

## Responding to challenges

RCS priorities are established under six strategic objectives of the RCS Framework to support resilience at whole-of-Catchment and sub-Catchment scales (Level 3 and 4).

### ► EMBEDDING THE RESILIENCE APPROACH

Because SESs are complex, with many uncertainties and ever-changing circumstances, building resilience requires the knowledge, skills and efforts of a variety of people and organisations to plan and manage in an adaptive way.

Important thresholds (or tipping points) for what makes an SES resilient have been identified, such as community contribution levels, native vegetation coverage and nutrient loads in waterways, although many knowledge gaps remain.

Sub-strategies and reports on issues such as salinity, environmental flows, floodplain management, biodiversity and weeds, which provide the background and base data for the RCS, will continue to be updated so that emerging drivers of change are identified and acted upon.

### ► STRENGTHENING PARTNERSHIPS

Recognising local differences across the Catchment, partnerships with local communities have been important in developing this RCS and will be critical in its implementation, including planning within the six sub-Catchment SESs.

This RCS builds on the long history of community and agency partnerships and strong leadership.

### ► ADAPTING TO LAND-USE CHANGES

As farm enterprises and other uses of land change in the Catchment, significant opportunities for improving the environment and managing risks emerge. RCS priorities include farm and land-use planning that balance economic, social and environmental needs.

### ► ADAPTING TO WATER POLICY REFORM

How water policy is developed and implemented is critical in achieving a balanced delivery of water, benefiting all users – farmers, people in towns, recreational users and the natural environment.

### ► ADAPTING TO CLIMATE VARIABILITY

Long-term changes in climate need to be considered in planning by the Goulburn Broken CMA and partners. Well-planned and co-ordinated emergency responses to, and recovery from, extreme climatic events are needed.

Opportunities for achieving balanced outcomes are also emerging as land and water managers develop responses to climate variability.

### ► ADAPTING TO INCREASED FARM PRODUCTION

The pressure to produce more with less and highly variable trade and climatic conditions is driving more innovation. The resilience of natural resources such as soils needs to be a key factor in new practices that emerge.

#### ► RCS IN ACTION



### Gecko CLaN's Pasture Cropping Project Success

The Gecko CLaN's pasture cropping project has been highly successful for a number of years, setting up a series of trial sites, conducting numerous education events and publishing two books.

Pasture cropping is a sustainable agriculture technique for integrating cropping and grazing enterprises. It involves zero-till sowing annual crops directly into freshly grazed perennial pastures. The technique focuses on improving soil health, including structure, nutrient cycling and increased soil carbon.

The Gecko CLaN has sparked interest from far and wide, with hundreds of people attending various education days, and pasture cropping techniques have spread rapidly throughout Victoria.

This project is a great example of the RCS in action, building farm and farmer resilience in the face of changes driven by climate variability and increased farm production.

#### ► RCS IN ACTION



### Waterwatch in the Goulburn Broken Region

Waterwatch is a community water quality monitoring program that has been operating in the Goulburn Broken catchment since 1993. The program, coordinated and delivered by Goulburn Valley Water, brings together school and community groups, concerned individuals and landowners, local councils and water authorities. Monitors test the quality of their local stream or water source so that practical actions can be taken to maintain and improve water quality.

The program provides water testing gear to interested people and trains them to use that equipment correctly. A large body of water quality data has been collected since the program's inception and can be viewed at: [www.vic.waterwatch.org.au](http://www.vic.waterwatch.org.au). Community volunteer monitors from widely separated sites can share their results to quickly identify problem areas. The more we understand the issues around river health, the better we can care for our waterways.

The data is also used by resource management agencies to monitor river health changes following improvement works.

## An evolving understanding

The Goulburn Broken RCS 2013-2019 provides the next step in sustaining valuable economic, social and environmental characteristics of the Catchment.

It builds on decades of work, beginning with a focus on the single threat of salinity in the 1980s, leading to integrated Catchment management in the 1990s, progressing to the valuing of ecosystem services in the early 2000s, and evolving to the current resilience-based approach.

## From strategy to action

Success will depend on Catchment communities developing and delivering projects.

Partnerships across the six SESs will be strengthened between individuals, landholders, community groups such as Landcare, and all levels of government.

Although these partnerships have always been important, they will be given increased priority in a genuine attempt to consult more widely to support decision-making at the local level.

Volunteer groups such as Landcare, the Country Fire Authority, the State Emergency Service, sporting clubs, school groups and other community organisations will be essential in implementing actions.

