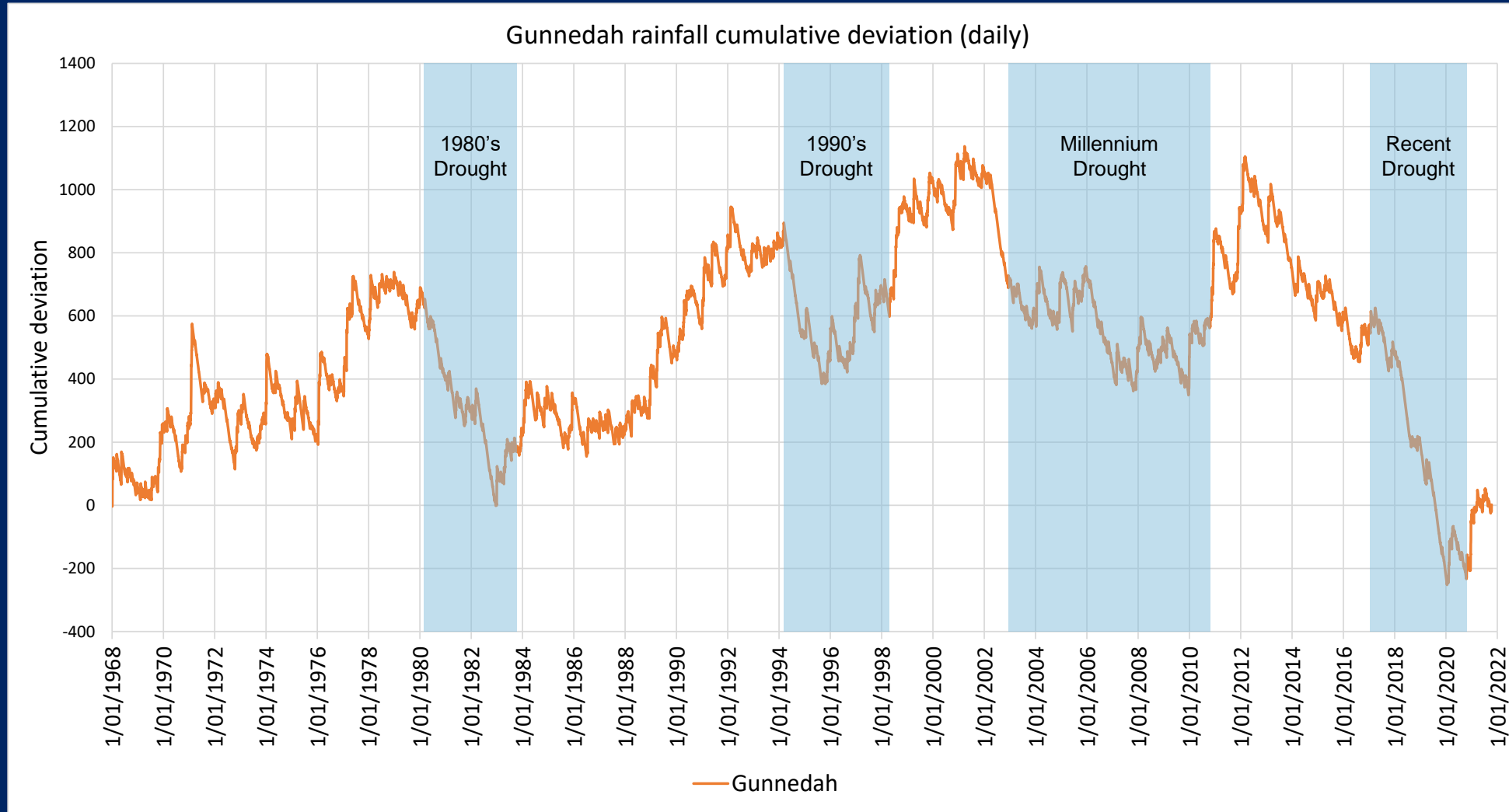
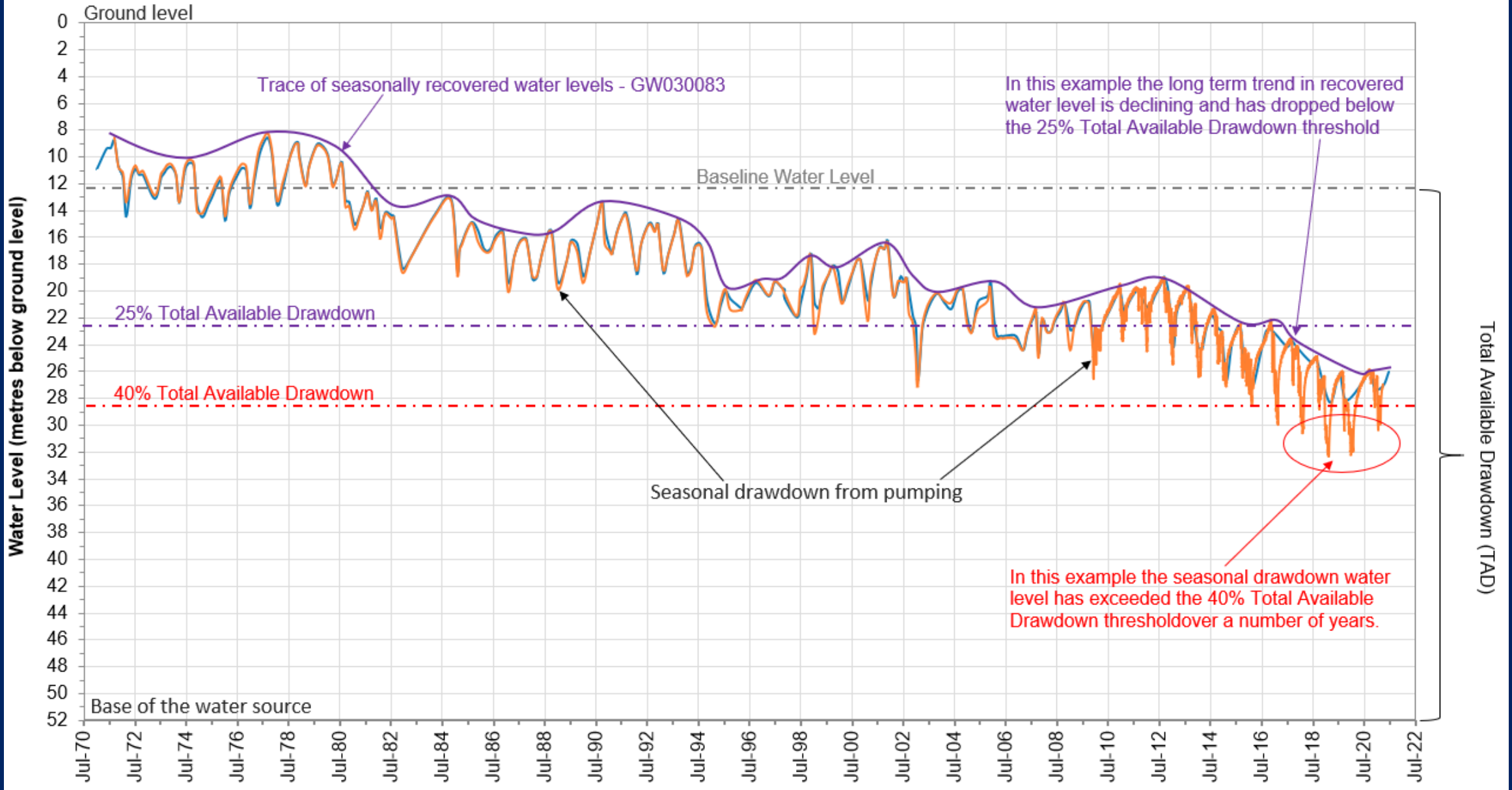
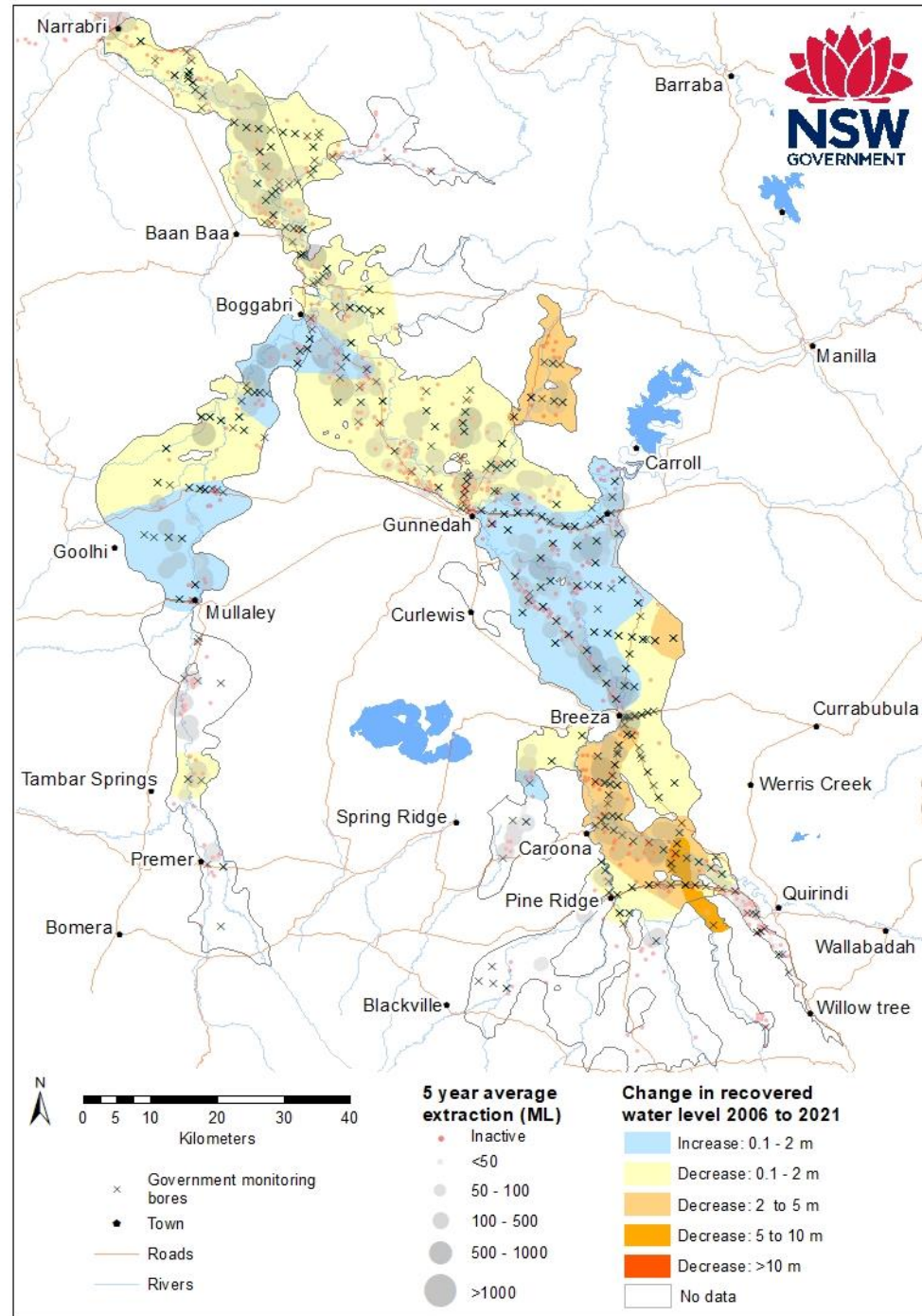
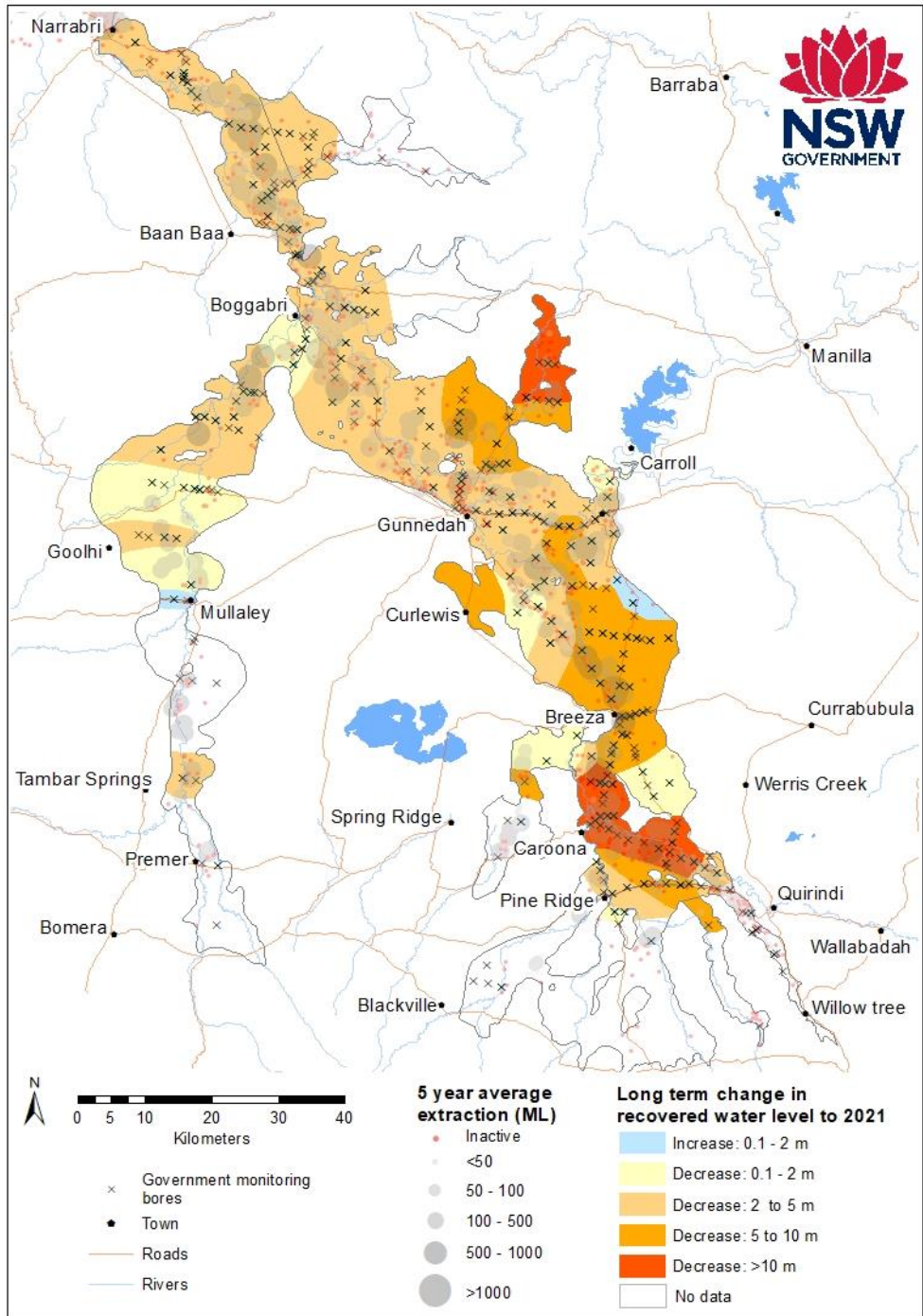


