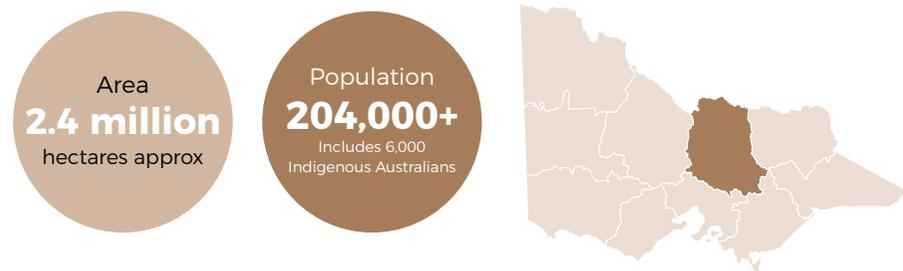


Goulburn Broken

REGIONAL CONTEXT



AGRICULTURE: approximately 1,000,000 hectares of dryland agriculture and 270,000 hectares irrigated agriculture with a gross value of agricultural production of over \$2.1 billion (within an annual economic output for the Catchment of over \$15.9 billion).

SIGNIFICANT NATURAL FEATURES: Barmah Forest (icon site of The Living Murray program, National Park and Ramsar listed), Alpine National Park, Lower Goulburn National Park, Lake Eildon National Park, Cathedral Ranges State Park, Heathcote-Graytown National Park.

MAJOR WATERWAYS AND WETLANDS INCLUDE: Goulburn River, Broken River, Winton Wetlands, Lake Eildon, Kanyapella Basin, Gaynor Swamp, Yea Wetlands, Alpine bogs and significant deep and shallow groundwater aquifers.

THREATENED SPECIES AND ECOLOGICAL COMMUNITIES

INCLUDE: Superb Parrot, Bush Stone-curlew, Squirrel Glider, Grey-crowned Babbler, Regent Honeyeater, Mountain Pygmy Possum, Alpine Sphagnum Bogs, Grey Box Grassy Woodlands and Buloke Woodlands of the Riverina and Murray-Darling.

INDIGENOUS HERITAGE: Traditional Owners in the north of the Catchment are represented by Yorta Yorta Nation, whose traditional lands include the northern plains of the Goulburn and Murray Rivers. The south of the Catchment forms part of the traditional lands of Taungurung Clans, which includes the mountains and rivers to the Great Divide. Traditional Owners' knowledge of land and water resources and cultural heritage in the landscape is rich and unique.

