Fact Sheet 2
Northern Region

The Northern Region – our current water use

Northern Victoria has developed on the back of reliable water supplies delivered by the River Murray and its tributaries. The region is home to more than half a million Victorians, is rich in agriculture and has a broad tourism base linked to its waterways, heritage and natural environment.

The Region's rivers

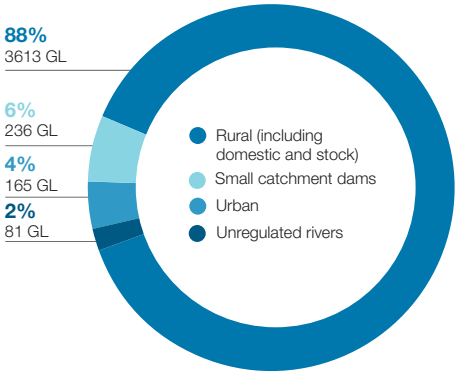
The Northern Region's river systems support major recreational and tourist activities including fishing, water sports, camping and picnicking Many culturally significant sites are also associated with the rivers, creeks and wetlands.

The social, cultural and heritage values of the Region's rivers also have a significant economic value – as a guide, Victoria's waterways in total generate $532.9 million each year from tourism and fishing, and are worth a further $368 million a year in recreational value.

The environmental condition of Victoria's rivers is measured by five key aspects of river health – flow, water quality, streamside vegetation, physical form and aquatic life. Within the Northern Region, the Upper Murray and Kiewa river basins are in the best condition with 31 to 50 per cent of river length in good or excellent condition. The Ovens and Goulburn river basins have 11 to 30 per cent of river length in good or excellent condition, while the Broken, Campaspe and Loddon have less than 10 per cent.

The health of rivers and their catchments has economic, social, recreational and environmental implications for local communities. Managing river systems to meet the needs of water users and the environment is a very complex undertaking.

Figure 1 Surface water available for use in the Northern Region



One Gigalitre (GL) = One billion (1,000,000,000) litres.

The Northern Region's water entitlements

Victoria leads the nation in water management. Its allocation system is built on a framework of reliable entitlements, the ability to adapt to changing conditions and over-riding legislative powers to enable changes in entitlements when necessary.

Most water used in the Northern Region is surface water created by the rain that falls on river catchments, and flows into rivers and reservoirs. On average, the Northern Region has 9,788 billion litres of surface water in the system each year. Under the Murray-Darling Basin Cap Victoria is entitled to divert 3,859 billion litres of this water a year on average for urban and rural users. The amount diverted in a particular year may be above or below 3,859 billion litres depending on climatic conditions. An estimated 870 billion litres is lost through inefficient distribution systems including leakage, seepage and evaporation.

In regulated river systems (where flow is controlled by major dams or weirs), the Victorian Government allocates water resources by bulk entitlements issued to rural and urban water corporations.

In the Northern Region, rural water users consume the vast majority of water resources – rural entitlements represent 88 per cent of all surface water available, compared to the four per cent of water entitlements available for urban users (see figure 1).

The Northern Region can also access groundwater from underground aquifers. In 2005/06 groundwater represented about 200 billion litres or five per cent of water used. Alternative water sources, including stormwater, recycled water and drainage water from irrigation can also be used either at an individual level or for localised projects. However, the percentage of alternative water sources used is currently only four per cent compared to surface water, which represents 91 per cent of water used.

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Dealing with drought

Over the past 10 years, rainfall across almost all of Victoria has been well below the long-term average. This has caused catchments to 'dry out', so that even when rain does occur, a large proportion is required to simply saturate the soil, with little run-off into streams and reservoirs. Victoria's water allocation framework was designed to cope with drought, but the duration and severity of the low inflows over the past decade has tested the ability of people, industries, the environment and water storages to recover.

In the Northern Region, allocations by water corporations for irrigation and urban water use have been reduced since 2002/03 in line with the gradual drawdown of storage levels. Water for environmental needs has also been reduced during drought, with local water resources reprioritised between different users and the environment to ensure that basic human needs are met. The Campaspe and Loddon systems have been the worst affected, but the impacts of the prolonged drought have been felt everywhere across the region – as at December 2007, 173 of 174 towns in the northern Victoria on reticulated systems were on water restrictions, and irrigation allocations for 2007/08 continue to be extremely low.

During droughts, plant and animal populations shrink and survive only in key refuges. When the drought breaks, these refuges provide the building blocks for plants and animals to spread out again along rivers. However, the capacity for recovery in the Northern Region has been reduced because of regulated flows, water storage in dams and weirs, the extraction of water for homes, farms and businesses and catchment land uses. During droughts, environmental managers focus on preventing the loss of species and protecting key refuges so that rivers can recover their health as quickly as possible when dry conditions break. Securing water for dry and drought years helps to ensure sufficient base streamflows to protect high priority environmental sites so that species can recolonise rivers and catchments when conditions improve.

