Southern Rural Water

Annual Water Outlook

2023-2024

Contents

Executive summary

Following a period of higher rainfall over recent years, a declared El Nino event is now bringing a forecast for lower-than-average rainfall in spring and summer, with a high chance of unusually hot and dry conditions over the summer of 2023-24.

The Macalister Irrigation District opened with an allocation of 100% high reliability water shares, with flood events during October allowing SRW to also offer spill allocations, providing additional opportunity to customers. The dry outlook is likely to increase utilisation from storages over coming months. The spill period ends in mid-December at which time an outlook will be issued on low reliability water shares.

The Werribee and Bacchus Marsh Irrigation Districts opened with an allocation of 80% high reliability water shares and approximately 11GL of carryover. At the start of the season water storage in Pykes Creek Reservoir was 96%, and Melton Reservoir held 77% which is likely to result in another high allocation season.

In unregulated systems, the drier outlook may result in restrictions being placed on some consumptive users. Within the central region, a stronger focus has been placed upon compliance with stock & domestic use from tributaries in the Maribyrnong catchment, which are frequently subject to bans and restrictions. Releases from the Tarago under a Bulk Entitlement Order may also be required to supplement natural flows.

Groundwater levels across the regions are stable or rising in most areas, which reflects the increased recharge and lower demand as a result of the wet conditions observed over recent years. The drier conditions forecast are unlikely to have an immediate impact on groundwater levels.

Introduction

Southern Rural Water (SRW) has responsibility for managing surface water licensing, groundwater extraction, storage dams and irrigation districts across the southern third of Victoria. We supply water for agricultural, urban, power generation and industrial purposes.

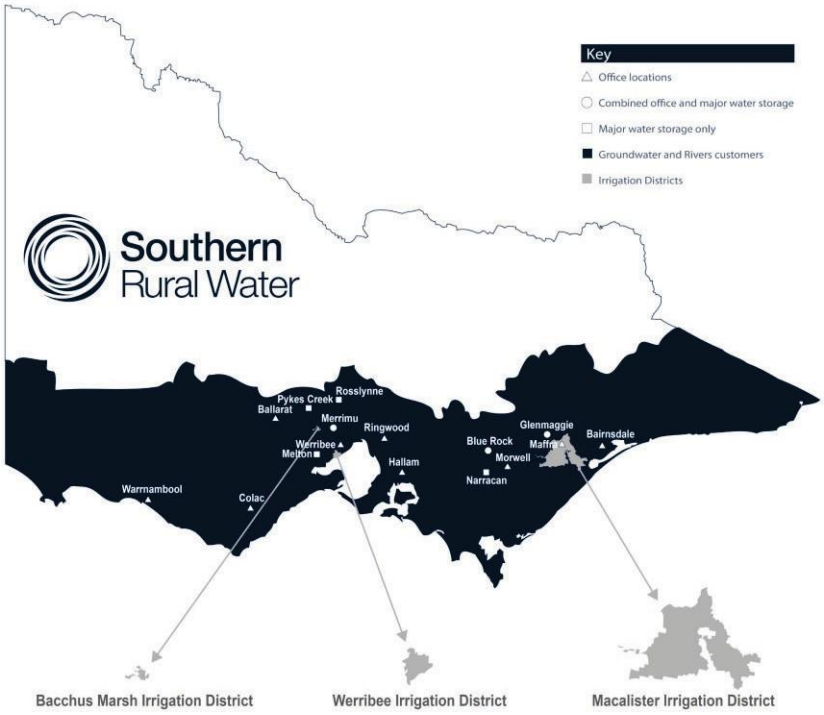


Figure 1 – Southern Rural Water service area

Across this wide geographic area SRW manages:

- seven major dams
- three irrigation districts
- licences for taking water from rivers and groundwater aquifers
- licences for operating farm dams.