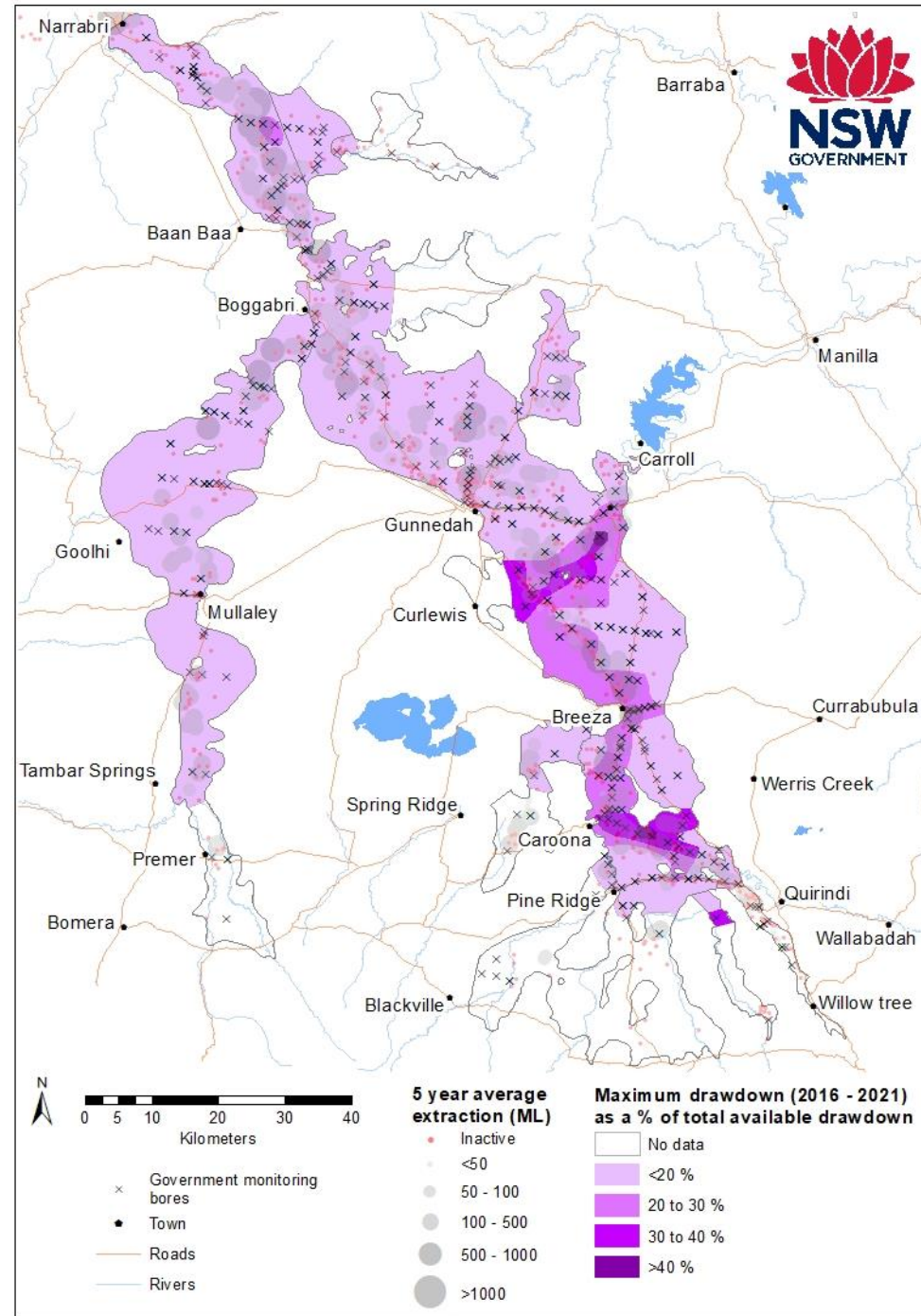
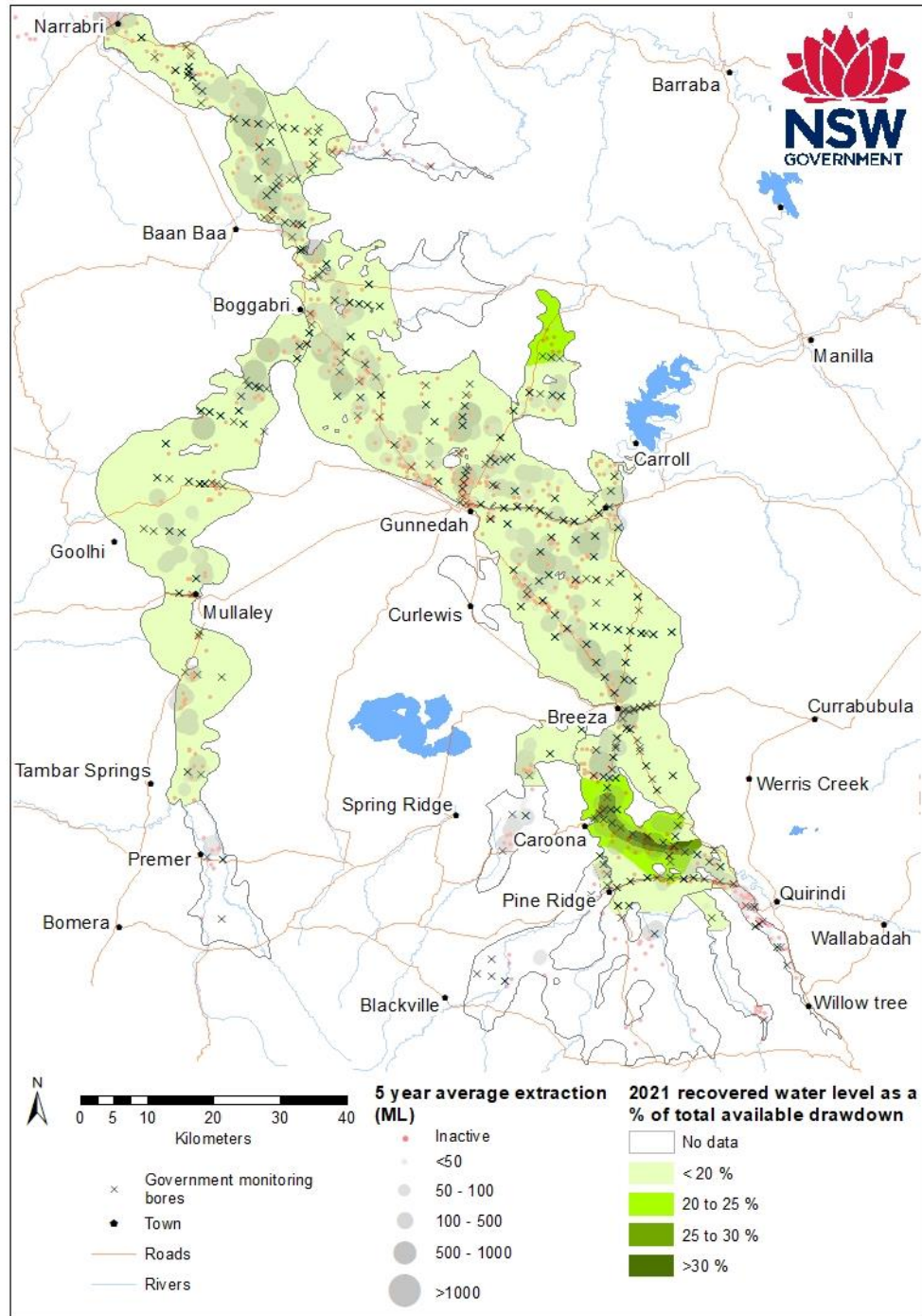
Upper Namoi Zones 8 and 12 groundwater sources Water level trends

