



Gippsland
Water

Annual Water Outlook

December 2022

Table of contents

Executive summary	1
Water outlook.....	1
System Summary	2
Overview.....	6
Summary of water system characteristics	6
2022 Rainfall and Streamflows	9
Recent consumption trends	13
Other risks to water supply	18
Current water resource position	19
Climate outlook.....	21
Bureau of Meteorology (the Bureau) rainfall outlook	21
Bureau temperature outlook	22
Bureau streamflow outlooks	23
Bureau ENSO outlook	24
Summary.....	24
Water resources outlook.....	25
Public green space watering.....	28
Actions	29

Executive summary

Water outlook

Average to above average rainfall has been recorded across almost all of our region during 2022. In our third consecutive year of a La Niña, following two wet years of 2020 and 2021, has led to above average soil dampness in most of our water catchments with ongoing high and sustained streamflows. All of our water supply systems are in a strong position for the coming summer, and customers can be confident that their water supplies will remain secure over the summer season and into 2023.

Our current catchment conditions and the seasonal outlook also suggest that water restrictions are unlikely for our smaller communities without large water storages, where sudden and unforeseen changes in conditions have the potential to lead to shortages. Previous performance and drought modelling of these water systems provides further confidence that full demand can be met this summer.

On 13 September 2022 the Bureau of Meteorology (the Bureau) announced the commencement of this season's La Niña, which for our region is the wet phase of the Pacific Ocean's El Niño Southern Oscillation. A negative Indian Ocean Dipole event is also currently underway. The Bureau is also forecasting a generally positive Southern Annular Mode to persist through spring. These combined conditions increase the likelihood of above average rainfall for our region and underpins the Bureau's outlook for a higher probability of a wetter than average summer. With our catchments already quite damp, and storages in a great position, the wetter outlook will help ensure that we can meet demand without water restrictions this summer.

Latrobe Valley resources are at 100% with both Moondarra Reservoir and our capacity share of Blue Rock Reservoir being full. West Gippsland communities and industries have their full drought reserve allocation available as well as supply from the interconnecting pipeline between the Moe and Tarago systems.


Sale and surrounding areas retain their full access to the deep and reliable Boisdale Aquifer. Supplies for several smaller communities are in a good position due to augmentation programs that have been implemented over the last decade such as the Seaspray raw water basin and the recent Coongulla interconnection to Heyfield.

While water restrictions are deemed unlikely this summer, permanent water saving rules apply as always. Information on these rules, and advice on how to save water, can be found at www.gippswater.com.au/savewater.


System Summary

Water system	Towns serviced	Water source	Water restriction outlook period	Water restriction likelihood and comments
Briagolong	Briagolong.	Wa De Lock Aquifer.	While a groundwater system, the aquifer is shallow and unconfined. It is also strongly connected to the Freestone Creek. The outlook is therefore limited to the coming summer only.	For much of this calendar year, groundwater levels have stabilised at a similar level to which they recovered in 2020, at the end of the east Gippsland drought. The current level provides confidence that water restrictions are unlikely this summer. It should be noted that matters outside our control such as management of the resource as well as use by others could impact this outlook.
Rawson	Erica, Rawson.	Trigger Creek.	A long term outlook is not possible because this is a run-of-river system with minimal storage. The outlook is therefore limited to the coming summer only.	Based on historic performance and current streamflows, the chance of water restrictions this summer is deemed unlikely.

Water system	Towns serviced	Water source	Water restriction outlook period	Water restriction likelihood and comments
Latrobe	Moe, Trafalgar, Yarragon, Darnum (north), Yallourn Nth, Morwell, Churchill, Yinnar, Boolarra, Traralgon South, Jeeralang Junction, Traralgon, Tyers, Glengarry, Rosedale, Toongabbie, Cowwarr, Thorpdale, Willow Grove.	Moondarra Reservoir, Blue Rock Reservoir, Narracan Creek.	12 months. A storage forecast chart for the next 12 months under a range of climate and demand scenarios is presented in the water resources outlook section of this report.	Current storage levels in the Latrobe system provide excellent supply security for the coming 12 months. The chance of water restrictions during the next year is deemed unlikely.
Mirboo North	Mirboo North	Little Morwell River (north arm)	A long term outlook is not possible because this is a run-of-river system with minimal storage. The outlook is therefore limited to the coming summer only.	Based on historic performance and current streamflows, the chance of water restrictions this summer is deemed unlikely. While a reliable stream, supply could become restricted by a catchment water quality incident such as heavy soil runoff into the stream due to very heavy rain combined with upstream agricultural land use.
Sale	Sale	Boisdale Aquifer	12 months.	The chance of water restrictions in the coming year is deemed unlikely. This resource is a deep, confined aquifer. While subject to long term decline, short term trends in aquifer levels are more strongly related to usage than climate, and are reasonably predictable. There is high confidence of supply meeting demand for the year ahead.



Water system	Towns serviced	Water source	Water restriction outlook period	Water restriction likelihood and comments
Seaspray	Seaspray	Merriman Creek	While the raw water basin holds up to 30 ML, enough for about nine months' supply, flow in Merriman Creek sometimes completely stops during summer. Restriction rules are designed to maintain a reserve in the raw water basin. Therefore the restriction outlook is limited to three months only.	With the raw water basin currently at 87% and strong flows in the Merriman Creek, the chance of water restrictions for the coming summer is deemed to be unlikely. Algae outbreaks in the raw water basin could give rise to water restrictions, although measures have been implemented to address this so the risk is deemed unlikely.
Tarago	Warragul, Drouin, Rokeby, Buln Buln, Nilma, Darnum (south), Neerim South, Noojee.	Tarago River	With the exception of a reserve for Neerim South, we do not have an entitlement to water stored in Tarago Reservoir. Supply to Warragul and Drouin is limited to run-of-river flows in the Tarago River. To address this risk, we have arranged a drought reserve in Tarago Reservoir with Melbourne's water retailers. This reserve is limited, therefore the restriction outlook is limited to three months only.	Based on historic performance and good holdings in the drought reserve (supply agreement with Melbourne water retailers), the chance of water restrictions this summer is deemed unlikely. The Moe-Warragul Interconnection will help to reduce reliance on the Melbourne system.



Water system	Towns serviced	Water source	Water restriction outlook period	Water restriction likelihood and comments
Thomson Macalister	Heyfield, Maffra, Stratford, Boisdale, Coongulla, Glenmaggie.	Thomson River, Macalister River, Lake Glenmaggie .	The outlook period is to 30 June 2023 because we have received our full allocation for this system for the 2022-23 financial year.	With a full allocation, the chance of water restrictions for the remainder of the current financial year is deemed unlikely. Historically the supply to Coongulla was vulnerable in dry years to late summer and autumn low water levels in Lake Glenmaggie causing problems with pumping from the lake. This year we completed the interconnection of Coongulla to Heyfield, removing that vulnerability.

Disclaimer: While we have considered relevant climate forecasts and taken care in presenting the information in this Annual Water Outlook, we cannot and do not guarantee any forecast outcome or event. There are many factors that could deliver a different outcome and many are beyond our control. Examples include fires and floods that lead to dirty water sources that are untreatable or that can only be treated at reduced rates, requiring water restrictions.

It is always possible that a drought could occur that is worse than any on the historic record. For instance, the 2017-19 east Gippsland drought that affected the north east of our region including the Briagolong supply system three years ago, was 13% drier at the Giffard rain gauge than any previous lowest rainfall three year period in over a century. We undertook modelling in the preparation of our 2022 Urban Water Strategy to determine the resilience of our systems to extreme drought, using a method that creates a test drought event worse than experienced. The results showed that none of our systems failed to meet demand during this test drought under stage four restrictions, meaning all systems were shown to be sufficiently robust to meet critical human needs. Furthermore, modelling we undertook during the development of the 2022 Urban Water Strategy showed all of our systems to be highly resilient to a repeat of the Millennium Drought (1997-2009), with only minimal water restrictions necessary to balance supply and demand.

Overview

We published our 2022 Urban Water Strategy (UWS) in September 2022 following the public release of the Central and Gippsland Region Sustainable Water Strategy. The UWS supersedes earlier Urban and Water Supply Demand Strategies and is our principal water resources planning tool. The UWS undergoes a major review every five years.

In preparing the UWS, we undertook a thorough review of all of our water resource systems, including a long term 50 year supply–demand outlook, as well as an assessment of short term drought vulnerability risks. Where we identified that a system may be at risk of supply falling short of demand, we estimated the extent and possible timing of the shortfall, leading to an action plan to maintain an adequate supply–demand level of service. The UWS is prepared at a point in time, using the best available knowledge at that time, acknowledging that new, better information will be forthcoming in the future and that we will need to be adaptable in our planning.

Our Annual Water Outlook fulfils two primary purposes, one of which is to report on changes in circumstances that have led to the need to adapt any actions set out in the UWS. The other is to provide an outlook of the water supply situation for the year ahead, with a focus on the forthcoming summer and the likelihood of water restrictions being necessary.

Summary of water system characteristics

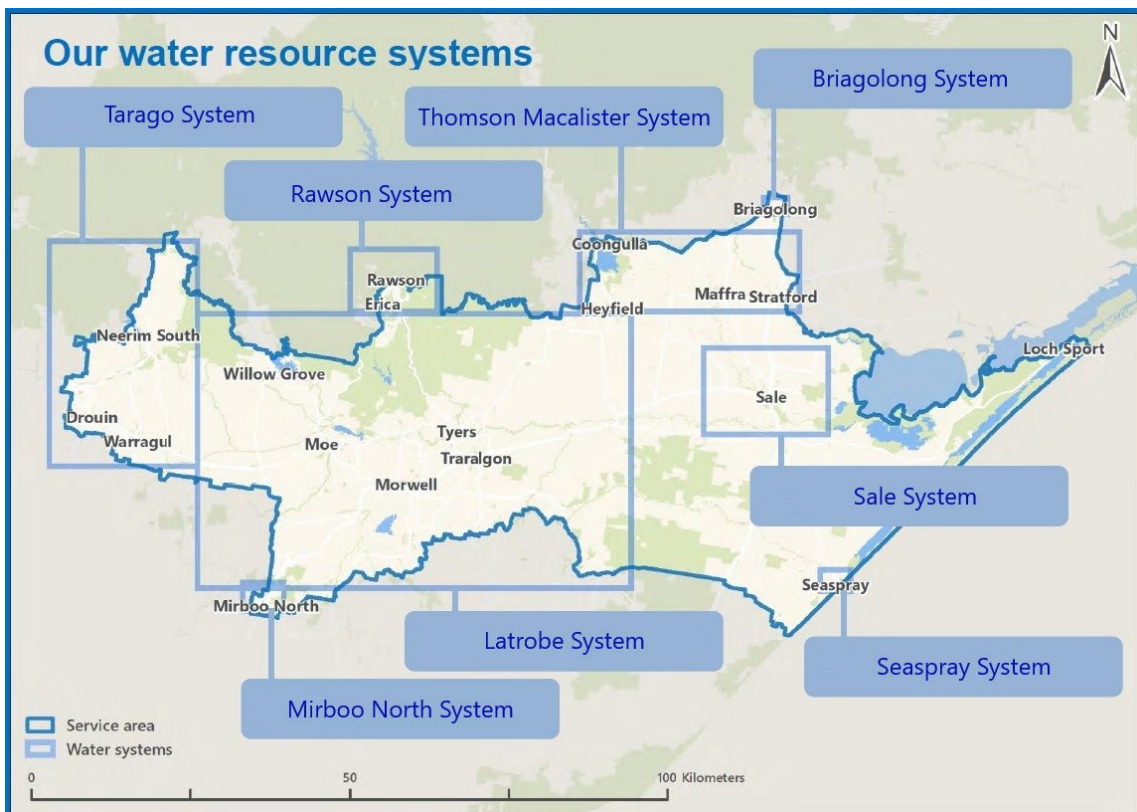
The UWS contains comprehensive descriptions of each of our systems as a public record. This summary will therefore focus on aspects of each water system most relevant to preparing an outlook for the summer ahead, and beyond, where that is possible.