As detailed in Figure 1, SRW manages the Macalister Irrigation District (MID) in central Gippsland and the Werribee (WID) and Bacchus Marsh (BMID) irrigation districts west of Melbourne. Much of the water used in the irrigation districts is for primary agricultural production, along with stock and domestic and minor industrial use. Water shares are held by individual customers within the districts and transactions are recorded in the Victorian Water Register.

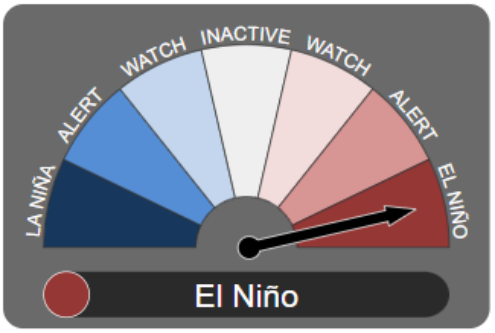
Blue Rock Lake (part of the Latrobe River system) plays a key role in providing coolingwater for Victoria's brown coal power generation.

Blue Rock Lake and Lake Glenmaggie also have environmental water entitlements that are managed by the West Gippsland Catchment Management Authority on behalf of the Victorian Environmental Water Holder. Visit SRW's website for further information: www.srw.com.au.

Climate Outlook 2023-24

Climate influences

The El Nino Southern Oscillation (ENSO) outlook has shifted to El Niño, based upon the alert issued 10 October 2023. Climate model outlooks predict that the El Niño is likely to continue until at least the end of February 2024. Sea surface temperatures firmly exhibit an El Nino state and further warming of the Pacific is likely. In addition, the positive Indian Ocean Dipole (IOD) continues to strengthen. A combination of a positive IOD and an El Nino usually results in a stronger and more widespread drying effect. As a result, the long-range forecast indicates warmer and drier than average conditions between November & January.



Rainfall and temperature ahead The Bureau of Meteorology's (BOM) seasonal rainfall outlook for the period December 2023 to February 2024 predicts drier than average conditions. It is showing a 30-50% chance of above median rainfall across the state for the period. The southwest of the state is less likely to exceed median rainfall than central and east Gippsland regions of the state.

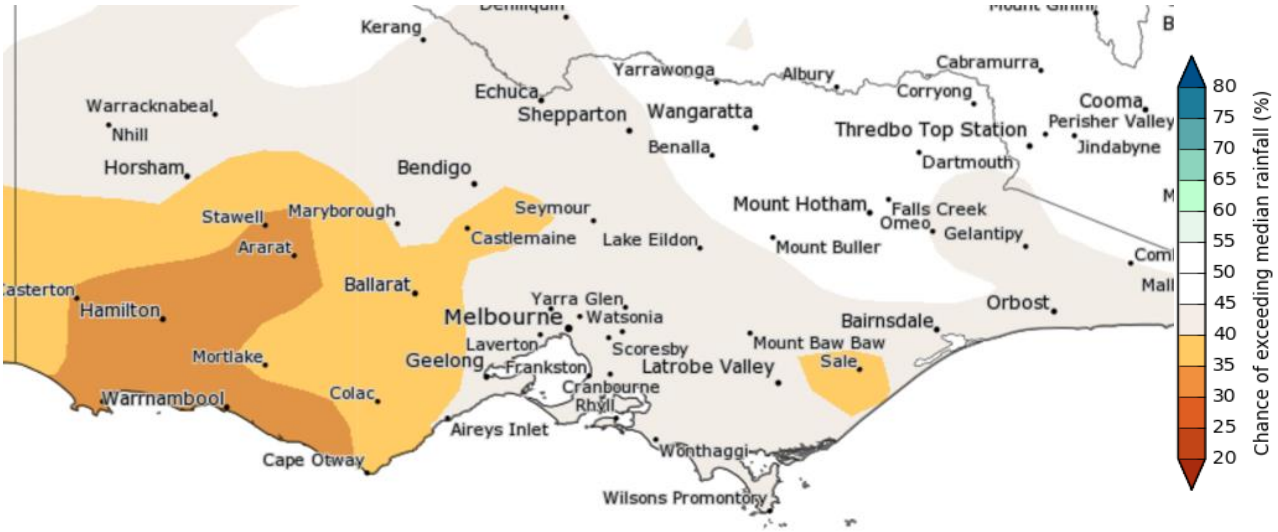


Figure 2 - Chance of exceeding the median rainfall December 2023 – February 2024 (Source: BOM)