Works and activities will be implemented according to priority, including consideration of available funding and the capacity of partners and their willingness to participate.

Detailed sub-strategy condition reports will be updated to support action plans for waterways, floodplains, wetlands, groundwater, biodiversity and people in the six SESs.

Priorities in the short-term include:

- Establishing an RCS implementation plan
- Building projects stemming from this RCS into business planning processes
- Furthering our understanding of key Catchment thresholds

The Goulburn Broken CMA has the key leadership role in bringing together partners, sourcing funds and co-ordinating delivery of the Regional Catchment Strategy.

To learn more and find out how you can be part of catchment management, visit the Goulburn Broken CMA website:

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## Goulburn Broken Regional Catchment Strategy 2013 - 2019

# Summary for the Community



The Goulburn Broken Regional Catchment Strategy 2013 - 2019 (RCS) guides efforts for the coming six years and beyond to sustain and restore the natural environment that underpins our way of life, wellbeing, prosperity and future.

This RCS builds on more than 25 years of achievements, including the 1997 and 2003 RCSs. The Catchment's people have worked tirelessly together in areas such as soil health, salinity, habitat management, pest plants and animals, river health and revegetation.

The past decade of drought, fires and floods has highlighted our inter-connectedness with the environment's land, water and biodiversity.

This inter-connectedness is understood intrinsically by traditional owners, who lived in a complex society connected spiritually to the land and its resources.

Since European settlement our relationship with the natural environment has become more complicated. Land clearing, large-scale agriculture, irrigation, urbanisation and tourism have all changed the landscape and our connection with it.

We cannot return the Catchment to pre-European condition, nor do we want to. However, we do want a resilient Catchment that supports delivery of a desired mix of economic, social and environmental benefits.

Resilience is the ability of the Catchment's people and environment to cope with stress while continuing to maintain the same functional identity.

We need to work with our environment so that it can continue to provide key functions or services such as:

- replenishing soils for agricultural production
- filtering water and cleaning the air
- providing habitat and pollination
- creating a place that is pleasant to live and work in.

### The Goulburn Broken Catchment:

- stretches north from the edge of Melbourne to the Murray river, taking in alps, forests, hills, woodlands and plains
- has 215,000 people, who mostly live in regional centres and towns
- is ethnically diverse, including a large Indigenous population
- has natural resource-dependent industries including livestock, dairy, fruit, vegetable and grape production, processing and rapidly growing services such as tourism.



# Catchment resilience depends on people

This RCS, which emphasises the development of resilience in our biodiversity, land, water and people, has been developed collaboratively between individuals, community groups, funders and agency partners.

The resilience approach focuses on common characteristics and connections between people and the environment, as social-ecological systems (SES). SESs exist at a range of connected scales, from an individual site to the whole-of-Catchment. Two scales of SES are important for decisions relevant to this RCS – whole-of-Catchment and six sub-Catchment areas.

