Upper Murray Groundwater Source

Introduction

This report is a summary of water accounts, volume pumped and groundwater levels for the Upper Murray Groundwater Source for the period 1 July 2020 to 30 June 2021. It will be updated regularly.

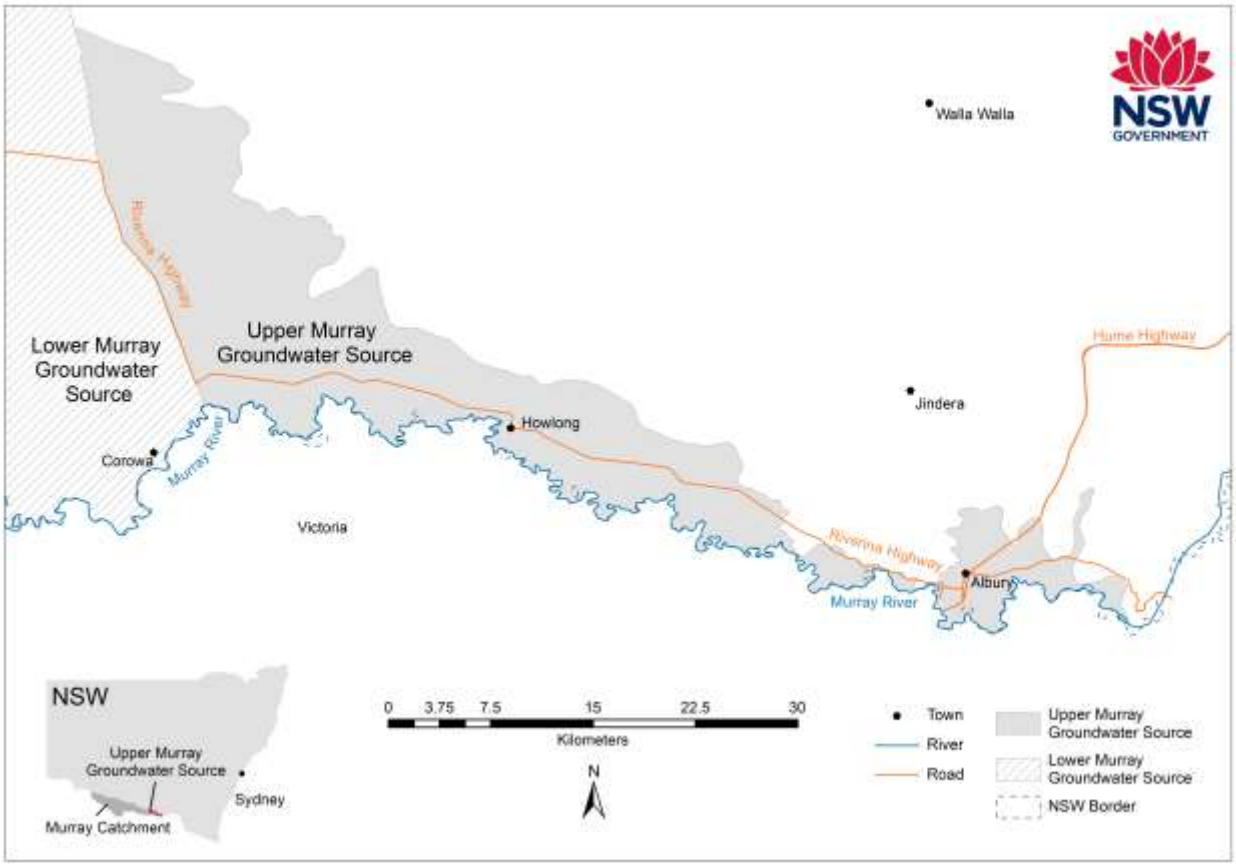
For detailed information of the hydrogeology, management and past long-term water level behaviour of this water source refer to the Groundwater Resource Description Report for the Murray Alluvial Groundwater Sources: www.industry.nsw.gov.au/__data/assets/pdf_file/0004/230674/appendix-a-murray-alluvium-wrp-groundwater-resource-description.pdf

Description

The Upper Murray Groundwater Source is located within the Murray River catchment. The water source is bounded by the Murray River to the south and foothills to the north, and extends from the Hume Dam near Albury in the east to Corowa in the west (**Figure 1**).