Government initiatives – easing the pain of drought

The Government is responding to the current drought with a wide range of actions to assist rural communities. In October 2007, the Premier announced $100 million in assistance, in addition to the $178 million the Victorian Government has provided for drought relief over the past two years.

Full details of the package can be found at www.dse.vic.gov.au and www.dpi.vic.gov.au.

How we use our water – irrigation and agriculture

Agricultural production in the Northern Region generates more than $3.26 billion a year from more than 6.37 million hectares of farmland. The region has 16 major irrigation areas, but irrigation also occurs outside these areas with water sourced directly from a river or groundwater bore.

About 3,600 billion litres of water is used per year for irrigation and agriculture – by far the most significant water use in the Northern Region.

The predominant irrigated industries are horticulture (valued at $924.8 million per year) and dairy ($707.5 million a year). These industries generate the highest dollar value, accounting for 51 per cent of the farm gate value of irrigation in the Northern Region. Mixed farming is also a significant and flexible industry in the region.

Figure 2 Irrigation areas in the Northern Region

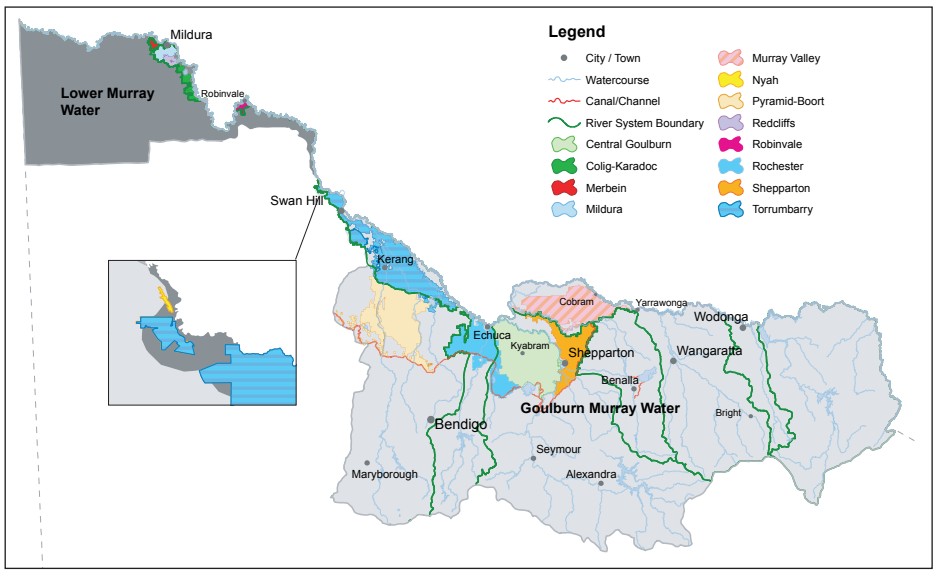

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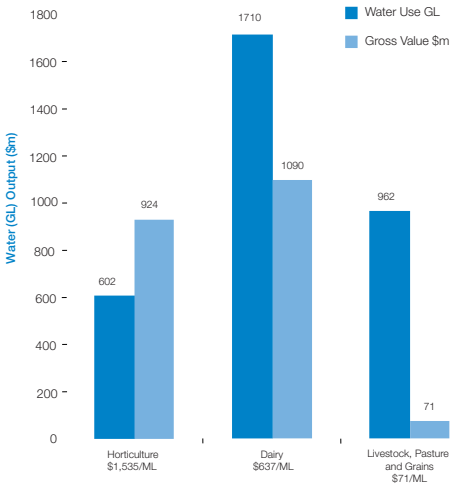
Figure 3 Average amount of water used (GL/year) and economic value ($million/year) of major irrigation industries in the Region



Water use in cities and towns

Up to 163 billion litres, or 4.7 per cent of the total water used in the Northern Region, is available for urban use each year, by households, commercial purposes and industry.

Urban systems in the Northern Region are characterised by many small, widely dispersed, stand-alone systems, as opposed to one large integrated system like that in Melbourne. Many people also rely on non-reticulated supplies, such as rainwater tanks and bores, which are not connected to urban systems.

The table below shows how water corporations service more than 400,000 of the region's 529,000 people. Superficially, there appear to be big differences in consumption across homes in the Northern Region. For instance, the average residential water use varies from between 261 litres a day in the Central Highlands area in 2005/06 to 611 litres a day in the Lower Murray area. However, much of the Central Highlands area was under stage 1 or stage 2 restrictions in that time period, whereas in the Lower Murray, stage 1 restrictions only came into force in December 2006. Somewhere in the middle is probably a more accurate estimate of residential water use within the Region, from between 275 litres per day in the Coliban area, to 324 litres per day in the North East. By comparison, Melbourne households in the same period used an average 208 litres of water per day each.