Water System	Brief overview of source and relevant outlook period
Briagolong	Wa De Lock Aquifer. While a groundwater system, the aquifer is shallow and unconfined. It is also strongly connected to the Freestone Creek. This source is also used for irrigation by others. While the source has a history of reliability, the short term volatility in draw down and recharge, and the potential uncertainty in use by others, means the outlook is limited to the coming summer only.
Rawson	Trigger Creek. While a historically reliable source, a long term outlook is not possible because this is a run-of-river system with minimal storage. The outlook is therefore limited to the coming summer only.

Water System	Brief overview of source and relevant outlook period
Latrobe	Moondarra Reservoir, Blue Rock Reservoir and Narracan Creek. The large storage volume, reliable minimum streamflows, and typically predictable demand from a major industry dominated customer base, means this system lends itself to a 12 month outlook. A storage forecast chart for the next 12 months under a range of climate scenarios is presented in the water resources outlook section of this report.
Mirboo North	Little Morwell River (north arm). While a historically reliable source, a long term outlook is not possible because this is a run-of-river system with minimal storage. The outlook is therefore limited to the coming summer only.
Sale	Boisdale Aquifer. While in a state of long term decline, this aquifer is relatively deep and is confined. The aquifer behaves fairly predictably with annual drawdown from urban and irrigation use, followed by a recharge that returns the aquifer to a level usually (with the exception of particularly wet years) slightly below the previous year's peak level. For short term outlook purposes, this resource allows a 12 month outlook with good confidence.
Seaspray	Merriman Creek. While the raw water basin holds up to 30 ML, enough for about nine months' supply, flow in Merriman Creek sometimes completely stops during summer. In addition to this, flows can stay quite low during autumn with higher flows due to significant rain events sometimes being unsuitable for diversion due to poor water quality. The winter fill period from July to October inclusive is then subject to a particularly high minimum passing flow before diversions can be made. Because of these constraints, water stored in the basin may be needed well beyond a summer. Restriction rules are therefore designed to be conservative and maintain a reserve in the raw water basin so the restriction outlook is limited to three months only.
Tarago	Tarago River. With the exception of a reserve for Neerim South, we do not have an entitlement to water stored in Tarago Reservoir. Supply to Warragul and Drouin is limited to run-of-river flows in Tarago River. To address this risk, we have arranged a drought reserve in Tarago Reservoir with Melbourne's water retailers who hold the bulk of the entitlement to storage in the reservoir. This reserve is critical to supply reliability and is used to a small degree in almost all years to manage summer peak demand. This reserve is limited to 400 ML/year (about 12% of total annual demand), therefore the water restriction outlook is for three months only.

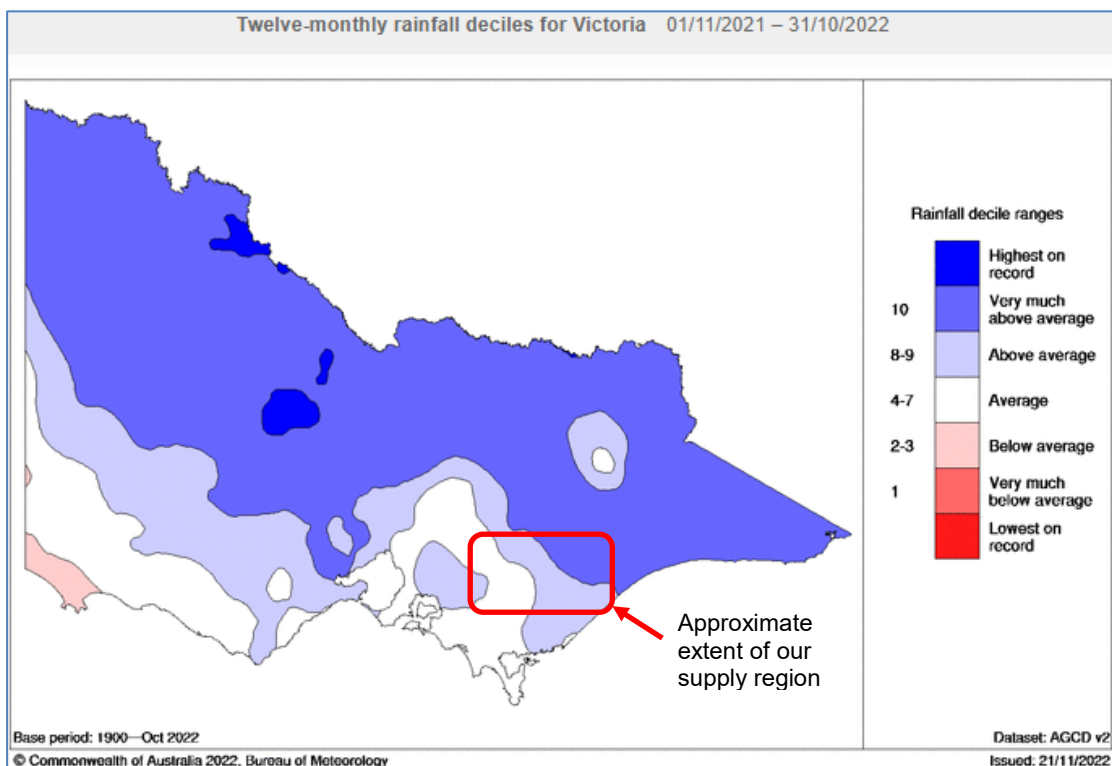
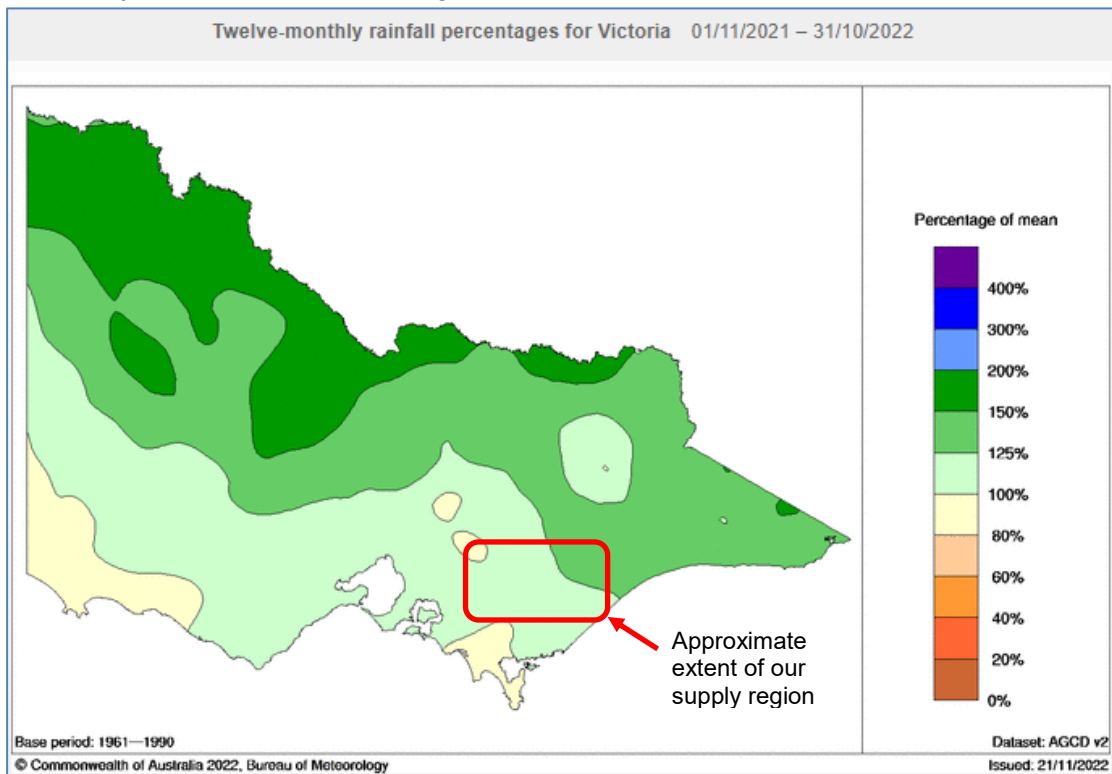
Water System	Brief overview of source and relevant outlook period
Thomson Macalister	Thomson River, Macalister River, Lake Glenmaggie. The outlook period is to 30 June 2023, because we have received our full allocation for this system for the 2022-23 financial year. The outlook beyond that will depend on the opening allocation and subsequent allocation progression during the 2023-24 year.

The map below shows which towns are supplied by each of our 8 water resource systems.

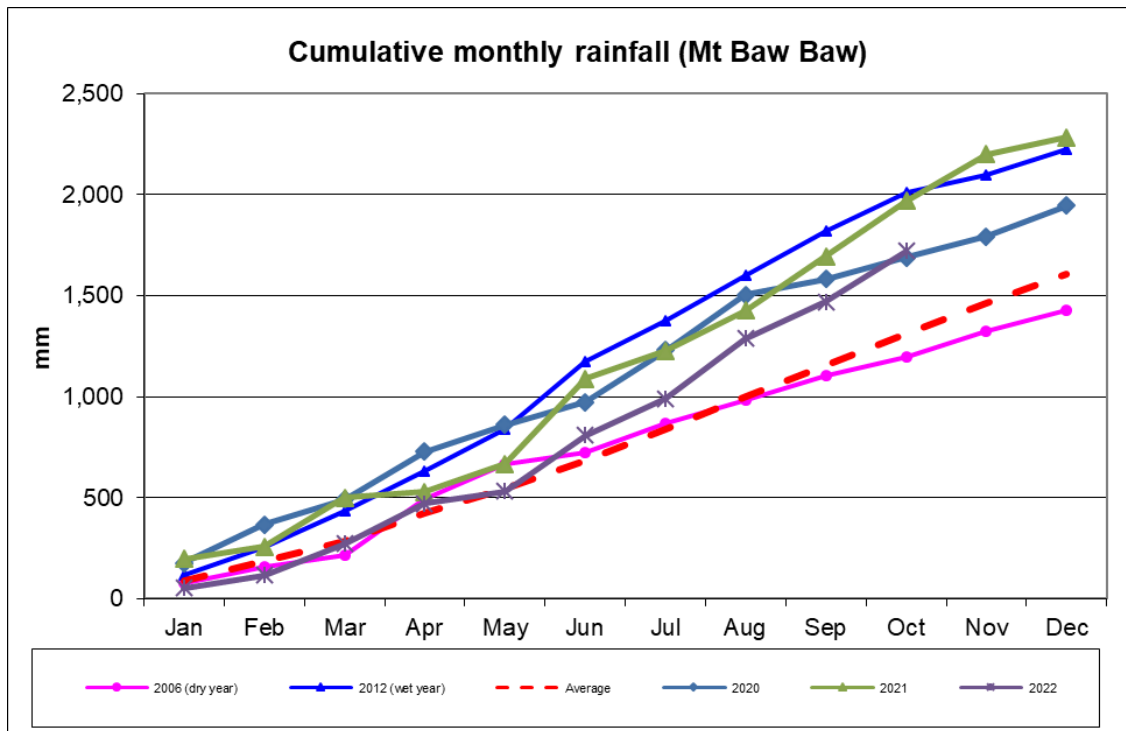


2022 Rainfall and Streamflows

Rainfall in our region in the 12 month period up to the end of October 2022 has been mostly average in our west to above average in our east, with the exception of a slight deficiency around the upper Tarago and Latrobe catchments in our north west.