The Upper Murray Groundwater Source includes all alluvial sediments comprised of clay, silt, sand and gravel to the basement rock.

Figure 1: Location map



Water resource management

Water sharing plan

The Upper Murray Groundwater Source is managed by the rules defined in the Water Sharing Plan for the Murray Alluvial Groundwater Sources 2020.

This water sharing plan is available for viewing on the Department of Planning, Industry and Environment website at: www.industry.nsw.gov.au/water/plans-programs/water-sharing-plans/status/murray-region

Basic rights

Basic landholder rights are available in this groundwater source for domestic and stock watering requirements. While landholders don't need an access licence to take water for domestic and stock purposes from groundwater below their property, the bore must be authorised by WaterNSW.

The volume of water set aside in the water sharing plan for basic landholder rights is 403 megalitres (ML).

An approval holder is responsible for monitoring water quality from the bore to ensure it is suitable for its intended purpose for the duration of the approval. Inherent water quality and land use activities may make the water in some areas unsuitable for use.

Water from the groundwater sources should not be used without first being tested and, if necessary, appropriately treated to ensure it is fit for purpose. Such testing and treatment are the responsibility of the water user.

Groundwater access licences

Groundwater access licence share components for 2020 - 2021 are presented in **Table 1**.

Table 1: Upper Murray Groundwater Source share component at 30 June 2021

Access Licence Category	Number of Licences	Total Volume
Local Water Utility[1]	2	59
Aquifer (Town Water Supply)[1]	2	92
Aquifer[2]	96	41,066

[1]Megalitres/year (ML)

[2] Megalitres per unit share

Extraction limit

All groundwater sharing plans have rules to manage extraction in a water source to the long-term average annual extraction limit.

The extraction limit for Upper Murray Groundwater Source is 14,109 ML/year. Extraction in the Upper Murray Groundwater Source is not compliant if the **5 years** average annual extraction is more than **110%** of the extraction limit (known as the compliance trigger).

If average extraction exceeds the compliance trigger, then the available water determination made for aquifer access licences for the following water year may be reduced by an amount that would return subsequent total water extraction to the extraction limit.

Information on tracking groundwater extraction against extraction limit for the groundwater source, including the likelihood of compliance being triggered in the current water year can be found at: www.industry.nsw.gov.au/water/allocations-availability/tracking-groundwater

For each inland groundwater source, the dashboard shows for the current water year:

- Volume that if extracted will reach the compliance trigger (in ML, calculated annually).
- Volume remaining to be extracted before reaching the compliance trigger (in ML, calculated throughout the year).
- The likelihood that access to groundwater may be reduced in the next water year.

Note: the information on the dashboard is limited by the extraction data available at the time.

Available water

Total water availability in a water year is controlled by the available water determinations credited to an access licence account, and the carryover rules that dictate the allowable volume to be brought forward from one year to the next.

Total available water for use is controlled by the annual account usage limits, which define the maximum volume of allocated water that can be taken in that water year. The rules and limits that are applicable to the Upper Murray Groundwater Source are provided in **Table 2**.

Table 2: Upper Murray Groundwater Source access licence account rules

Access Licence Category	Carryover Limit	Annual Use Limit	Maximum AWD
Local Water Utility	0%	100%	100%
Aquifer	0.74 ML/share	1.37 ML/share	1 ML/share

The maximum amount of water that can be debited from an aquifer access licence account in a water year can't exceed 1.37 ML per unit share component (annual use limit), plus any allocation transferred in (temporary trade), minus any allocation transferred out. This means that metered extraction plus transfers out can't exceed 137% of the of share component, unless water is transferred in.

Total account water for period 2012-13 to 2021-22 is displayed in **Figure 2,** showing the proportion available for use and what is not available for use in a year. Total yearly extraction is also displayed.

Note: all access licence categories have been combined in **Figure 2**.

