

## Talbragar Alluvial Groundwater Source

### Introduction

This report is a summary of water accounts, volume pumped and groundwater levels for the Talbragar Alluvial Groundwater Source. The report is for the period 1 July 2019 to 30 June 2020 based on the water sharing plan that applied over the period and will be updated on an annual 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 Alluvial Groundwater Sources:

[www.industry.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0017/192221/macquarie-castlereagh-alluvium-appendix-a-water-resource-description.pdf](http://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 Coolburragundy and Talbragar Rivers past Coolah and Leadville to approximately 7 km downstream of Dunedoo (**Figure 1**).

The Talbragar Alluvial Groundwater Source (**Figure 1**) 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

For the period of reporting, the Talbragar Alluvial Groundwater Source was managed by the rules defined in the Water Sharing Plan for the Macquarie Bogan Unregulated and Alluvial Water Sources 2012. It was replaced on 1 July 2020 by the Water Sharing Plan for the Macquarie-Castlereagh Groundwater Sources 2020.

These water sharing plans are available for viewing on the Department of Planning Industry and Environment - Water website at: [www.industry.nsw.gov.au/water/plans-programs/water-sharing-plans/status/macquarie-castlereagh-region](http://www.industry.nsw.gov.au/water/plans-programs/water-sharing-plans/status/macquarie-castlereagh-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 69 megalitres/year (ML/year).

The bore owner is responsible for monitoring water quality from the water supply work 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.

## Talbragar Alluvial Groundwater Source

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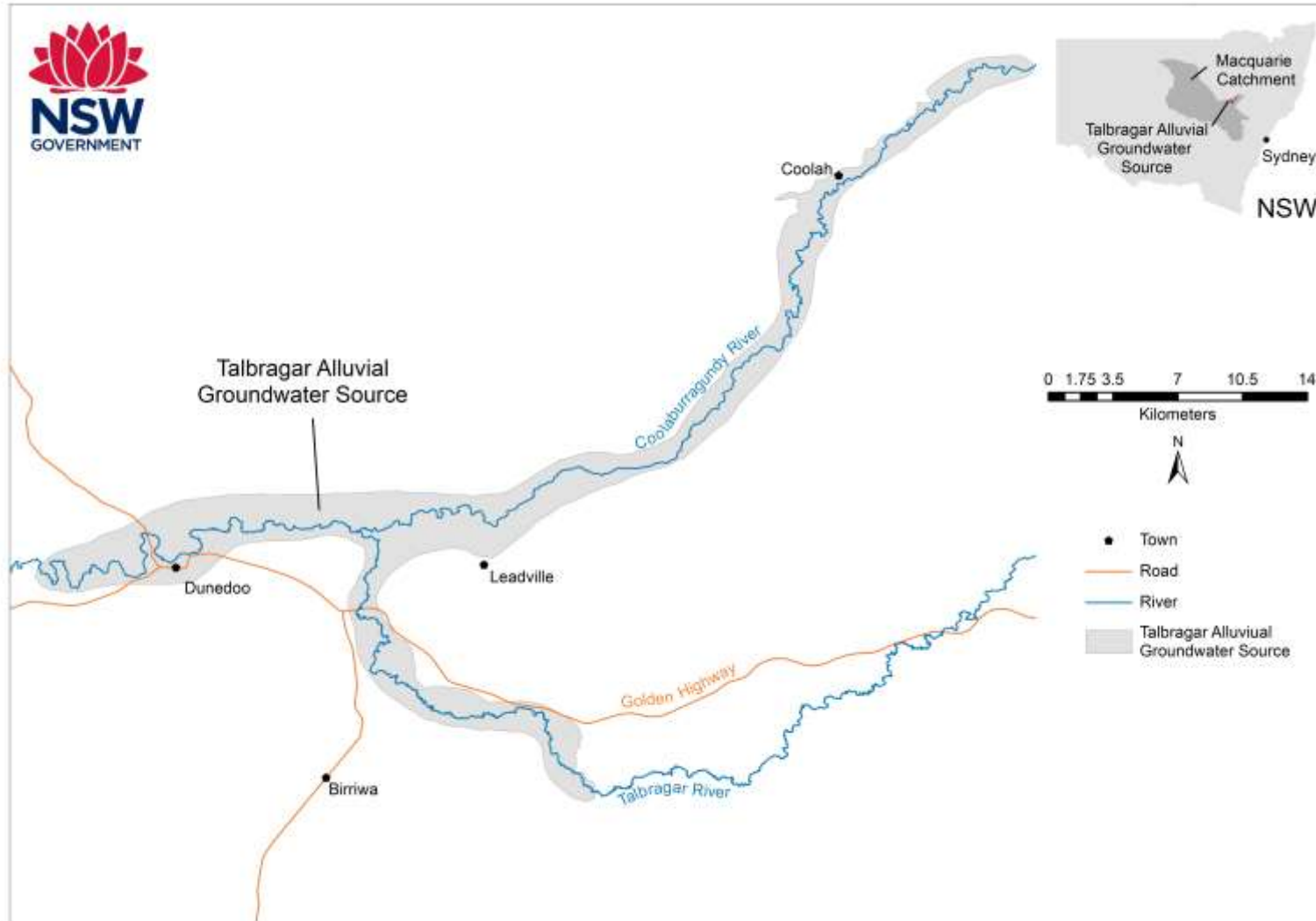