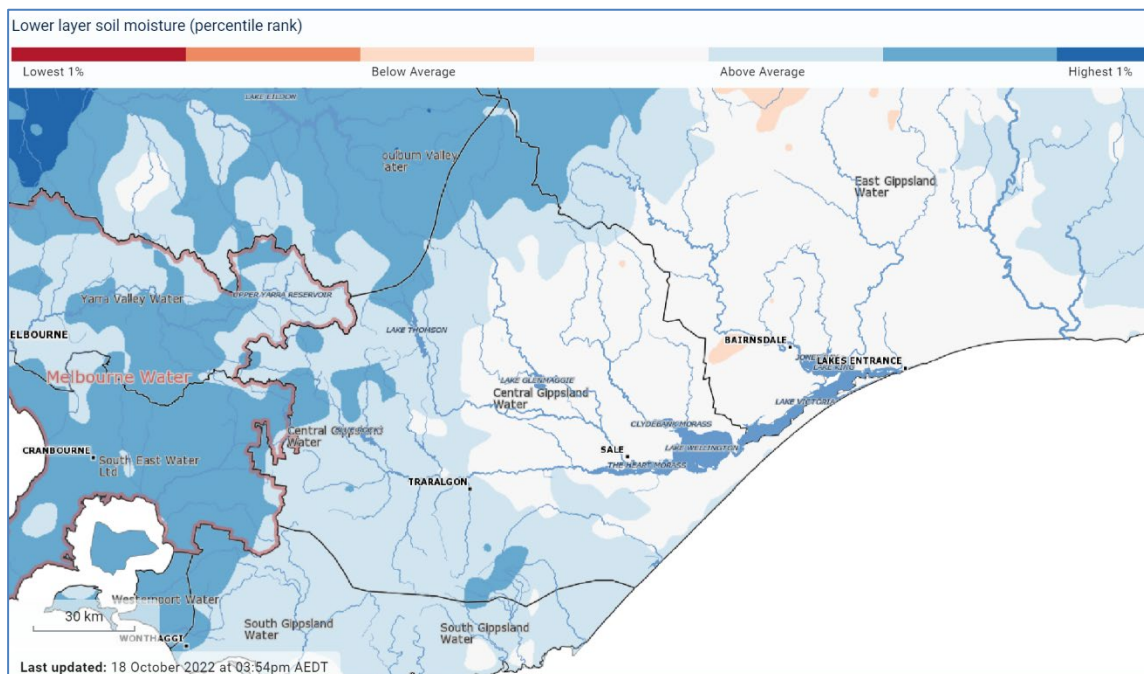


The chart below shows that despite a slow start last summer, rainfall in our main catchment, the Baw Baw plateau, has been above average and similar by this time of year to 2020, a markedly wet year. August was a particularly high rainfall month.



The rainfall over the last three years has led to catchments across our region being generally damper than average, in some cases much damper. The chart below shows lower (deeper) soil moisture levels (at 10 cm to 1 m depth), relative to average, around mid-October. All of our catchments currently have average to well above average lower layer soil moisture levels.

Above average soil moisture means less rain water is absorbed by the soil providing more runoff and streamflow. The associated higher water table also provides a baseflow return to streams in some catchments. This provides confidence that rainfall over the coming summer will have a higher conversion to streamflow.

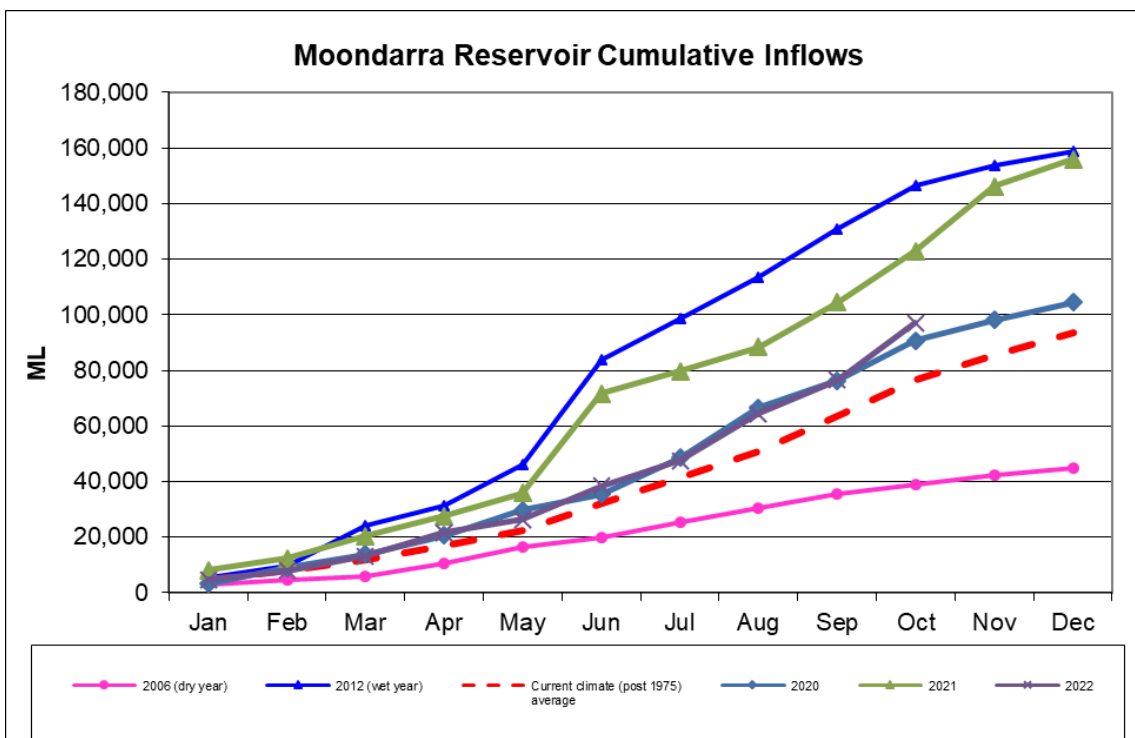


Source: Bureau of Meteorology Australian Water Outlook <https://awo.bom.gov.au/>

The chart below shows that 2022 has produced above average inflows to Moondarra Reservoir in every month, particularly August and October. While total rainfall for the year up to the end of September had been trailing the last two years, inflows were similar to 2020, and with the exception of the extraordinary rainfall event of June 2021, similar to last year too.

This is likely to be the result of both the damper catchment conditions that have resulted from three years of high rainfall, as well as the pattern of rainfall, with good rainfall this year in the cooler months. Rainfall in the 'cool season' when catchments are colder and damper, and trees don't take as much water, contributes to better streamflows.

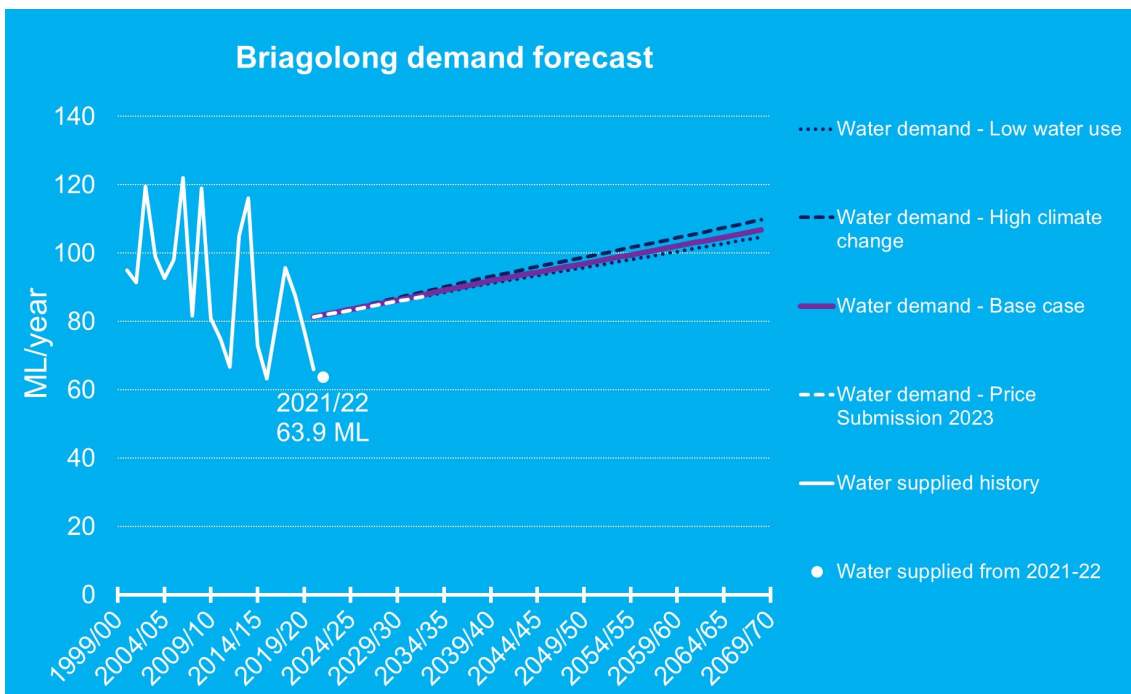
2022 has been an excellent inflow year for Moondarra Reservoir. With increased demand from the Hazelwood mine fire protection system, the storage drew down to about 83% in autumn, but with river inflows and transfers of water from Blue Rock Reservoir, refilled by June and has remained full since.