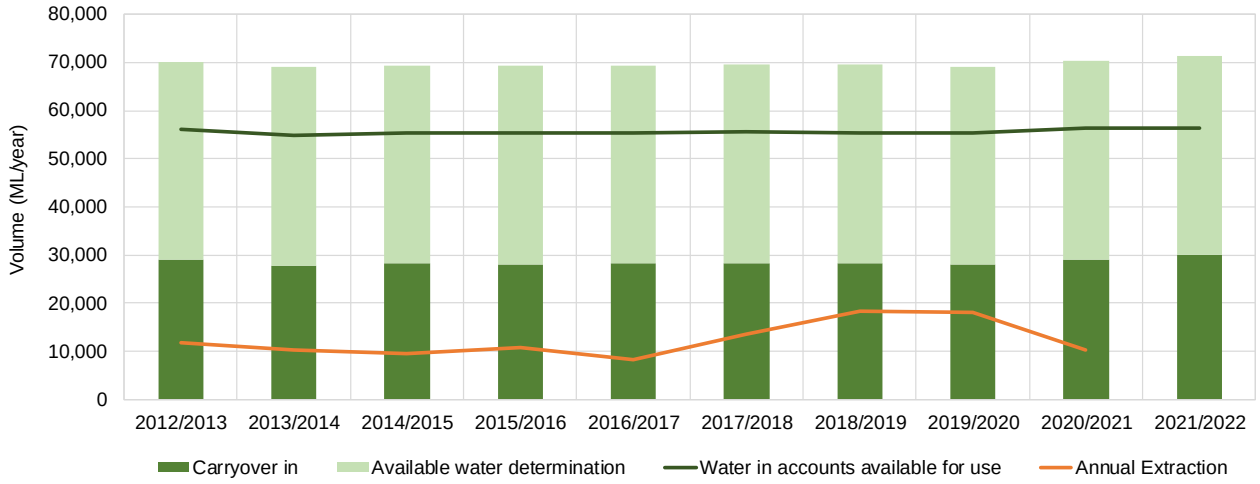
There has been no reduction in the available water determination for aquifer access licences in the Upper Murray Groundwater Source since the water sharing plan first started in 2012.

The access licence account information for the Upper Murray Groundwater Source on 1 July 2021 is summarised below:

- Carryover In: 30,004 ML
- Available water determination: 41,217 ML

- Total water in account: 71,221 ML
- Total water available for use: 56,429 ML

Figure 2: Account water availability and usage summary for Upper Murray Groundwater Source



Groundwater trading

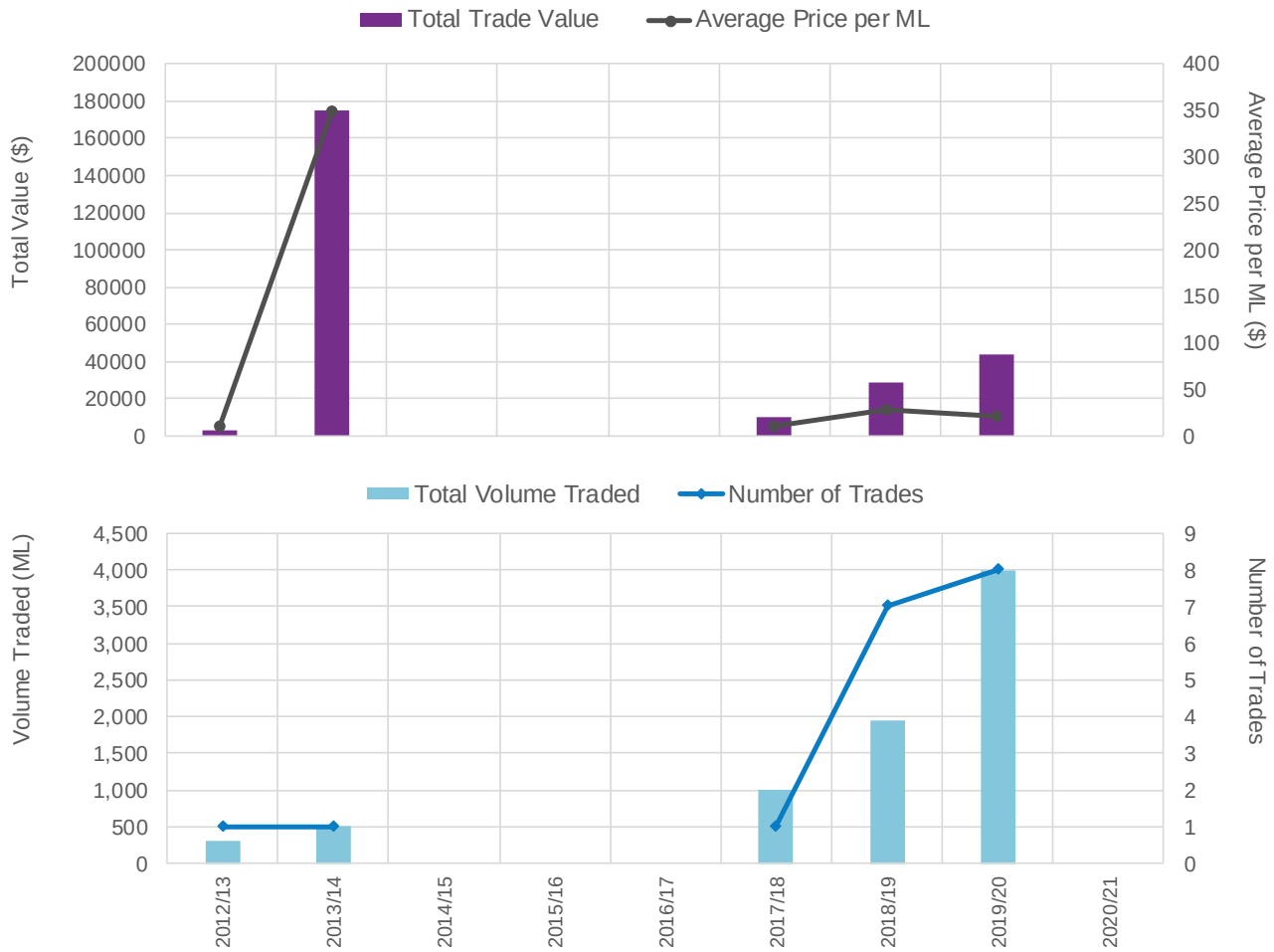
Trades are permitted within, but not between Upper Murray and any other groundwater source.