Figure 1: Location Map

## Talbragar Alluvial Groundwater Source

### Groundwater access licences

Groundwater access licence share components for 2019/2020 are presented in **Table 1**.

**Table 1: Talbragar Alluvial Groundwater Source share component 30 June 2020**

Access Licence Category	No. of Licences	Talbragar Alluvial Groundwater Source
Local Water Utility <sup>1</sup>	2	650
Aquifer (Town Water Supply) <sup>1</sup>	1	6
Aquifer <sup>2</sup>	21	5,355

<sup>1</sup> Megalitres/year (ML/year)

<sup>2</sup> Megalitres per unit share

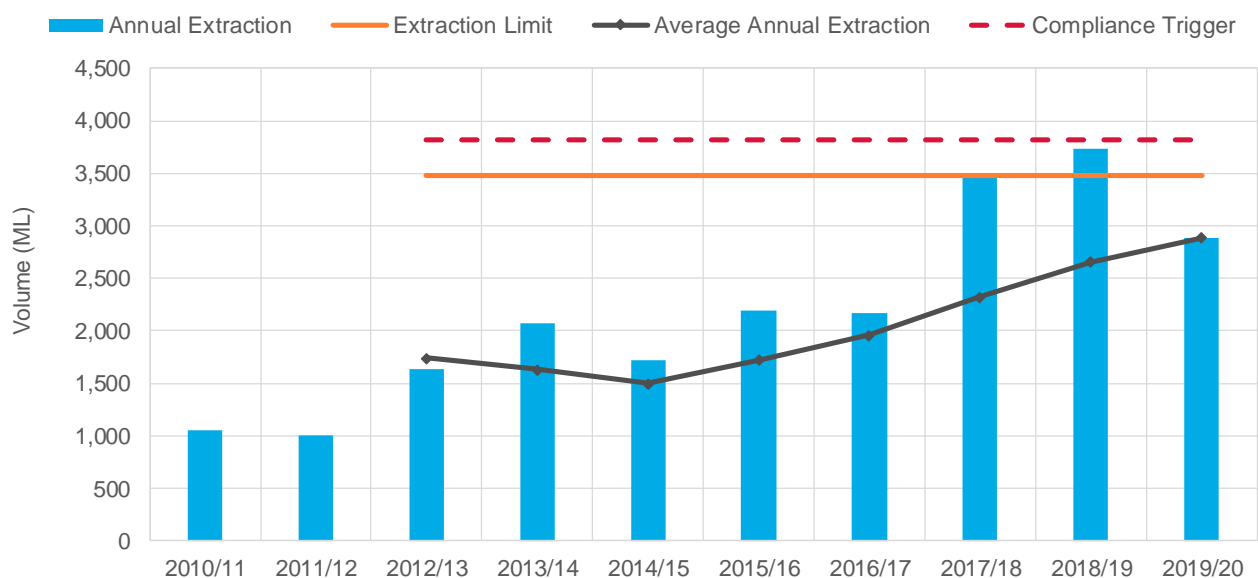
### Extraction limit

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

The extraction limit for this Talbragar Alluvial Groundwater Source is 3,473 ML/year.

Extraction in the Talbragar Alluvial Groundwater Source is not compliant if the **5 years** average annual extraction (the assessment period) 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 total extraction to the extraction limit.

Compliance against the extraction limit for the Talbragar Alluvial Groundwater Source is shown in **Figure 2**.



