Talbragar Alluvial Groundwater Source

Groundwater annual report 2022

Introduction

This report is a summary of water accounts, volume pumped and groundwater levels for the Talbragar Alluvial Groundwater Source to 2022 for the period 1 July 2021 to 30 June 2022, including the start of year water account volumes for the 2022/2023 water year. It will be updated on a regular basis.

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 Macquarie-Castlereagh Groundwater Sources: www.industry.nsw.gov.au/__data/assets/pdf_file/0017/192221/macquarie-castlereagh-alluvium-appendix-a-water-resource-description.pdf

Description

The Talbragar Alluvial Groundwater Source is located within the Macquarie-Castlereagh River catchment. The water source extends downstream along the Coolaburragundy and Talbragar Rivers past Coolah and Leadville to approximately 7 km downstream of Dunedoo (**Figure 1**).

The Talbragar Alluvial Groundwater Source is made up of the alluvial sediments. These sediments form an extensive alluvial fan deposited along the Coolaburragundy and Talbragar Rivers, comprised of clay, silt, sand and coarse gravel.

Water resource management

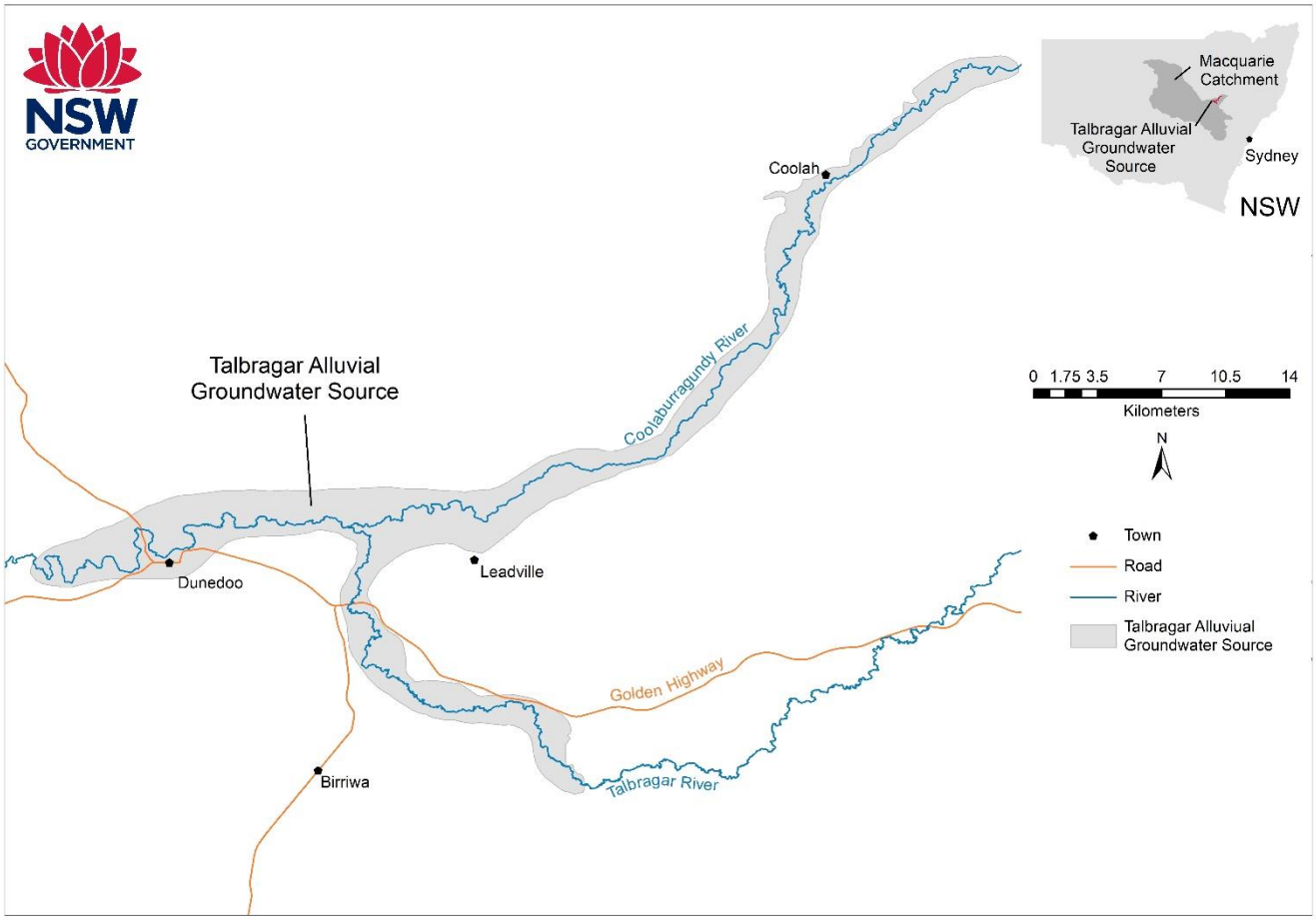
Water sharing plan

The Talbragar Alluvial Groundwater Source is managed by the rules defined in the Water Sharing Plan for the Macquarie-Castlereagh Groundwater Sources 2020.

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

PUB23/53

Figure 1: Location map



Basic rights