Temperature and rainfall influence water use, especially during summer periods. At the same time, they also influence catchment soil moisture levels and inflows to SRW's unregulated waterways and storages. SRW continually monitors flow conditions and the Bureau's seasonal climate outlooks. Waterway flow and rainfall information is made publicly available on the SRW website. For the most up to date weather, temperature and rainfall data and predictions, see the BOM website www.bom.gov.au/climate/.

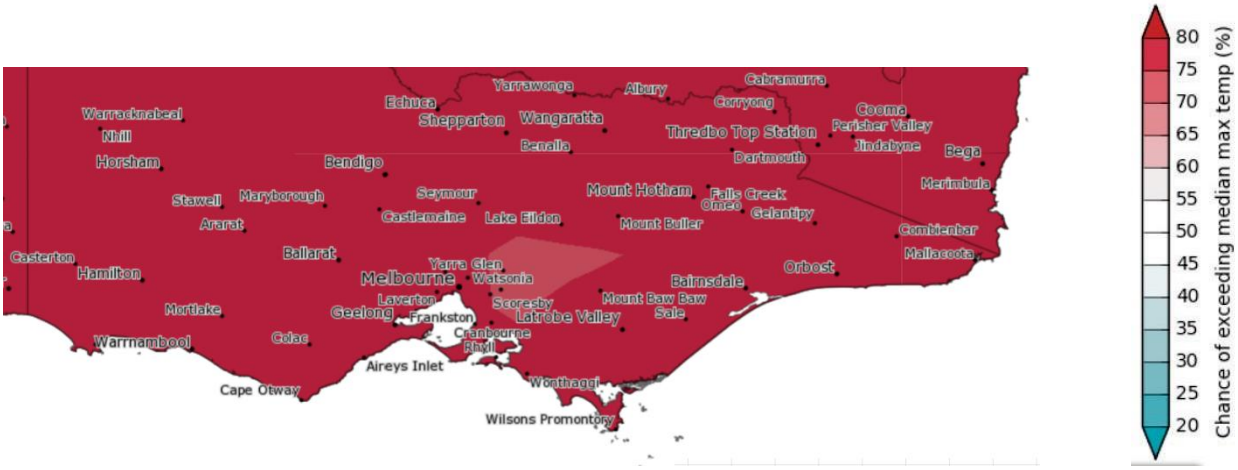


Figure 3 - Chance of exceeding the median maximum temperature December 2023 – February 2024 (Source: BOM)

The months ahead are highly likely to be hotter than average. Figure 3 indicates that across Southern Rural Water's area, the probability of exceeding median temperatures from December 2023 to February 2024 is greater than 80% in most areas. The timing of warmer weather and rainfall are critical to growing and harvesting crops.

Longer term trend

Victoria's climate has shown a heating and drying trend over recent decades, and this trend is expected to continue over the longer-term future.

Although there will still be a lot of variability in Victoria's climate and streamflow, the chance of experiencing warmer conditions and less streamflow is now higher than in past decades.

More information on the observed changes and longer-term future climate and water projections can be found at https://www.water.vic.gov.au/climate-change.

Southern Rural Water continues to improve our preparation for drought events, with business continuity plans designed to respond to short and long-term (drought) supply interruption.

Specifically, we are able to supply additional water which was purchased in 2016 from the Thomson drought reserve, as well as a small share of entitlement from Blue Rock Lake which is held by SRW for downstream licence holders.