**Figure 2: Talbragar Alluvial extraction compared to the extraction limit compliance trigger**

## Talbragar Alluvial Groundwater Source

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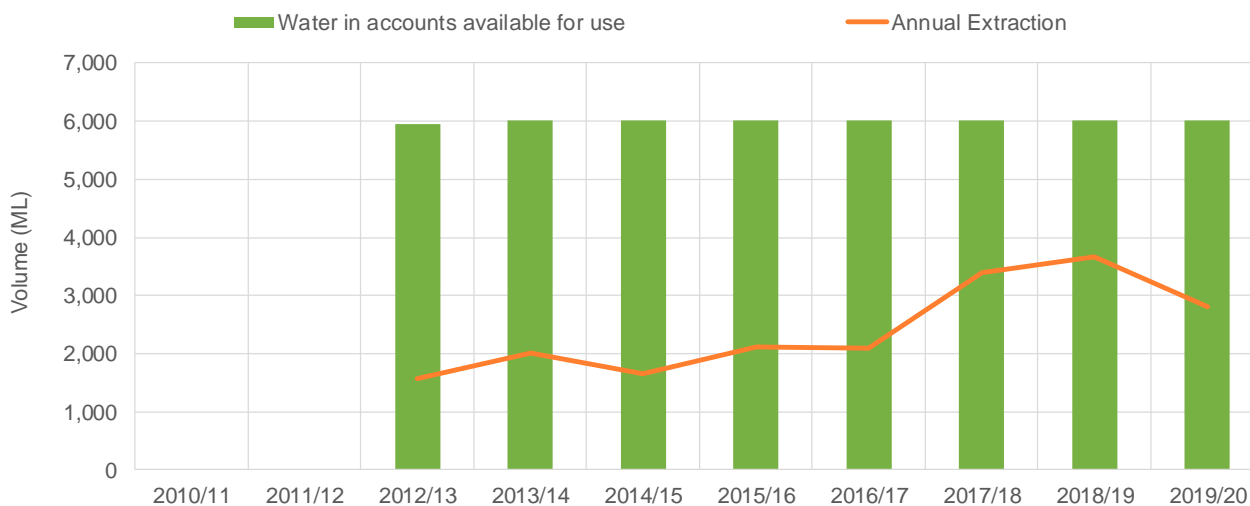
### Available water

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 and yearly extractions are displayed in **Figure 3**. Note, all access licence categories have been combined in **Figure 3**.

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



**Figure 3: Account water availability and usage summary for the Talbragar Alluvial Water Source**

### Access licence account summary for the 2019/2020 water year

The following section summarises the water accounting information applicable to the access licences in the Talbragar Alluvial Groundwater Source for the period 1 July 2019 to 30 June 2020.

The data is presented in **Table 2**. Account summary components have been rounded to the nearest megalitre.

## Talbragar Alluvial Groundwater Source

**Table 2: Talbragar Alluvial Groundwater Source access licence account summary 2019-20, volumes in ML or shares**

Access licence category	Share 30 June 2019	Opening balance	AWD	Assignments (Temporary Trades)		Account usage	End of year balance		End of year forfeit	Carry forward
				In	Out		Available	Unavailable		
Local Water Utility	656	25	656	0	0	178	501	0	471	30
Aquifer	5,355	0	5,355	417	417	2,632	2,723	0	2,723	0

### Explanatory information for Table 2

Heading		Description
Share		This is the total share component (entitlement) in the specific licence category and the end of the relevant water year
Opening balance		The volume of water that has been carried forward from previous years access licence accounts for the relevant licence category.
AWD		Increase to total account water as a result of available water determinations (a process which distributes a volume of water to access licence accounts at the commencement of each water year)
Assignments	In	Increase in account water as a result of allocation assignments (temporary trade) in.
	Out	Decrease in account water as a result of allocation assignments (temporary trade) out.
Account usage		Decrease in account water due to account usage
End of year balance	Available	The available (accessible for use) account balance reported and the end of the relevant water year. The total account balance is equal to the available plus unavailable volumes. The volume stated is prior to any end of year forfeits.
	Unavailable	The amount in accounts that is unavailable for use at the time of reporting due to account usage limits defined in the relevant water sharing plan. The volume is reported at the end of the relevant water year. The total account balance is equal to the available plus unavailable volumes. The volume stated is prior to any end of year forfeits.
End of Year Forfeit		Account water that is forfeited at the end of the water year as a result of carryover rules defined in the relevant water sharing plan that may restrict the volumes allowed to be carried forward.
Carry Forward		This represents the account water that is permitted to be carried forward into the next water year as determined by the carryover rules.
(123)		Denotes a negative value

## Talbragar Alluvial Groundwater Source

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### 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 **Table 3**, this excludes temporary trades for less than \$1 per megalitre.