Rainfall trends

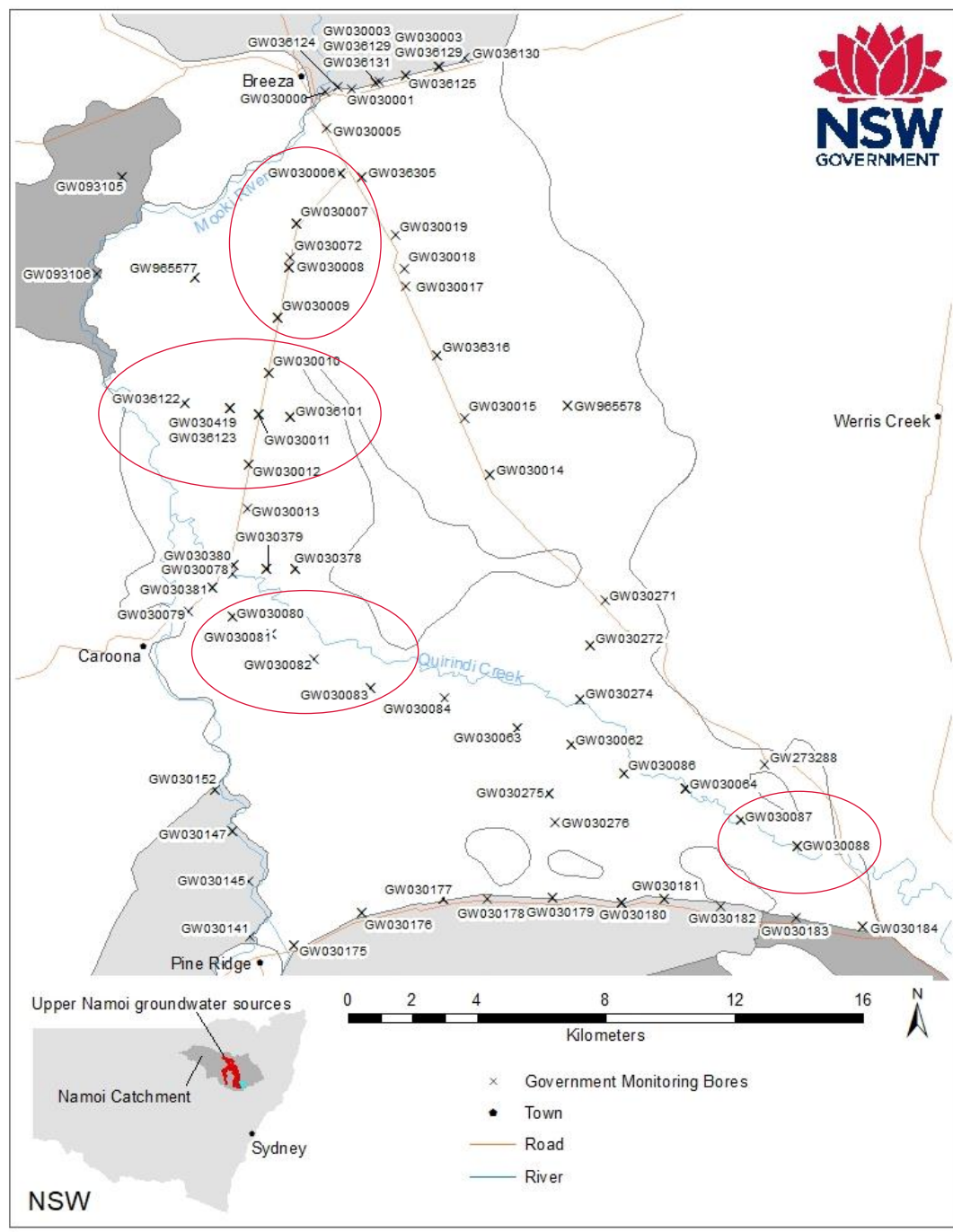




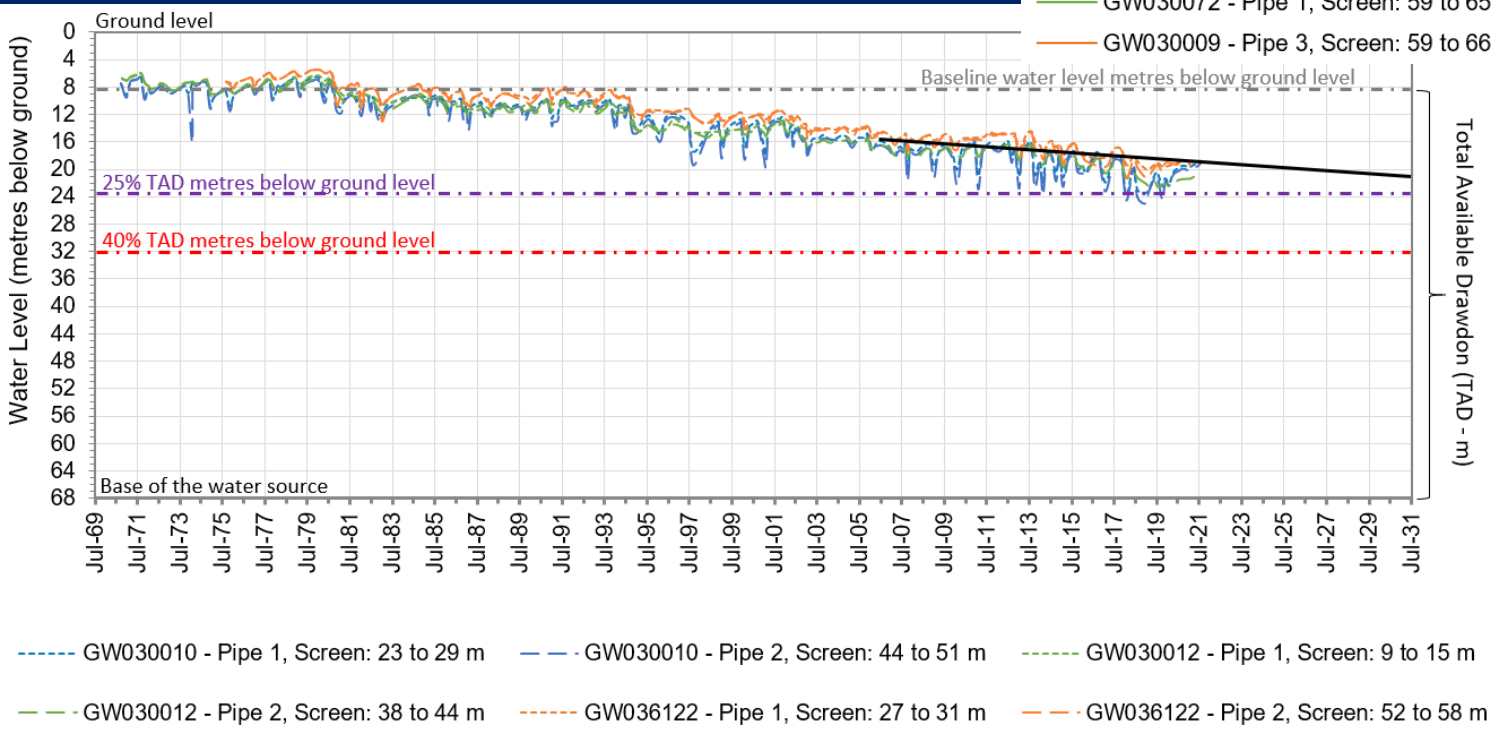
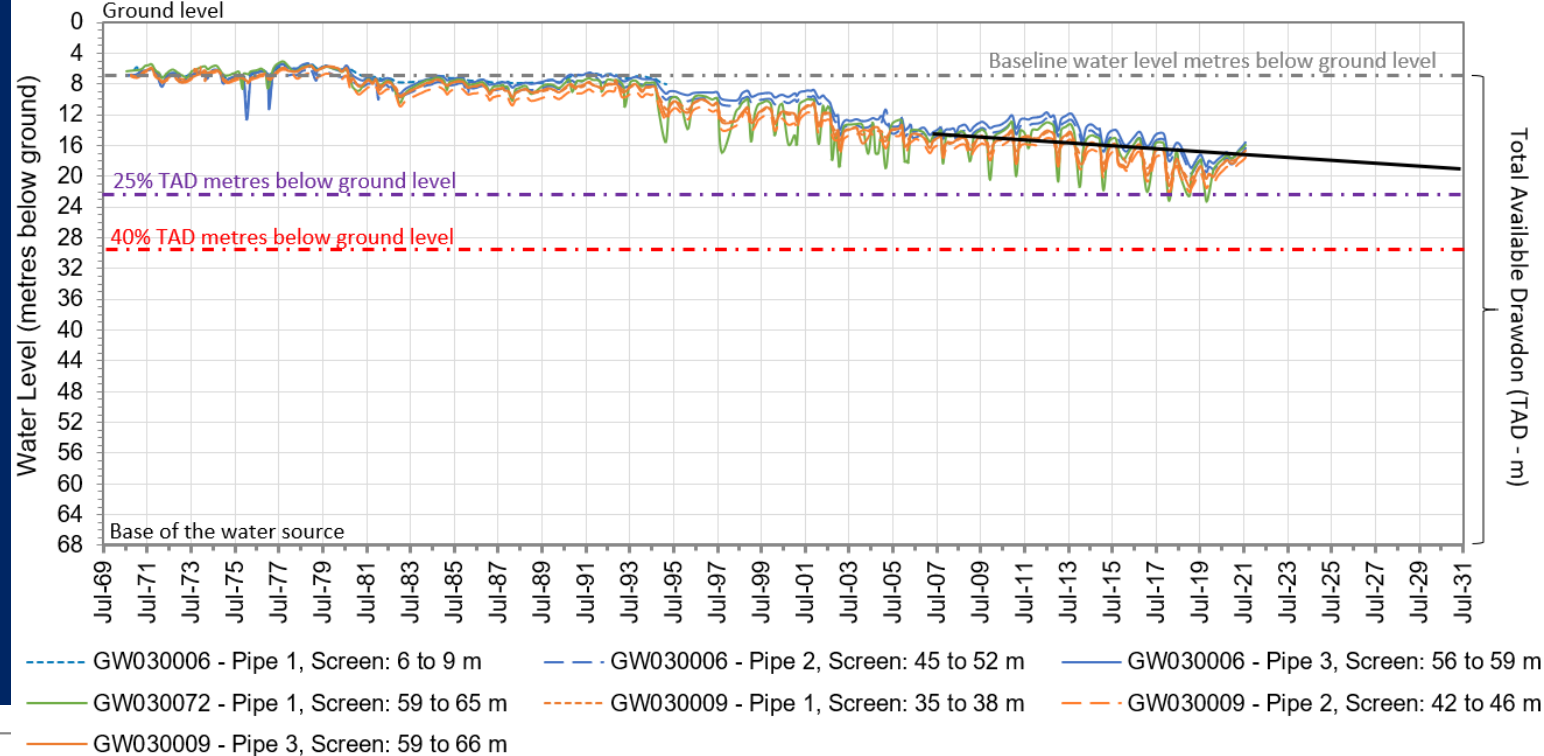




