

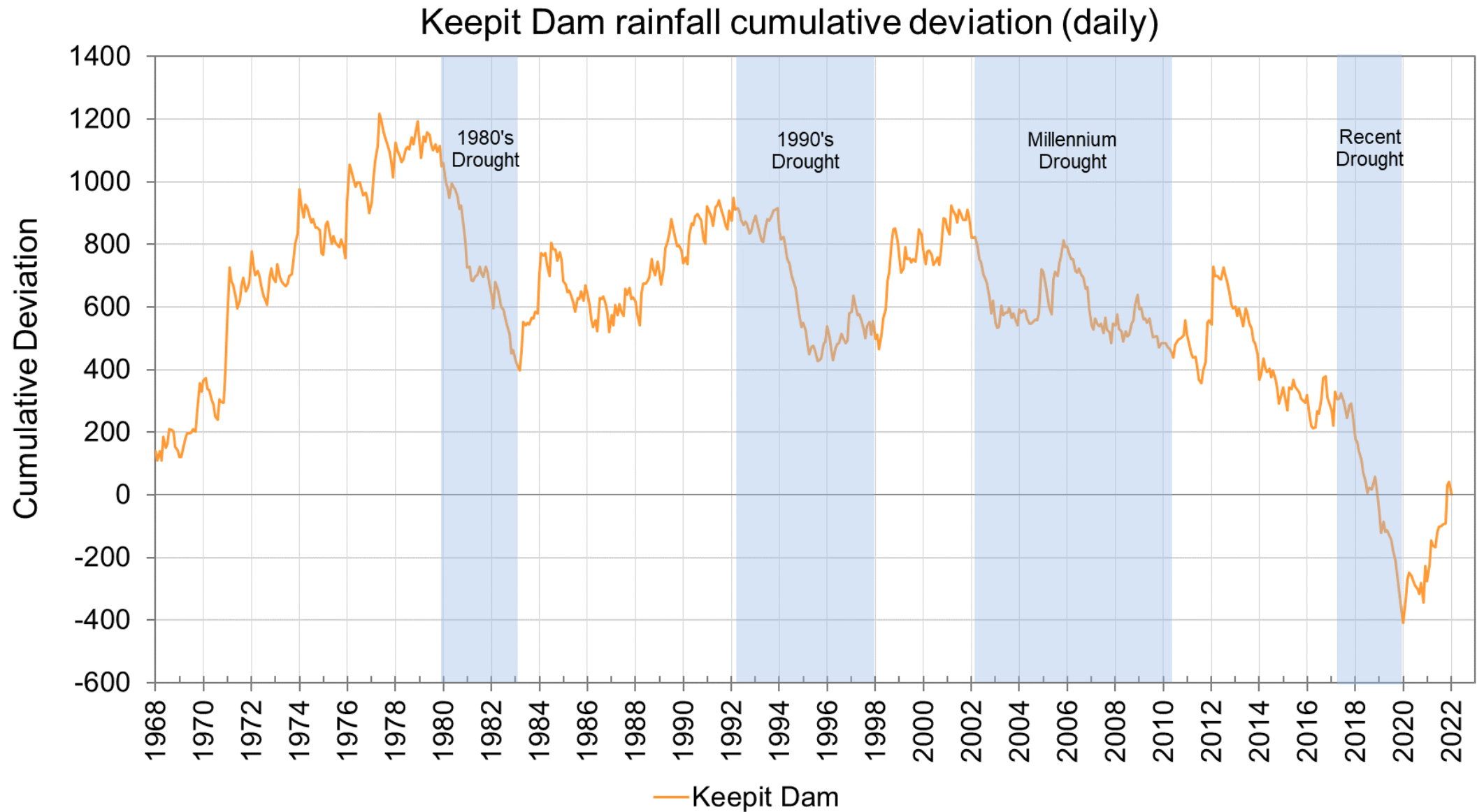
# Upper Namoi Zone 12 groundwater source Water level trends

