regional drains (ML)	200	0	0
	Irrigation systems – improved (ha) <sup>ii</sup>	7,500	21,083	281
	Pasture – plant (ha)			
<i>Sub-surface water</i>	New groundwater pumps – public (no.)	1	1	100
	New groundwater pumps – private (new and upgrade no.)	12	11	92
	Volume water pumped (ML)	1,400	1,794	128
	Tile drains – install (ha)			
	Revegetation - plantation / farm forestry (ha)			
Nutrient-rich & turbid water & suspended solids	Waste water treatment plants - install (no.)			
	Stormwater management projects (no.)	2	1	50
In-stream and near-stream erosion	Bed and bank protection actions (km)	1	2	210
	In-stream & tributary erosion controlled (km)			
Soil erosion, acidity, sodicity & structural decline	Application of lime (ha)			
	Minimum tillage (ha)			
Changed flow pattern	Water allocated - eg wetlands (ML)			
	Weeds – woody weed management (ha)			
Weed invasion <sup>iv</sup>	Weeds – aquatic weeds controlled/eradicated (km)	10	19	187
	Targeted infestations of weeds in high priority areas covered by control programs (ha) <sup>v</sup>	4,090	8,952	219
Pest animals <sup>iv</sup>	Area of high priority rabbit infested land that are covered by control programs (ha)			
	Area of high priority fox infested land covered by control programs (ha)			
<b>Impact</b>				
Habitat loss - terrestrial	Revegetation - plant natives within or next to remnants (ha) <sup>vi</sup>	125	131	105
	Revegetation - plant natives away from remnants (ha)			
	Fish release (no.)			
Habitat loss – in-stream	Vertical slot fishway (no.)			
	Rock ramp fishway (no.)			
	Fish barrier removal (no.)	0	1	100
	Establish SEAR (Significantly Enhanced Aquatic Refugia) (no.)	2	50	2,500
Habitat loss – wetlands	Reinstate flood regime (ML)			
	Construct new wetland (ha)			
Habitat loss – Threatened species <sup>vii</sup>	Threatened Species Recovery Plan and Action Statements (no. projects)	7	7	100
<b>Planning</b>	Whole farm plans (no.)	207	247	119

i Targets are determined by considering level of government funds received (as listed in Corporate Plan) and do not include contributions from other fund sources. Refer to separate Long-term scorecard for analysis of progress towards long-term targets.

ii There are several different ways to 'improve' irrigation systems, including laser grading. The figures included from 2002-03 to 2007-08 are for the Shepparton Irrigation Region only.

iii 11 km were constructed during 2005-06 but 0 km were formally handed over to Goulburn-Murray Water for it to manage.

iv The Pest Plant and Animal targets also include the Second Generation Landcare funded program (mainly areas of pests treated). The achievements are not collected in time for the 4th quarter report as community groups are usually still completing their projects. These achievements are collated every five years as part of the SGL review and added in that year's outputs.

Broken Goulburn Implementation Committee						2008-09			Total achieved					
Mid Goulburn Broken			Upper Goulburn			Target <sup>i</sup>	Achieved	% achieved	2007-08	2006-07	2005-06	2004-05	2003-04	2002-03
Target <sup>i</sup>	Achieved	% achieved	Target <sup>i</sup>	Achieved	% achieved									
275	326	119	65	98	151	390	451	116	710	769	519	771	512	539
2	142	7,075				13	609	4,681	1,794	22	6	24	13	
23	903	3,876	20	191	953	76	2,563	3,390	2,536	725	115	91	218	104
25	54	216	15	14	93	77	122	158	95	73	89	74	86	
320	260	81	300	50	17	845	363	43	373	1,625	758	797	(no.) 231	
						7,000	20,476	293	8,525	4,490	7,700	7,700	9,000	
						2	5.5	275	9	6	11	8	12	16
						3	5.3	177	0	0	6	0	20	7
						44	66	151	48	56	70	65	78	99
						200	0	0	200	75	235	675	160	
400	1,631	408	400	345	86	8,300	23,059	278	8,967	6,060	8,580	13,232	10,325	10,031
0	75	-				0	75	-	391	718	1,543	544	330	138
						1	1	100	1	0	3	3	3	5
						12	11	92	24	19	11	10	19	34
						1,400	1,794	128	3,237	3,462	1,800	1,071	tba	
										31	97	129	156	224
						2	1	50	1	3	2	2	1	
4	0	0	7	6.2	89	12	8	69	13	12	16	41	11	9
40	5	13	130	97	75	170	102	60	543	19	502	916	83	681
											510,000	266		
										0	75	70	79	59
10	6	57	50	1.6	3	70	26	37	53	39	33	21	0	
10,020	14,213	142	20,020	13,799	69	34,130	36,964	108	11,138	9,637	69,437	281,200	259,920	
1,950	50	3	4,400	1,480	34	6,350	1,530	24	200	0	10,150	56,800	35,700	
100	0	0	100	0	0	200	0	0	45,570	94,410	108,856	53,000	54,200	
330	470	142	185	344	186	640	945	148	460	758	1,177	981	459	428
											117	74	248	401
											1	3	1	
												5		
						0	1	100	8	6	4	0		18
3	7	233	6	2	33	11	59	536	30	2	1.3	17	10	
												3		
19	15	79	7	7	100	33	29	88	37	34	13	15	6	4
49	44	89	35	50	144	291	341	117	369	232	185	262	363	371