Macalister Irrigation District

Current water resource position The Macalister Irrigation District's (MID) primary sources of water are Lake Glenmaggie and Thomson Reservoir. Lake Glenmaggie is an annual fill and spill reservoir, which means SRW is reliant on winter and spring rains to fill it to enable a 100% seasonal determination for the Thomson/Macalister Irrigation District. Thomson Reservoir holds the drought reserve which provides additional allocation in years with low rainfall.

Good inflows through early winter allowed for an opening seasonal allocation announcement of 100% of high reliability water shares on 1 July. For irrigators on the channel system, the irrigation season started on 15 August, while those taking directly from the river can operate all year round.

Recent flood events have provided an opportunity for spill allocation to be offered to customers in the MIA. Spill allocations essentially 'resets' customers available allocation to 100% High Reliability Water Shares (HRWS), thus providing an opportunity for customers to reassess their irrigation profile for the remainder of the season and maximise their productive potential.

To the 25th of September, MIA deliveries are 25,742 ML. This is almost double the 5-year average of 12,807 ML to this point in the season.

Flows continue to be consistently between 70-90% of capacity, with some areas reaching 100% capacity at short bursts. Expected warm weather and limited rainfall are likely to ensure this keeps up into the near future.

Whilst we continue reviewing the spill period regularly through to 15 December, there will be no further allocation reviews until after this date, which is the end of the spill period. At that time, we will assess a range of measures including storage levels, inflows, customer usage and Thomson Reserve volume to provide an outlook on when allocation against low reliability water shares will be issued.

Forward outlook

Because Lake Glenmaggie is a fill and spill system, opening allocations are highly dependent on rainfall over autumn and winter within the Macalister catchment area. Additionally, the Thomson drought reserve volume is used to supplement opening allocations.

The BOM declaration of El Nino suggests that this year will become dry and possibly windy, with heavy storms possible. Utilisation of water resources from storages is likely to be high into the coming months.

A risk exists operationally that, if the weather becomes dry and demand increases substantially, irrigation delays may be experienced in some areas, similar to those experienced in 22/23.

Consistent with our price submissions, SRW are considering the sale of 1,000 ML of High Reliability Water Shares within the coming year.

Werribee and Bacchus Marsh Irrigation Districts

Current water resource position

The Werribee and Bacchus Marsh Irrigation Districts primary storages are the Pykes Creek Reservoir and the Melton Reservoir. At the opening of the irrigation season, Pykes Creek Reservoir was holding 96% of capacity whilst Melton Reservoir held 77% of capacity. These are good starting storage levels, which will likely result in another high allocation season.

The opening allocation for the season was set at 80% of high reliability water shares, with customers holding almost 11 GL of carryover. Since the opening allocation, our catchments to these reservoirs have continued to receive rainfall, resulting in both Pykes Creek and Melton Reservoirs spilling. Allocation reached 100% high reliability shares, and 50% low reliability shares in August.

Water deliveries since the start of the season are more than double the 5–year average for this point in the season for both the WID and BMID.

Irrigation supply to the WID has been augmented with a supply of Class A recycled water since 2005, to assist with overcoming water shortages due to drought and to secure water for greater production in the future.

Forward outlook

Whilst the full storages indicate our customers can plan their irrigation with a high degree of confidence, demand for water is expected to be high, whilst recycled water will provide additional certainty in the WID.

Latrobe System

Current water resource position

Blue Rock Reservoir is the primary storage for the Latrobe System. Water from Blue Rock Reservoir is primarily used for electricity generation in the Latrobe Valley coal fire power plants. It also supplies Gippsland Water with water for urban supply to towns in the Latrobe Valley and secures entitlements for licensed river diverters along the Latrobe River.

As of 23 October 2023, the reservoir is 100% full.

Forward outlook

The BOM outlook suggests dry conditions over the summer months which may see the storage level decline a little.