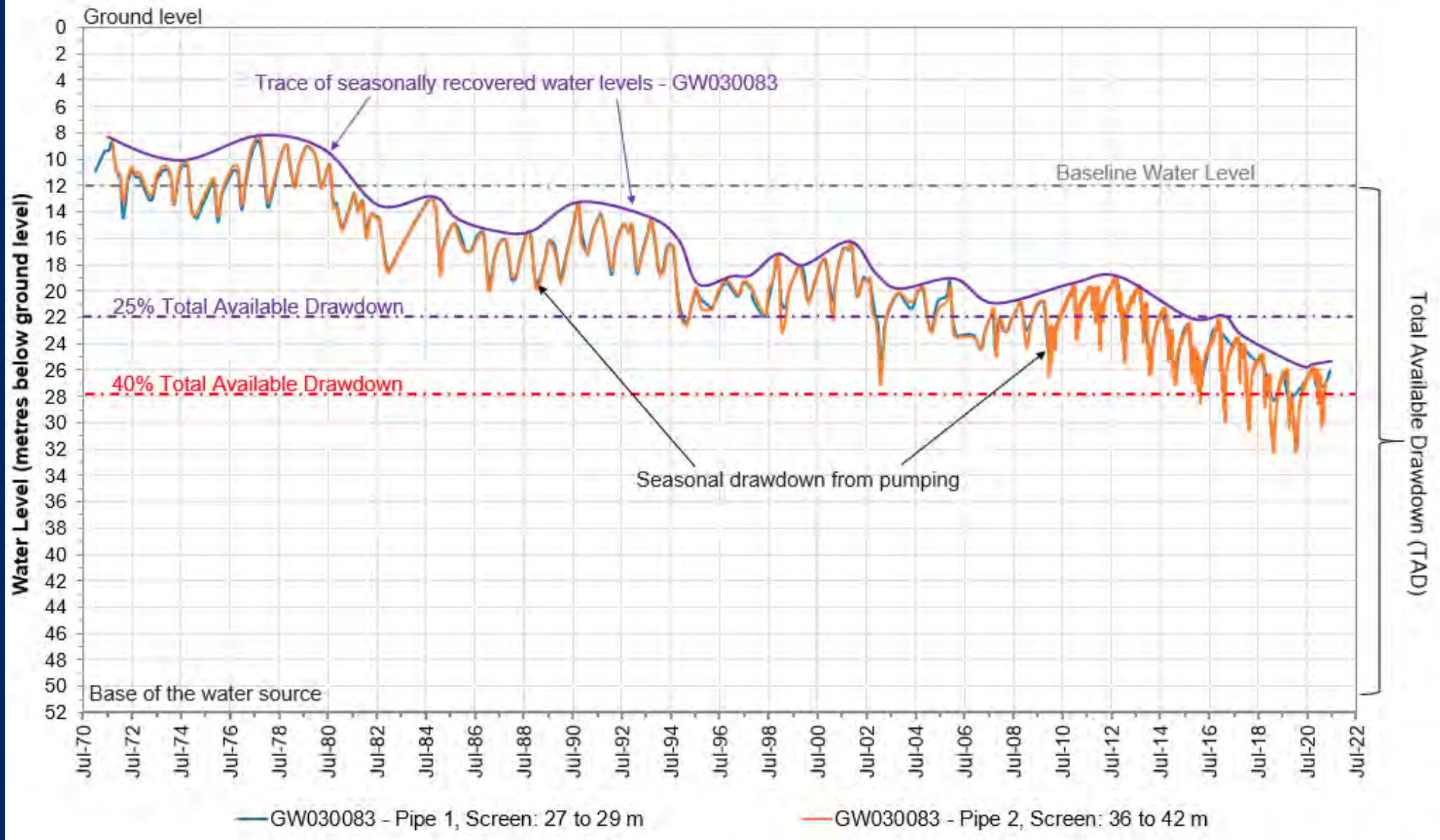
# Introduction

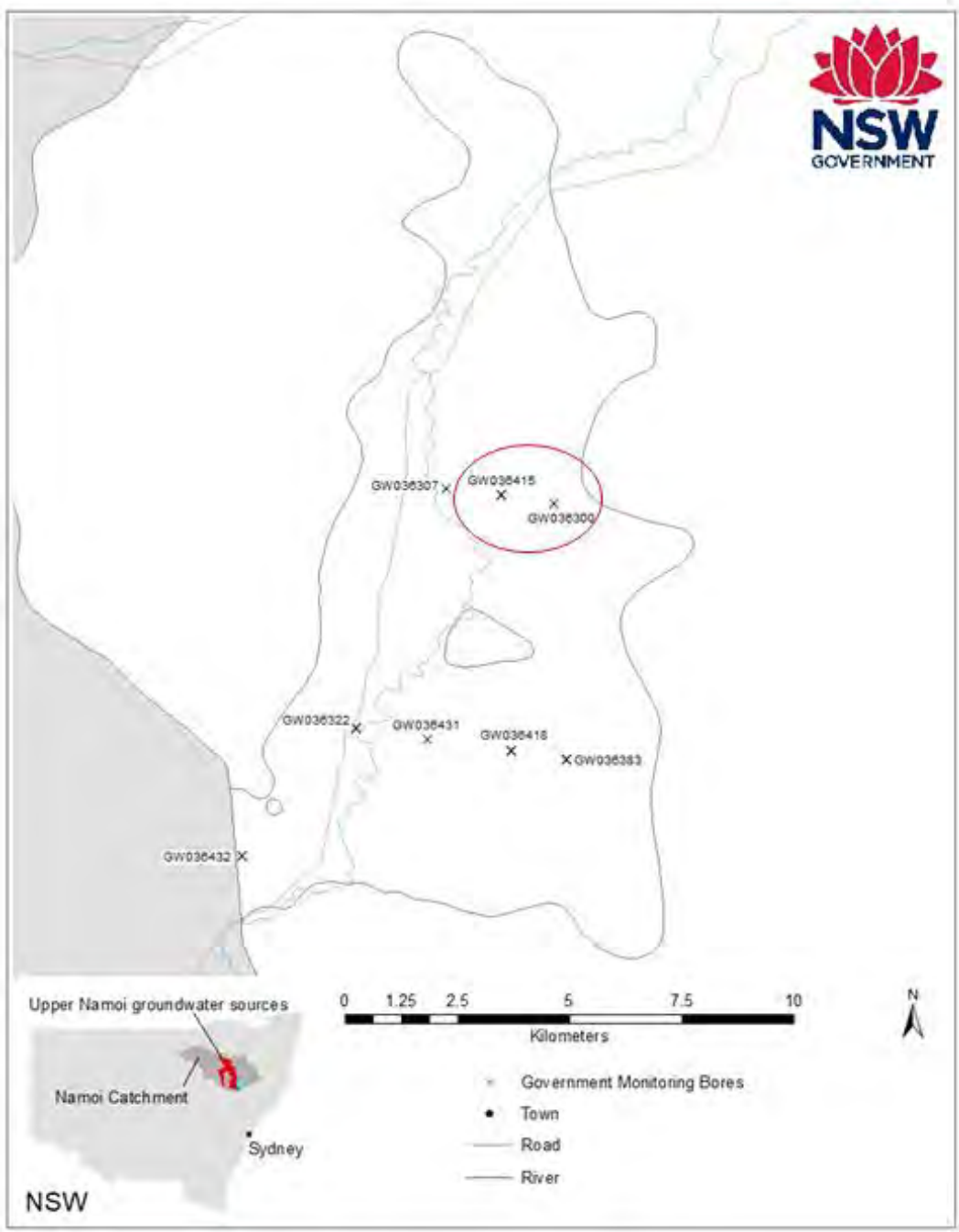
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- History of declining groundwater levels
- Water level analysis was conducted to determine how groundwater levels are responding to current water use and management frameworks

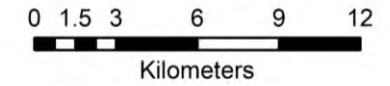
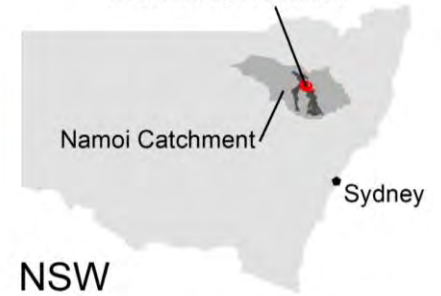
# Rainfall trends







### Upper Namoi Zone 4 and Zone 12 Groundwater Sources



- Town
- Road
- River

### Upper Namoi Groundwater Sources

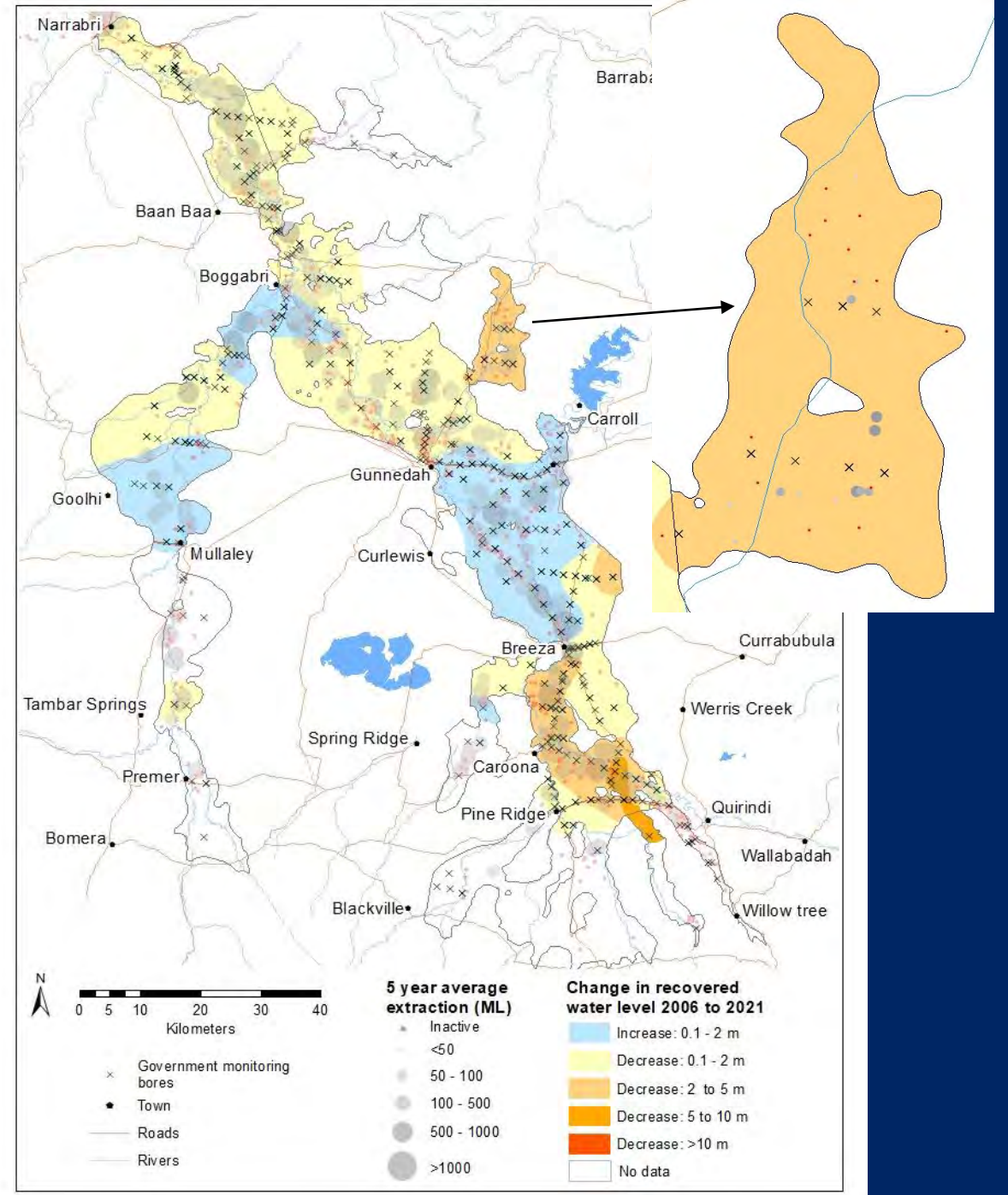
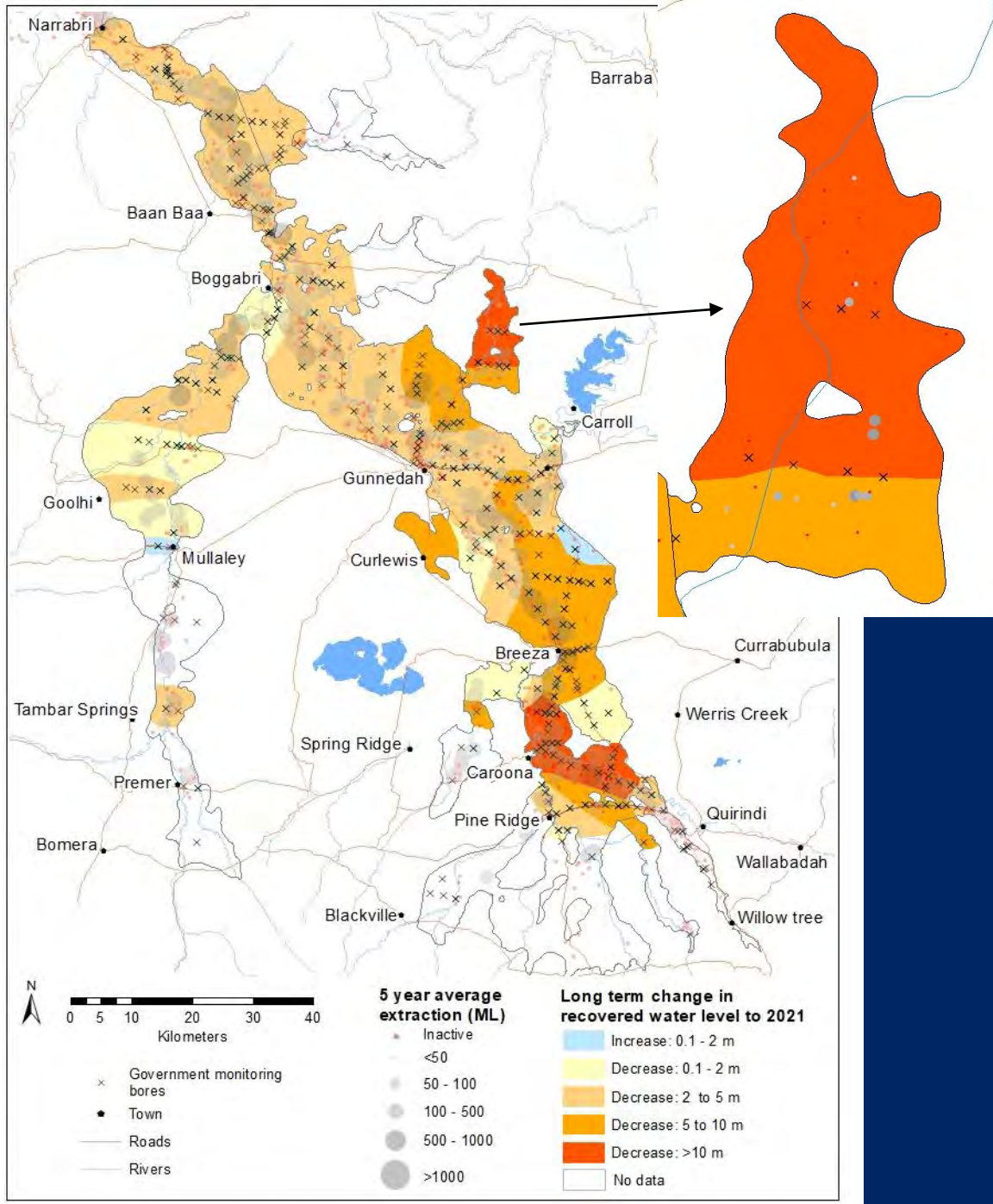
- Zone 4
- Zone 12
- Zone 3
- Zone 5
- Zone 2