Basic landholder rights are available in this groundwater source for domestic and stock watering requirements. While landholders do not 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 69 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 to 30 June 2022 are presented in **Table 1**.

Table 1: Talbragar Alluvial Groundwater Source share component 30 June 2022

Access Licence Category	Number of Licences	Total Volume
Local Water Utility[1]	2	650
Aquifer (Town Water Supply)[1]	1	6
Aquifer[2]	21	5,355

[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 Talbragar Alluvial Groundwater Source is 3,473 megalitres. Extraction in the 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

Carryover of unused account water from one water year to the next is not available in this groundwater source. Total water availability in a water year is controlled by the available water determinations credited to an access licence account.

The maximum amount of water that can be debited from an account in any one water year can't exceed the available water determination (AWD), plus any allocation transferred in (temporary

trade), and minus any allocation transferred out. This means that metered extraction plus transfers out cannot exceed the AWD, unless water is transferred in.

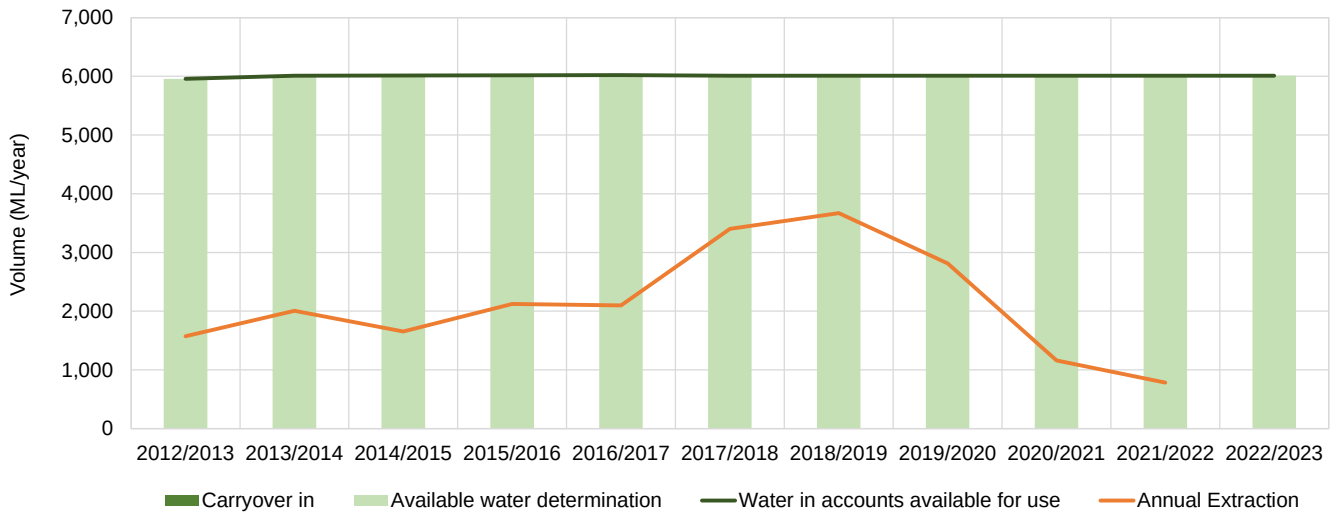
Total account water for period 2012/2013 to 2022/2023 is displayed in **Figure 2,** showing the proportion available for use and what is not available for use in a year. Total yearly extraction is also displayed. Note, all access licence categories have been combined in **Figure 2**.

