

What are we planning for?

At a glance

Depending on the catchment, the most severe climate change scenario would mean:

- > total inflows reduced between 42 per cent to 72 per cent
- > water available for consumptive use reduced between 10 per cent to 67 per cent
- > environmental water reduced between 51 per cent to 86 per cent.

What the future may hold

We cannot predict the next 50 years with certainty, but we do know there is likely to be less water available. The Strategy aims to protect against a range of pressures and risks including:

- > **reduced water availability** and reliability because of climate change and drought – for example, a reduction of up to 42 per cent is predicted for Victoria's share of the Murray system
- > **existing over-allocation** of water resources – for example, the growth in water use between 1988 and 1994 reduced full allocations of Murray low-reliability water shares from 85 to 75 years out of 100
- > **changing demands for water** due to population increases, and changing farm and manufacturing practices – there were 16,000 water trading transactions in 2007/08 that northern Victorian irrigators used to meet their changing demands
- > **increased interception** of water from land use change, farm dams, the expansion of plantations and bushfires – for example, in the Campaspe system, farm dams historically captured 11 per cent of surface water runoff but could capture up to 29 per cent under climate change
- > **poor water quality** and increasing salinity levels – of the 260,000 hectares of salt affected Victorian farm land, 54 per cent is located in Victoria's northern irrigation district.

The Strategy is the Northern Region's response to **future drought** and the uncertainty of **climate change**.

The past 11 years have been extraordinarily dry, with record low inflows in 2006/07. It is not known if this is the early onset of climate change, or simply a prolonged drought after which rainfall will return to normal. Since we do not know exactly what the impact of drought and climate change will be, the Strategy looks at a **range of possible futures**.

What does this mean for water availability?

Climate change is likely to mean less water for everyone. In Victoria's share of the Murray system, the most severe scenario would mean:

- > about 250 GL less water each year for water users (15 per cent reduction)
- > about 2,000 GL less water for the environment (51 per cent reduction).



Table 1. Forecast water availability under the most severe scenario (compared with the long-term average)

Immediate impacts of a continuation of recent low inflows (1997/98-2006/07)	River system				
	Murray ²	Broken	Goulburn	Campaspe ³	Loddon
Total inflows¹					
Long-term average ⁴	7,596 GL	281 GL	3,287 GL	305 GL	278 GL
Continuation of recent low inflows	4,408 GL	139 GL	1,704 GL	92 GL	77 GL
<i>Difference (%)⁵</i>	-3,188 GL (-42%)	-142 GL (-51%)	-1,583 GL (-48%)	-213 GL (-70%)	-201 GL (-72%)
Diversions for consumptive use					
Long-term average ⁴	1,697 GL	31 GL	1,638 GL	110 GL	102 GL
Continuation of recent low inflows	1,445 GL	28 GL	1,139 GL	56 GL	34 GL
<i>Difference (%)</i>	-252 GL (-15%)	-3 GL (-10%)	-499 GL (-30%)	-54 GL (-49%)	-68 GL (-67%)
Environmental water⁶					
Long-term average ⁴	4,089 GL	184 GL	1,591 GL	162 GL	109 GL
Continuation of recent low inflows	2,005 GL	55 GL	489 GL	23 GL	17 GL
<i>Difference (%)</i>	-2,084 GL (-51%)	-129 GL (-70%)	-1,102 GL (-69%)	-139 GL (-86%)	-92 GL (-84%)

1. Total inflows include diversions for consumptive use, environmental water, plus systems losses. Excludes water use in unregulated systems and farm dams.

2. Murray diversions and inflows are Victorian shares only. Murray environmental water is Victorian flow at the South Australian border (including Living Murray Initiative commitments).

3. Campaspe diversions include Coliban River diversions for urban and irrigation supplies.

4. Calculated based on historic record 1891/92-2006/07.

5. These percentages may vary from Table 3.2 which demonstrates the long-term average pre-1997 (while this table compares the long-term average over the full historic record, including 1997-2006/07).

6. Environmental water is reflected by end of valley flows (ie. flows at the basin outlet).

Less water for irrigators means:

- > water shares are less reliable
 - full allocations on the Murray could be reduced from 98 to 68 years out of 100
- > the risk of zero allocation years, including:
 - irrigation distribution systems not operating
 - water not being delivered to towns and farms
 - trade and carryover no longer being effective
- > reduced productivity.

Less water for groundwater and upper catchment users means:

- > reduced streamflows in unregulated streams
- > increased time on restrictions and bans
- > reduced groundwater recharge
- > increased dependence on groundwater as surface water availability reduces.

Less water for the environment means:

- > reduced environmental flows
 - up to seven times the reduction experienced by water users, because most environmental water is provided by spills from reservoirs
- > more frequent droughts with much longer dry spells and less frequent floods, resulting in:
 - the disappearance of most areas of river red gum forest
 - reduced populations of native fish (such as Murray cod) and colonial birds (such as egrets)
 - the likely loss of internationally recognised Ramsar-listed wetlands.

Less water for urban water users means:

- > urban water corporations' entitlements are less reliable
- > longer, more frequent and more severe water restrictions
- > severe water restrictions impacting on businesses and community facilities, including sports grounds.

See Chapter 3 of the Draft Strategy for more information on risks to water resources. See Chapters 5 to 8 for an overview of the proposed responses to these challenges.

Further information

Individuals, organisations and the community are invited to provide formal feedback on the proposals in the Draft Northern Region Sustainable Water Strategy by December 12 2008. These will inform the directions in the Final Strategy, due for release in early 2009.

To obtain a copy of the Draft Strategy, or to find out how to make a submission, please call 136 186 or go to www.ourwater.vic.gov.au/programs/sws/northern or see Fact Sheet 1.

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