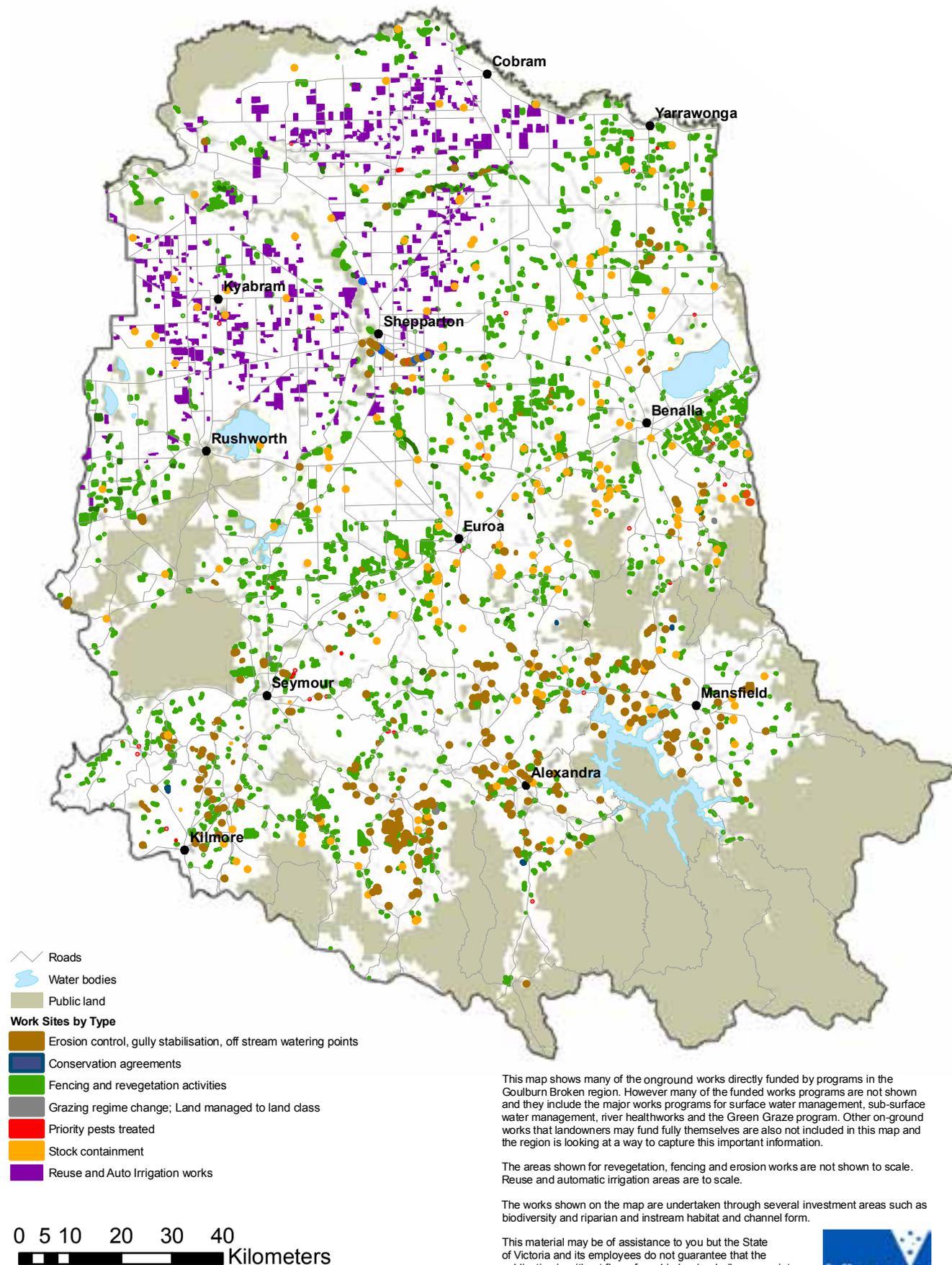
v The hectares treated for 'Weeds - woody weed management' has been included in this figure. Weeds outputs from 2007-08 include DPI, river health and Drought Employment Program works only. Second Generation Landcare outputs are included every five years.