Allocation assignments (temporary trade)

Trading statistics for the Upper Murray Groundwater Source are illustrated in **Figure 3**, excludes trades for less than $1 per megalitre.

Further information on water licences, approvals, water trade and water dealings and other matters related to water entitlements in NSW can be found on the NSW Water Register at: waterregister.waternsw.com.au/water-register-frame

Figure 3: Upper Murray Groundwater Source temporary trade statistics



Bores

There are approximately 855 registered bores across the Upper Murray Groundwater Source (**Figure 4**). The majority of these bores are used for stock and domestic purposes (Basic Landholder Rights). There is also significant use of groundwater for irrigation (**Table 3**).

Production bores in the Upper Murray Groundwater Source are located mainly in the western half of the water source between Howlong and Corowa. Bores constructed in the deeper more productive aquifer system can yield up to 1,650 ML/year, while most production bores produce supply up to 200 ML/year (**Figure 5**).

Table 3: Approximate number of licensed bores in Upper Murray Groundwater Source (at June 2021)

Groundwater Source	Registered Bore Purpose		
	Basic Landholder Rights	Production	Local Water Utility
Upper Murray Groundwater Source	727	124	4

Water level monitoring

WaterNSW monitors groundwater levels at 37 monitoring bores at 19 sites in the Upper Murray Groundwater Source (**Figure 6**). At most monitoring sites there are two or more pipes monitoring different depths. The depth monitored by each pipe reflects the depth where the casing is slotted to allow groundwater entry into the pipe.

A hydrograph is a plot of groundwater level or pressure from a monitoring bore over time. A representative sample of hydrographs from monitoring bores have been selected and are presented in **Figures 7** to **11**.

Data for the monitored bores, as well as private bore information, can be obtained from the WaterNSW real time data portal (realtimedata.waternsw.com.au/). It includes data for 5 groundwater monitoring sites in real-time via telemetry.