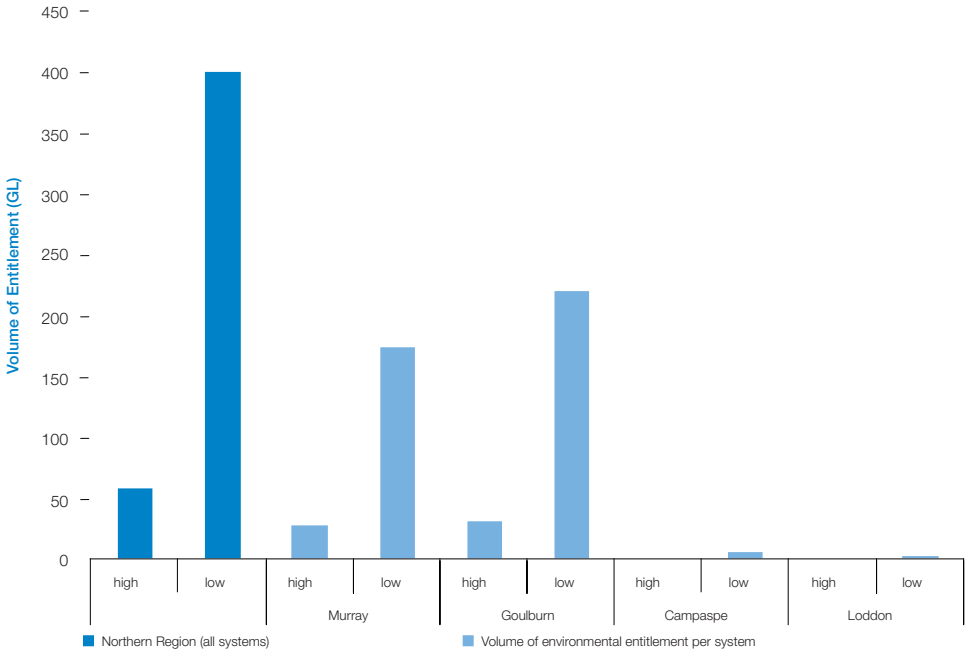
Industrial and commercial water use accounts for about one-third of total urban water use in the Northern Region and includes industries such as food processing, packaging, textiles, pulp, abattoirs, poultry, dairy manufacturing, hospital, textiles and tourism.

Table 1 Urban water use in the Northern Region

Water Corporation	No. of towns supplied	Main Towns	Population	Connections	Volume supplied (05/06)[3]	Residential use in 2005/06 (litres/person/day)[4]	Main water sources	Largest Storages
North East	37	Wangaratta, Benalla, Wodonga	96,873	41,900	20.4 GL	324	Murray, Ovens, King, Kiewa, Mitta Mitta rivers, minor watercourses and groundwater.	Lake Dartmouth, Lake Hume, Lake Buffalo
Goulburn Valley	54	Shepparton, Seymour	118,000	56,232	30.46 GL	341	Goulburn/Broken, Murray.	Lake Eildon
Coliban[1]	51	Bendigo, Echuca, Castlemaine	117,658	62,468	22.1 GL	275	Bulk supplies from Murray, Campaspe, Goulburn and Loddon systems, Campaspe Deep Lead WSPA	Upper Coliban Reservoir, Lake Eppalock
Central Highlands[2]	18	Maryborough	16,233	8,977	2.55 GL	261	Upper Loddon WSPA, Bungaree GMA, small tributaries	Tullaroop Reservoir
Lower Murray	14	Swan Hill, Mildura	63,000	29,190	21.19 GL	611	Murray and Loddon Rivers	Lake Dartmouth, Lake Hume

1. Excludes Wimmera supply system and Coliban Rural Supplies
2. Clunes, Daylesford, Dean, Lexton, Maryborough and Waubra urban supply systems
3. Total amount of water diverted from surface and groundwater systems for urban use in 2005/06
4. Data includes the impact on demand of any water restrictions in 2005/06. Residential consumption can also vary from year to year due to climate variations.

Figure 4 Existing environmental entitlements in the Northern Region and its associated reliability



Water for the environment

The environmental water reserve (EWR) is the term used to describe the amount of water set aside to meet environmental benefits. The EWR includes environmental entitlements (see figure 4), however most of the EWR is provided as passing flows and 'above cap' water.

Figure 4 shows the environmental entitlements in the Northern Region that have similar characteristics to those held by irrigators (ie. they are tradeable and are a mix of high and low reliability). It is estimated that these make up about four per cent of the total EWR. Of the estimated 459.6 GL of environmental water, 57.6 GL (about 12 per cent) is high reliability water and the remaining 402 GL (about 88 per cent) is low reliability.

The environment uses high and low reliability water shares in a similar way to an irrigator. It uses high-reliability water to keep key refuge areas going through extended dry periods (similar to horticulturists needing water to maintain their crops). In wetter years, the environment can use low-reliability water to piggyback on natural high flows needed for breeding events to flush the river and to water wetlands.