vi Natural regeneration from Bush Returns are included in this: 40 ha for 2006-07, 0 ha for 2007-08 and 324 ha for 2008-09. The Green Graze program contributed 1,189 ha to the grazing regime change works output in 2006-07, which is not included in the revegetation figures.

vii This is the output currently used to report on Threatened Species. The review of standard outputs undertaken by DSE in 2008 resulted in a new output relating to the Actions for Biodiversity Conservation database. The GBCMA will consider the use of this output in 09/10.

# Goulburn Broken onground work sites

July 2001 to June 2009



Map produced by LPS FSV Benalla, July 2009  
 © The State of Victoria Department of Primary Industries

This map shows many of the onground works directly funded by programs in the Goulburn Broken region. However many of the funded works programs are not shown and they include the major works programs for surface water management, sub-surface water management, river healthworks and the Green Graze program. Other on-ground works that landowners may fund fully themselves are also not included in this map and the region is looking at a way to capture this important information.

The areas shown for revegetation, fencing and erosion works are not shown to scale. Reuse and automatic irrigation areas are to scale.

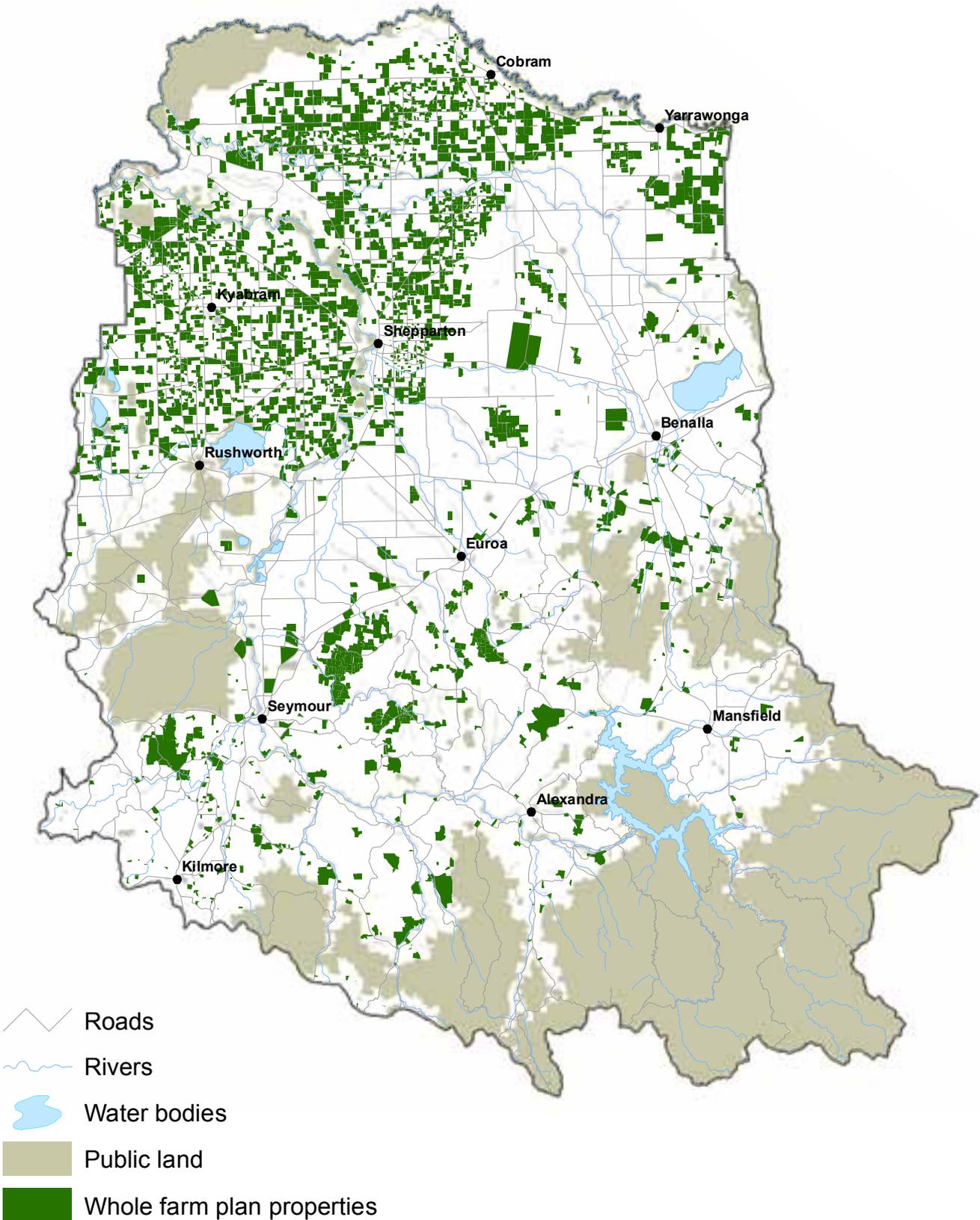
The works shown on the map are undertaken through several investment areas such as biodiversity and riparian and instream habitat and channel form.