You can also request information via: Customer.Helpdesk@waternsw.com.au

Figure 4: Upper Murray Groundwater Source registered bores

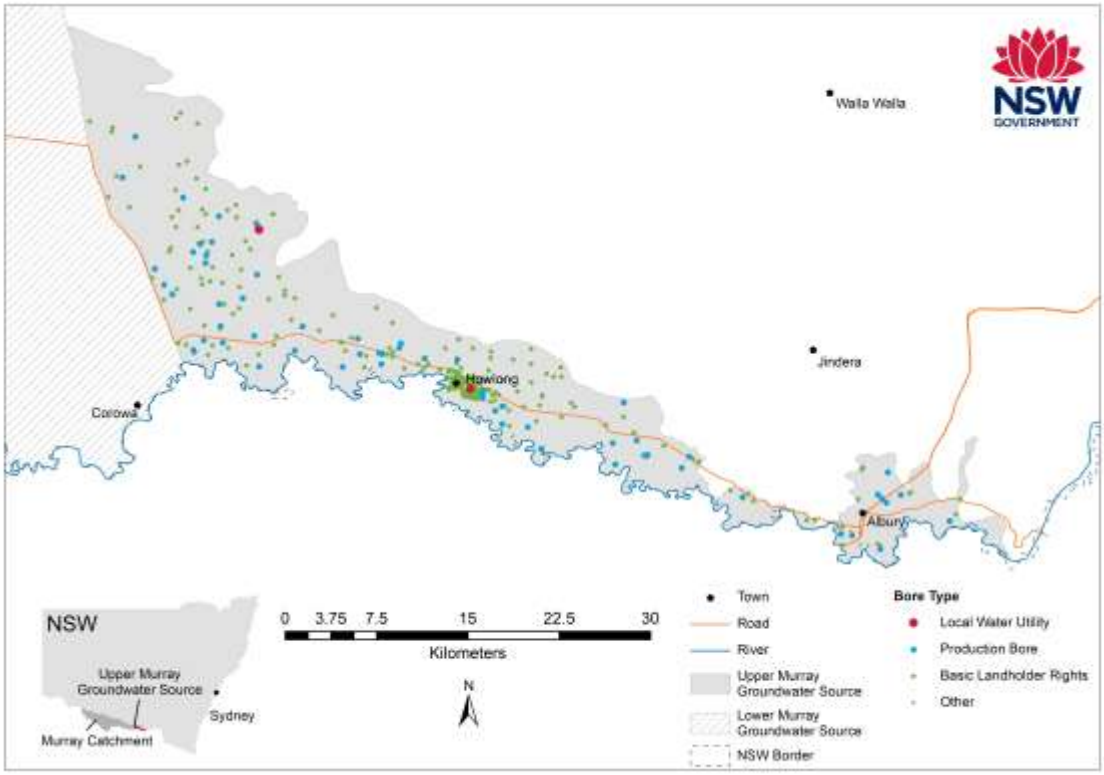


Figure 5: Upper Murray Groundwater Source water supply bores and distribution of extraction