All entitlements including both the regulated and unregulated systems will be able to be met, including supplementation of unregulated licences in the lower Latrobe River. Latrobe River irrigators may seek access to additional water if their share of Blue Rock storage or run of river flows is less than their demand. In dry conditions Latrobe licence holders are also able to access additional water from the Latrobe Reserve (drought reserve) or via trade with other licence holders.

Maribyrnong system

Current water resource position

The Rosslynne Reservoir on Jackson's Creek near Gisborne provides additional water supplies to the townships of Sunbury and Gisborne, and irrigation water to licence holders along the Maribyrnong River, with a capacity when full of 25,400 ML.

The reservoir reached 100% storage in October 2022, and spilled for the first time in 26 years. One year on, the reservoir is now at 92% full having not received much inflow over the winter.

Forward outlook

With Rosslynne storage at 92%, there is no current restriction on irrigation supply. Urban supplies are managed by the relevant urban water authority, with information provided in their outlooks.

Unregulated surface water

Overview

Unregulated surface water relates to water accessed from rivers where supply to some or all users is not managed through releases from onstream dams. Most rivers in southern Victoria are therefore unregulated. Access to water in unregulated rivers is governed through rules documented in Local Management Plans. The purpose of these plans is to provide fair and equitable access for consumptive users and the environment. These rules set out a framework for trade, restricting access and managing local water issues. Access to water is therefore linked to streamflow which relates to antecedent and forecast climate conditions such as rainfall.

Gippsland region

Conditions in Gippsland have shown high spatial variability in the preceding 12 months.

The first 9 months of 2023 have yielded rainfall totals of up to 700mm across much of west and south Gippsland. However around central and east Gippsland, lower rainfall during winter and early spring has resulted in an early start to the irrigation season. This contrasts with other areas where rainfall has been more consistent in parts of west and south Gippsland.

During the month of October excellent rainfall fell across all areas.

In eastern areas, the Avon River was periodically on stage one of the irrigation roster with the Mitchell River at times being on a winterfill ban. Due to the strong October rainfall, all onstream and off stream dams are full which is encouraging for a positive start to the season ahead for summer.

The rainfall outlook indicates a very high likelihood of achieving lower than average rain for spring and early summer. However high rainfall and flooding during October in areas of Gippsland are likely to provide mitigation against restrictions being imposed on customers during the coming irrigation season.

Restrictions may apply mid to late in the season if dry conditions are realised, however.

Western region

Rainfall across the region in late winter and spring has been similar or below average for late winter and spring in Geelong and eastern zones. Late spring rainfall has occurred in western Victoria that has prolonged flows in the major streams. (Barwon River, Leigh River, Glenelg River, Wannon River, Hopkins River and Mount Emu Creek). There were no peak overbank flows compared to last year.

On farm catchment storages have generally filled and Winter-fill licence-holders have been able to utilize their full allocations and fill off-stream storages.

Rosters and restrictions for all river basin systems are likely to be average with any increase

from Stage 1 to be made just prior to the end of 2023.

With the lower usage from groundwater in the Southwest Limestone, most licence-holders will be able to utilize their full 30% carry-over allocations for this season which will be important with the declared El Nino event currently underway. This is a tool that irrigators in this system can use to spread the unused portion of their licence into the following year. Usage was well below average with a quarter (26%) of the total licence volume in this aquifer being used in the 2022-23 season.

Central region

There has been average rainfall within the Central Region so far this year and as a result stream flows have remained stable. Forecasts predict lower than average rainfall for the period November 2023 to January 2024 as well as higher temperatures. This is likely to result in restrictions being imposed on some consumptive users. All central region catchments will be monitored closely over summer and any restrictions will be imposed in line with relevant operating rules.

Winter and spring rainfall across the Dandenong Creek catchment has been average and is somewhat consistent with conditions observed last year. Stream flows in the Dandenong Creek systems have remained similar to last year. Steady flows have been observed in Mile Creek, Monbulk Creek and Eumemmerring Creek systems. Based upon the current outlook, restrictions may be placed on Monbulk Creek this summer with the remaining catchments of Dandenong Creek unlikely to be subject to restrictions, however this will be informed by ongoing monitoring.