**Table 3: Talbragar Alluvial Groundwater Source temporary trade statistics**

Water Year	Number of Trades	Total Volume Traded (ML)	Total Trade Value (\$)	Average price per ML (\$)
2017-18	2	400	12,500	25
2018-19	4	721	36,050	50
2019-20	4	417	22,935	55

#### Assignment or transfer of rights (permanent trade)

A summary of the assignment or transfer of water access rights dealings in the Talbragar Alluvial Groundwater Source is provided in **Table 4**.

Other dealings that can result in increased extractions at existing locations or at new locations such as adding or removing approvals from an access licence, or subdivision and consolidation of access licences have not been included in **Table 4**.

Note that permanent dealings and/or new bore applications may not be approved or will be subject to an annual extraction limit in some parts of this water source. This is due to the high density of bores and/or share volumes in the local area impacting on the groundwater source, other users and/or the environment.

## Talbragar Alluvial Groundwater Source

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**Table 4: Summary of assignments or transfers of water access rights**

Dealing		2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
<b>Talbragar Alluvial Groundwater Source</b>											
Transfer of WAL (excludes transfers for less than \$1 per share)	Number	0	0	0	0	5	0	0	0	1	0
	Total share transferred	0	0	0	0	617	0	0	0	30	0
Assignment of share component (excludes assignments for less than \$1 per share)	Number	0	0	0	0	0	0	0	0	0	0
	Total share assigned	0	0	0	0	0	0	0	0	0	0
	Average price per ML	0	0	0	0	0	0	0	0	0	0

## Talbragar Alluvial Groundwater Source

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### Bores

There are approximately 129 registered bores across the Talbragar Alluvial 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 5**).

Some bores can yield up to 1,400 ML/year, while most production bores produce supply up to 400 ML/year (**Figure 5**).

**Table 5: Number of licensed water supply bores in the Talbragar Alluvial Groundwater Source (at June 2020).**

Water Source	Registered Bore Type		
	Basic Landholder Rights	Production	Local Water Utility
Talbragar Alluvial Groundwater Source	91	34	4

### 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 **Figures 7 to 10**.

Data for the monitored bores as well as private bore information can be obtained from the WaterNSW real time data portal ([realtimedata.watarnsw.com.au/](https://realtimedata.watarnsw.com.au/)). You can also request information via: [Customer.Helpdesk@watarnsw.com.au](mailto:Customer.Helpdesk@watarnsw.com.au)

The manually monitored sites are read every four to eight weeks. Data is also available for 3 of the groundwater monitoring sites in real-time via telemetry.



