

# *River Murray Irrigators*

## WHAT AFFECTS THE RELIABILITY OF YOUR WATER ALLOCATION?

As an irrigator, the most important things to affect your water allocation are rainfall, the amount of water in storages such as the Hume Dam, and your State's allocation policies.

In a natural system, the variability in rainfall would mean that in some seasons the river would be practically dry, and in some there would be flooding. However for most of the time the quantity of water in the river would vary somewhere between these extremes. In short, water supply in a natural system is not reliable because it depends totally on how much rain falls.

For irrigators, the reliability\* of your water supply is crucial.

The Murray is a regulated system where storages like Hume Dam and other structures like locks and weirs have been built to increase the reliability of water supply. While these structures have increased the reliability of supply, they have not been able to compensate totally for the natural variability of rainfall.

*Another related factor affecting reliability of water supply, and your allocation, is the fact that the amount of rain that falls varies from region to region as well as from season to season. This variability and each State's allocation policies, are the main reason why water reliability is not the same across the States that share the Murray.*

\* Reliability of water available is a measure of how often a certain amount of water supply can be expected.

### THE RIVER MURRAY SYSTEM

*The River Murray system is a vital source of water for farmers, communities, industry and the environment in NSW, Victoria and SA. At the same time, we all recognise that the river cannot provide an endless supply of water.*

*With such a high degree of reliance on this system, the amount of water available is limited and varies from season to season. It is essential that we share the water in a way that sustains the health of the river, thus ensuring the livelihoods and lifestyles of those who rely on it.*

#### ACHIEVING THIS BALANCE CAN BE DIFFICULT.

*To do this, rules for sharing available water fairly between the States have been worked out by the Murray-Darling Basin Commission through the relevant partner Governments – the Commonwealth, NSW, Victoria and SA.*

*These rules are set out in the Murray-Darling Basin Agreement. The rules of the Agreement can change if the*



*partner Governments agree. The first agreement was reached in 1915 and the present one dates from 1992.*

*While these rules are important, the most important thing affecting the reliability of your allocation as an irrigator is the variability of rainfall from year to year and trends over longer periods.*

# WATER AVAILABILITY TO THE STATES

*over the last hundred years*

## DIVERSIONS

How much water,  
how often

1 year  
in 10    5 years  
in 10    1 year  
in 10

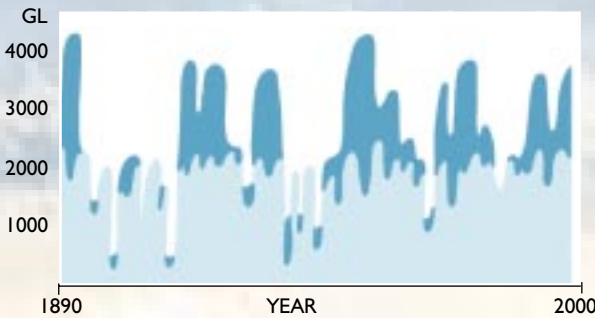


MORE THAN  
**2300**  
GL

MORE THAN  
**2000**  
GL

LESS THAN  
**1300**  
GL

## NSW



100-years of water availability (■) and  
use (□) on the River Murray in NSW

The last hundred years have seen many changes in the Murray with major dams, locks and weirs having been built and irrigation having grown enormously. These changes have resulted in the river being highly regulated so that supply is much more reliable than it would have been without them.

If we assumed that these structures and present rules for water sharing between the States had been in place for the last 100 years, how much water would have been available with current levels of development? A computer model has been used to find out, using each State's existing water allocation policies.

## DIVERSIONS

How much water,  
how often

1 year  
in 10    5 years  
in 10    1 year  
in 10

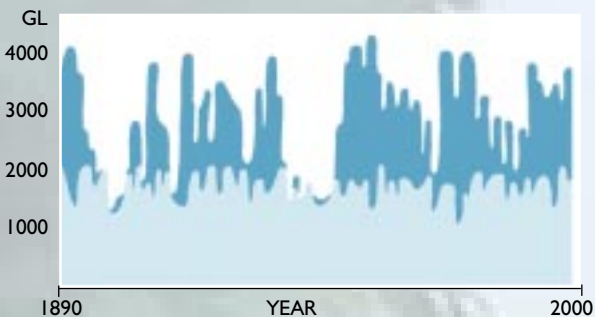


MORE THAN  
**1900**  
GL

MORE THAN  
**1600**  
GL

LESS THAN  
**1350**  
GL

## VICTORIA



100-years of water availability (■) and  
use (□) on the River Murray in Vic

**NSW.** For NSW this model shows that for 5 years in 10, water use for the Murray would have been more than 2000 GL a year while for 1 year in 10 it would have been less than 1300 GL a year, and 1 year in 25 it would have been less than 500 GL a year. It also shows that the last 10 years have been wetter than the average of the last hundred years so that 25% more water has been available in this time. The 100 year average use in NSW would have been approximately 1870 GL.

**VICTORIA.** For Victoria it shows that with its more conservative approach in the way it uses its share, in only 1 year in 20 would water use for the Murray have gone above 2000 GL a year. This approach also means that, unlike NSW, water use would not have fallen below 1000 GL a year due to lack of water. If the 1939-46 drought, one of the most severe this century, were repeated, Victoria would be able to supply 100% water right to its Murray customers in all but one year. The 100 year average use in Vic would have been approximately 1600 GL.