The Werribee and Maribyrnong catchments continued to have average rainfall for the first ten months of 2023. Within the Maribyrnong catchment, Turitable Creek and Willimigongon Creek are often subject to a total ban or restrictions in the summer months though neither system has had bans imposed in the past two years. With the predicted outlook for lower rainfall, these systems may see bans or restrictions this year, however these systems are sensitive to changes in rainfall and will be monitored closely and managed accordingly. Southern Rural Water has been granted DEECA funding for a Project Officer to help manage creek flows in this area. The project will focus on domestic and stock use and ensuring compliance with this type of extraction in line with the Water Act. This should be in place prior to summer and the dryer predicted conditions.

Rainfall across the Tarago/Bunyip catchment remained average during winter 2023. Stream flows in the semi regulated Tarago/Bunyip were completely supplied by natural flows last season rather than releases from Tarago Reservoir. This occurred following significant rainfall last year and continuing wet catchment conditions. With the lower rainfall forecast expected for this summer and expected increased demand, it is likely that bulk entitlement from the Melbourne Water Tarago Reservoir will need to be released this summer. Stream flows will be monitored closely during summer and release procedures followed as required. The Lang Lang River system may see restrictions put in place based on predicted forecasts.

There are no gauging stations in operation in the Mornington Peninsula catchments. Whilst management plans are in place for Main Creek, limited data availability means it is difficult to impose restrictions. These systems will be monitored through field checks but if conditions continue to follow predicted trends improved monitoring may be recommended.

Groundwater

No groundwater rosters/restrictions are anticipated. A 100% allocation was announced on 1 July 2023 for the Deutgam Water Supply Protection Area which is the second consecutive year where the groundwater allocation in Deutgam has been unrestricted.

Generally, groundwater levels across the regions are stable or rising in most areas, which reflects the wet conditions observed over recent years.

Recent groundwater level trends for each groundwater management unit are summarised in Table 1.

Table 1 - Groundwater level trends

Gippsland region		
Groundwater management unit	**Recent Trend**	**Notes**
Corinella	Rising	
Denison		Insufficient data available
Giffard	Stable	
Leongatha	Rising	
Moe	Declining	
Orbost	Rising	
Rosedale	Declining	Depressurised for Latrobe Valley mines
Sale	Rising	
Stratford	Rising	Depressurised for Latrobe Valley mines & offshore oil and gas
Tarwin	Stable	
Wa De Lock	Rising	
Wy Yung	Rising	
Yarram	Stable	Depressurised for Latrobe Valley mines & offshore oil and gas

South-west region		
Groundwater management unit	**Recent Trend**	**Notes**
Bungaree	Stable	
Colongulac	Stable	
Condah	Rising	

Gellibrand	Stable	
Gerangamete	Rising	
Glenelg	Declining	
Glenormiston		No data available
Jan Juc	Declining	
Newlingrook	Rising	
Paaratte	Stable	
Portland	Stable	
South-west limestone	Stable	
Warrion	Rising	

Port Phillip & Western Port region		
Groundwater management unit	**Recent Trend**	**Notes**
Cut Paw Paw		No data available
Deutgam	Stable	100% allocation
Frankston	Stable	
Koo Wee Rup	Rising	
Lancefield	Declining	
Merrimu	Rising	
Moorabbin	Rising	
Nepean	Stable	
Wandin Yallock	Rising	

Source:https://www.water.vic.gov.au/__data/assets/excel_doc/0029/673913/groundwater-trends-2018-2023.xlsx

Further information

SRW provides a variety of information on allocations, streamflows, rosters andrestrictions and delivery/availability issues on our website www.srw.com.au

Water trading information is also available through SRW and on our WaterMatch site www.watermatch.com.au

For all climate and weather predictions and observations, customers should go to the Bureau of Meteorology site at www.bom.gov.au.