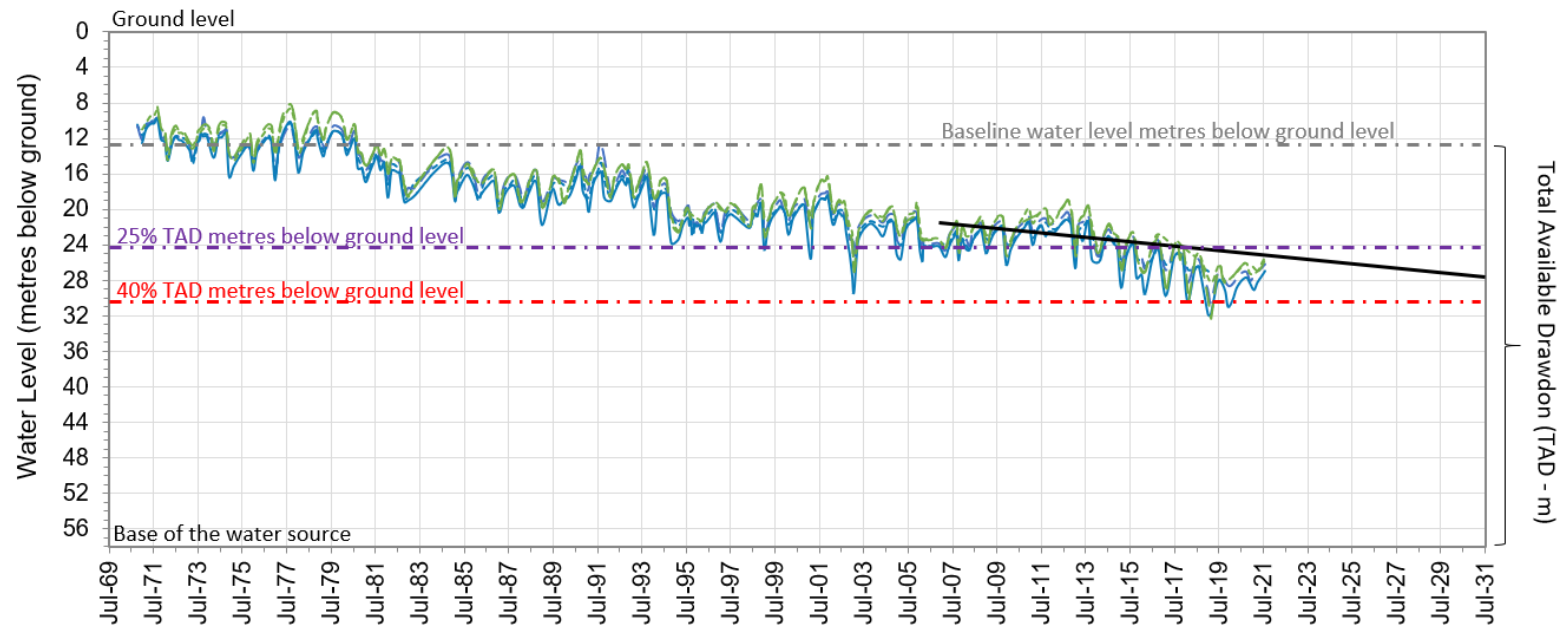
Upper Namoi Zone 8 Groundwater Source



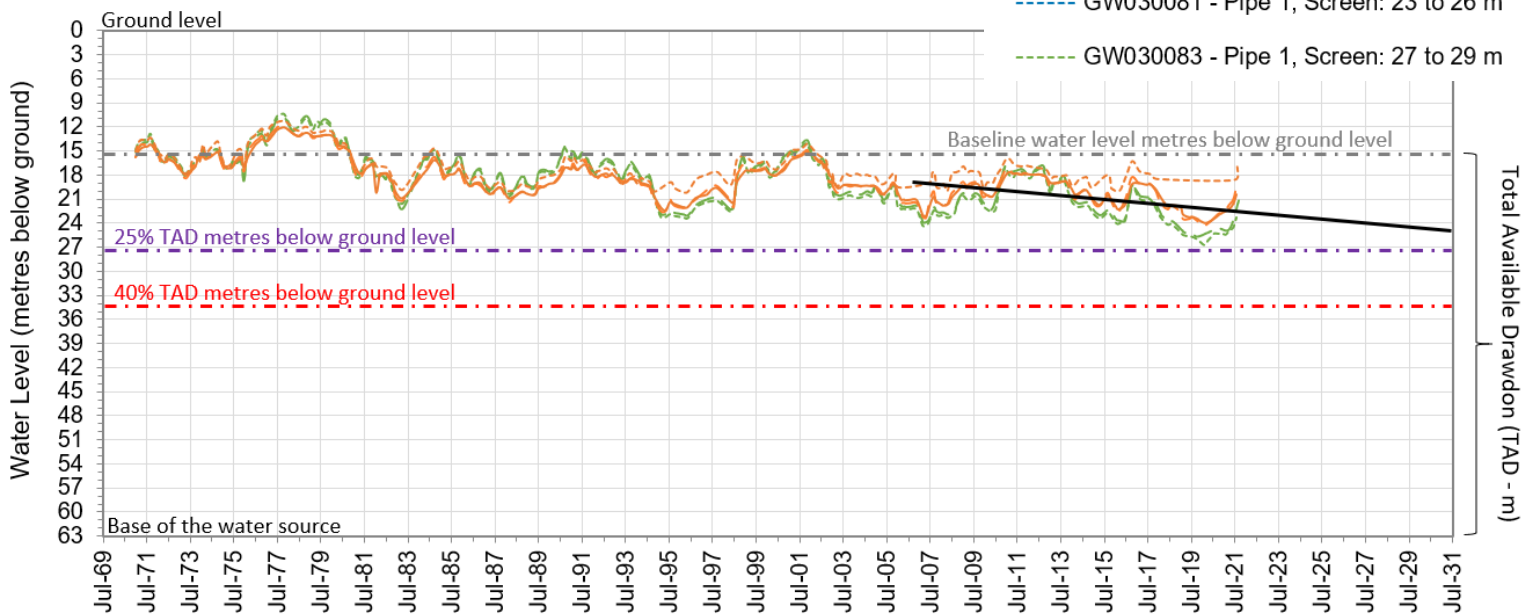
Upper Namoi Zone 8 hydrographs



Upper Namoi Zone 8 hydrographs

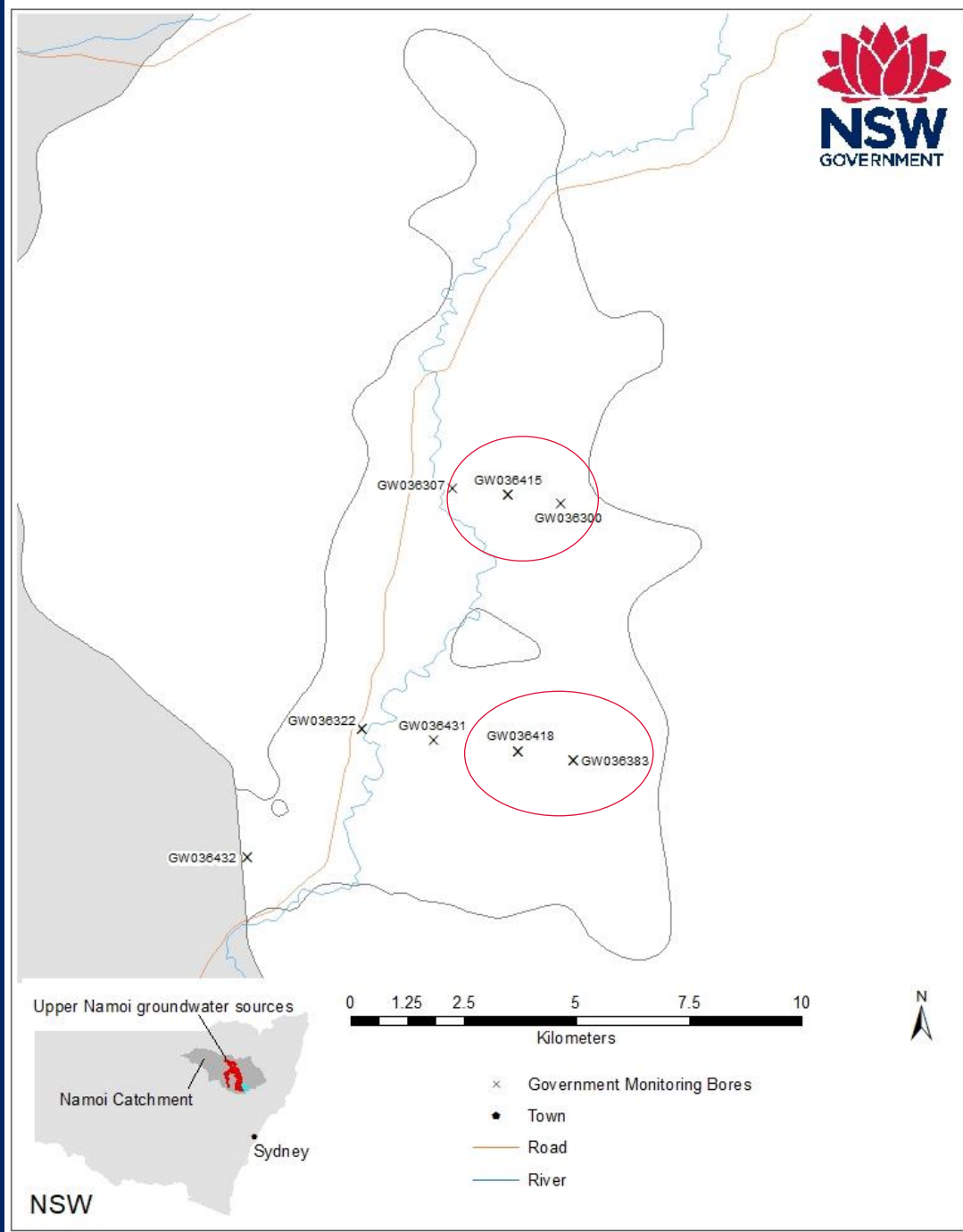


- GW030081 - Pipe 1, Screen: 23 to 26 m
- GW030081 - Pipe 2, Screen: 49 to 55 m
- GW030082 - Pipe 1, Screen: 50 to 56 m
- GW030083 - Pipe 1, Screen: 27 to 29 m
- GW030083 - Pipe 2, Screen: 35 to 42 m