### Average use 2014/2015 - 2018/2019

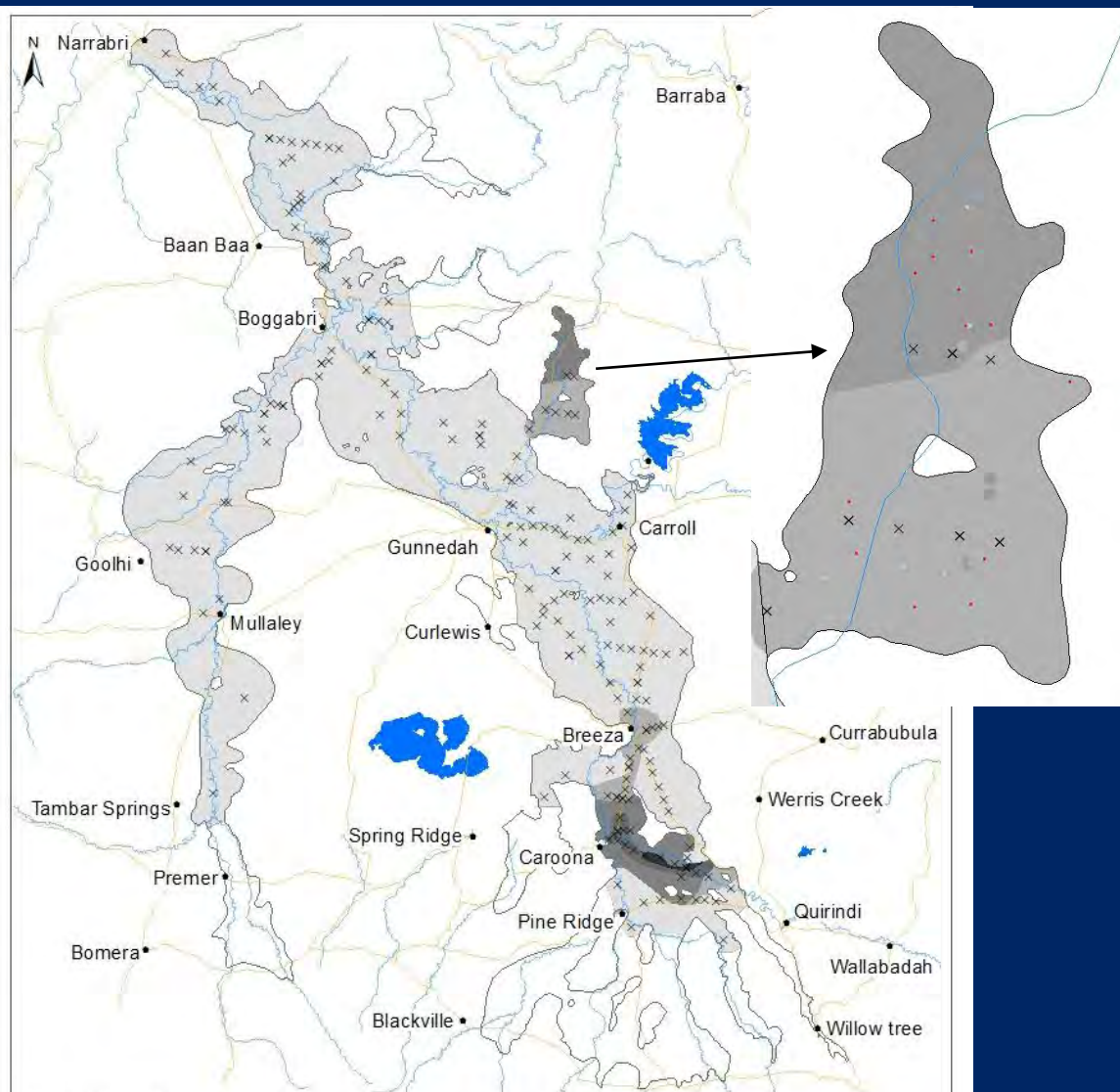
- 0 ML
- 1 - 100 ML
- 101 - 200 ML
- 201 - 500 ML
- > 500 ML









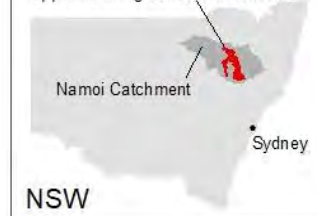


0 5 10 20 30 40  
Kilometers  
Upper Namoi groundwater sources

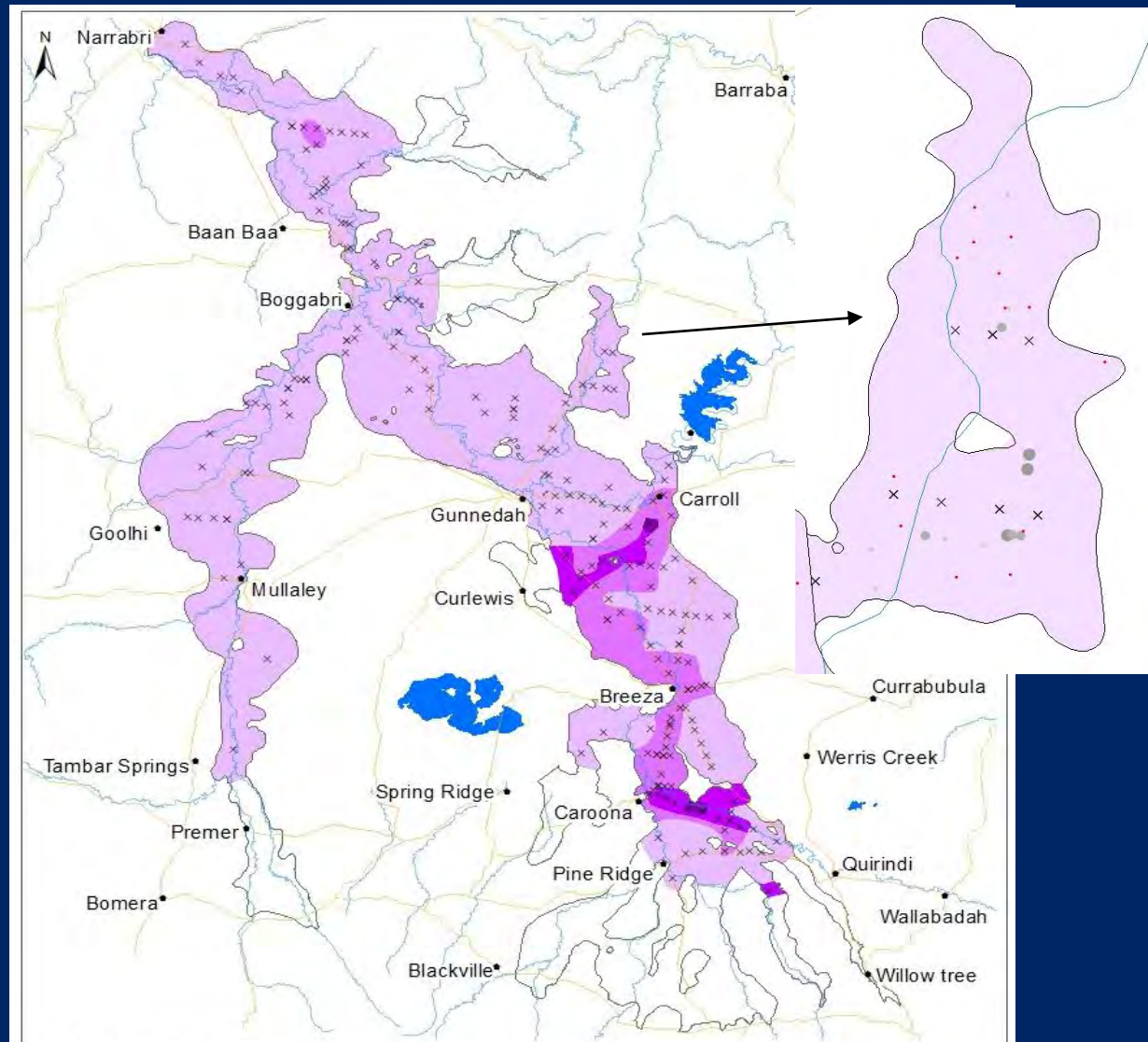
**2021 recovered water level as a % of Total Available Drawdown**