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# Goulburn Broken properties covered by a whole farm plan

to June 2009 \*



\* Whole Farm Plans in the Shepparton Irrigation Region have been developed since 1987. Whole Farm Plans in the Dryland have been developed since 2003

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Map produced by LPS FSV Benalla, July 2009  
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## Glossary

**End-of-valley targets** have been proposed for major rivers contributing salt to the River Murray under the (Murray-Darling) Basin Salinity Management Strategy. The purpose of these targets is to maintain salinity levels at the benchmark site, Morgan in South Australia, at or under 800 EC for 95 per cent of the time. These enable within-valley targets to be set. The proposed end-of-valley targets are being investigated to align them with expectations and obligations of different parties at regional and state levels and federal levels.

**Foodbowl Modernisation** plan was a proposal put to the State Government of Victoria by a consortium of community leaders in the Goulburn Murray Irrigation Area to share the water savings created as a result of upgrading irrigation infrastructure.

**Future Flow** is a G-MW alliance made up of water engineers, designers, constructors and risk managers. The Alliance is working with G-MW to deliver a major water upgrade project that will modernise the irrigation system in major areas of northern Victoria.

**Minimum (river) flow:** a minimum level of flow that the water authority needs to maintain in the river at a particular location, or a trigger below which water cannot be harvested from the river. Minimum flows are usually specified in water authority bulk entitlements or in environmental entitlements. (See also 'qualification of rights' below.)

**Modernised Wholefarm Plan** is a plan revised to take account of the changed regional channel delivery infrastructure as a result of modernisation.

**Northern Victoria Irrigation Renewal Project** is a state owned entity established to plan, design and deliver the Northern Victoria Irrigation Renewal Project: the \$2 billion program of works to modernise and upgrade aging infrastructure.

**Qualification of rights:** if on a seasonal basis there is insufficient water in a water supply system to meet critical water needs, a water shortage may be declared by the Minister for Water and rights to water may be qualified temporarily. A qualification of rights changes a legal entitlement. Rights that may be qualified include licenses, water shares, bulk and environmental entitlements. Private rights may be suspended, reduced, increased or otherwise altered after a water shortage has been declared.