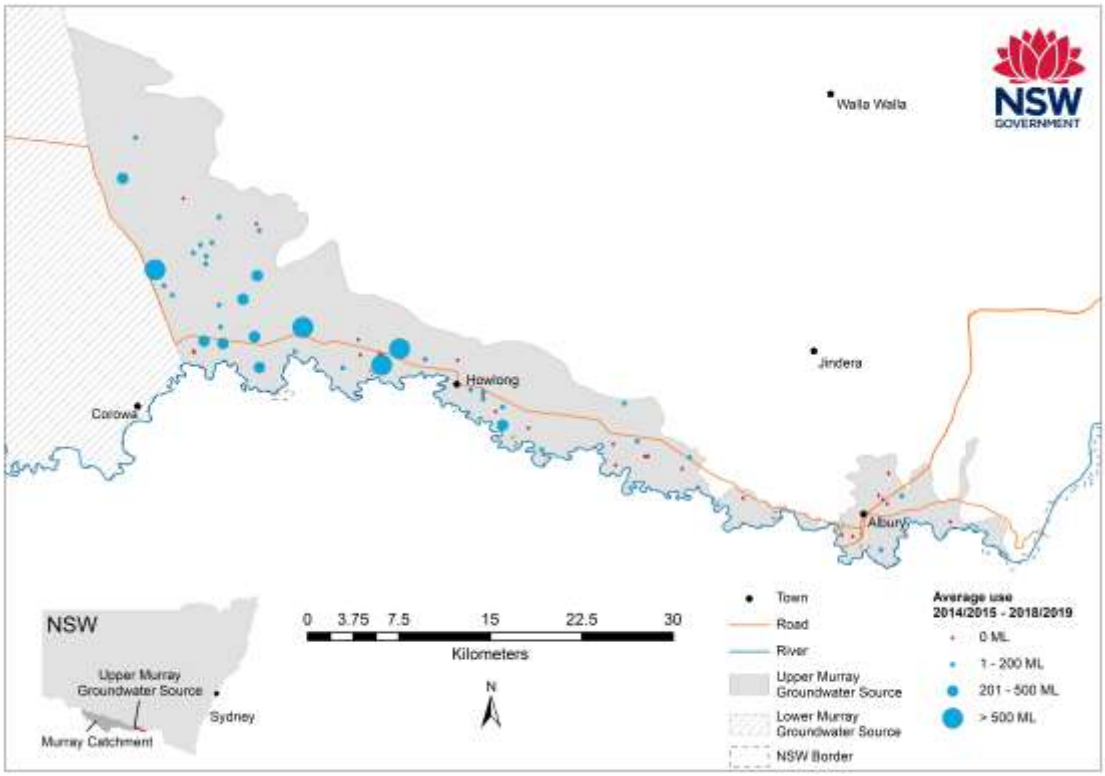


Figure 6: Upper Murray Groundwater Source monitoring bore sites

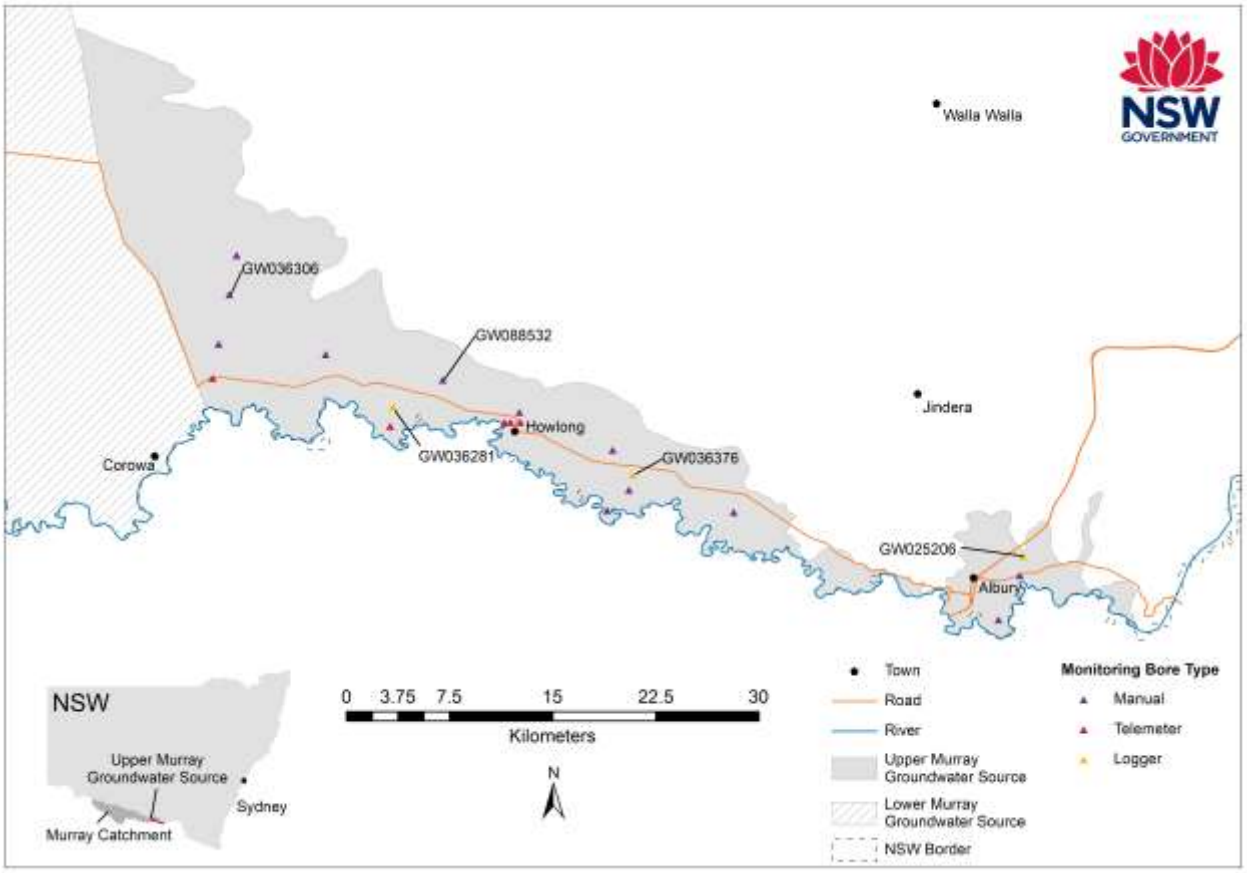


Figure 7: Hydrograph for monitoring bore GW036306