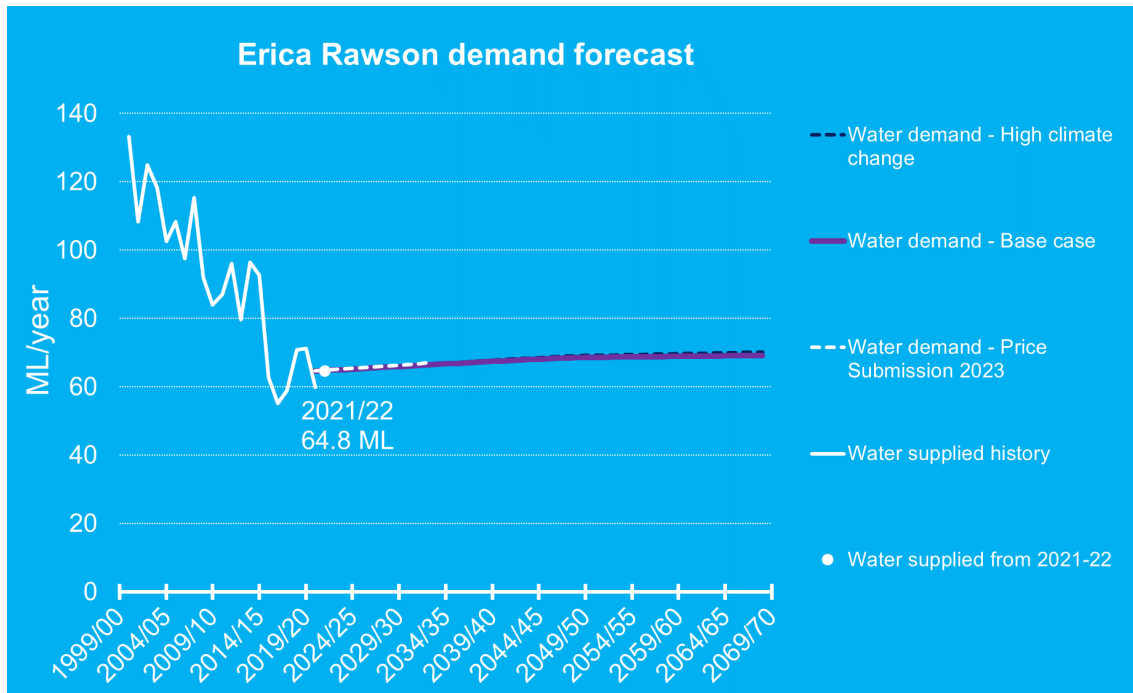
Recent consumption trends

The following charts show the 2022 UWS demand forecasts with the actual raw water consumption from 2021-22 onwards overlaid as white points. We compare this each year to ensure action can be taken to manage any evolving trends that differ from those upon which the UWS action plan was based. Demand in 2021-22 was lower than or close to the forecast for most systems, most likely a result of the cooler and wetter conditions, especially over summer.

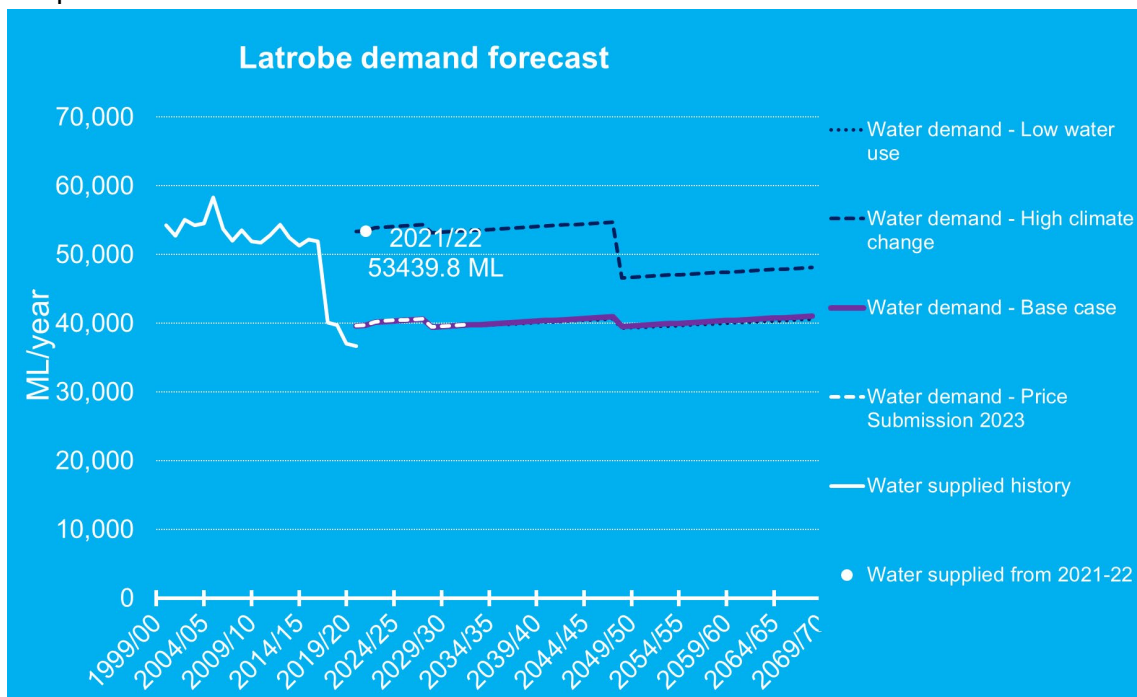
Briagolong: Demand has been significantly lower than forecast with above average rainfall and cooler conditions likely to have reduced outdoor water use.



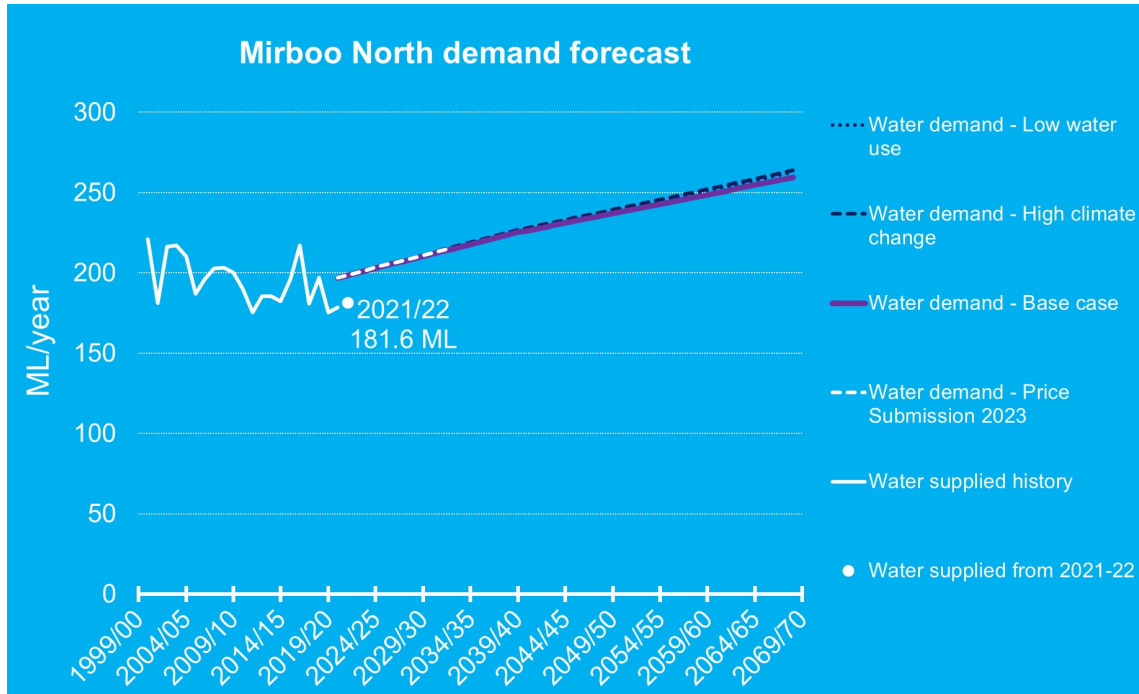
Erica - Rawson: Demand was as forecast.



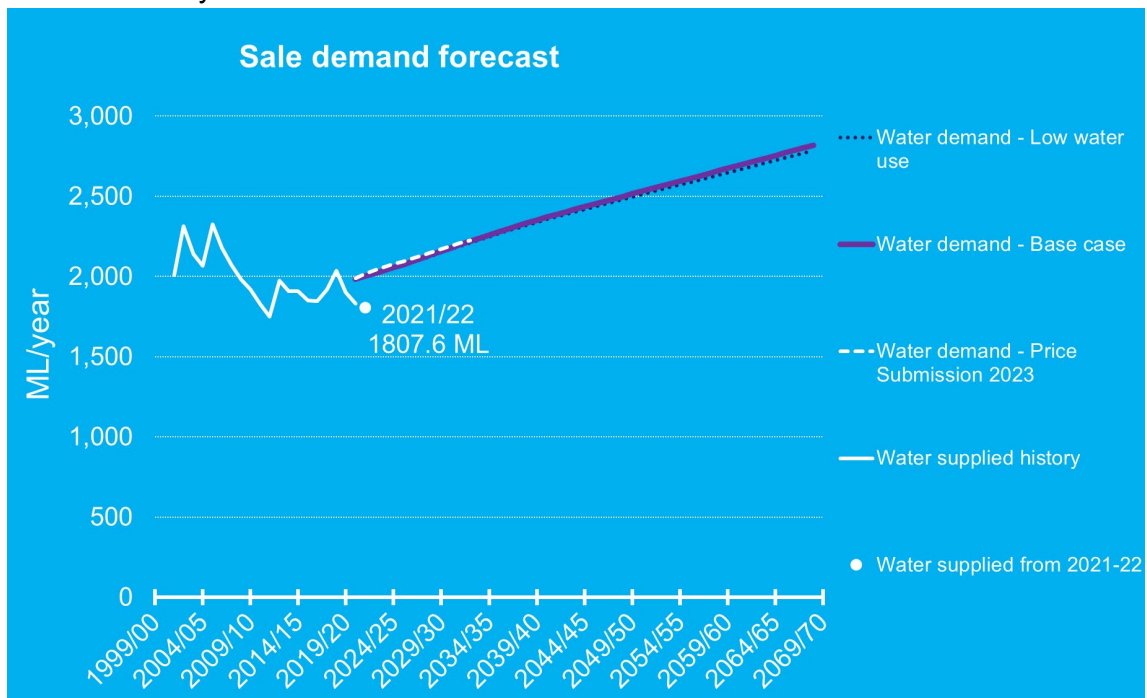
Latrobe: Demand has increased considerably compared with the previous 4 years since the closure of Hazelwood power station. This is because supply recommenced to the Hazelwood site in November 2021 to provide water supply to meet the mine operator's obligations to protect the mine from the risk of fire. Note that this supply is not part of the base demand forecast.



Mirboo North: Demand was lower than forecast with good rainfall and cooler conditions likely to have reduced outdoor water use.



Sale: Demand was lower than forecast with above average rainfall and cooler conditions likely to have reduced outdoor water use.



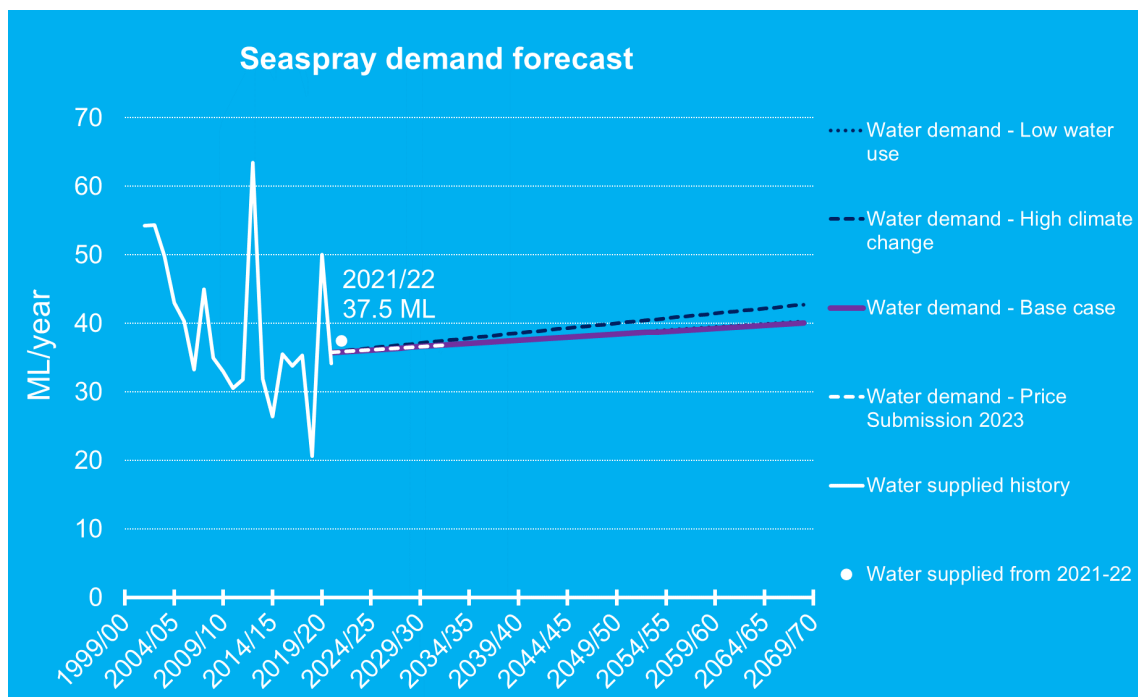
Seaspray: Demand was very close to the forecast.