There has been no reduction in the available water determination (AWD) for aquifer access licences in the Talbragar Alluvial Groundwater Source since the water sharing plan first started in 2012.

The access licence account information for the Talbragar Alluvial Groundwater Source on 1 July 2022 is summarised below:

- Carryover in: 0 ML
- Available water determination: 6,011 ML
- Total water in account: 6,011 ML
- Total water available for use: 6,011 ML

Figure 2: Account water availability and usage summary for the Talbragar Alluvial Groundwater Source



Groundwater trading

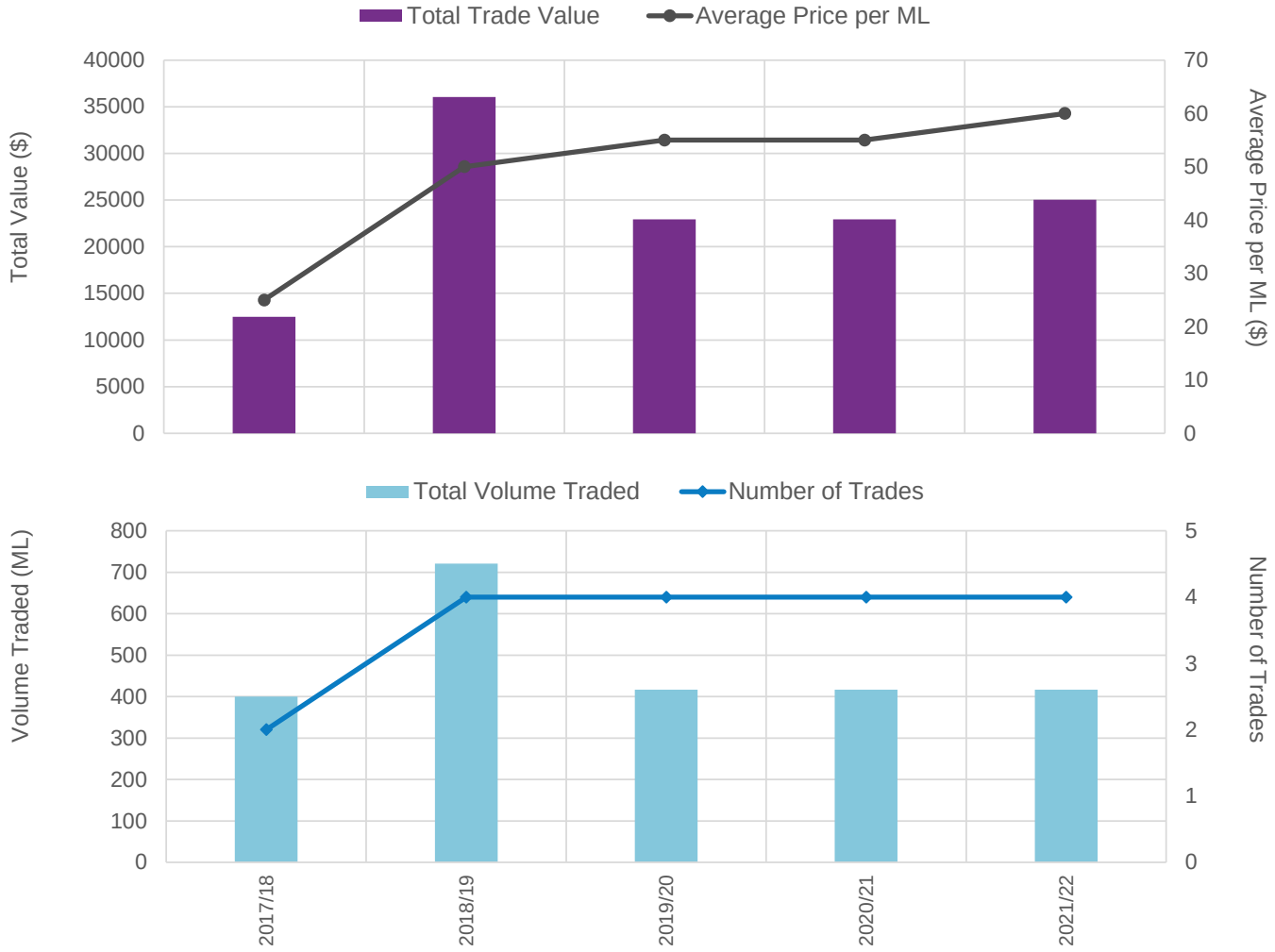
Trades are permitted within the Talbragar Alluvial Groundwater Source, but not between the Talbragar Alluvial Groundwater Source and any other groundwater source.