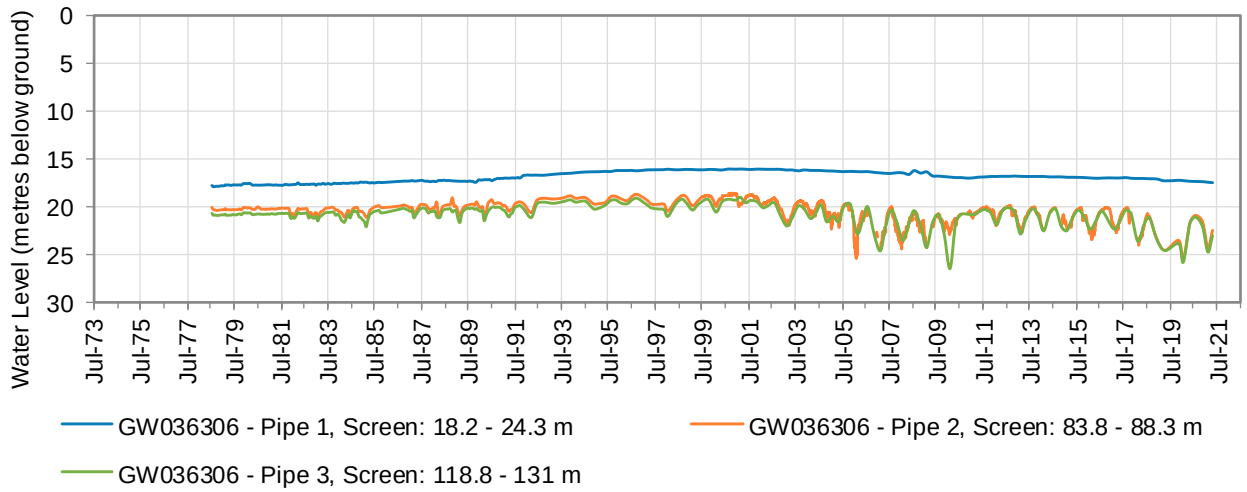


Figure 8: Hydrograph for monitoring bore GW036281

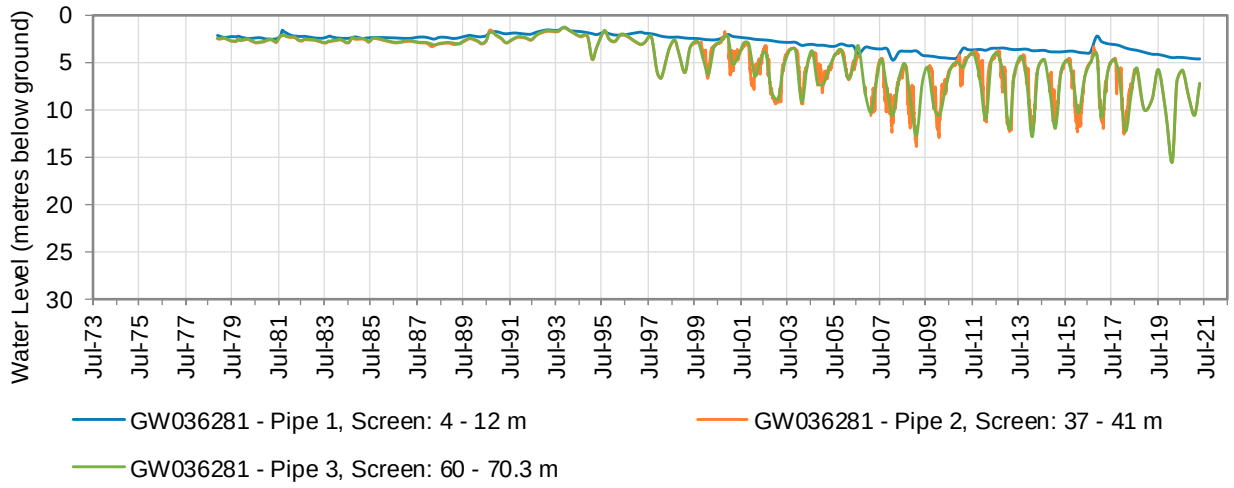


Figure 9: Hydrograph for monitoring bore GW088532