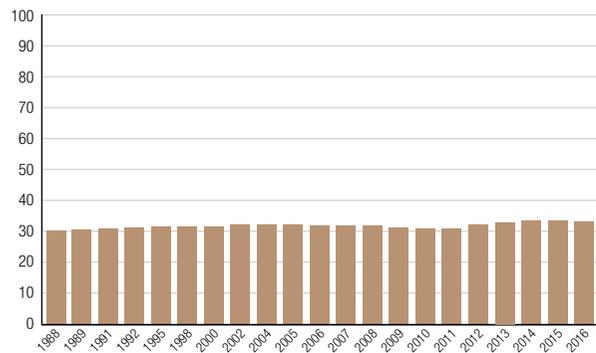
Source: GBCMA, 2016



Goulburn River, Acheron Cutting. Photo: Mark Turner

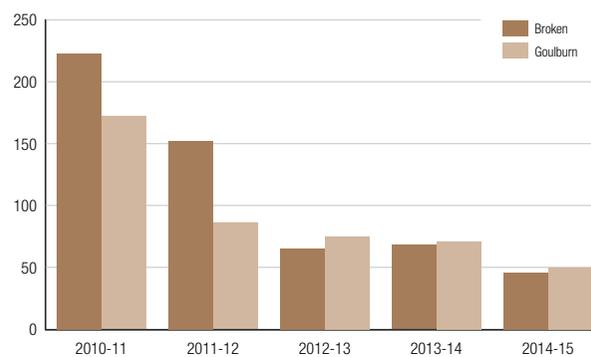
REPORT CARD

BIODIVERSITY Tree cover



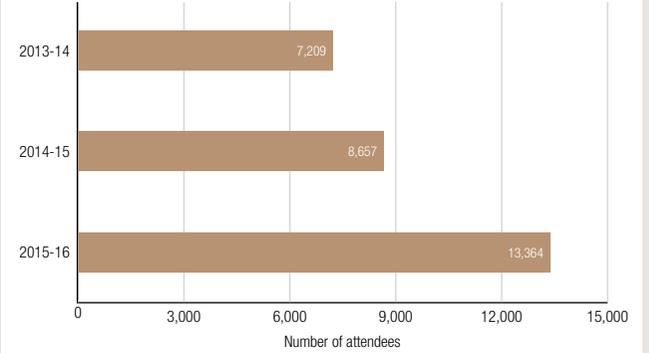
Average annual percentage (%) tree cover for the Goulburn Broken region 1988-2016. Source: Van Dijk and Summers, 2016

WATER Streamflow



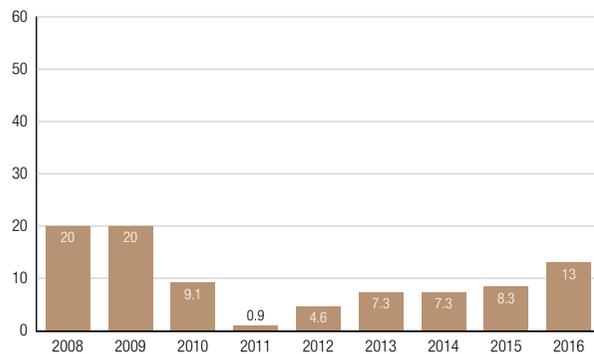
Basin streamflow (%) compared to long-term average. Source: Victorian Water Accounts

COMMUNITY Participation



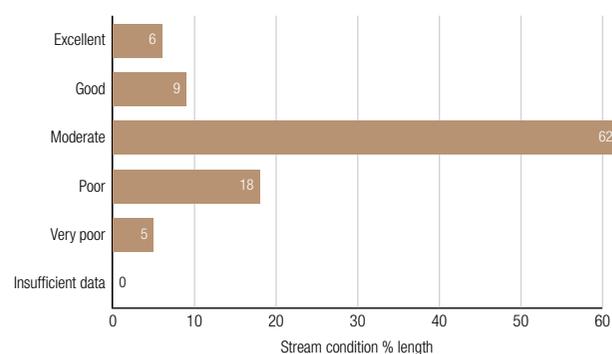
Community participation in CMA engagement events. Source: Victorian Catchment Management Authorities, 2014, 2015, 2017

LAND Exposed soil



Percentage (%) Dryland area with 30-100% bare soils (higher risk of erosion) in March, 2008-16. Sources: DEDJTR, 2017a; EnSym; Guerschman et al., 2015

WATERWAYS Stream condition



Index of Stream Condition 2013 summary for the Goulburn Broken region. Source: DEPI, 2013b, p. 30

ASSESSMENT OF CATCHMENT CONDITION

- ▶ The Goulburn Broken CMA's approach to evaluation, which stretches back to the 1980s, ensures that emerging issues and lessons from the past are continually built into strategy development. The framework is used in the Annual Report across all work programs, with a rating scale for catchment condition of very poor, poor, satisfactory, and good to excellent (GBCMA, 2016). The Victorian Auditor General (2014) found that the Goulburn Broken CMA 'is the most advanced of the four CMAs (of five in the assessment) in that it has a pre-existing monitoring, evaluation and reporting framework developed in 2004'.
- ▶ The CMA is continuing to develop its approach to monitoring, evaluation and reporting and is now exploring how long-term progress can be used to further improve understanding and decision making. This aligns with the Regional Catchment Strategy's emphasis on system resilience and the focus on critical attributes and thresholds emerging from local planning (GBCMA, 2013).

LAND

- ▶ The Goulburn Broken region has a slightly elevated risk of erosion from bare soils in dryland production areas, particularly since 2011. The Goulburn Broken CMA encourages landholders to maintain ground cover greater than 70%. The Goulburn Broken CMA's most recent catchment condition report gives a satisfactory rating for land health and a stable trend,

based on an assessment of soil health indicators (GBCMA, 2016). Improving the condition of land is critical to growing the Catchment's sustainable agricultural industries as well ensuring the ongoing provision of important ecosystem services including clean water, habitat and aesthetically pleasing landscapes for communities to live.