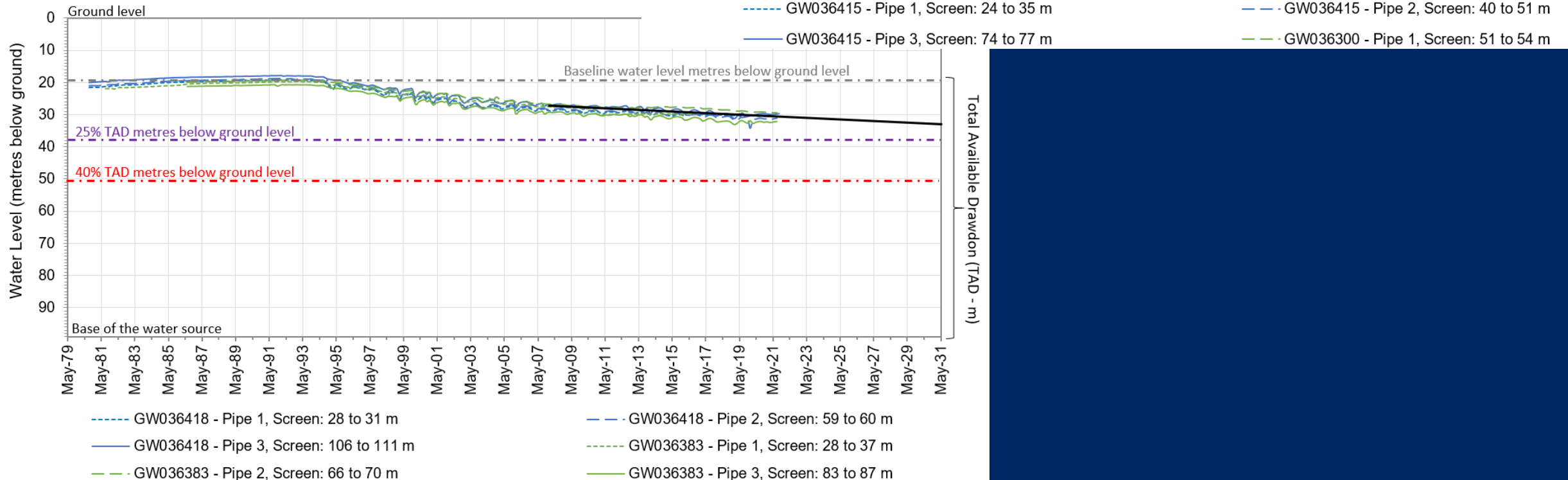
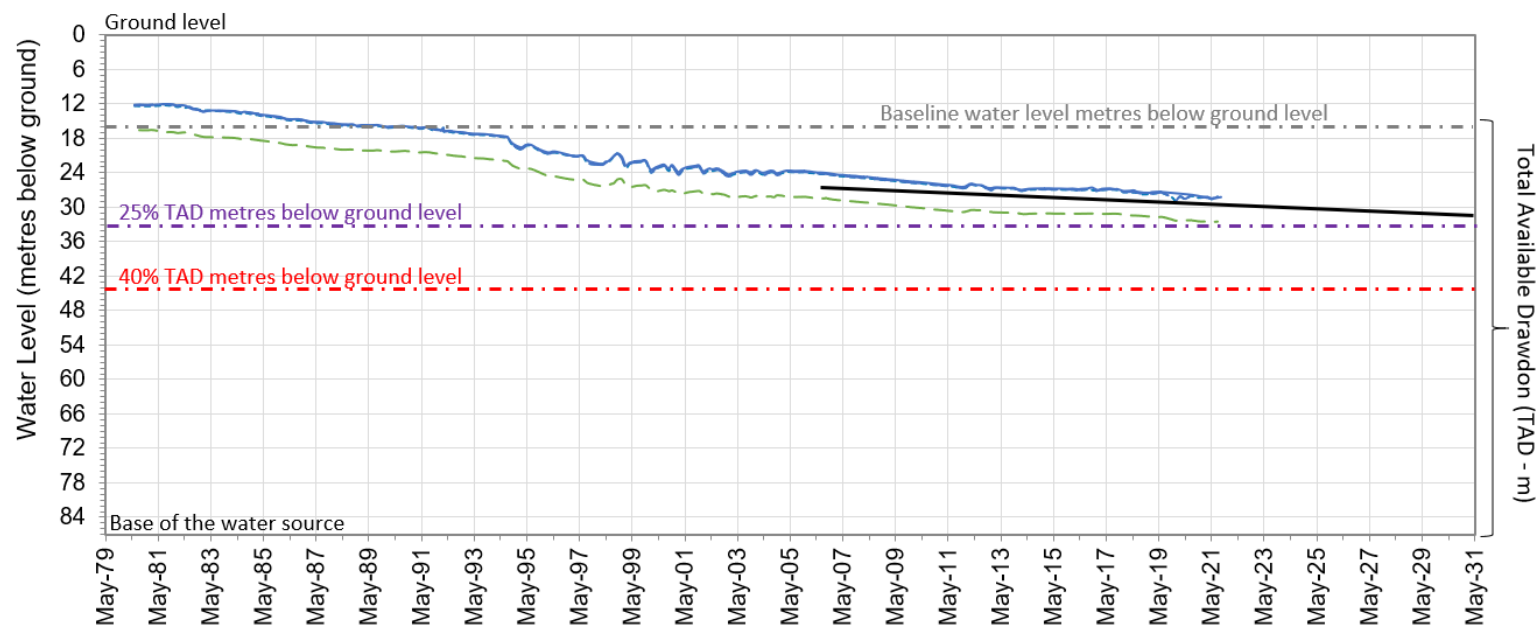


- GW030087 - Pipe 1, Screen: 23 to 29 m
- GW030087 - Pipe 2, Screen: 40 to 46 m
- GW030088 - Pipe 1, Screen: 19 to 20 m
- GW030088 - Pipe 2, Screen: 41 to 42 m
- GW030088 - Pipe 3, Screen: 65 to 66 m

Upper Namoi Zone 12 Groundwater Source



Upper Namoi Zone 12 hydrographs



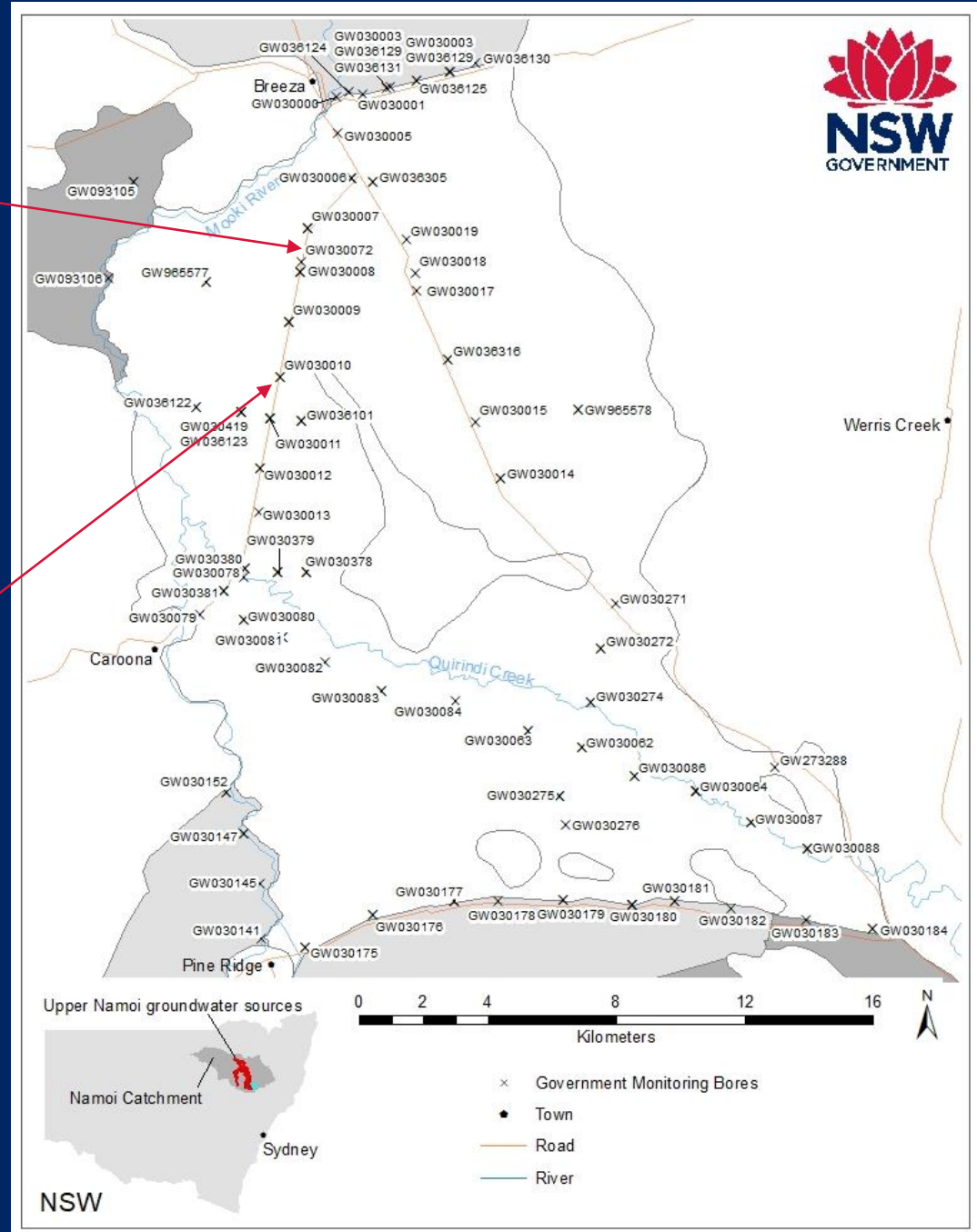
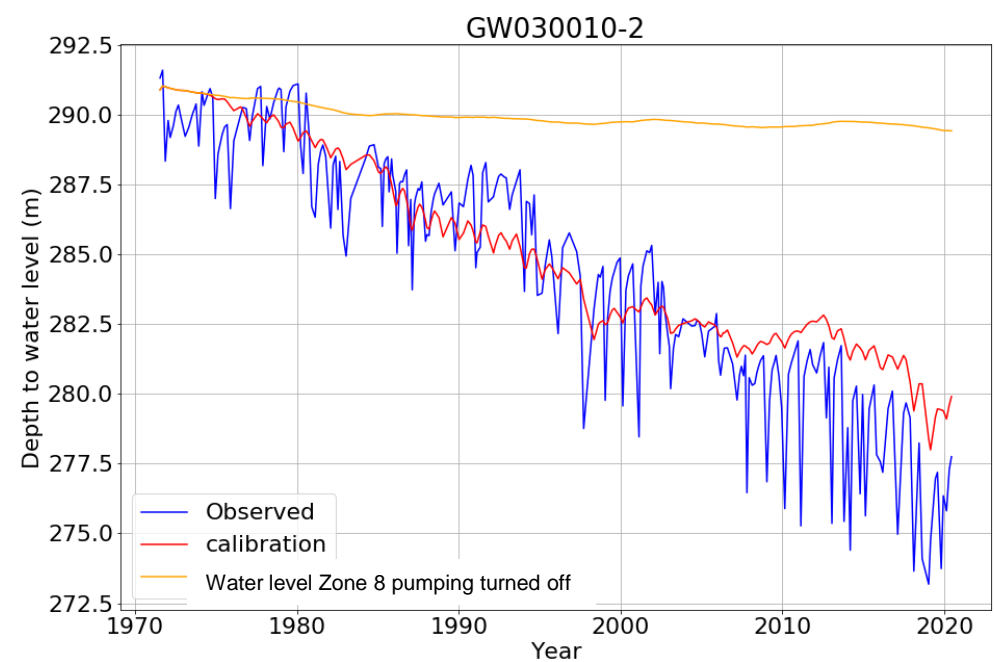
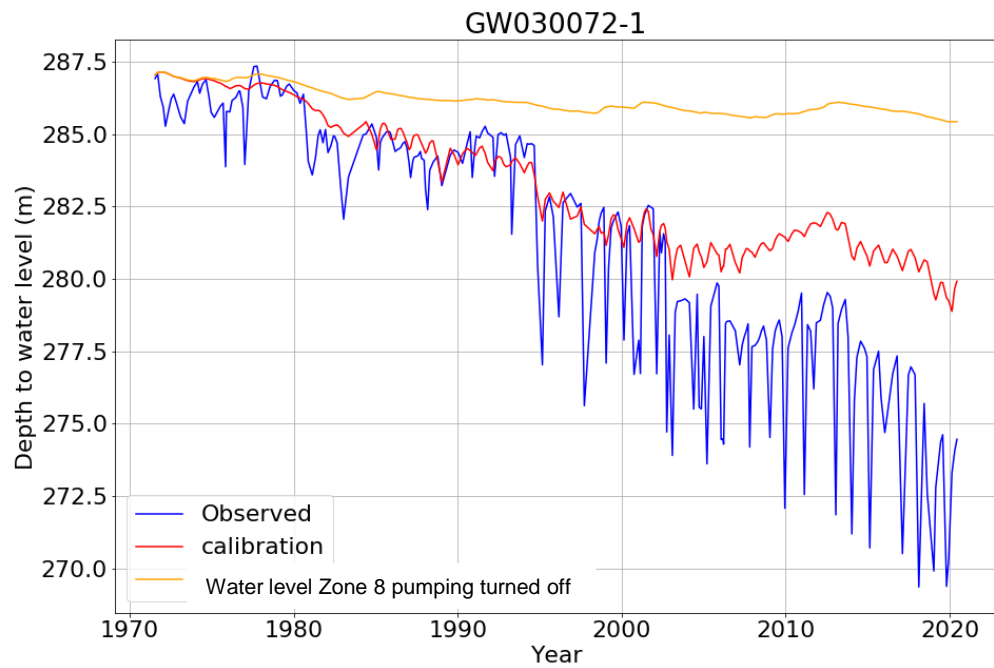
Model scenarios