## DIVERSIONS

How much water,  
how often

1 year  
in 10    5 years  
in 10    1 year  
in 10

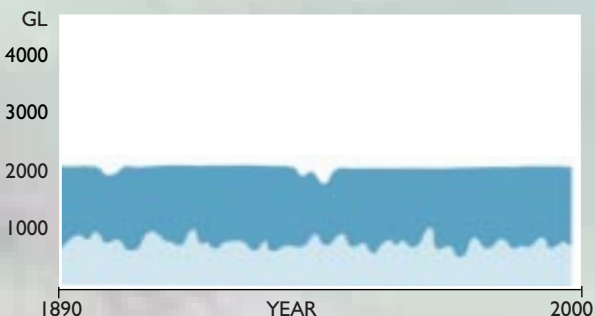


MORE THAN  
**790**  
GL

MORE THAN  
**650**  
GL

LESS THAN  
**540**  
GL

## SOUTH AUSTRALIA



100-years of water availability (■) and  
use (□) on the River Murray in SA

**SOUTH AUSTRALIA.** For SA it shows that the full share would have been available in 9 out of 10 years and that SA diversions would have been well within SA's entitlement flow provision. It also shows a very high reliability of supply to irrigation and urban water users in SA, reflecting the highly conservative approach to use of River Murray water in that State. The 100 year average use in SA would have been approximately 660 GL.

## RAINFALL VARIABILITY ISN'T THE ONLY THING AFFECTING YOUR ALLOCATION

There are two other things that affect, to a lesser extent, your water allocation:

- *the Cap on diversions*
- *how the States decide to share the total volume of water available each year between all users, including irrigators, towns, stock and domestic users and the environment and reserves for next year.*

### RELIABILITY UNDER THE CAP

The Cap is not a fixed limit on the amount of water the States can divert for use each year. Rather, it sets a limit to the long term, average diversion of water from the Murray-Darling River system that each State can make. Under this averaging system the States can allocate differing amounts of water each year, as long as they do not go over an average specified amount over a period of years.

The specified amount is calculated based on rainfall actually received and the amount of water held in storage.

### STATE ALLOCATIONS

While the Cap sets a long term limit on diversions, it is up to each State to decide how this water is shared among users such as irrigators, towns, stock and domestic users and the environment each year.

In general, if the season is dry, this will have a bigger effect on how much water you are allocated than the Cap. In dry times, pretty much all the water available in the system will be allocated to users.

The limit to diversions under the Cap actually comes into play in wetter years. As there is more water in the system during these times, the States may choose to keep more water in storage for use in dry years in the future and as a way of not going over the Cap in the long term.

## STATE APPROACHES TO WATER ALLOCATION – a summary

The most important aspects of each State's management of water allocations are as follows:

### NSW

- *Shares River Murray water equally with Victoria*
- *Maximises water use in each year and carries a minimum of water reserves for the next year*
- *Adopts a more opportunistic approach to water management, reflecting the high proportion of annual crops grown compared with Victoria*
- *Use of River Murray water is, on average, higher than Victoria but much lower in times of drought*

### VICTORIA

- *Shares River Murray water equally with NSW*
- *Keeps significant volumes of water in reserve at the end of each irrigation season to protect the needs of enterprises that depend on the Murray should there be a prolonged drought*
- *Reflects the higher proportion of permanent crops grown compared with NSW*
- *Adopts a more conservative approach to water management meaning that water use is, on average, lower than in NSW but is more reliable in times of drought*

For Victoria and NSW it is worth noting that while they share equally in the water available from the Murray system, they manage this share differently between the different diverters. Each State also manages its own tributary flow into the Murray e.g. the Murrumbidgee River in NSW and the Goulburn River in Victoria.

### SOUTH AUSTRALIA

- *Receives an agreed amount of water from the River Murray each year as a legal entitlement*
- *Has a very conservative approach to water management because of the type of irrigation enterprises and the need to meet urban water requirements throughout the State*
- *Has a very high reliability of supply*

# THE CAP AT A GLANCE

Several years ago the five Governments that made up the Murray-Darling Basin Commission (the Federal Government, Queensland, NSW, Victoria and SA) agreed to establish a Cap on further diversions<sup>†</sup> from the Murray-Darling Basin. This Cap has been operating since 1 July 1997 and applies to all surface water whether it is used by irrigators, for stock or domestic purposes, and by townspeople.

The major reason for the Cap being introduced is that over time the amount of water taken from the Murray-Darling Basin for a variety of uses, including irrigation, had grown substantially. The States agreed that further increases in diversions through new development would not be sustainable and would have seriously reduced reliability to all existing water users, including irrigators.

River health was also, and remains, an important issue. As more water was extracted, the rivers were showing signs of stress so that there was no certainty that the current riverine environment

would be able to survive in the long term without some action. Reducing water quality would have also threatened the reliability of water to existing irrigators.

The amount of Murray water shared between NSW, Victoria and SA each year under the Cap is based on:

- *management rules and infrastructure (number of irrigation licences, dams, weirs and channels) that existed in 1993/94*
- *fixed allocation for SA*
- *how much water is held in storages*
- *expected inflow and losses, which depend on weather conditions and releases from the Snowy Mountains Scheme.*

This means that the prevailing weather condition and conditions in the river are crucial to how much water individuals are allocated in any year. It also means that the amount allocated to users will vary from year to year depending on these conditions.

<sup>†</sup> *Diversions refers to water that is diverted or taken from the river. Diversions include water supplied to irrigators for agriculture, and supplied to satisfy stock and domestic and urban needs.*

## OTHER PUBLICATIONS

*Sharing the Murray*, Murray Water Entitlement Committee, October 1997

*The Cap: providing security for water users and sustainable rivers*, MDBC brochure, 1999

*Murray-Darling Basin Cap on Diversions 1997/98: striking the balance*, MDBC brochure, 1998

## FURTHER INFORMATION

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