WATER

- ▶ The 2010 Index of Stream Condition showed that some reaches in the upland streams of the Goulburn River were in reference condition or rated as 'excellent'. A majority of stream reaches assessed (62%) in Goulburn and Broken Basins were rated as 'moderate' (DEPI, 2013b). Basin streamflow for both the Goulburn and Broken river basins peaked in 2010-11 due to widescale natural flooding, and have since returned to more natural patterns.
- ▶ The CMA reports that phosphorus loads from irrigation drains are below the long-term target, and rates water quality in waterways as satisfactory (GBCMA, 2016). Environmental flows were rated as satisfactory, as were riparian and instream habitat and channel form, both of which were trending towards improved condition. The distribution and abundance of large bodied native fish species such as Trout cod, increased in several waterways, evidence of the benefits of the improved condition of some waterways.

BIODIVERSITY

- ▶ Tree cover has been stable over the last 17 years, taking in approximately 30% of the catchment, mostly located in the southern (upland) part of the catchment. The CMA reports that catchment condition for biodiversity continues to be poor, and that native vegetation extent targets are not being met, requiring additional investment in revegetation and reducing clearing impacts (GBCMA, 2016). Despite this, targeted revegetation activities are having a positive impact on the landscape, supporting increased populations of native fauna including threatened species including threatened woodland bird community which includes Grey-crowned Babbler, Dimond Firetail and Turquoise Parrot, and the EPBC-listed Regent Honeyeater.

COMMUNITY

- ▶ The Regional Catchment Strategy reflects the views of the community, and their concerns include: water policy and associated water availability for agriculture and the environment, climate change, land-use changes, and agricultural viability (GBCMA, 2013).
- ▶ Community participation was high in 2016 (20.2% of statewide participation figures) and has increased over three years. The top three concerns of the broader community about environmental health relate to invasive weeds (88% of respondents), declining numbers of native fish (79%), and pest fish species (79%); all considered a problem by respondents (Schirmer et al., 2016).

CASE STUDY

Improving river health and farm productivity through better irrigation



Photo: GBCMA

“Modern irrigation infrastructure has saved farmers time and effort in farm management, and has improved agricultural productivity through better watering efficiency and more consistent water flows across farm properties. More broadly, the program has boosted regional development, creating new jobs and promoting industry confidence and co-investment in the region.”

LOCATION: Goulburn Murray Irrigation District

PARTICIPANTS: A consortium led by Goulburn Broken CMA, including North Central CMA, North East CMA, Goulburn-Murray Water, Dairy Australia, Murray Dairy, Northern Victorian Irrigators, state and local government. Funding sources include the Australian Government’s On-Farm Irrigation Efficiency Program, Victorian Government’s Northern Victorian Irrigation Renewal Program, the Victorian On Farm State Priority Projects Initiative and the Victorian Farm Modernisation Project.

OBJECTIVES: To assist irrigators to achieve water savings by improving on-farm irrigation systems.

The Goulburn Murray Irrigation District (GMID) is one of the oldest and largest irrigation districts in Victoria. The GMID encompasses a large stretch of the Murray River and its surrounds in Victoria’s north. Much of the GMID has ageing and inefficient surface irrigation infrastructure. Outdated infrastructure means a less efficient irrigation system, and more water lost just to get water from the river to farms.

Infrastructure upgrades are considered the best option to save water for the environment, and to maintain and support improved agricultural productivity. The water savings are shared between farmers and the environment.

Works to date have primarily involved modernising larger channels in the GMID (known as the ‘backbone’), and connecting non-backbone or ‘spurs’ customers with pipes. Works include laser grading, drainage reuse, micro systems, sprinkler irrigation, gravity channel surface irrigation, pipe and riser systems, irrigations scheduling, farm channel upgrades, and plastic lined channels.

More than 500 projects were completed as of May 2017. However, there is still estimated to be around 70,000 – 100,000 hectares of farm systems that need to be modernised.

As of May 2017, 70 GL of water has been saved as a result of infrastructure upgrades. This has led to more water being available to protect and restore river health, while more efficient water delivery systems have reduced groundwater accessions and nutrient runoff, and helped address re-emerging salinity and water table issues in the region.

Modern irrigation infrastructure has saved farmers time and effort in farm management, and has improved agricultural productivity through better watering efficiency and more consistent water flows across farm properties. More broadly, the program has boosted regional development, creating new jobs and promoting industry confidence and co-investment in the region.