Demand volatility over the past few years, as shown in the chart below, represents significant variations in the amount of water drawn from Merriman Creek from year to year. Usage of potable water within the town is much steadier.

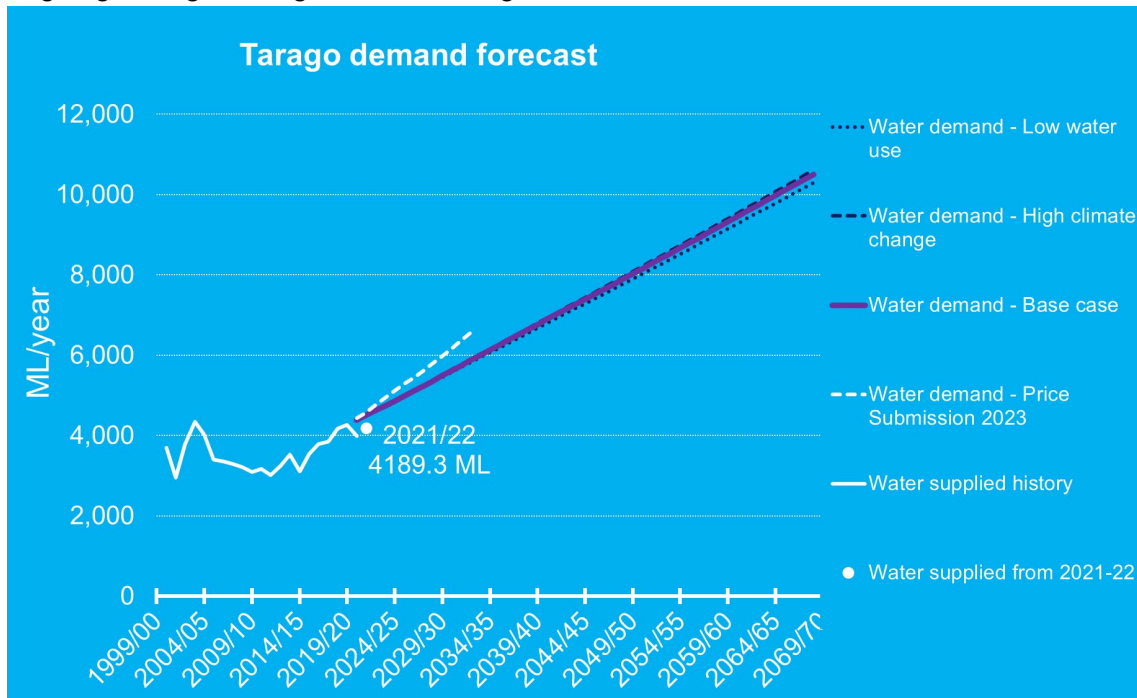
Seaspray has a 30 ML raw water basin between the Merriman Creek weir and the water treatment plant. This is a critical part of the system and helps maintain supply reliability during times of no streamflow or when the terms of our water entitlement prevent us from accessing streamflow.

A year affected by drought, 2018-19, saw extended periods when we could not divert water from the creek and we therefore drew down the basin. During 2019-20 when adequate streamflow returned, we were able to refill the basin.

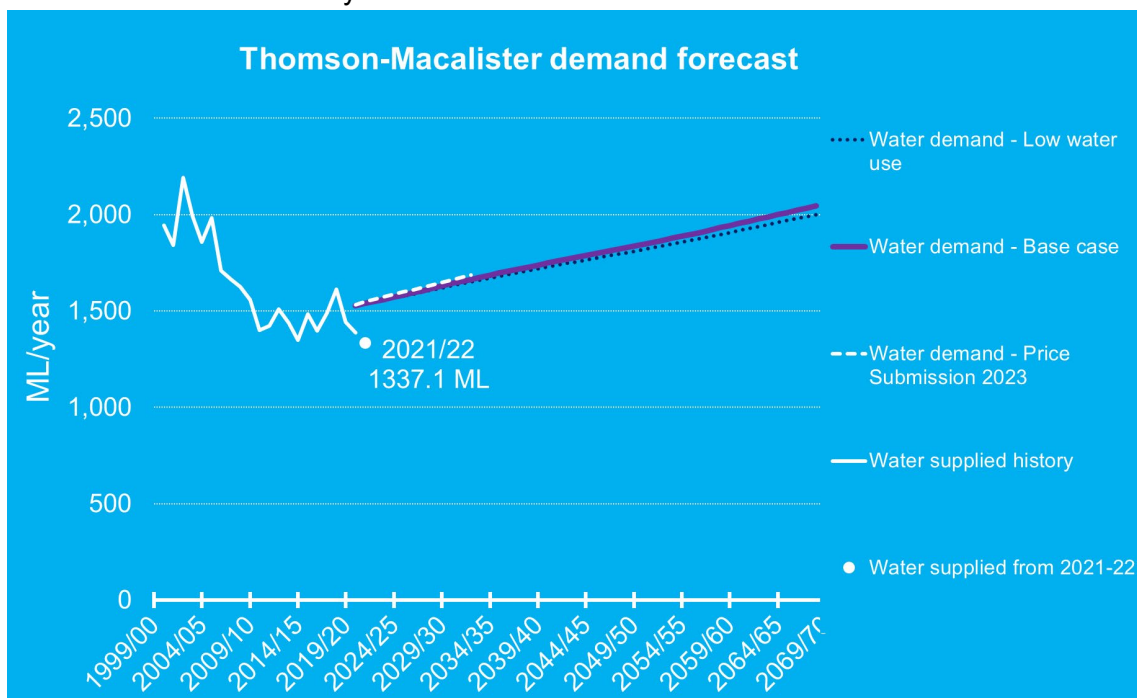
Earlier spikes from about a decade ago relate to construction water and initial basin fill for both the Seaspray sewerage treatment plant and raw water basin.



Tarago: Cooler summer conditions resulting in less outdoor water use likely led to demand being slightly below forecast. Despite this, demand in 2021-22 can be seen to be continuing a trend of increasing water use since about 2014 which is the outcome of ongoing strong urban growth in Warragul and Drouin.



Thomson Macalister: Demand was lower than forecast with above average rainfall and cooler conditions likely to have reduced outdoor water use.






Other risks to water supply

In addition to supply shortages and higher than expected demand, a range of other factors can impact upon our ability to meet the target supply–demand level of service. Water quality incidents such as the floods of 2007 that followed the 2006-07 Summer Great Divide Fires, which brought large amounts of suspended solids (soil) into rivers, can lead to the inability to treat water to a potable standard, or at least a reduction in the rate of treatment and the ability to meet demand. Also, Blue Green Algae outbreaks in storages can impact upon water treatment and supply reliability. Therefore even our supply systems that are secure from a water quantity perspective are not guaranteed to be immune from restrictions.

Current water resource position

Water system	Towns supplied	No. of connections (June 2022)		Major customers	Water source	Alternative water source	Current supply position	Current consumption comments
		Residential	Non-residential					
Briagolong	Briagolong.	322	22	None	Wa De Lock Aquifer.	Possible deeper groundwater resource being investigated.	Aquifer level is in an excellent position for October and well above restriction levels.	Lower than expected due to prevailing weather.
Rawson	Erica, Rawson.	302	44	None	Trigger Creek.	None	Stream flows adequate.	As expected.
Latrobe	Moe, Trafalgar, Yarragon, Darnum (north) Yallourn Nth, Morwell, Churchill, Yinnar, Boolarra, Traralgon South, Jeeralang Junction, Traralgon, Tyers, Glengarry, Rosedale, Toongabbie, Cowwarr, Thorpdale, Willow Grove.	38,354	3,335	AGL Loy Yang A, Alinta Loy Yang B, Australian Char, Bega, Energy Aust. Yallourn W, Engie Hazelwood mine, Fonterra, IXOM, Jelfor Timber, Latrobe Regional Hospital, Omnia, Opal Aust. Paper.	Moondarra Reservoir, Blue Rock Reservoir, Narracan Creek.	Blue Rock Drought Reserve	Storages at 100%.	From November 2021 demand has increased significantly to supply the Hazelwood mine fire protection system.



Water system	Towns supplied	No. of connections (June 2022)		Major customers	Water source	Alternative water source	Current supply position	Current consumption comments
		Residential	Non-residential					
Mirboo North	Mirboo North	751	84	None	Little Morwell River (north arm)	None	Stream flows adequate.	Lower than expected due to prevailing weather.
Sale	Sale	7,391	870	Sale Hospital, RAAF Base, Livestock Exchange, Fulham Correctional Centre.	Boisdale Aquifer	None	Secure aquifer.	Lower than expected due to prevailing weather.
Seaspray	Seaspray	349	10	None	Merriman Creek	Water carting	Raw water basin at 87%.	As expected.
Tarago	Warragul, Drouin, Rokeby, Buln Buln, Nilma, Darnum (south), Neerim South, Noojee.	16,514	1,305	Park Avenue Laundry, Pureharvest, Warragul Linen, Warragul Sale Yards, Warragul Hospital.	Tarago River	Trade in Melbourne system. Moe-Warragul Interconnect.	Stream flows adequate. Drought reserve at 100%.	Strong demand growth continues in this system despite milder weather due to urban growth.
Thomson Macalister	Heyfield, Maffra, Stratford, Boisdale, Coongulla, Glenmaggie.	4,729	412	Saputo Milk Factory.	Thomson River, Macalister River, Lake Glenmaggie	Trade in Macalister Irrigation District.	2022-23 allocation 100%.	Lower than expected due to prevailing weather.