## Talbragar Alluvial Groundwater Source

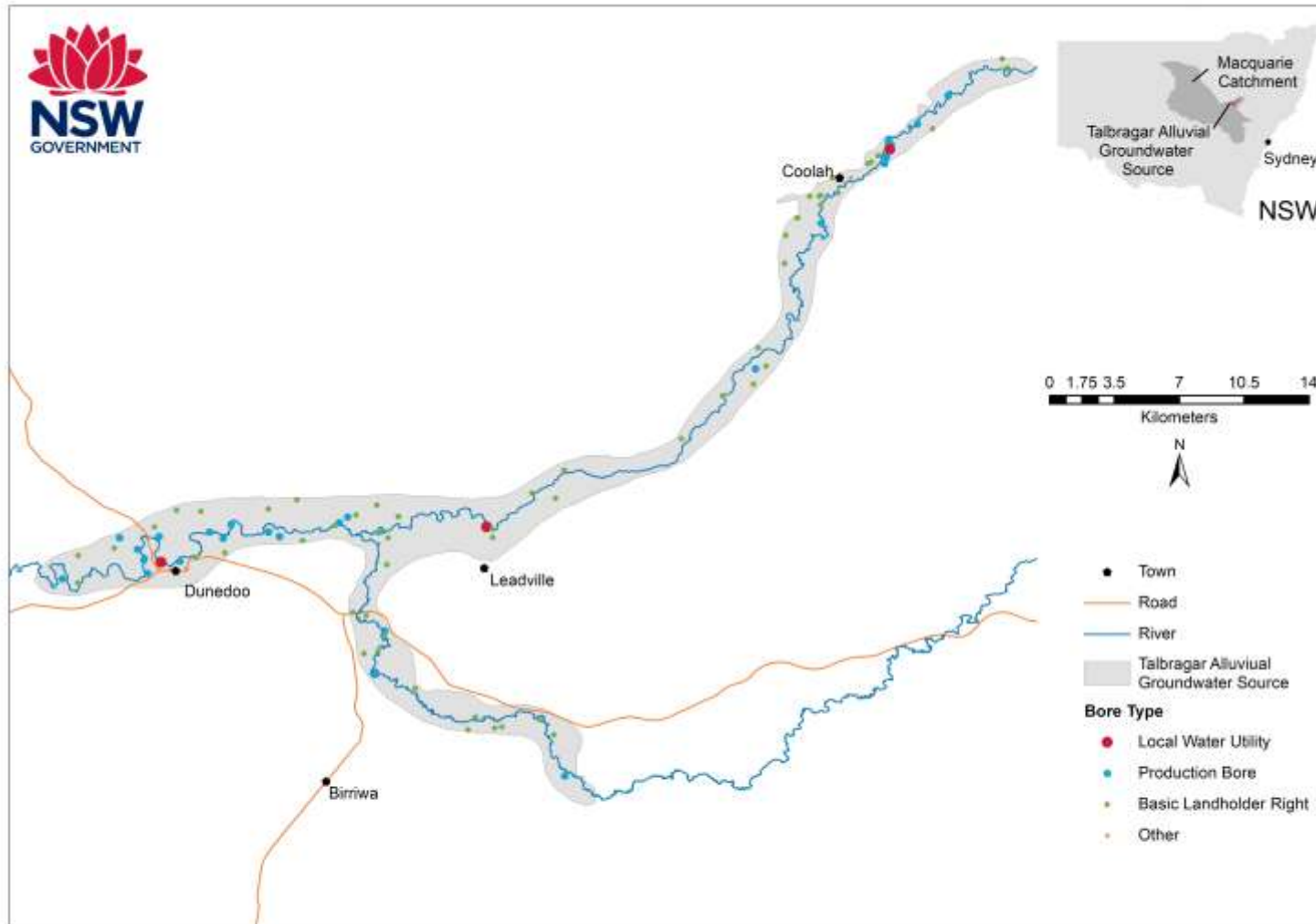


Figure 4: Talbragar Alluvial Groundwater Source water supply bores

## Talbragar Alluvial Groundwater Source

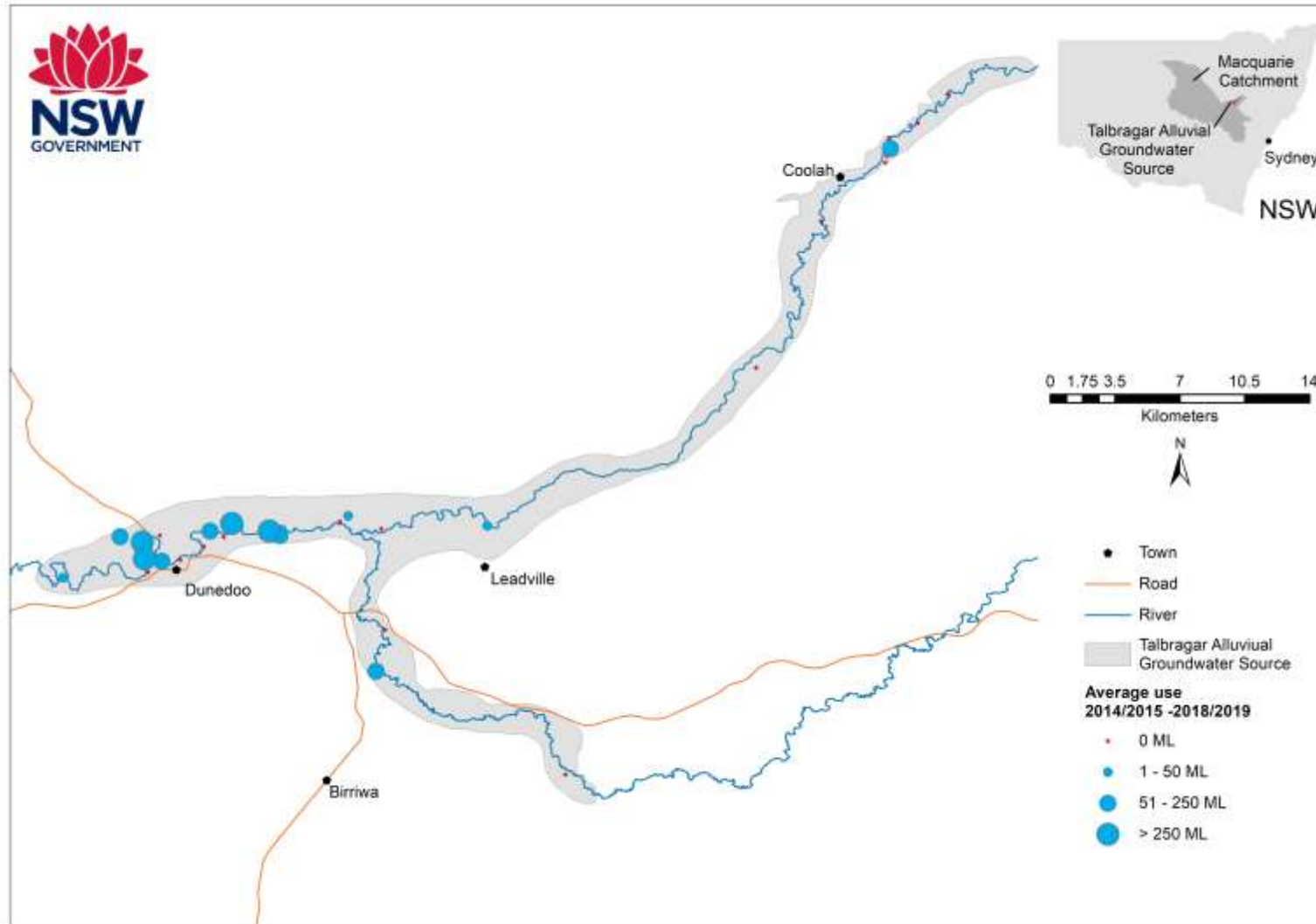