- No data
- <15 %
- 15 to 20 %
- 20 to 25 %
- 25 to 30 %
- >30 %

- × Government Monitoring Bores
- Town
- Road
- River



NSW

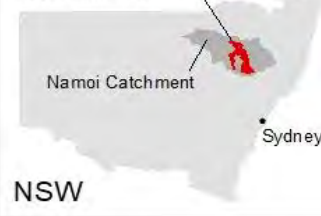


0 5 10 20 30 40  
Kilometers  
Upper Namoi groundwater sources

**Maximum drawdown as a % of Total Available Drawdown**

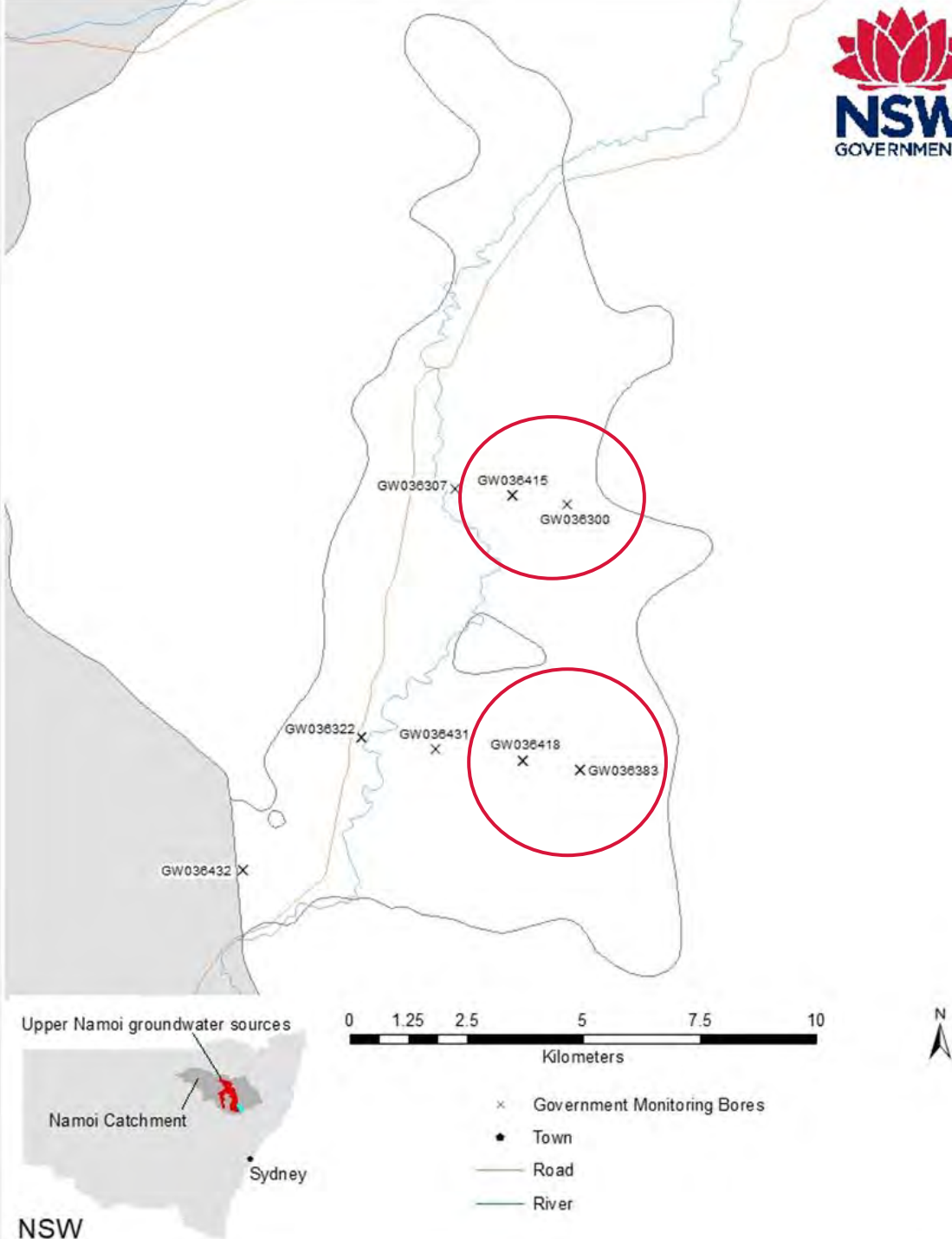
- No data
- <20 %
- 20 to 30 %
- 30 to 40 %
- >40 %