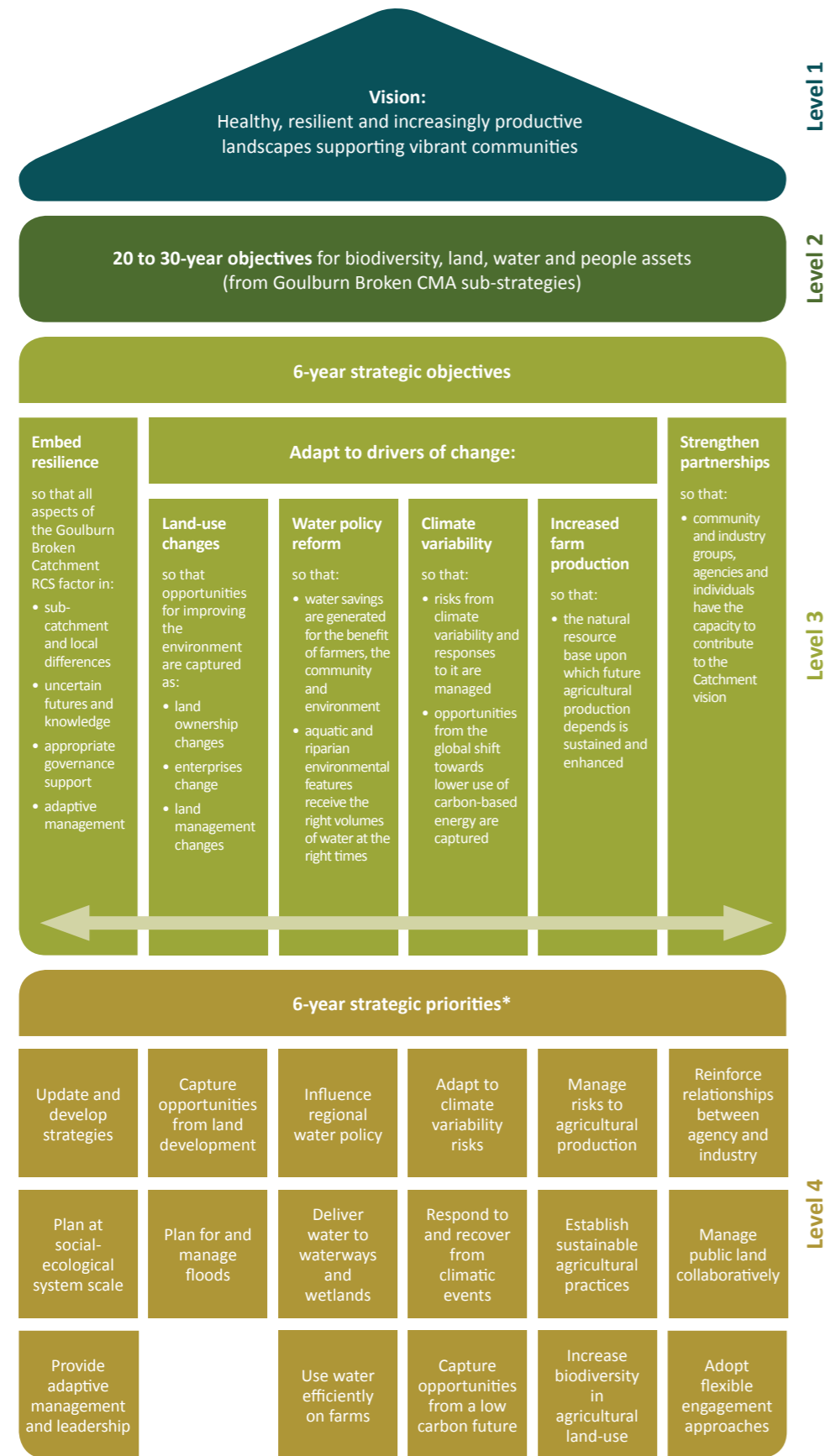
In developing this RCS, the views of many community members and technical experts have highlighted how the Catchment is dynamic or ever-changing, with many drivers of change. Four key drivers of change have been identified, which are also highly connected.

In implementing the resilience approach over the next six years, strategic objectives include adapting to these four drivers of change:

- land-use changes
- water policy reform
- climate variability
- increased farm production

The 50-year vision, 20-30 year objectives and 6-year strategic objectives and priorities come together as the RCS Framework shown here.

While the 50-year vision (Level 1) has been adjusted since the 2003 RCS to reflect the emphasis on resilience, the same 20 to 30-year objectives (Level 2) remain at the whole-of-Catchment scale in areas such as soil health, biodiversity, pest plants and animals, river health, water quality, wetlands, floodplains and salinity. These objectives are detailed in sub-strategies, which are updated regularly.



\* Strategic priorities describe the focus for bundles of management measures

# Planning and action at whole-of-Catchment and sub-Catchment social-ecological system scales

Responding to issues such as climate variability, floods and fire requires a Catchment-scale approach and local action. Across the Catchment, the landscape, people, threats and priorities differ. Six social-ecological systems (SESs) have been identified through consultation and research. These SESs don't have sharp boundaries, but they do share similar characteristics and issues which give them a unique identity. Why are they important? They shape what can be done to build and maintain resilience so that the best combination of people, land, biodiversity and water outcomes, valued by the local community, can continue to be provided. Types of actions have been identified for each SES as examples of what will be prioritised through the life of the RCS.