Allocation assignments (temporary trade)

Trading statistics for the Talbragar Alluvial Groundwater Source are illustrated in **Figure 3**, excludes trades for less than $1 per megalitre. The value paid per megalitre in 2021-22 was $60.

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

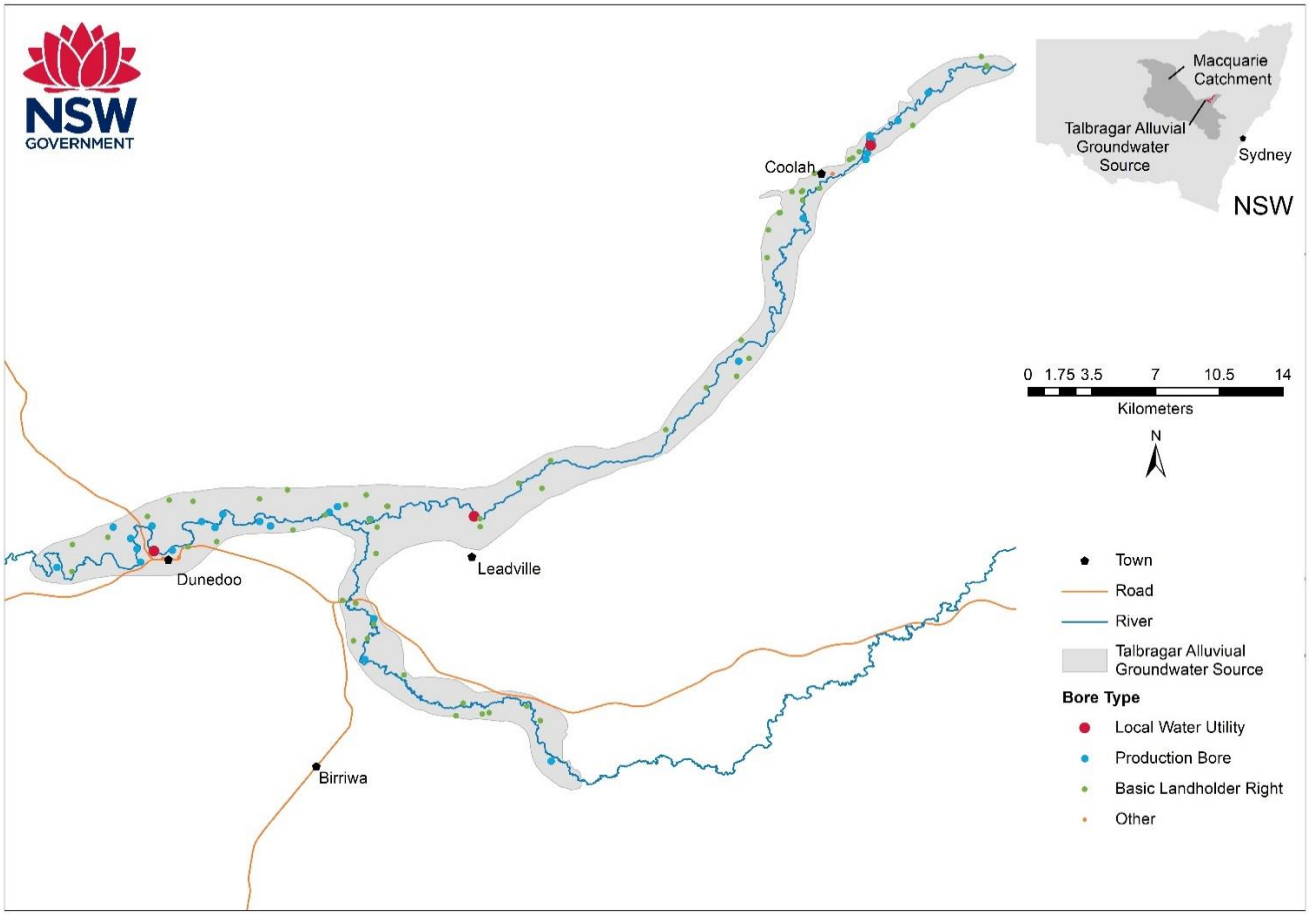
Figure 3: Talbragar Alluvial Groundwater Source temporary trade statistics