- × Government Monitoring Bores
- Town
- Road
- River



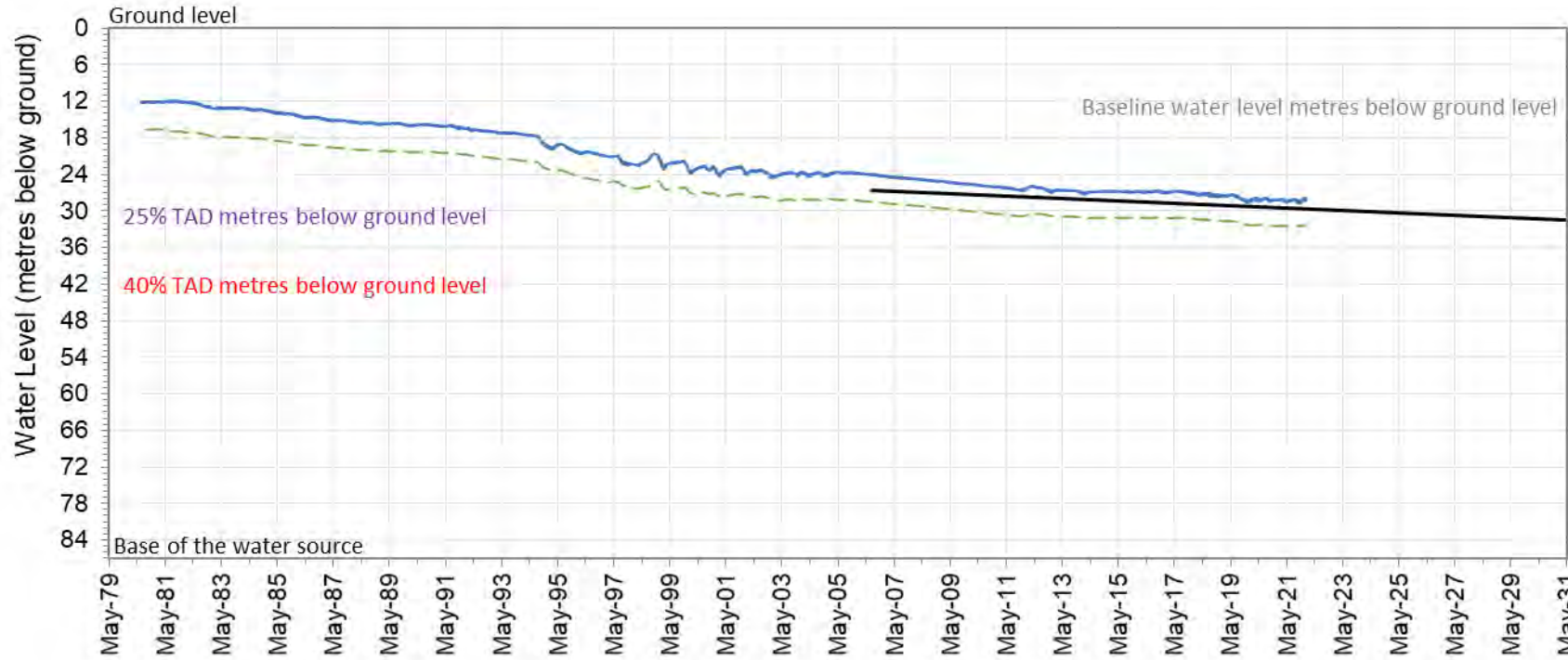
NSW

# Upper Namoi Zone 12 Groundwater Source Monitoring bores



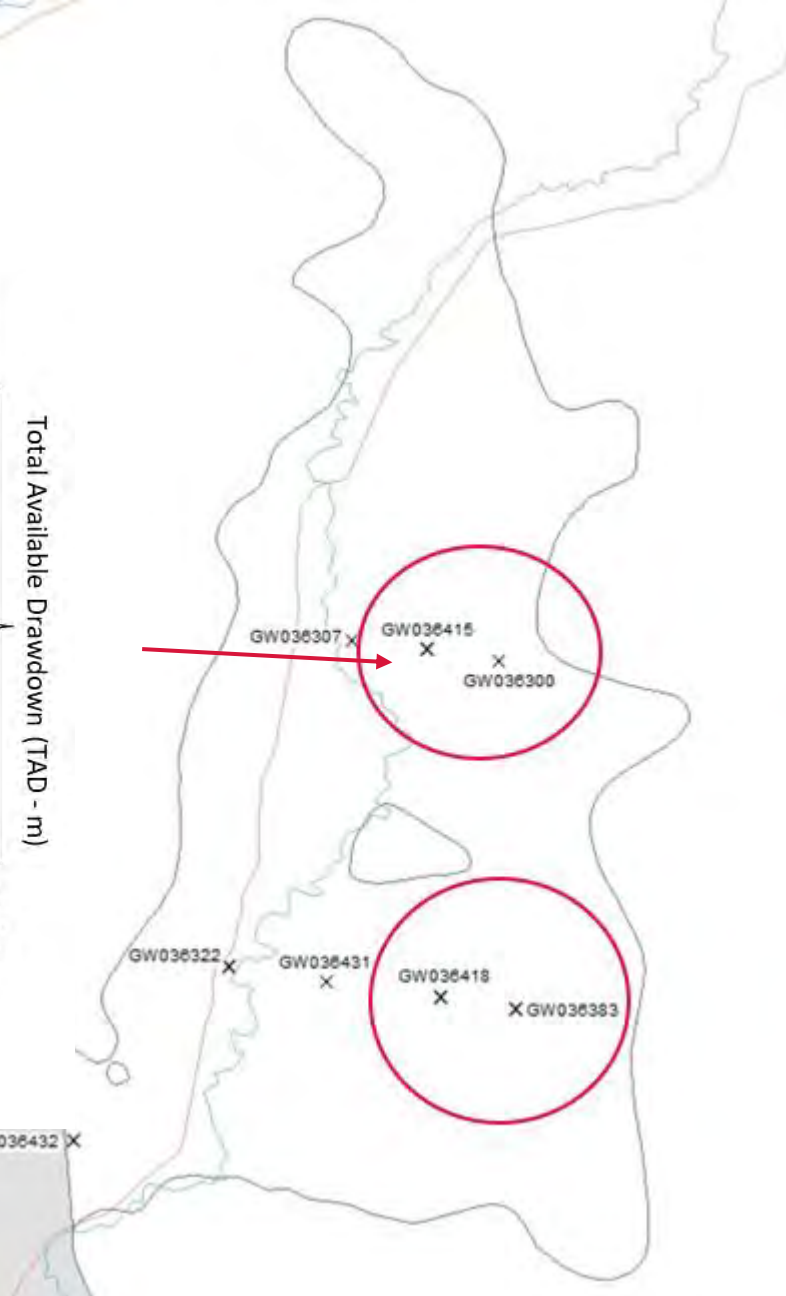


# Hydrographs

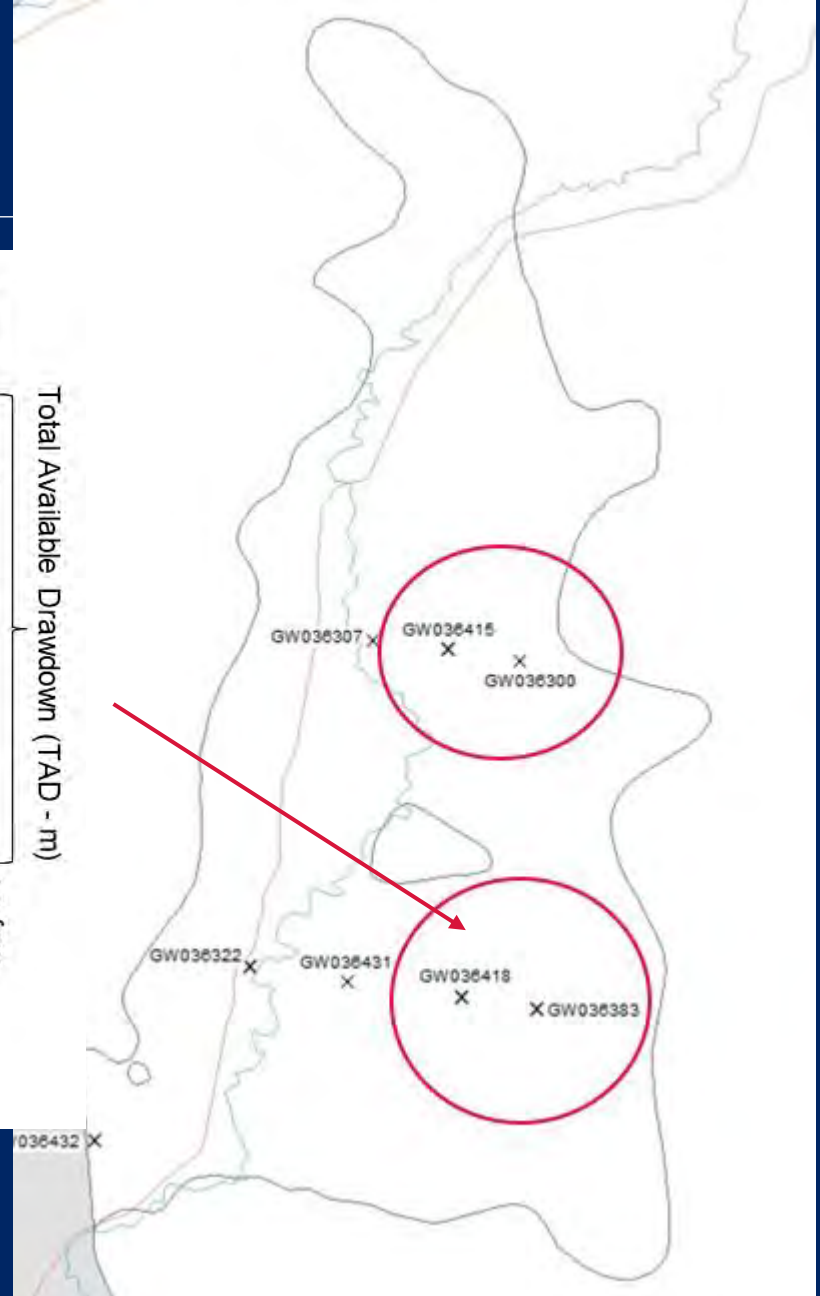
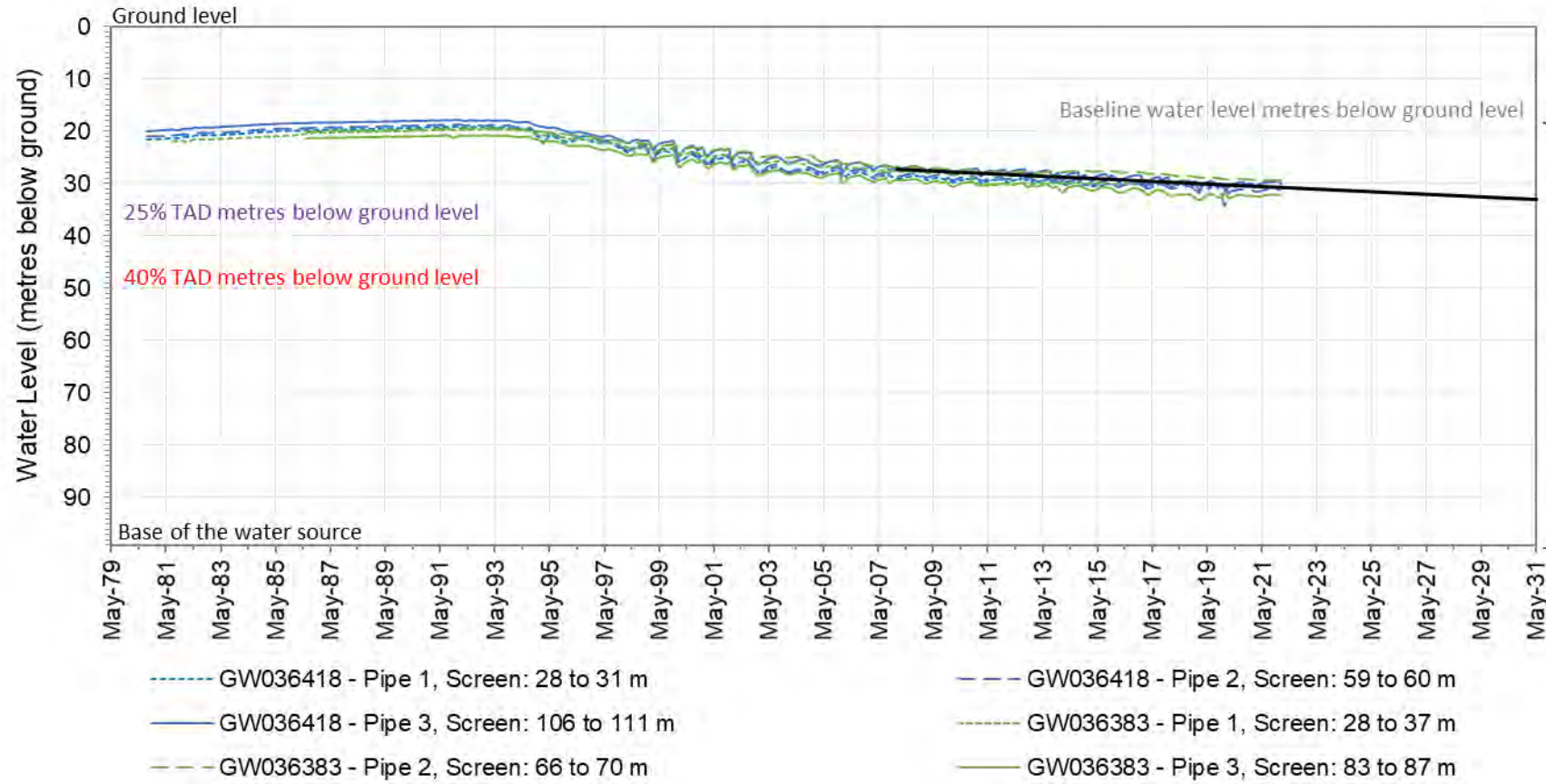


--- GW036415 - Pipe 1, Screen: 24 to 35 m  
 --- GW036415 - Pipe 2, Screen: 40 to 51 m  
 --- GW036415 - Pipe 3, Screen: 74 to 77 m

--- GW036415 - Pipe 2, Screen: 40 to 51 m  
 --- GW036300 - Pipe 1, Screen: 51 to 54 m