Figure 5: Talbragar Alluvial Groundwater Source distribution of extraction

## Talbragar Alluvial Groundwater Source

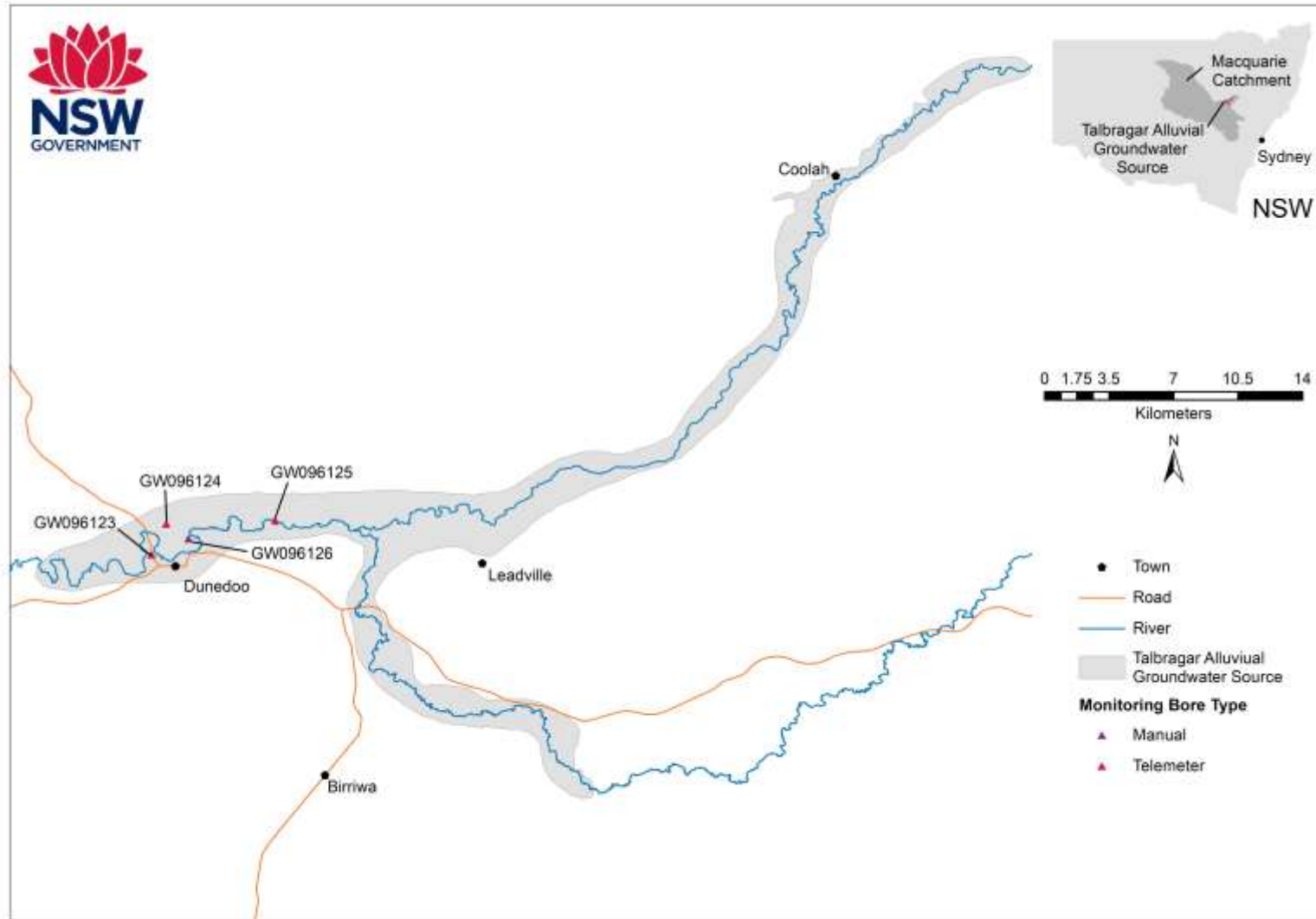
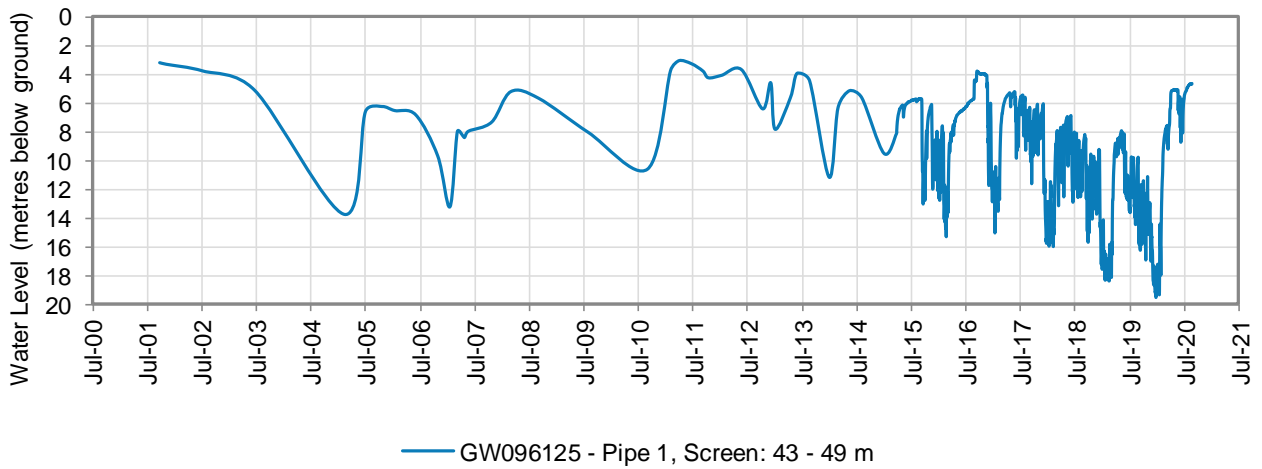