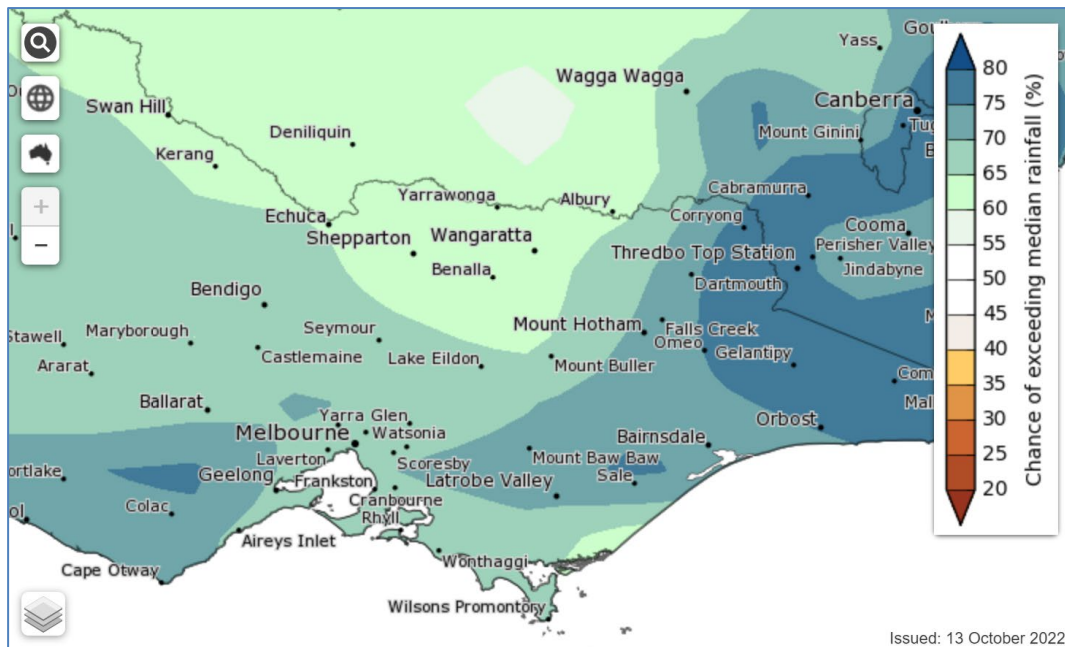
Climate outlook

Bureau of Meteorology (the Bureau) rainfall outlook

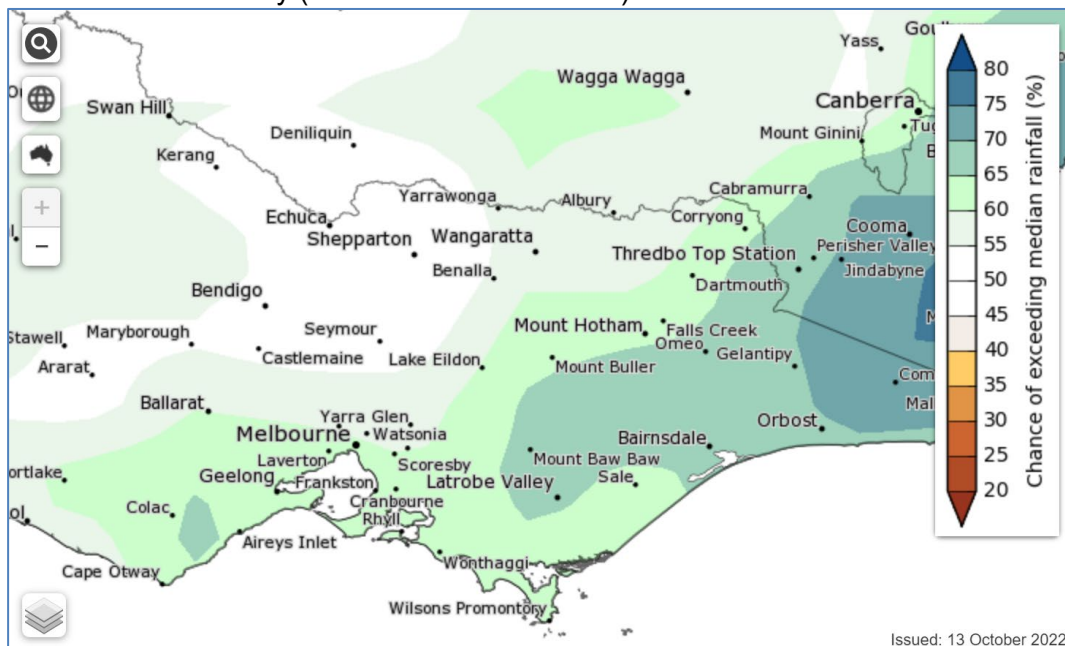
The outlook forecasts a 65-75% likelihood of rainfall for the next three months being above average for our region, with an even higher probability just north of Sale. Looking further into summer, the outlook shows the likelihood of wetter conditions weakening.

Chance of above median rainfall

November – January (issued 13 October 2022)



December – February (issued 13 October 2022)

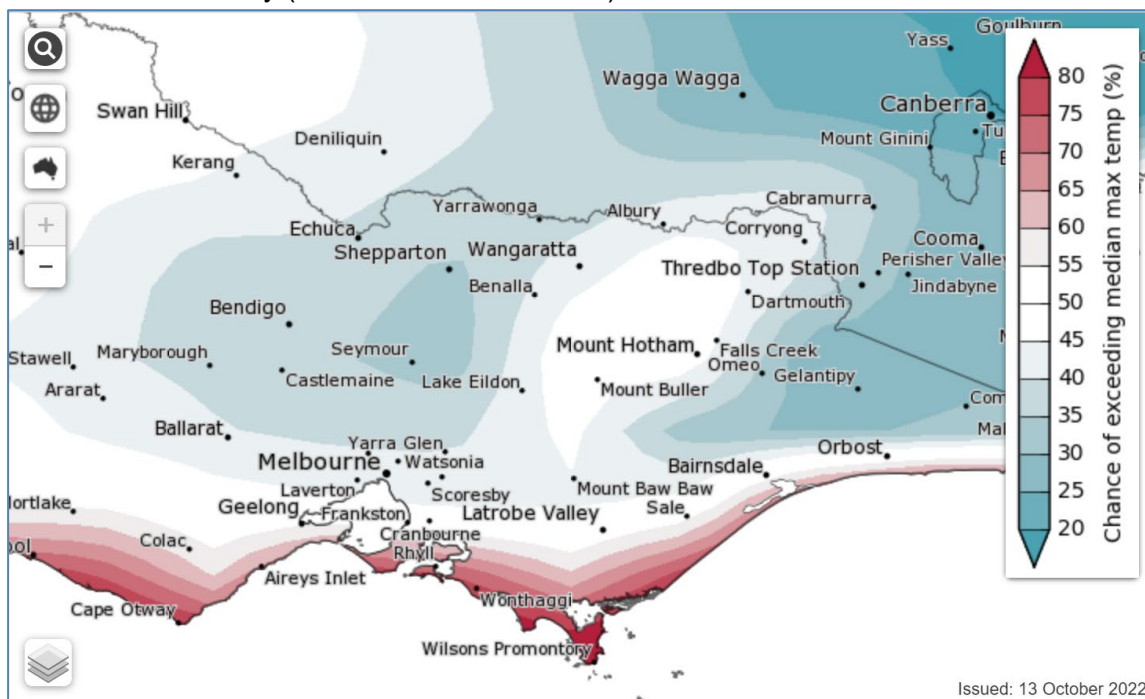


Bureau temperature outlook

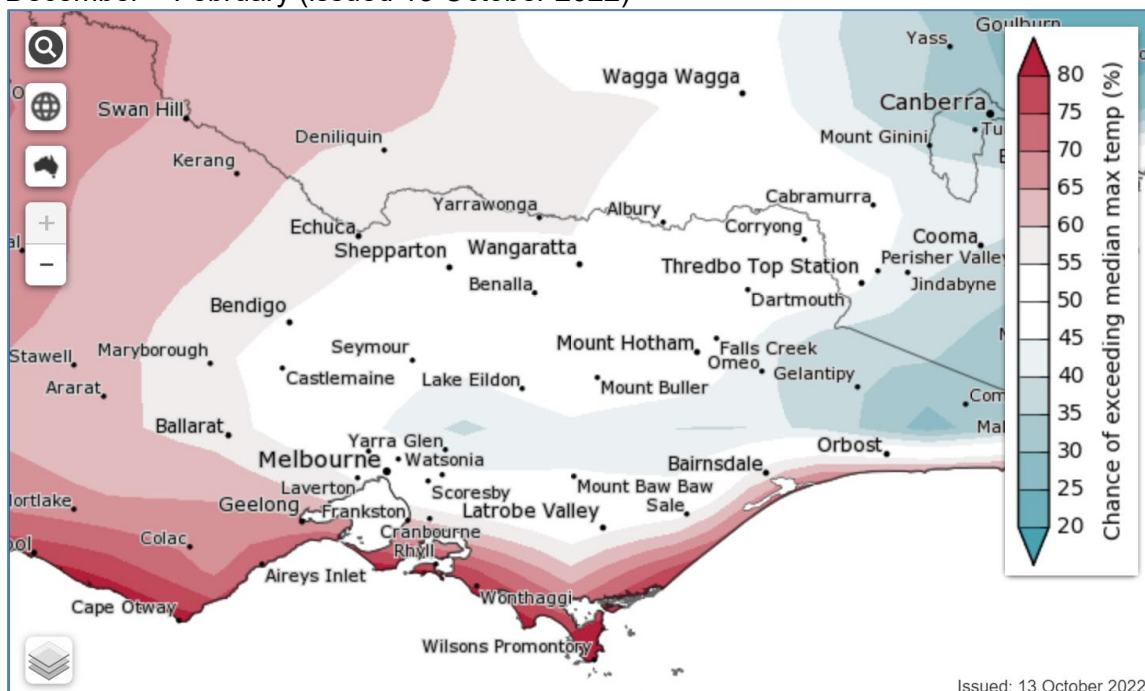
The outlook for temperature varies from north to south in our region, suggesting no strong drivers favouring particularly hot or cool conditions on average over the spring and summer ahead. Temperature outlooks can guide expectations for water demand as outside garden watering use is impacted by weather.

Chance of above median maximum temperature

November – January (issued 13 October 2022)