# Hydrographs



# Model scenarios

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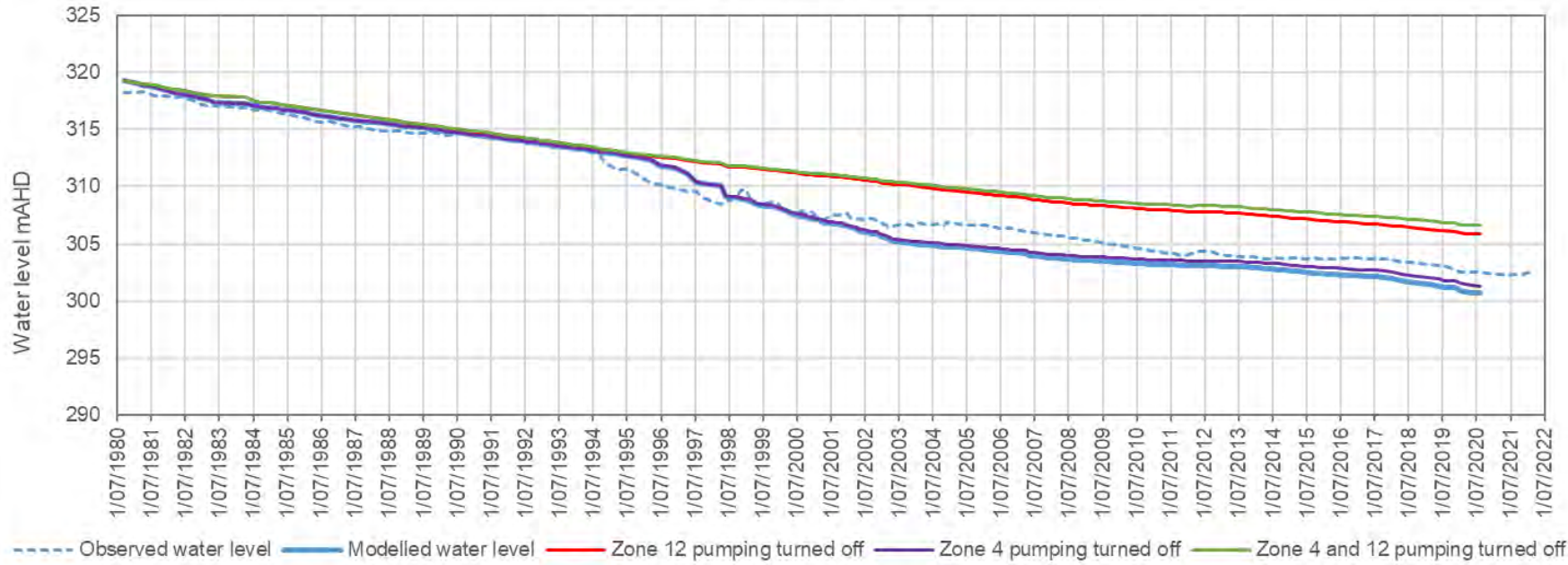
1: Observed water level, modelled water level & modelled water level with groundwater extraction turned off in Zone 12.

2: Observed water level, modelled water level & modelled water level with groundwater extraction turned off in Zone 4.

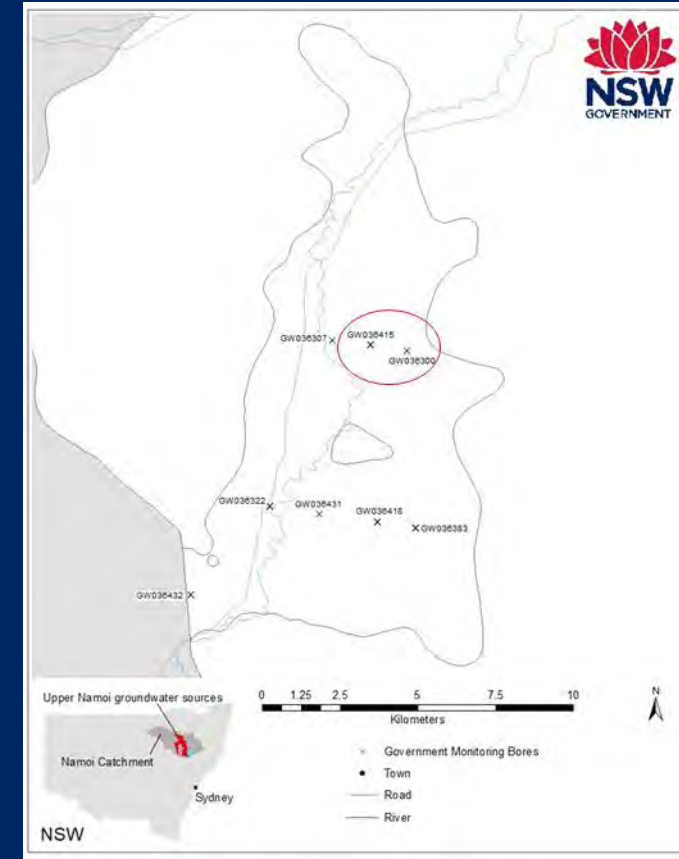
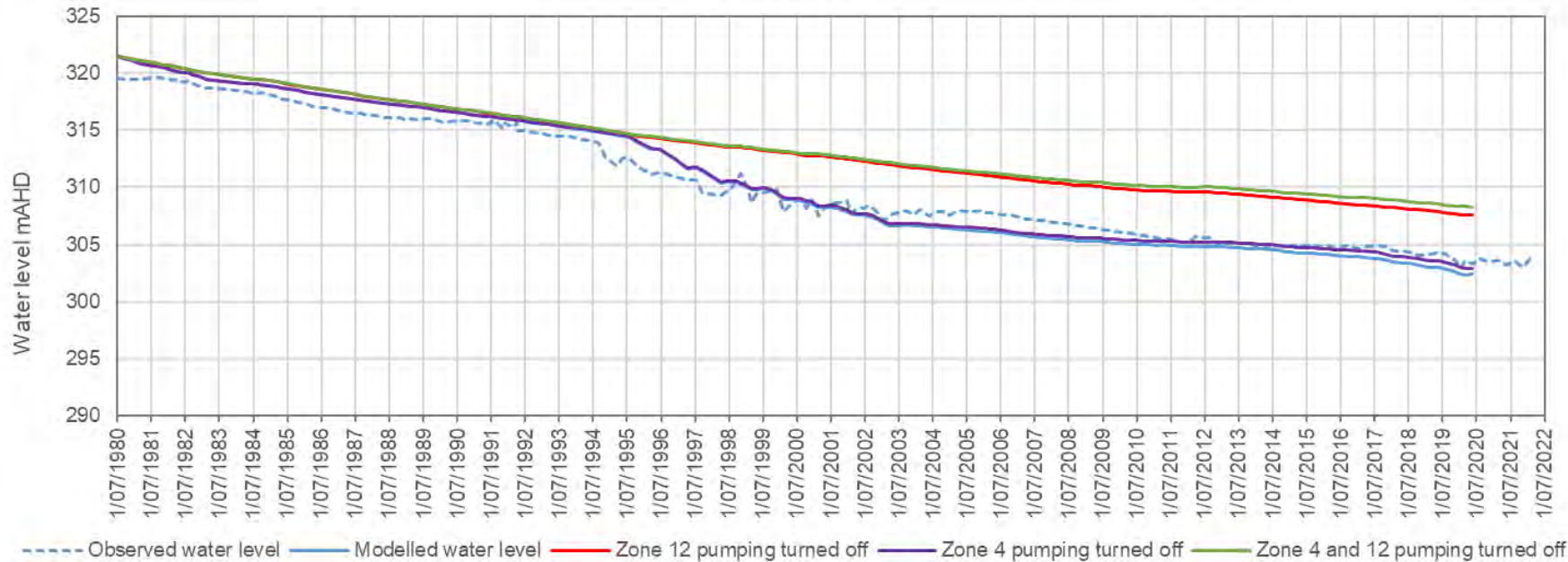
3: Observed water level, modelled water level & modelled water level with all groundwater extraction turned off.