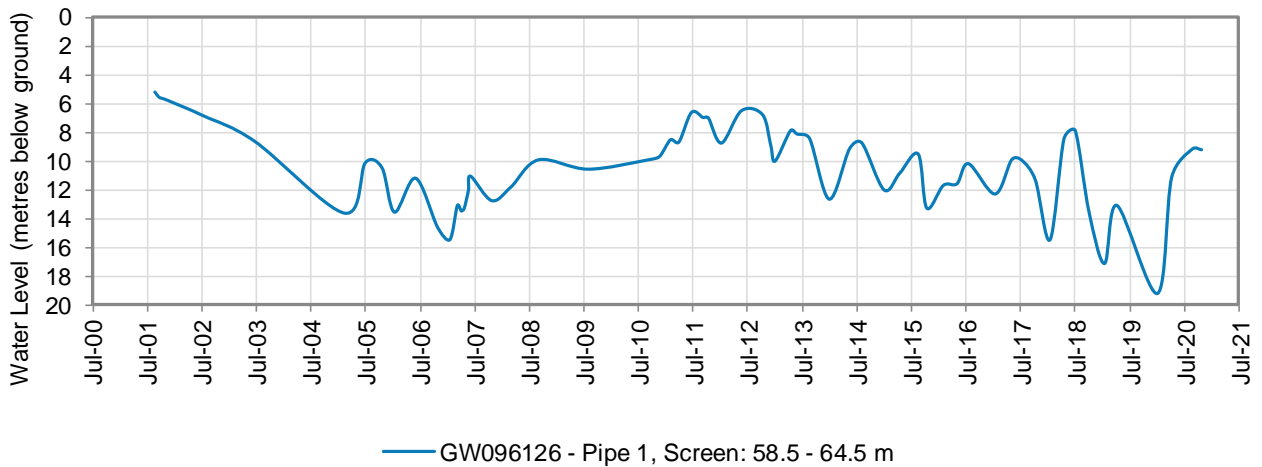
Figure 6: Talbragar Alluvial Groundwater Source monitoring bore sites