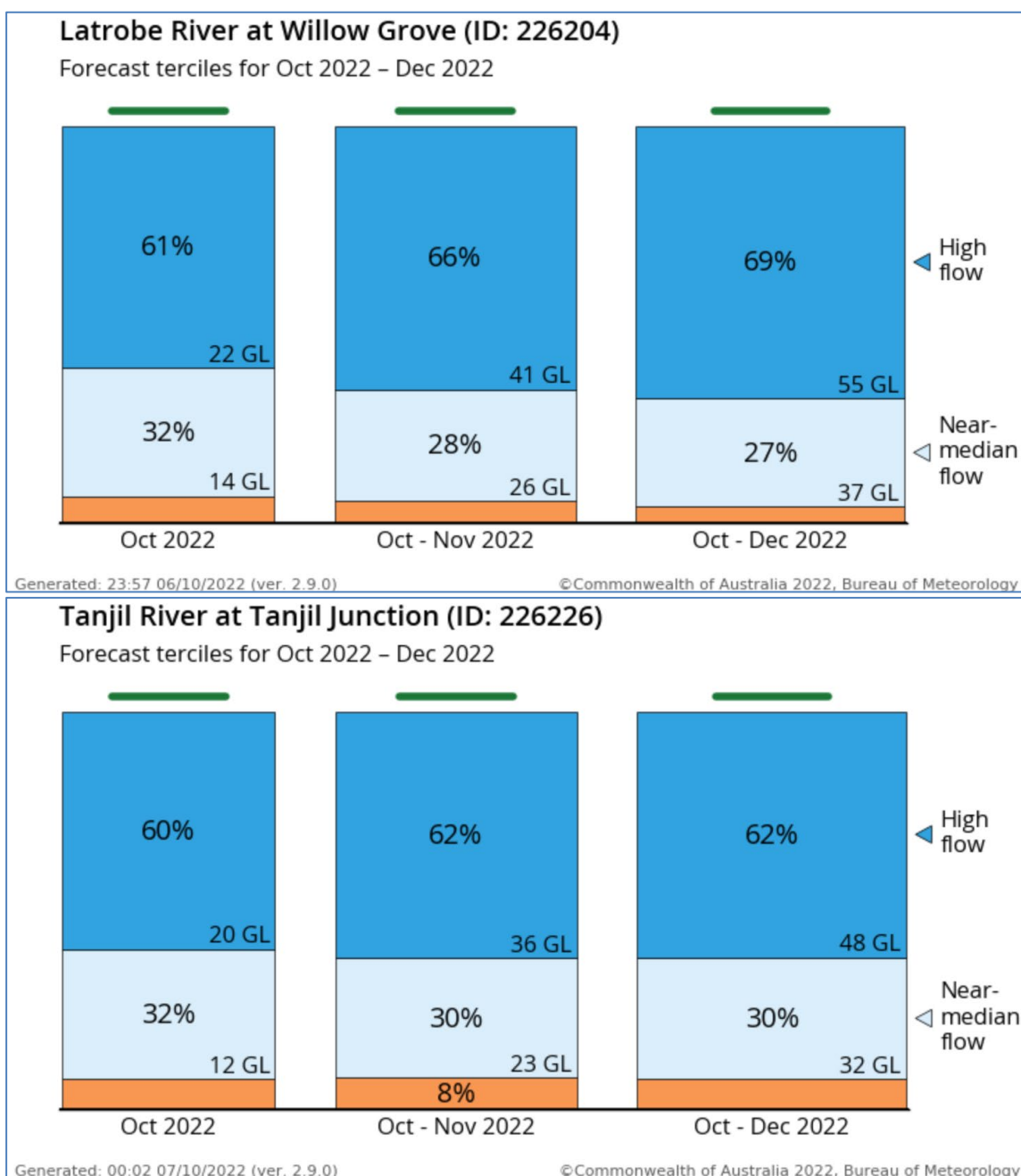


December – February (issued 13 October 2022)



Bureau streamflow outlooks

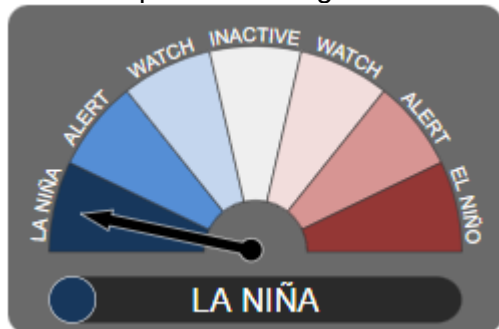
The following two charts show the forecast for streamflows in two major rivers in our region. While not a source of water for our systems, we believe the Latrobe River outlook to be indicative of likely streamflows in other nearby catchments upon which we rely. This is because some of these other catchments are in relatively close proximity to the Latrobe catchment. The Tanjil River is the source of water for Blue Rock Reservoir. Both outlooks below forecast a strong likelihood of above average to high stream flows through November and December. This is as expected given the outlook of above average rainfall and the currently wetter than average catchments.



Bureau ENSO outlook

Summary of ENSO Outlook 11 October 2022

Source: <http://www.bom.gov.au/climate/enso/outlook>



Climate in our region is influenced by several cyclical weather patterns, in particular the El Niño Southern Oscillation (ENSO), the Indian Ocean Dipole (IOD) and the Southern Annular Mode (SAM). All of these have phases that contribute to wetter or drier conditions for our region, and their impact also depends on the time of year.

On 13 September 2022 the Bureau announced the commencement of a La Niña, the third year in a row this has occurred. Climate models suggest this event will be relatively short lived and decline over spring, returning to neutral levels in early 2023. La Niña events increase the chance of above-average rainfall for our region during spring and summer.

A negative IOD event is currently in place and likely to persist until late spring. A negative IOD increases the chance of above-average spring rainfall for our region.

The SAM is currently positive and likely to stay mostly positive over spring and into early summer. A positive SAM during summer typically brings wetter weather to our region, in particular in our east.

It is important to also note that climate change is influencing our climate, with average warming across Australia of around 1.4 °C since 1910. Furthermore, southern Australia has seen a 10–20% reduction in cool season (April–October) rainfall in recent decades.

Summary

The outlooks presented above indicate a likelihood of higher than average rainfall during summer, along with close to average temperatures. With all catchments currently at average or wetter than average soil dampness, we are expecting close to or better than average streamflows through spring and into summer.

Water resources outlook

The following chart shows a 12-month outlook in megalitres of the combined water holdings in Moondarra Reservoir and our share of Blue Rock Reservoir under five scenarios starting from the current storage level of 100%. The scenarios present three differing outlooks for reservoir inflows:

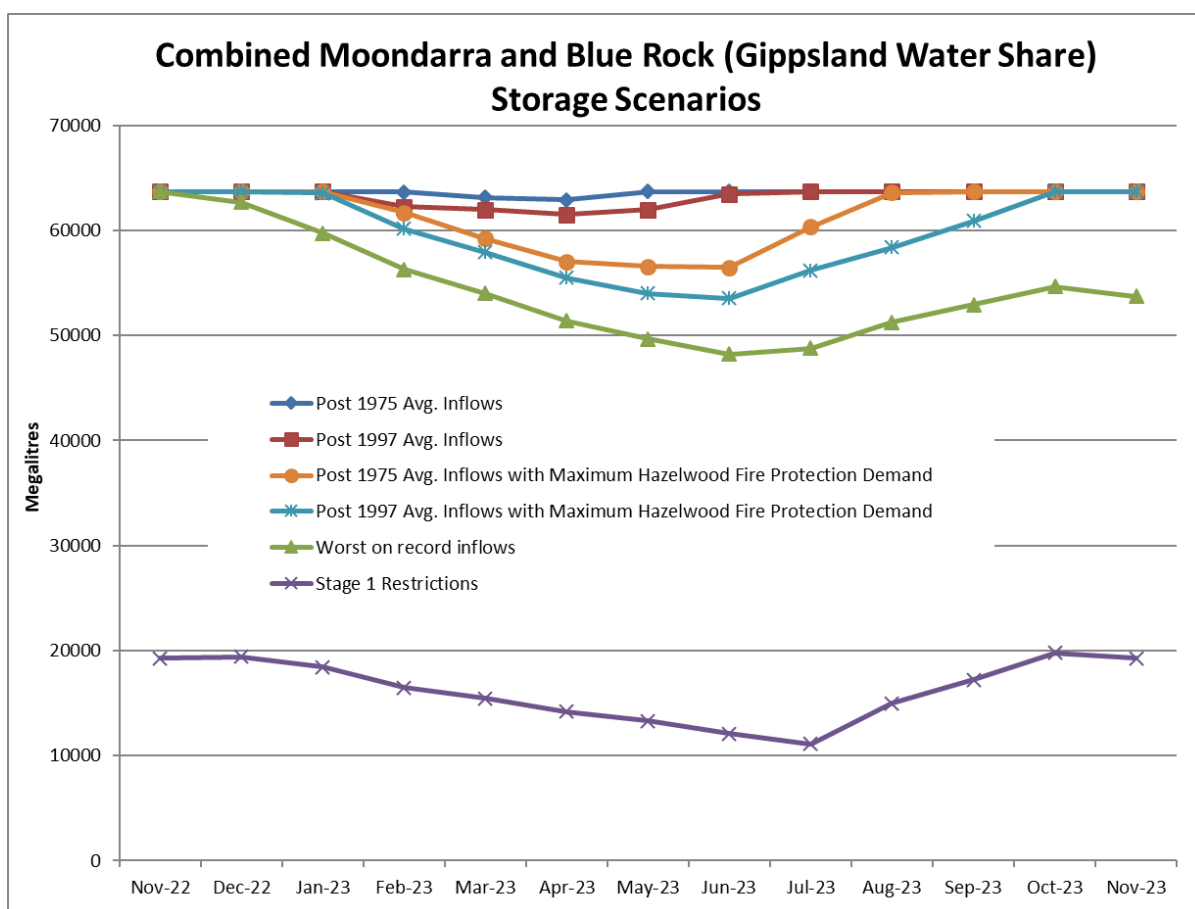
- Post 1975 average, nominated by the Victorian Water and Climate Initiative as the 'current climate';
- Post 1997 average, recognising that Victoria's climate took a 'step change' in 1997, the commencement of the Millennium Drought, and that some climatic characteristics of this change persist despite several wetter periods; and
- Worst year on record (2006/07).

The outlook scenarios adopt typical demand levels that would be anticipated with the weather conditions likely under each inflow scenario, e.g. in a drier year inflows decrease but demand would increase with less rain leading to more garden watering.

From November 2021 the Hazelwood mine commenced drawing significant flows of water from the Latrobe system for fire risk mitigation purposes. The outlook below now includes estimates of the drawdown on storage that could result from this use under two scenarios of reservoir inflows at the average since 1975 and 1997.

We have not applied this demand to the worst on record inflow scenario as under such conditions we may consider ceasing or reducing supply to the mine as it is not a guaranteed supply and can be restricted to protect reservoir levels for residential, commercial and industrial customers. Also the outlook presented in the preceding sections suggests a very low chance of such low inflows occurring this summer.

The chart shows a significant buffer between both the 'worst on record' streamflow and 'maximum Hazelwood mine fire protection' demand draw downs compared with the stage one restriction review point.



The following table provides an outlook for each water system for this summer.


Water system	Supply – Demand outlook and water restriction likelihood
Briarolong	For much of this calendar year, groundwater levels have stabilised out at around the level to which they recovered in 2020 following the end of the east Gippsland drought. The current level provides confidence that water restrictions are unlikely this summer. It should be noted that matters outside our control such as management of the resource as well as use by others could impact this outlook.
Rawson	Based on historic performance and current streamflows, the chance of water restrictions this summer is deemed unlikely.
Latrobe	Current storage levels in the Latrobe System provide excellent supply security for the coming 12 months. The chance of water restrictions during the next year is deemed unlikely as detailed in the discussion and chart above.
Mirboo North	Based on historic performance and current streamflows, the chance of water restrictions this summer is deemed unlikely. While a reliable stream, supply could become restricted by a catchment water quality incident such as heavy

Water system	Supply – Demand outlook and water restriction likelihood
	soil runoff into the stream due to very heavy rain combined with upstream agricultural land use.
Sale	The chance of water restrictions in the coming year is deemed unlikely. This resource is a deep, confined aquifer. While subject to long term decline, short term trends in aquifer levels are more strongly related to usage than climate, and are reasonably predictable. There is high confidence of supply meeting and exceeding demand for the year ahead.
Seaspray	With the raw water basin currently at 87% and strong flows in the Merriman Creek, the chance of water restrictions for the coming summer is deemed to be unlikely. Algae outbreaks in the raw water basin could give rise to water restrictions, although measures have been implemented to address this so the risk is deemed unlikely.
Tarago	Based on historic performance and good holdings in the drought reserve (supply agreement with Melbourne water retailers), the chance of water restrictions this summer is deemed unlikely. The Moe-Warragul Interconnection will help to reduce reliance on the Melbourne system.
Thomson Macalister	With a full allocation, the chance of water restrictions for the remainder of the current financial year is deemed unlikely. Historically the supply to Coongulla was vulnerable in dry years to late summer and autumn low water levels in Lake Glenmaggie causing problems with pumping from the lake. This year we completed the interconnection of Coongulla to Heyfield, removing that vulnerability.