Bores

There are approximately 129 registered bores across the Talbragar Alluvial Namoi 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 2**).

Figure 4: Talbragar Alluvial Groundwater Source registered bores



The majority of production bores produce supply in the range of 200 ML/year and tend to be clustered in the lower part of the water source (**Figure 5**).

Table 2: Approximate number of licensed bores in the Talbragar Alluvial Groundwater Source (2022)

Groundwater Source	Registered Bore Purpose		
	Basic Landholder Rights	Production	Local Water Utility
Talbragar Alluvial	95	21	3

Water level monitoring

WaterNSW monitors groundwater levels at 5 monitoring bores at 4 sites in the Talbragar Alluvial Groundwater Source (**Figure 6**). At some of the 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 **Figure 7** to **Figure 10.**

Data for the monitored bores as well as private bore information can be obtained from the WaterNSW real time data portal at: realtimedata.waternsw.com.au/

Data is also available for 3 of the groundwater monitoring sites in real-time via telemetry. You can also request information via: Customer.Helpdesk@waternsw.com.au

Figure 5: Talbragar Alluvial Groundwater Source water supply bores and distribution of extraction

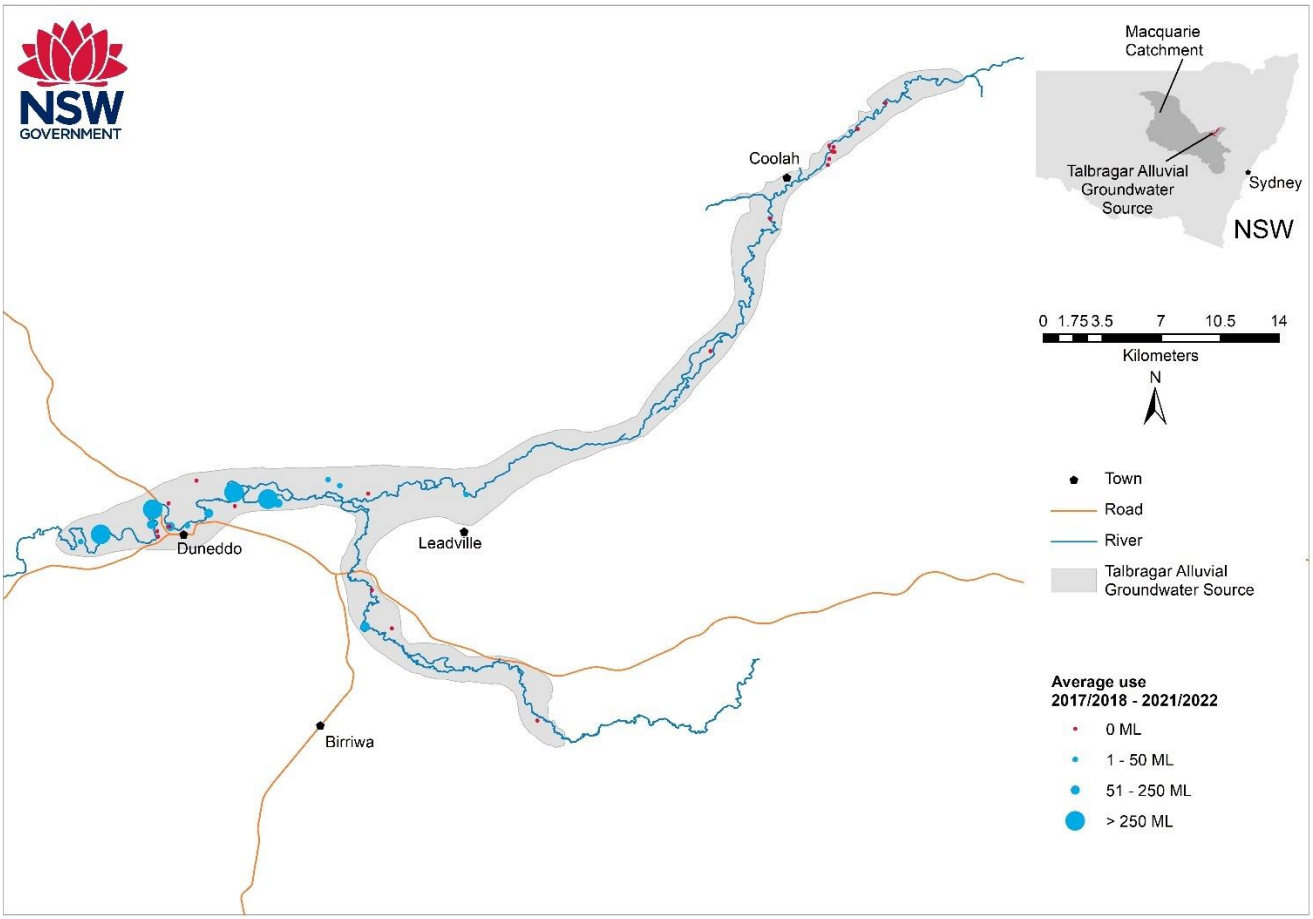