GW036300



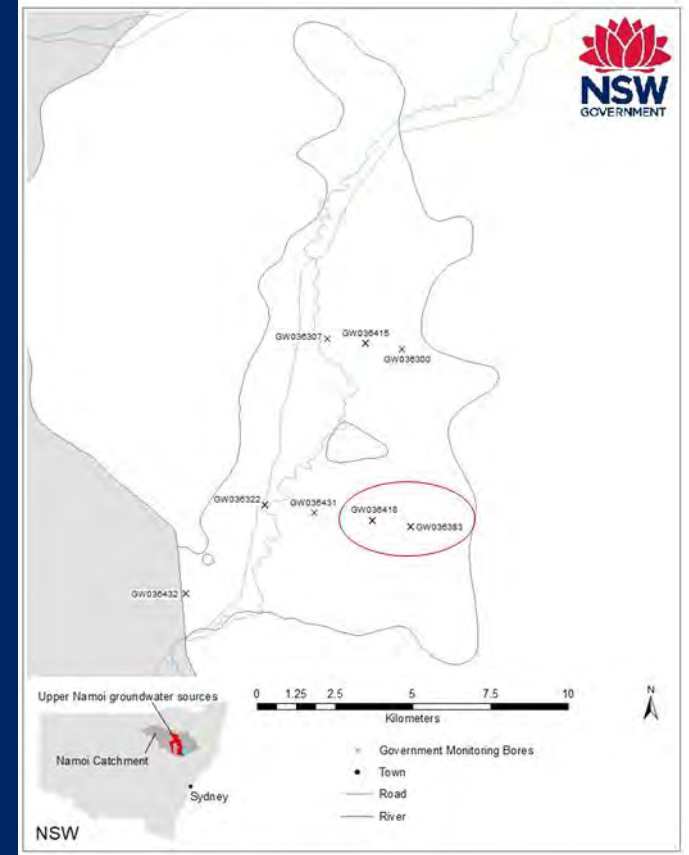
GW036415

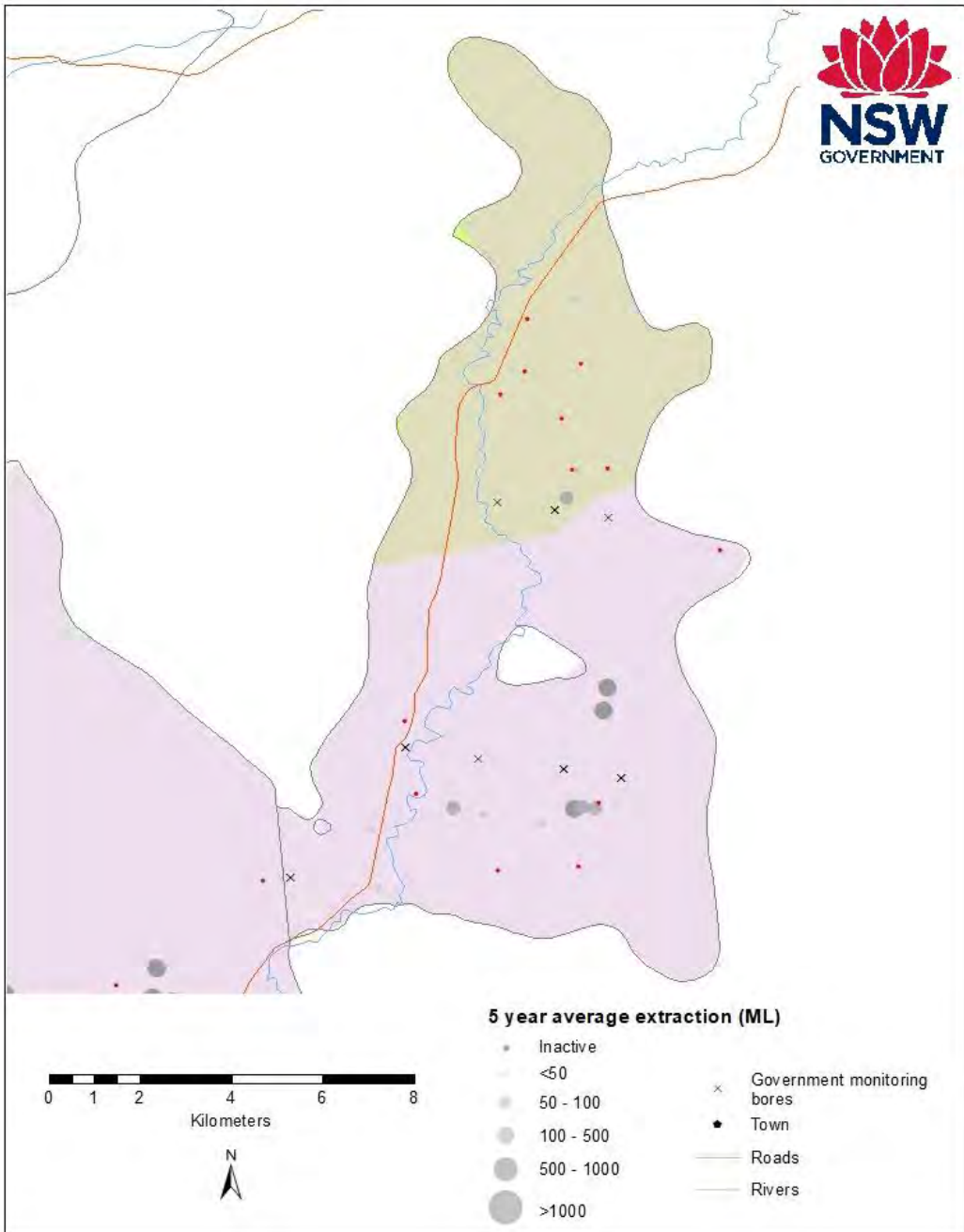


GW036418



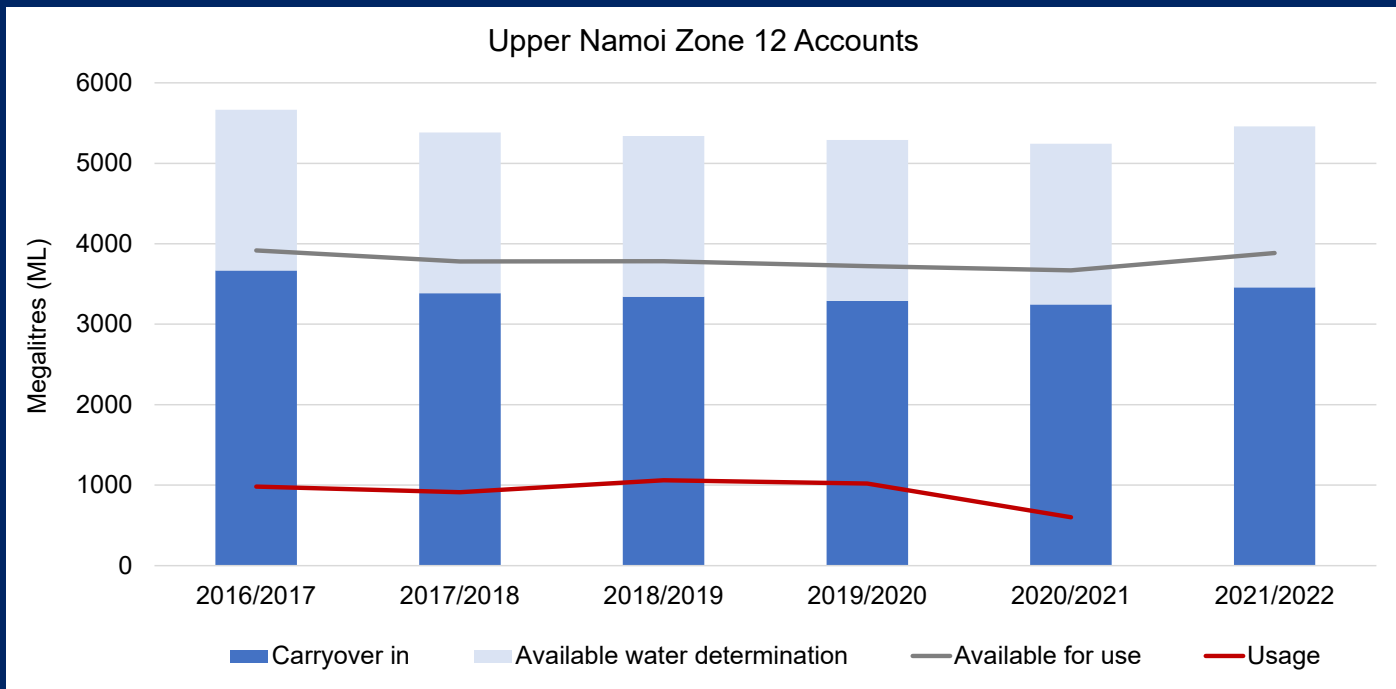
GW036383





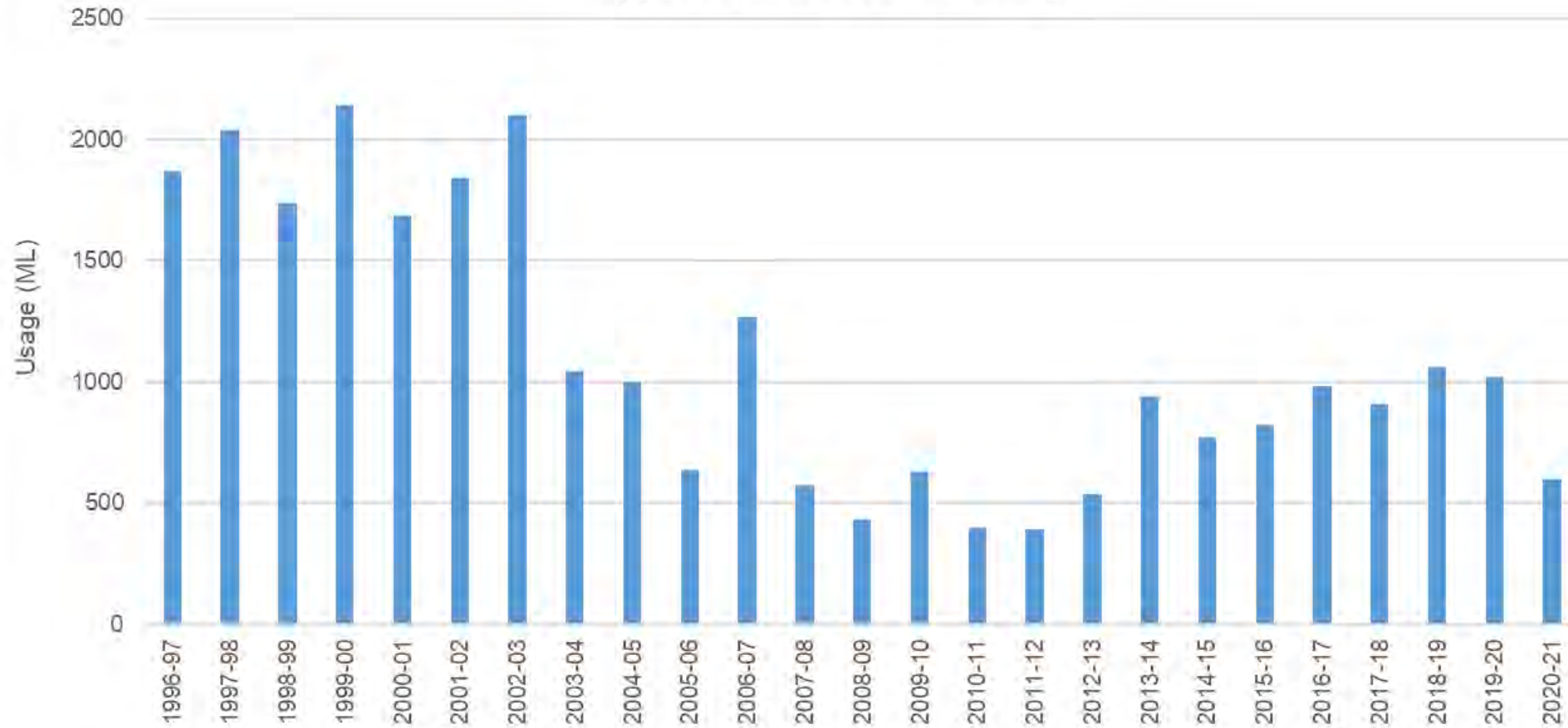
Long term average annual extraction limit: 2,042 ML/year