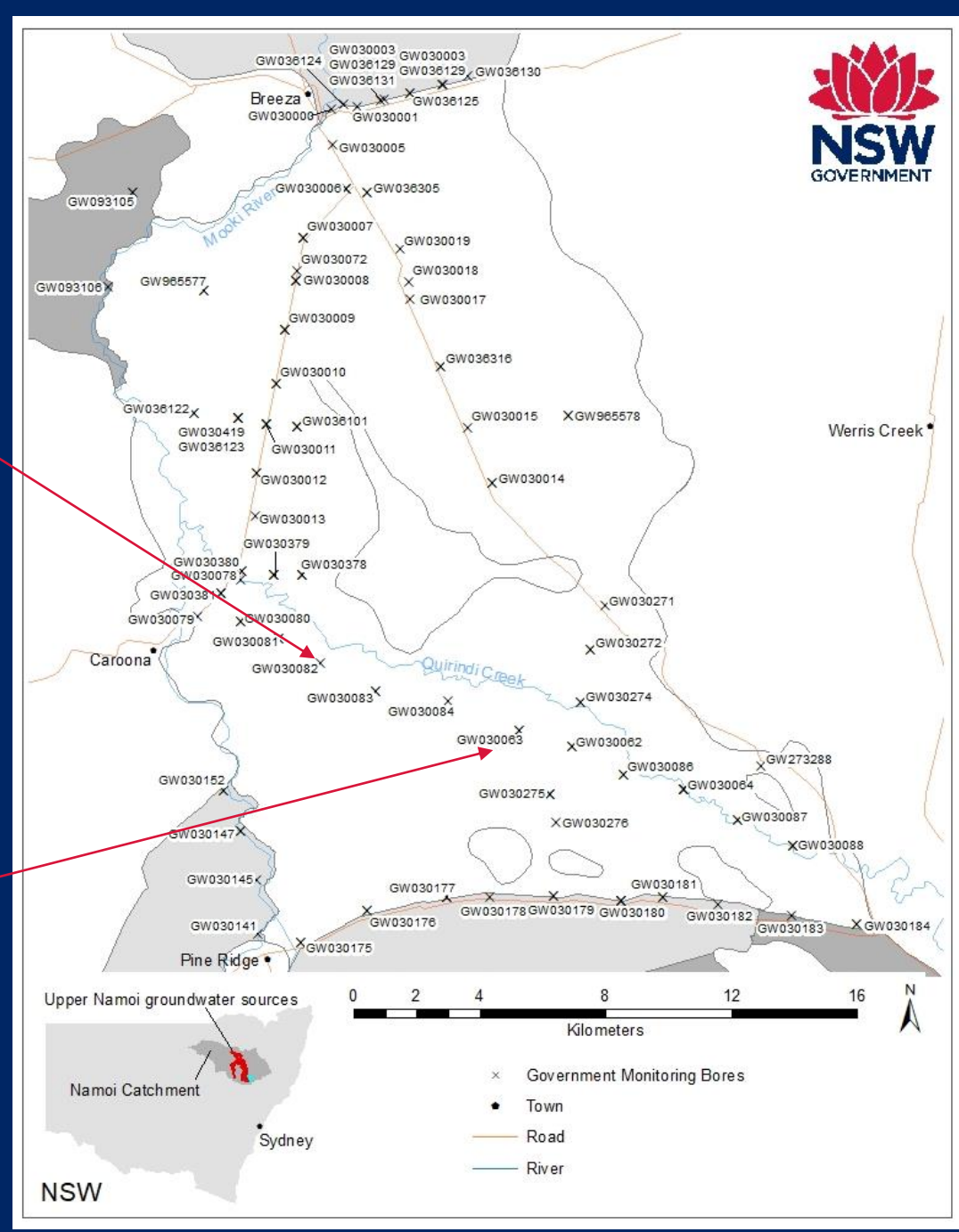
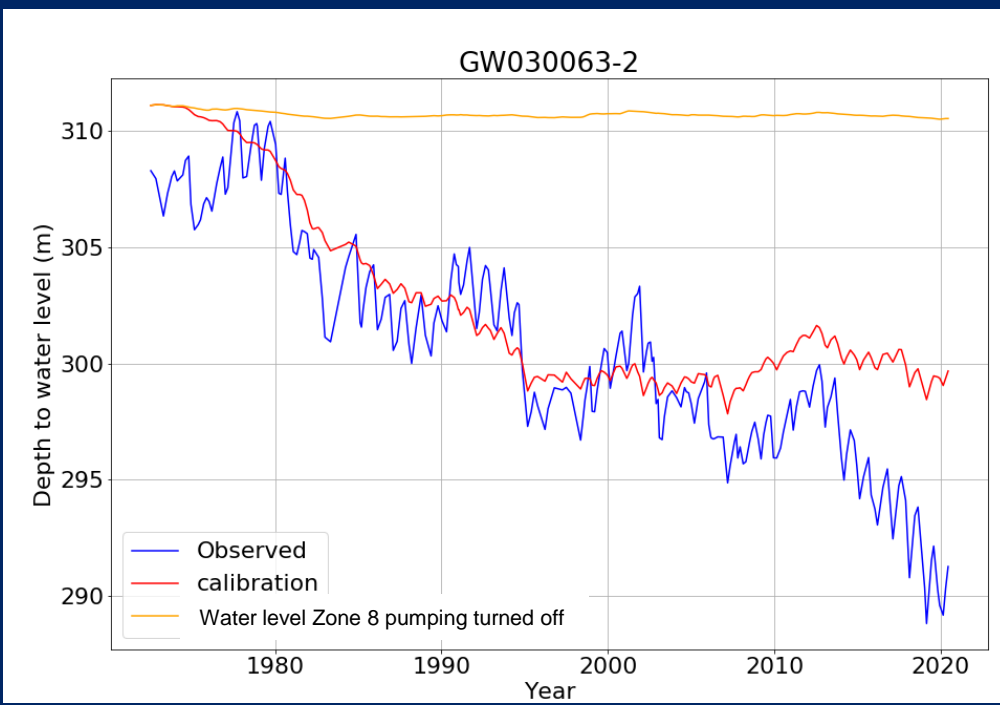
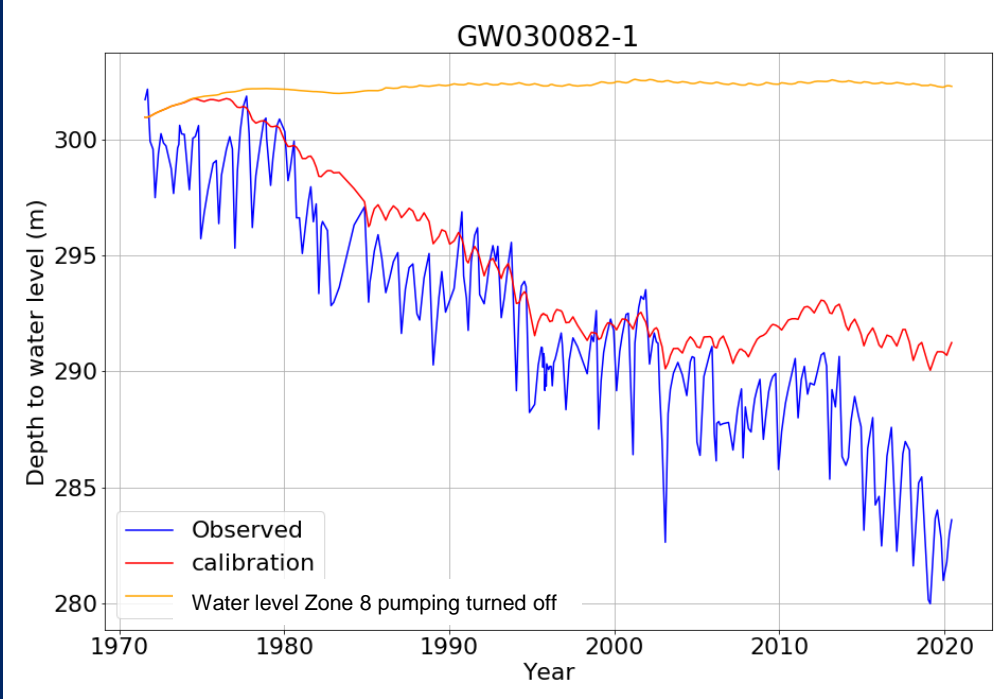
Zone 8