## AGRICULTURAL FLOODPLAINS

*Northern floodplain with Murray River along boundary with NSW*

- Landscape highly modified for agriculture with remaining vegetation fragmented and found mainly on waterways, wetlands and roadsides
- Irrigation supports dairy, horticulture and cropping and a large food processing sector with major investment in on and off-farm irrigation infrastructure recently
- Barmah National Park highly valued internationally (Ramsar listed) important breeding site for many bird species
- Long history of community leadership in managing land and water problems

**Threats:** Further loss and decline of vegetation, salinity, poor natural drainage, future farming options, and floods continue to threaten production and river health

**This RCS will:**

- Connect native vegetation on private land to the Goulburn and Broken Rivers, Barmah Forest and Broken Creek
- Keep shallow watertables below plant root zones and coordinate disposal of saline water
- Protect the unique character of Barmah Forest and key rivers, such as the Lower Goulburn River and wetlands through delivery of environmental water and land management
- Integrate efficient water use with other environmental features into farm design
- Identify new ways to farm sustainably in variable climatic conditions
- Influence water policy to protect and secure water for farmers and the environment through community leadership

## URBAN CENTRES

*Shepparton, Seymour and Benalla*

- Biodiversity is poor but urban people value the rivers and remaining vegetation for recreation
- Provide employment, housing, schools and services surrounded by farming and lifestyle properties on Goulburn and Broken River floodplains
- Water is pumped from the rivers for domestic use and runs off into rivers following storms
- Large diverse populations

**Threats:** Pollution, land development and aquatic weeds threaten river health, including water quality. Floods are also an on-going threat to properties and safety

**This RCS will:**

- Retain native vegetation extent in the face of land development pressures
- Improve the quality of riparian vegetation on public land along Goulburn and Broken Rivers
- Reduce flooding impacts
- Identify common interests and involvement of community that benefit the environment

## COMMUTING HILLS

*Mountainous southern and south western urban fringe*

- Public and private forests support many plant and animals including the Golden Sun Moth
- Land use also supports range of agricultural industries and lifestyle communities
- Waterways largely remain healthy because of the extent of remaining vegetation
- People drawn to area for natural beauty and lifestyle and commute to Melbourne for work

**Threats:** Fire remains a major threat to safety and properties, along with native vegetation loss through population pressures and development

**This RCS will:**

- Retain native vegetation extent in the face of development pressure to prevent loss of vegetation and subsequent biodiversity loss, erosion and water quality decline
- Identify and protect highest value vegetation corridors
- Nurture partnerships between land managers where private and public land meet

## PRODUCTIVE PLAINS

*Foothills and floodplains towards the north of the Catchment*

- Habitat provided by vegetation along waterways, roadsides, ranges and spring-soak wetlands
- Dryland farming includes cattle, sheep, cropping and viticulture and many farms remain in same families for generations with average farming populations ageing
- Rivers and creeks in moderate condition and wetlands in moderate to good condition.
- Landcare and conservation management networks establish sustainable farming practices and protect threatened species

**Threats:** More habitat loss, ageing farming populations and declining social connection are threats to biodiversity and farming futures

**This RCS will:**

- Increase native vegetation areas and connections to Goulburn and Broken Rivers, Holland and Hughes Creek and Winton Wetland
- Integrate environmental features into farm design
- Sustain highly-valued waterways and wetlands through river protection and expanding river corridors
- Deliver community initiatives to sustain habitat for threatened species and farm production

## UPLAND SLOPES

*Slopes and valleys towards the south of the Catchment*

- Grazing and other agricultural enterprises occur in cleared valleys surrounded by partially forested hills and vegetation along waterways
- Lake Eildon provides water for agricultural production, recreation, tourism, and river health all the way down the Catchment and beyond the boundary
- Generational farmers live alongside increasing numbers of lifestyle properties and absentee landholders

**Threats:** Erosion, weeds and fires are among the threats to the amount and quality of highly valued water used here for many purposes

**This RCS will:**

- Maintain native vegetation on public land, and enhance through strategic linkages to the Goulburn River and other key waterways
- Protect and improve the values of Lake Eildon and the Heritage listed Goulburn River
- Deliver environmental flows down the Goulburn River considering land use and development along the floodplain
- Deliver partnership approaches to sustainable land management practices

## SOUTHERN FORESTS

*South-east mountains, waterways and snow covered alps*

- Unique alpine vegetation supports endangered mountain Pygmy Possum
- Most of the area is public land managed for conservation, but also for recreation and timber production
- Waterways are in good condition with recreation and tourism highly valued
- People live in small and seasonal communities and travel to and from this area
- The interface between private and public land is important for management

**Threats:** Waterway health threatened by erosion along with threats to vegetation including fire, weeds and pest animals

**This RCS will:**

- Maintain diversity of large extents of native vegetation on public land for habitat, clean water and natural amenity
- Protect populations of threatened species such as Barred Galaxias
- Nurture partnerships between land managers where private and public land meet