## Talbragar Alluvial Groundwater Source

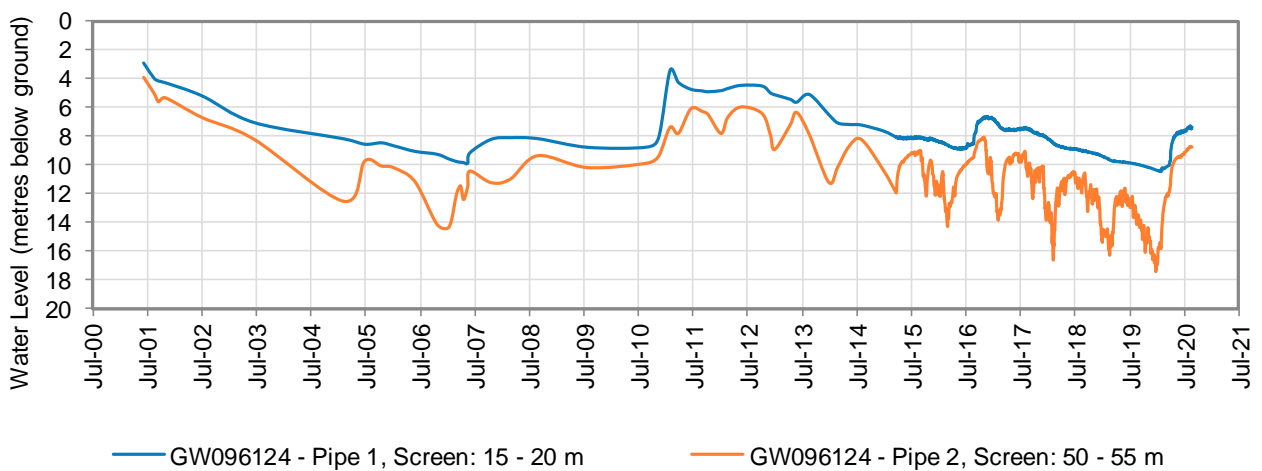
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**Figure 7: Hydrograph of monitoring bore GW096125**



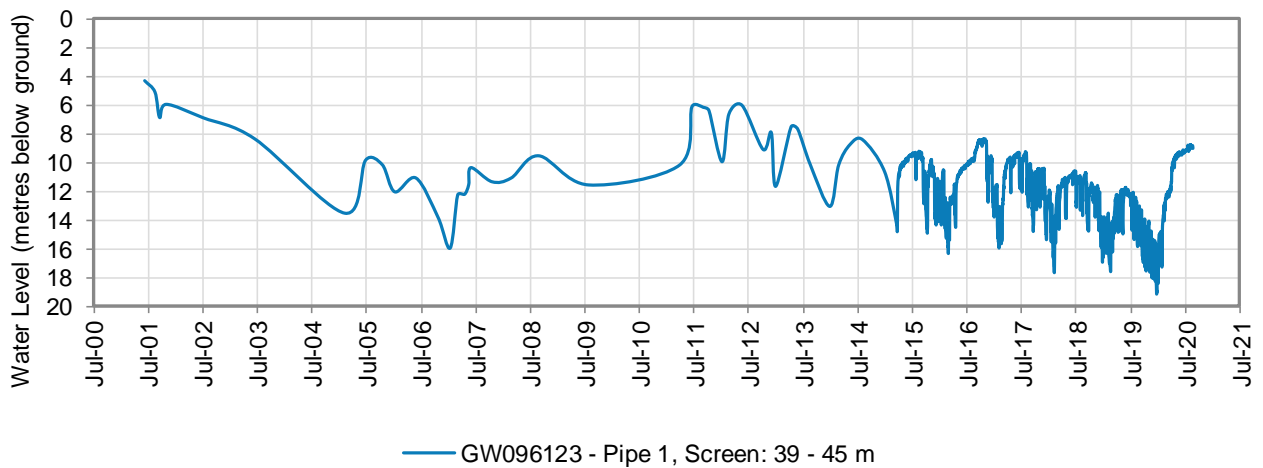
**Figure 8: Hydrograph of monitoring bore GW096126**



**Figure 9: Hydrograph of monitoring bore GW096124**

## Talbragar Alluvial Groundwater Source

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**Figure 10: Hydrograph of monitoring bore GW096123**

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