While water restrictions are deemed unlikely this summer, permanent water saving rules apply as always. Information on these rules, and advice on how to save water, can be found at www.gippswater.com.au/savewater.

It is always possible that a drought could occur that is worse than any on the historic record. For instance, the 2017-19 east Gippsland drought that affected the north east of our region including the Briagolong supply system three years ago, was 13% drier at the Giffard rain gauge than the previous lowest rainfall three year period in over a century. We undertook modelling in the preparation of our 2022 UWS to determine the resilience of our systems to extreme drought, using a method that creates a test drought event worse than experienced. The results showed that none of our systems failed to meet demand during this test drought under stage four restrictions, meaning all systems were shown to be sufficiently robust to meet critical human needs.

Furthermore, modelling we undertook during the development of the 2022 UWS showed all of our systems to be highly resilient to a repeat of the Millennium Drought (1997-2009), with only minimal water restrictions necessary to balance supply and demand.



Actual performance during the Millennium Drought is no longer relevant for many of our systems due to augmentations undertaken over the last decade, these include:

- Connecting Boolarra to the Latrobe system;
- Constructing a 30 ML water storage for Seaspray;
- Purchasing an increased share of Blue Rock Lake;
- After detailed assessment, resolving to truck potable water to Thorpdale as a permanent supply measure;
- Moe to Warragul Interconnect Stage One (Yarragon to Darnum) and Stage Two (Darnum to Warragul); and
- Connection of Coongulla to Heyfield.

Disclaimer: While we have considered relevant climate forecasts and taken care in presenting the information in this Annual Water Outlook, we cannot and do not guarantee any forecast outcome or event. There are many factors that could deliver a different outcome and many are beyond our control. Examples include fires and floods that lead to dirty water sources that are untreatable or that can only be treated at reduced rates, requiring water restrictions.

Public green space watering

In the 2017 UWS, we committed to collaborating with our local councils and communities to identify priority public green spaces and plan for their maintenance during drought periods. This was reaffirmed in our 2022 UWS. This could mean providing water restrictions exemptions or assisting with alternative water resources. A preliminary list of priority reserves is published in the UWS. It is important to note also that limitations on watering of public reserves are not limited to drought and other constraints also exist such as the cost of potable water which may not be the most suitable source. We will consider requests for restriction exemptions, although as stated above, the chance of restrictions this summer is deemed unlikely.

We regularly engage with councils through the Gippsland Integrated Water Management Forum that commenced in May 2018. The Forum, a Water for Victoria action, provides a platform for addressing some of the challenges in maintaining public green space. During 2022, we collaboratively renewed our Strategic Directions Statement, a public document, outlining our shared vision for Integrated Water Management (IWM) and projects we've committed to collaboratively pursue.

Baw Baw Shire, Wellington Shire, and Latrobe City Councils have all developed municipal IWM plans outlining priority projects for alternative water supply to recreation facilities. We are currently working with them on the delivery of some actions. In particular, our Forum has been successful in attracting Victorian Government funding to projects in Morwell and Trafalgar on which we are working with our council partners.

Actions

Our Urban Water Strategy 2022 set the following actions for the 2023-28 price submission period:


Action / Theme or System	Description	Timeframe	Progress
Action 1 / Partnering with our Traditional Owners	Develop and implement a Moondarra On-Country Plan, which focuses on Traditional Owner access to land and water, increasing opportunities to realise objectives for cultural values and uses, building the cultural awareness of our staff and the community.	To be progressed during the 2022-27 Urban Water Strategy period	We're working closely with GLaWAC to identify joint projects that support building cultural awareness across our community. Following further engagement and guidance from Traditional Owners, the focus of this action is now region-wide and no longer specific to Moondarra.
Action 2 / Partnering with our Traditional Owners	Provision of reticulated water to Knob Reserve, a significant meeting place for the Gunaikurnai Community. Reticulated water will support cultural events at the site and support sustainable use of water and health outcomes for Community.	To be progressed during the 2022-27 Urban Water Strategy period	The project has progressed to the concept design phase with a heritage advisor to be engaged before the end of 2022 to finalise the alignment of the proposed supply pipeline within the Knob Reserve. Construction is scheduled for the second half of 2023 assisted by Integrated Water Management funding from the Victorian government.
Action 3 / Partnering with our Traditional Owners	Pilot the application of the 'Multiple Benefits Of Ownership And Management Of Water By Traditional Owners Framework' on key projects.	To be progressed during the 2022-27 Urban Water Strategy period	We are actively supporting GLaWAC as members of the Gippsland Integrated Water Management forum by providing resources to pilot the framework on actions set out in the Central and Gippsland SWS.

Action / Theme or System	Description	Timeframe	Progress
Action 4 / Partnering with our Traditional Owners	Integrate the 'Multiple Benefits Of Ownership And Management Of Water By Traditional Owners Framework' into our planning frameworks to ensure quadruple bottom line assessments are integrated into business decisions.	To be progressed during the 2022-27 Urban Water Strategy period	This has not commenced and will follow on from learnings from Action 3.
Action 5 / Engaging with our stakeholders	Build on our existing close relationship with West Gippsland Catchment Management Authority (WGCMA) to better identify opportunities to collaboratively achieve outcomes that benefit each other's objectives and values, and to foster an enhanced mutual understanding of our respective challenges.	Ongoing	In addition to our existing collaborative arrangements, we have recently joined two WGCMA environmental watering advisory groups for the Latrobe and Thomson basins.
Action 6 / Engaging with our stakeholders	Continue to work with local councils and government to embed better water conservation planning for greenfield development.	Ongoing	These initiatives are being developed through a working group formed through the Central and Gippsland Region SWS. Our managing director is a founding member of that group and a number of associated work streams are progressing through the Integrated Water Management Forums.
Action 7 / Water efficiency and conservation	Continue to deliver our Non-revenue Water Action Plan	Ongoing	Ongoing targeted leak detection activities have focused on the Briagolong, Morwell and Tyers networks over the past year, with some significant but otherwise difficult to locate network leaks found and addressed. This program has also identified leaks on customer properties and notifications have been provided to customers.

Action / Theme or System	Description	Timeframe	Progress
Action 8 / Water efficiency and conservation	Expand our activities that support the government's Target Your Water Use program including continuing with the Schools Water Efficiency program, facilitating any applicable grant schemes for water efficiency improvements in homes and businesses, and expanding our community education programs.	Ongoing	<p>Over the past year we created and shared social media and bill insert content that supports the Victorian Government's Target Your Water Use campaign. This included water saving tips, promotion of the Permanent Water Saving Rules and online tools such as a household water use calculator.</p> <p>Despite COVID-19 restrictions, we conducted virtual education sessions with 106 students from two schools, recommencing face-to-face educational sessions in May 2022, with 401 people from six schools and kindergartens participating.</p> <p>We also have continued to work with schools to support their ongoing commitment to improving water efficiency. 28 schools in our region are actively involved in the Schools Water Efficiency Program.</p>
Action 9 / Engaging with our stakeholders	Continue to work closely with our Gippsland Integrated Water Management (IWM) Forum partners to identify and deliver feasible IWM initiatives that benefit the security of our water resources, the liveability of our urban landscapes and the health of our waterways and the broader environment.	Ongoing	We have worked with other IWM Forum partners over the last year to release a renewed Strategic Directions Statement, reaffirming our joint commitment to IWM and identifying new initiatives. A number of these in our region attracted funding from the Victorian Government and we'll be working with Latrobe City and Baw Baw Shire Councils to progress these over the next year.

Action / Theme or System	Description	Timeframe	Progress
Action 10 / Briagolong water	Drill a production bore in the deeper aquifer at Briagolong, buy a water license and upgrade the water treatment process at our Briagolong water treatment plant.	2023/24	After constructing a test bore in early 2021 and undertaking pump testing in mid-2021, we've continued to take regular water quality samples from this bore and monitor the seasonal level fluctuations of the aquifer. Concurrently we've been working with SRW to progress our licence transfer application, undertaking the required work to demonstrate a deep aquifer production bore will not adversely impact the environment and stock and domestic users.
Action 11 / Latrobe water	Continue working with the Department of Environment, Land, Water and Planning (DELWP) and other agencies to plan and deliver on directions for the Latrobe basin set by the Central and Gippsland Region Sustainable Water Strategy (CGRSWS) and the Latrobe Valley Regional Rehabilitation Strategy.	Ongoing – subject to regulator timeframes	The Central and Gippsland Region SWS was finalised and publicly released in September 2022. We have commenced preliminary discussions with DELWP and other local water sector partners on how these actions are to be delivered. An appendix in the SWS details accountability for delivery of actions with timeframes.
Action 12 / Sale water	Continue to work with Southern Rural Water (SRW) and DELWP to better understand the Boisdale aquifer and its future sustainable use.	Ongoing – subject to regulator timeframes	We've continued to advocate for progress on this long standing action which carries over from previous Urban Water Strategies, to ensure that the declining Boisdale aquifer is appropriately prioritised for investigation and management review given its critical importance for urban and agricultural supply.

Action / Theme or System	Description	Timeframe	Progress
Action 13 / Seaspray water	Explore alternative flow sharing arrangements for the Merriman Creek Bulk Entitlement.	2022/23	This action will be undertaken collaboratively with local water sector partners GLaWAC, WGCMA and SRW. We've formally invited these organisations to work with us on exploring alternative arrangements that work for all needs, with all having accepted. Further work will proceed during 2022-23.
Action 14 / Tarago water	Acquire a 2 GL yield Bulk Entitlement to the Yarra-Thomson Pool to secure Warragul and Drouin's future water.	2023/24	The Central and Gippsland Region SWS, publicly released in September 2022, has endorsed this as SWS Action 4-5. We are currently working with DELWP and other stakeholders to deliver this crucial water entitlement with a work plan in place to ensure it is secured by 1 July 2023.
Action 15 / Heyfield sewage	Develop an augmentation strategy for servicing future growth at the Heyfield sewage treatment plant.	2026/27	We have made provision in our Corporate Plan for budget to deliver this by the required timeframe. No other progress has occurred since our UWS release.
Action 16 / Mirboo North sewage	Deliver project for additional irrigation capacity at the Mirboo North sewage treatment plant site to allow greater re-use by our agribusiness operation.	2023/24	This project is budgeted for delivery in 2023-24 and is on track.
Action 17 / Neerim South sewage	Develop an augmentation strategy for servicing future growth at the Neerim South sewage treatment plant.	2026/27	We have made provision in our Corporate Plan for budget to deliver this by the required timeframe. No other progress has occurred since our UWS release.



Action / Theme or System	Description	Timeframe	Progress
Action 18 / Warragul sewage	Plan and deliver augmentations to increase Warragul sewage treatment plant capacity.	First stage by 2026/27	Our Major Infrastructure Projects team has commenced functional design and we are on track for delivery as scheduled.



**Gippsland
Water**

PO Box 348
55 Hazelwood Road
Traralgon VIC 3844

General enquiries 1800 050 500
Faults and emergencies 1800 057 057

contactus@gippswater.com.au
www.gippswater.com.au

ABN 75 830 750 413