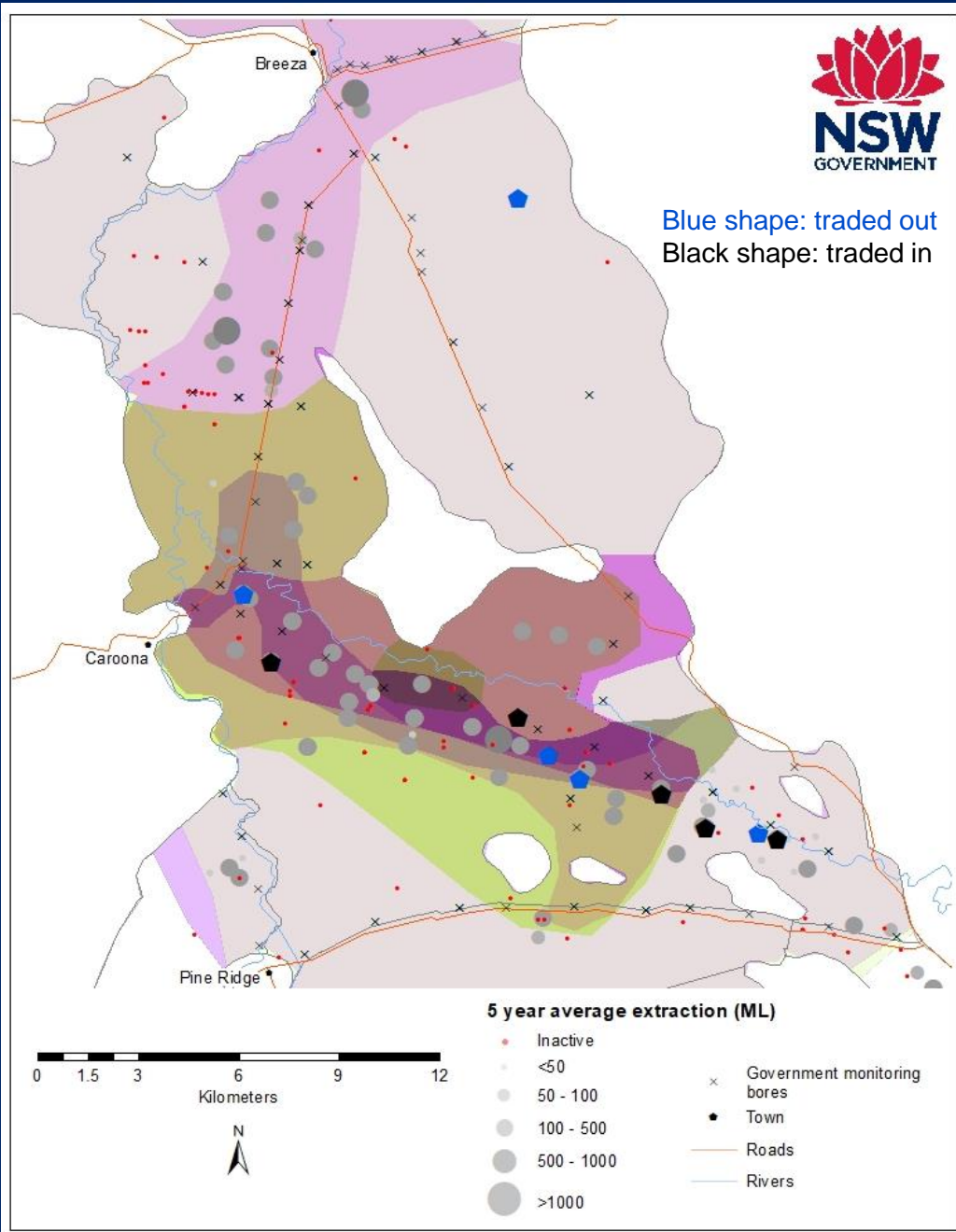
- Comparison of the calibration period water level and the calibration period water level with groundwater extraction turned off in Zone 8.

Zone 12

- 1: Comparison of the calibration period water level and the calibration period water level with groundwater extraction turned off in Zone 12.
- 2: Comparison of the calibration period water level and the calibration period water level with groundwater extraction turned off in Zone 4.
- 3: Comparison of the calibration period water level and the calibration period water level with all groundwater extraction turned off.

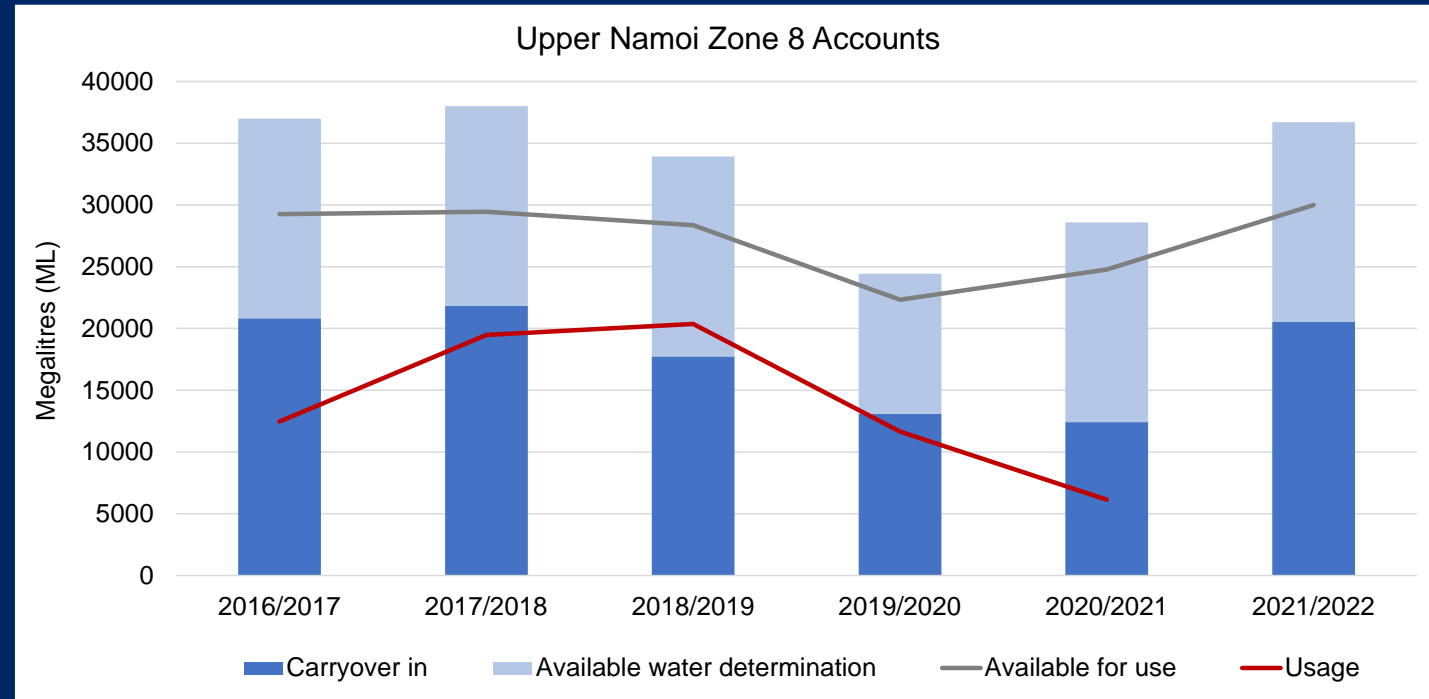


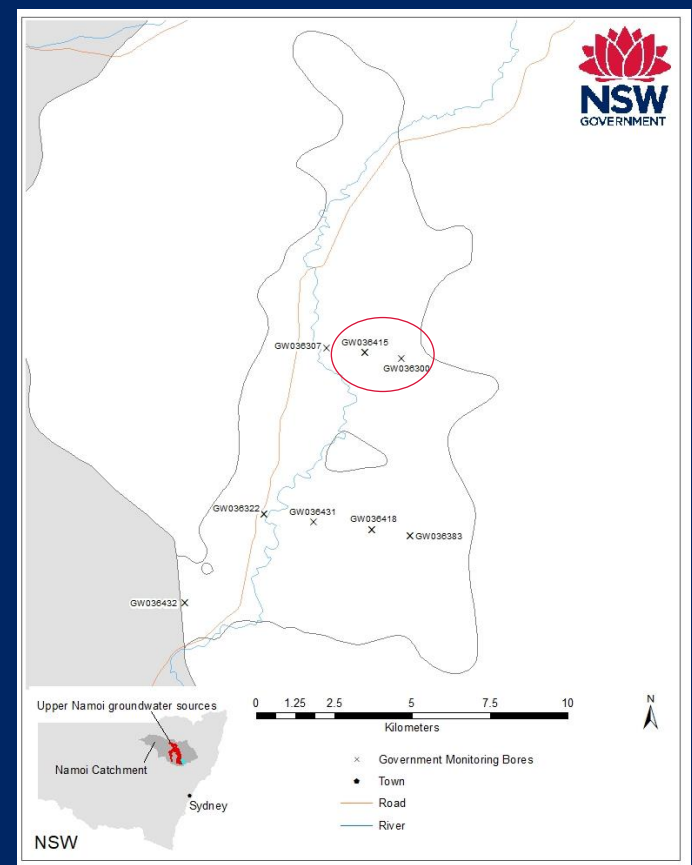
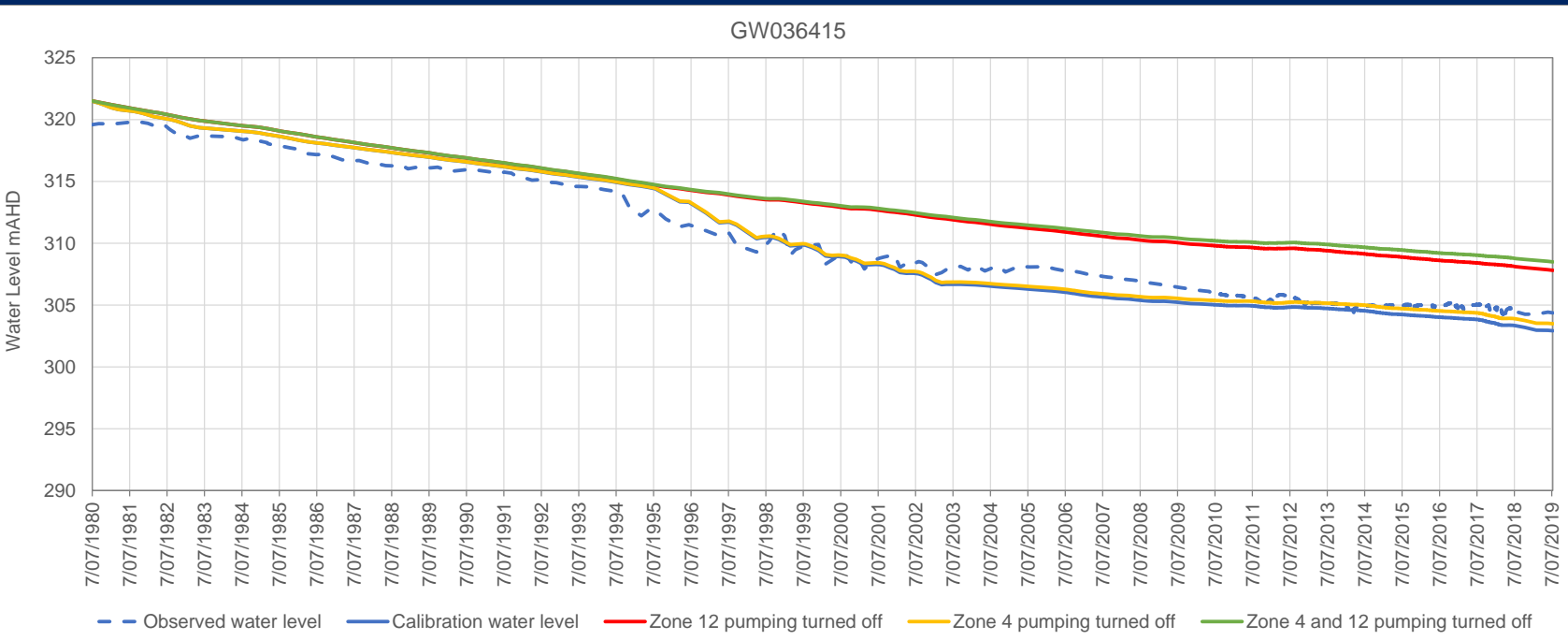
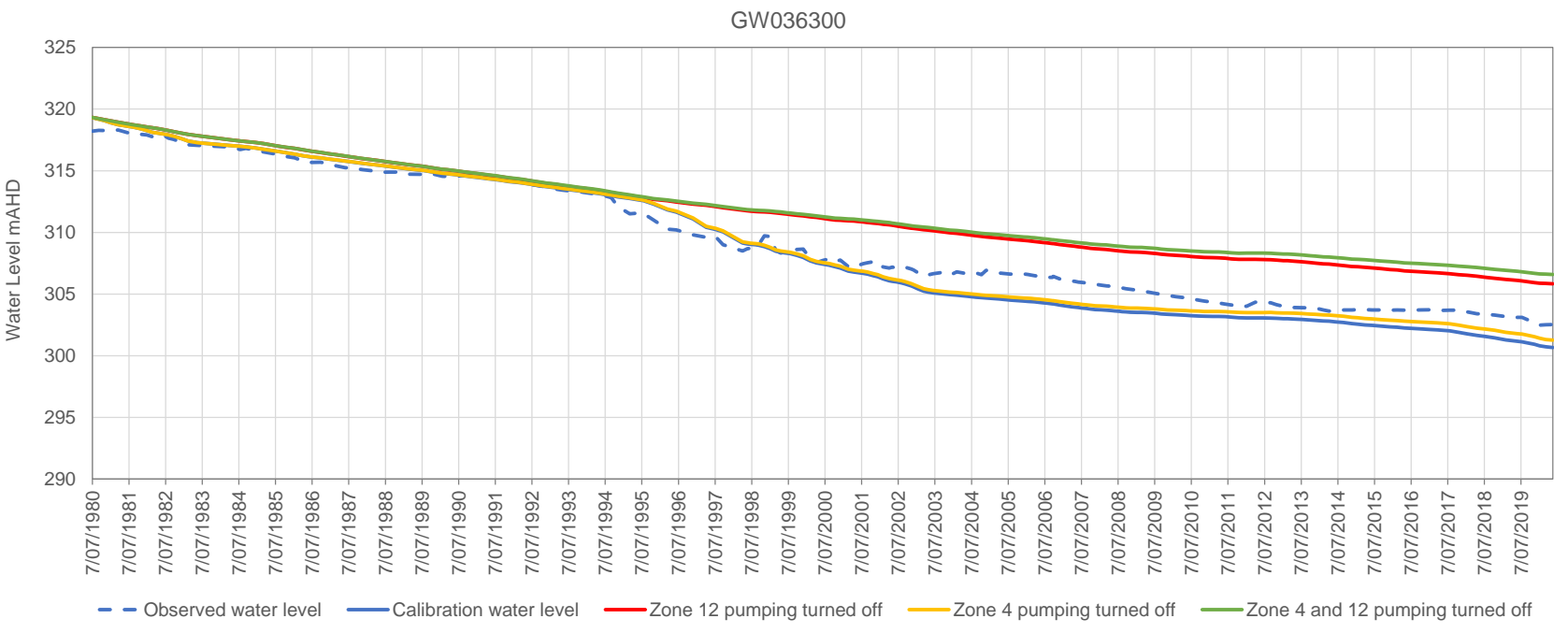