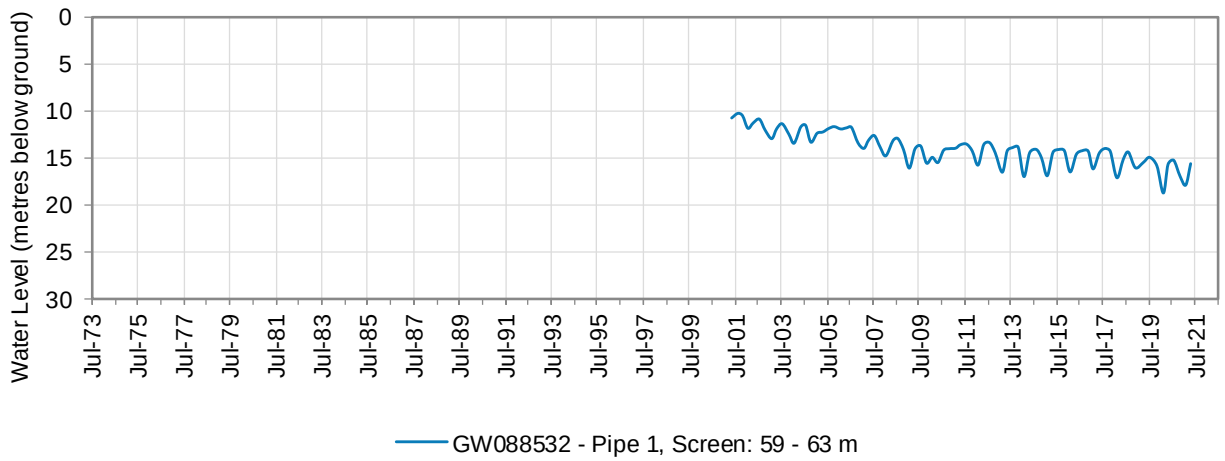


Figure 7: Hydrograph for monitoring bore GW036376

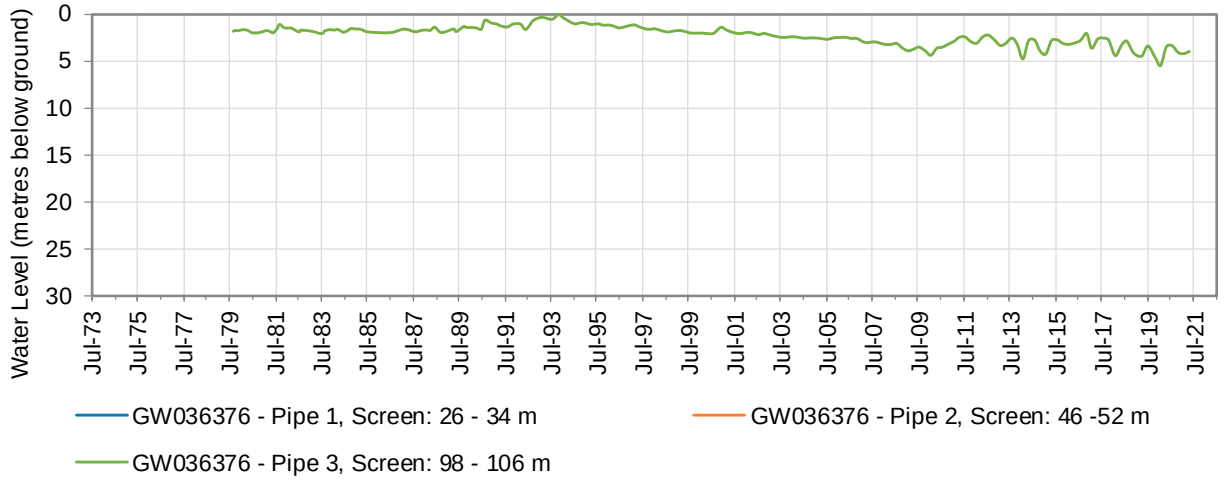


Figure 8: Hydrograph for monitoring bore GW025206