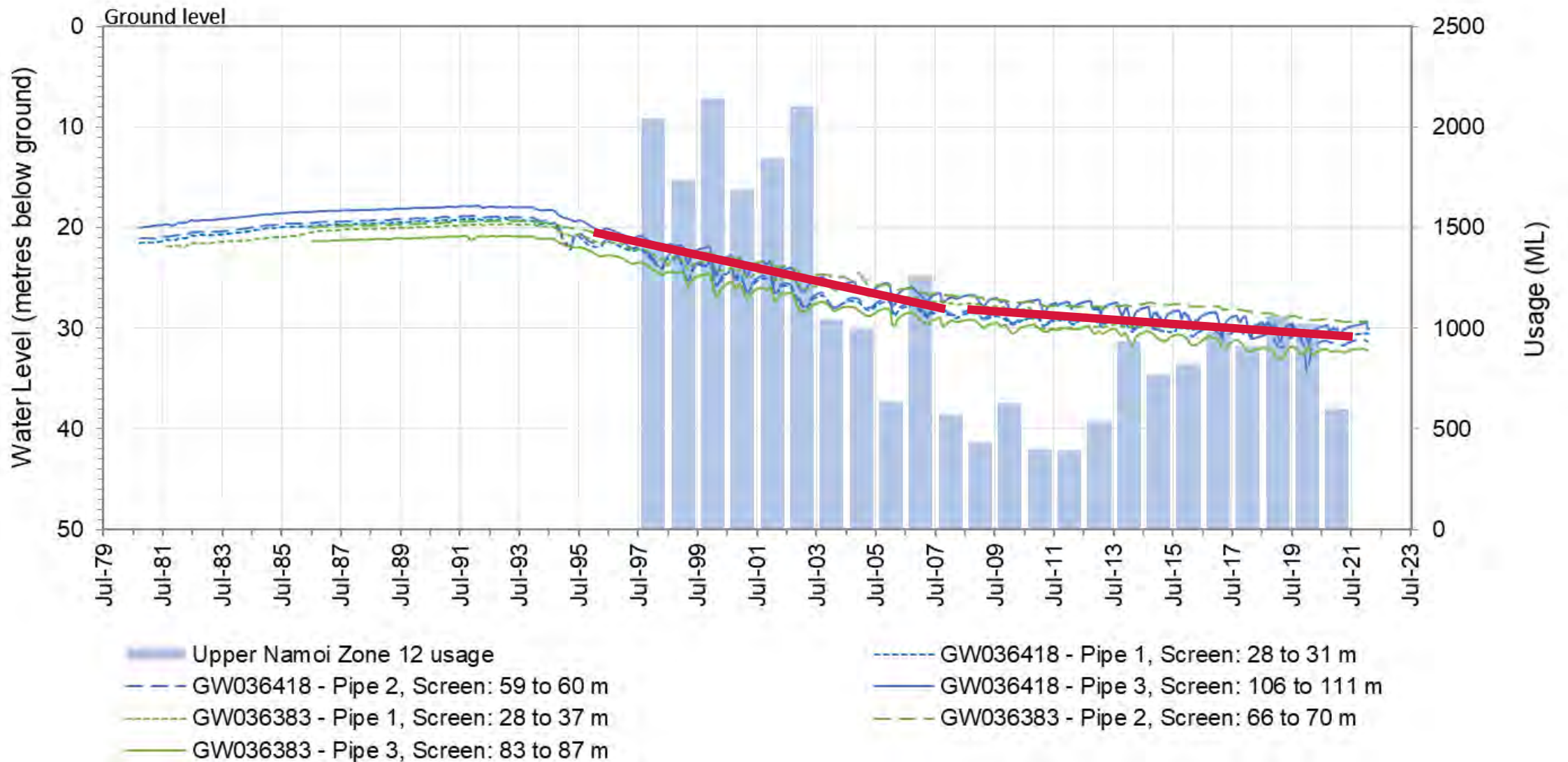
5 year average use: approximately 900 ML/year

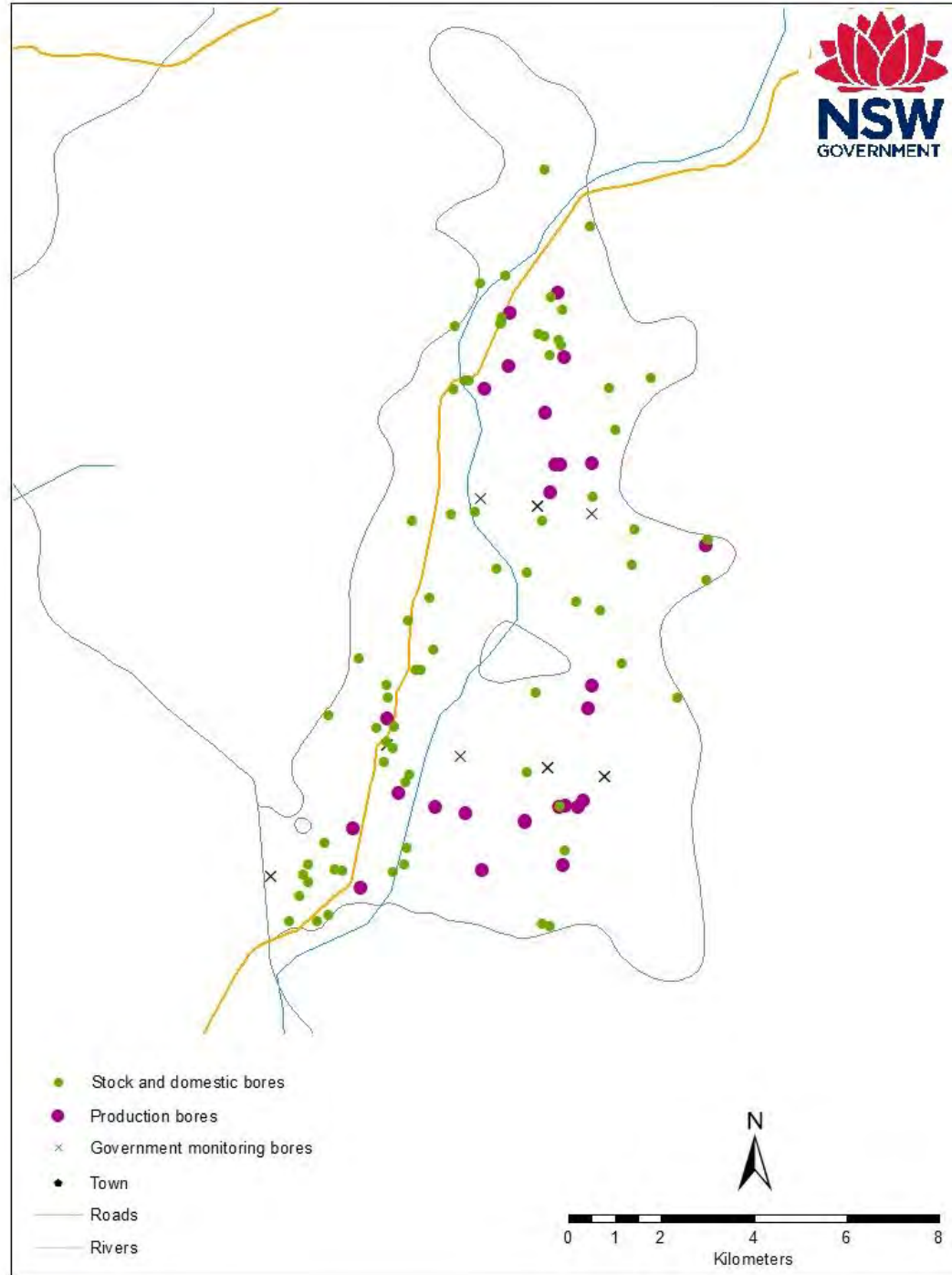




## Upper Namoi Zone 12 Usage









# Summary

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- Long-term overall decline in recovered water levels
- Declining trend has started to slow since around 2012
- Modelling scenario comparing no groundwater extraction with the calibration period and with Zone 12 and Zone 4 pumping alternately turned off indicates the declining trend is mainly driven by groundwater extraction in Zone 12 in conjunction with climate.



# Questions/ Discussion

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