**Regional Catchment Strategy** is a blueprint for integrated natural resource management across a geographic area.

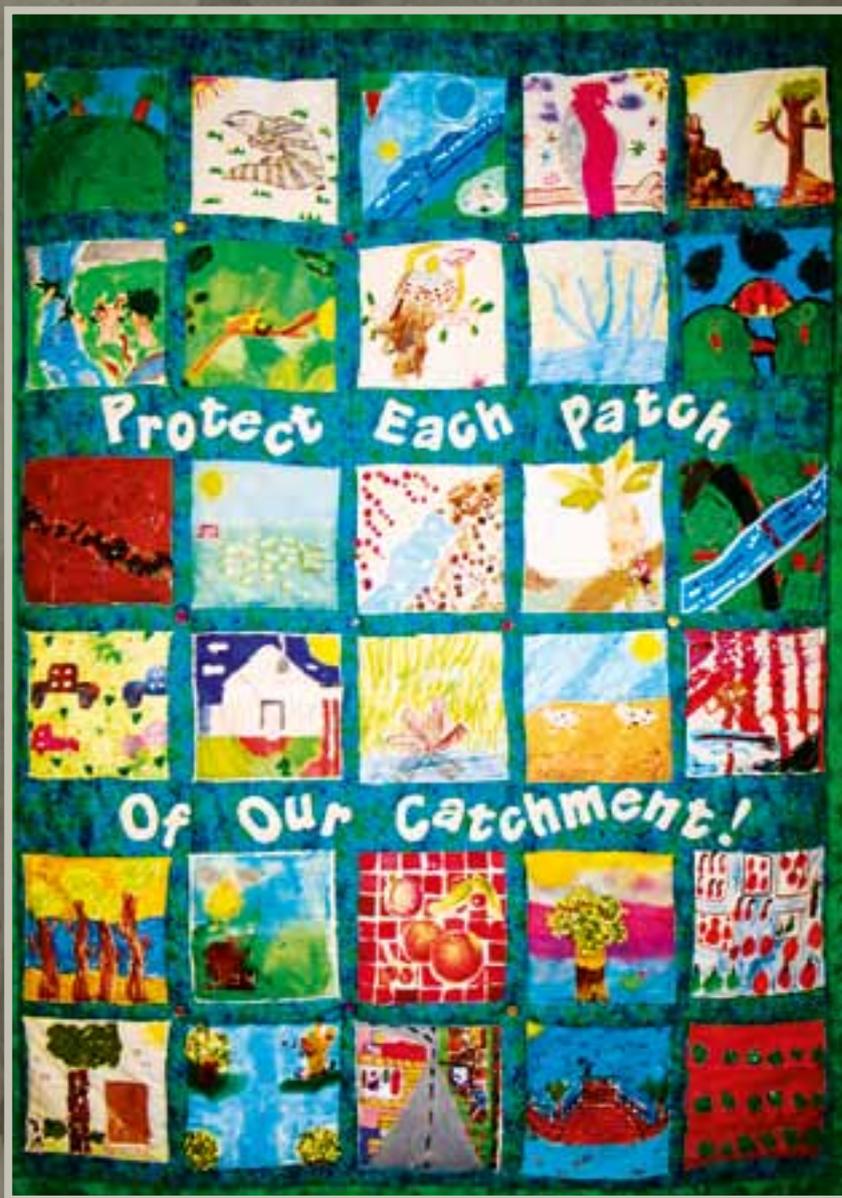
**Resource Condition Target** relates to the condition of the resource and can be measured over the short-term or the long-term depending on ease of measurement.

**Salt Registers** of salt debits and credits are required to be maintained by the State under the Federal Water Act 2007. The delayed impacts of dryland salinity are accounted for in the B Registers. The GB CMA has set up the framework for the B Register and is establishing a process with DPI and the Murray Darling Basin Authority for entering data to complement data already in the A Register under the salinity and drainage strategy.

## Abbreviations

AASB	Australian Accounting Standards Board
CaLP	Catchment and Land Protection Act 1994
BGIC	Broken Goulburn Implementation Committee
CEO	Chief Executive Officer
CLaN	Catchment Landcare Network
CMA	Catchment Management Authority
CMN	Conservation Management Network
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DPI	Department of Primary Industries
DSE	Department of Sustainability and Environment
EC	Electrical Conductivity unit
GB CMA	Goulburn Broken Catchment Management Authority
GB RRHS	Goulburn Broken Regional River Health Strategy
G-MW	Goulburn-Murray Water
GST	Goods and Services Tax
ha	hectare
IC	Implementation Committee
IT	Information Technology
km	kilometre
KPI	Key Performance Indicator
ML	Megalitre
MLC	Member of the Legislative Council
MoU	Memorandum of Understanding
no.	Number
NSW	New South Wales
NVIRP	Northern Victoria Irrigation Renewal Project
RCS	Regional Catchment Strategy
SIR	Shepparton Irrigation Region
SIR IC	Shepparton Irrigation Region Implementation Committee
SIR CIS	Shepparton Irrigation Region Catchment Implementation Strategy





## Waterwatch Catchment Quilt

The Waterwatch catchment quilt represents the upper, middle and lower areas of the Goulburn Broken Catchment. The quilt is the result of a patch competition run as part of National Water Week in 2008. Over 500 entries were received from 12 schools and the top 30 squares were sewn together to make the quilt.

Photo: Goulburn Valley Water

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**GOULBURN  
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 CATCHMENT  
 MANAGEMENT  
 AUTHORITY

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