Figure 6: Talbragar Alluvial Groundwater Source monitoring bore sites

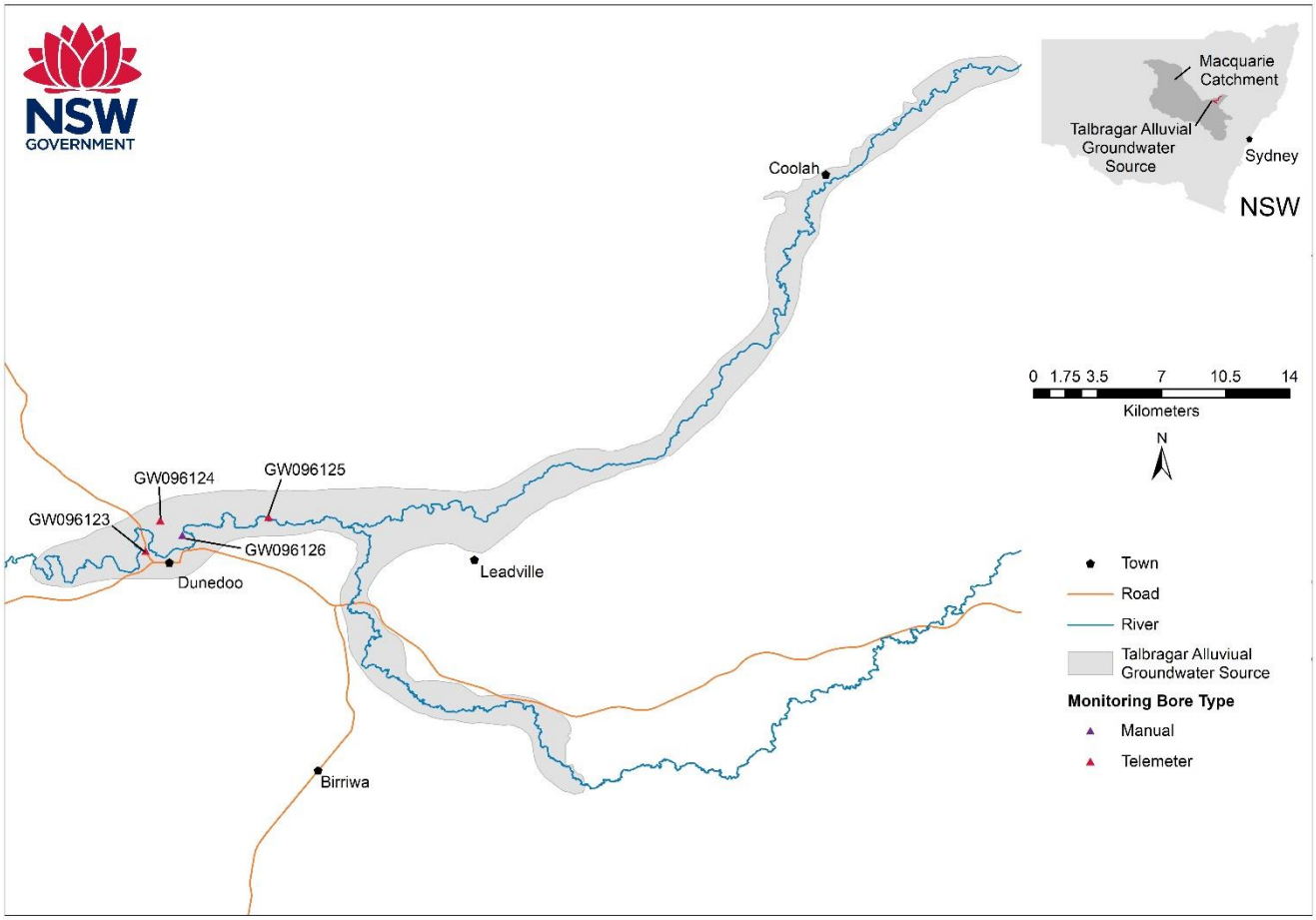


Figure 7: Hydrograph for monitoring bore GW096125

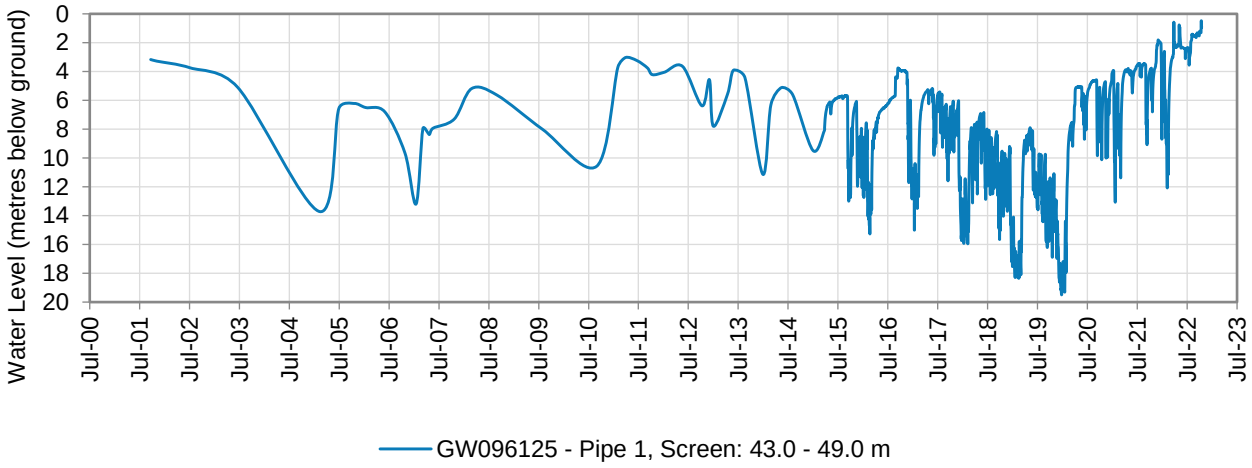


Figure 8: Hydrograph of monitoring bore GW096126

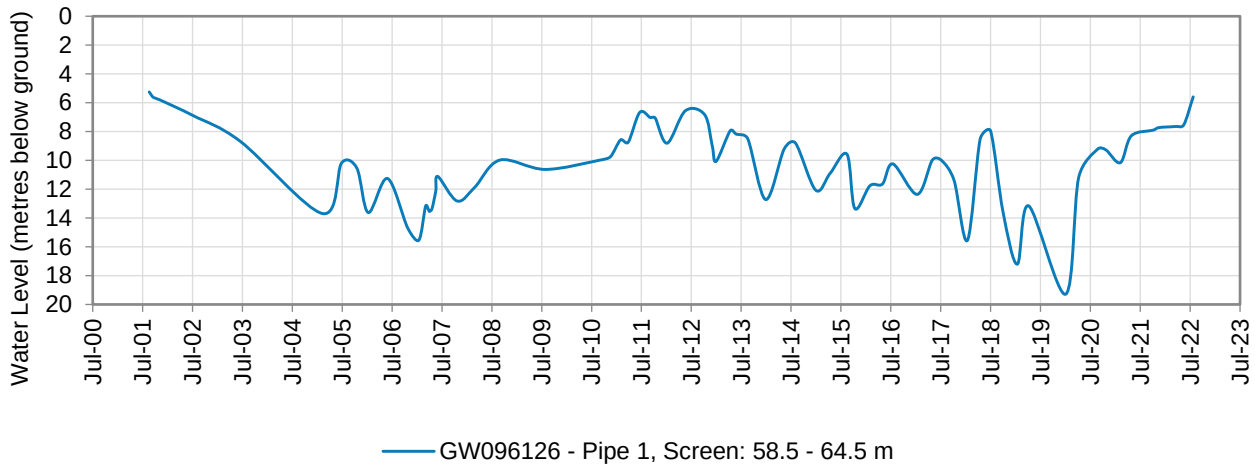


Figure 9: Hydrograph of monitoring bore GW096124

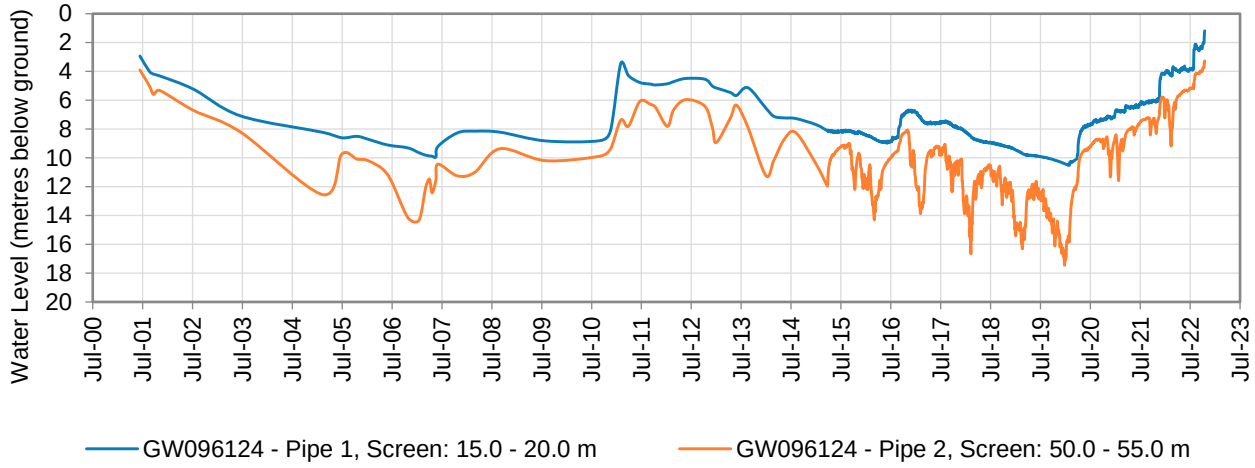


Figure 10: Hydrograph of monitoring bore GW096123