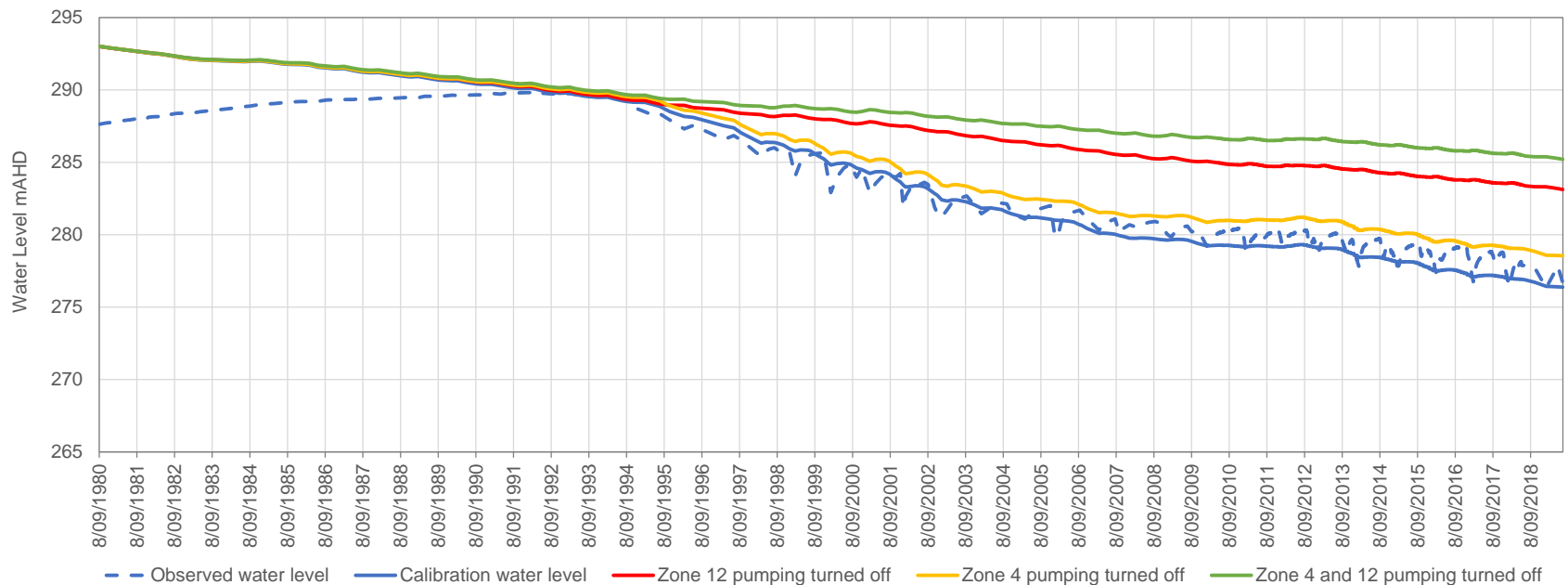
Long term average annual extraction limit: 16,114 ML/year

5 year average use: approximately 14,000 ML/year

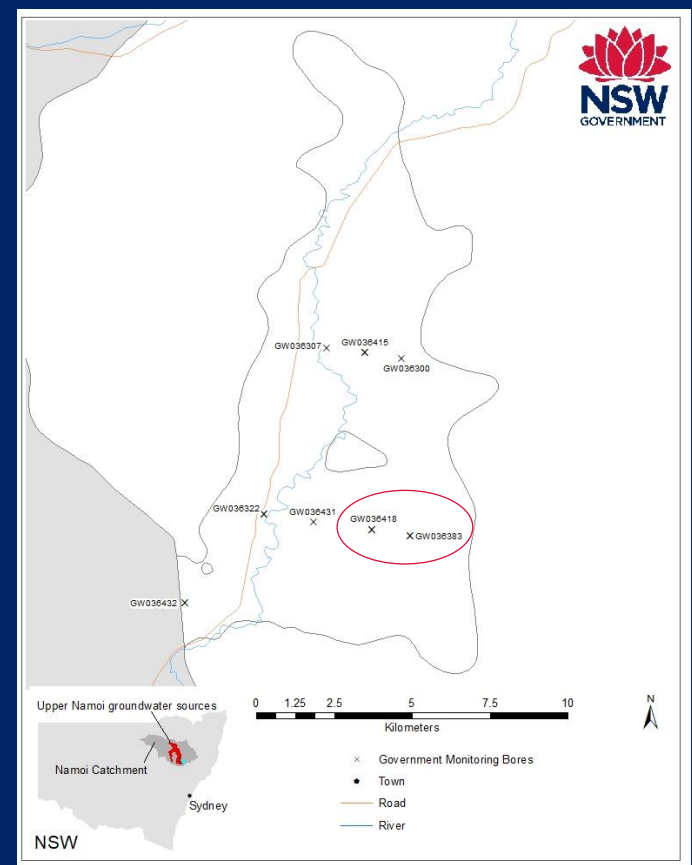
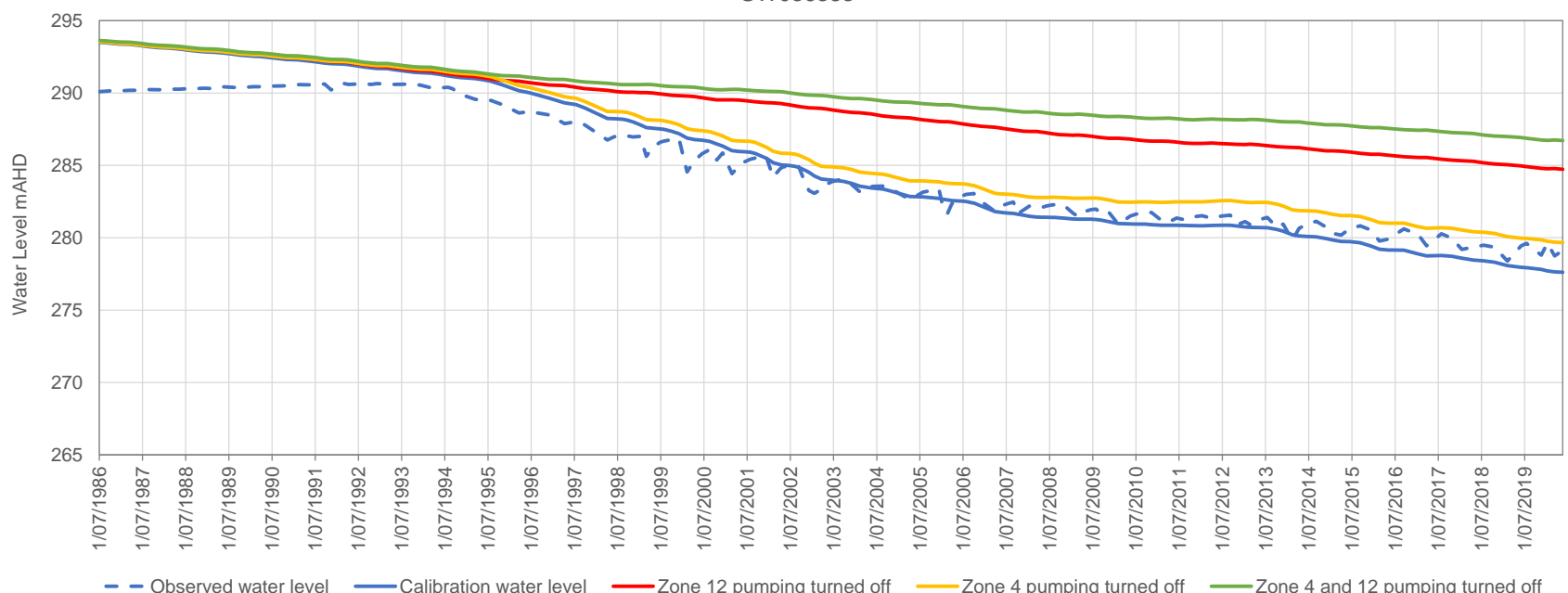




GW036418

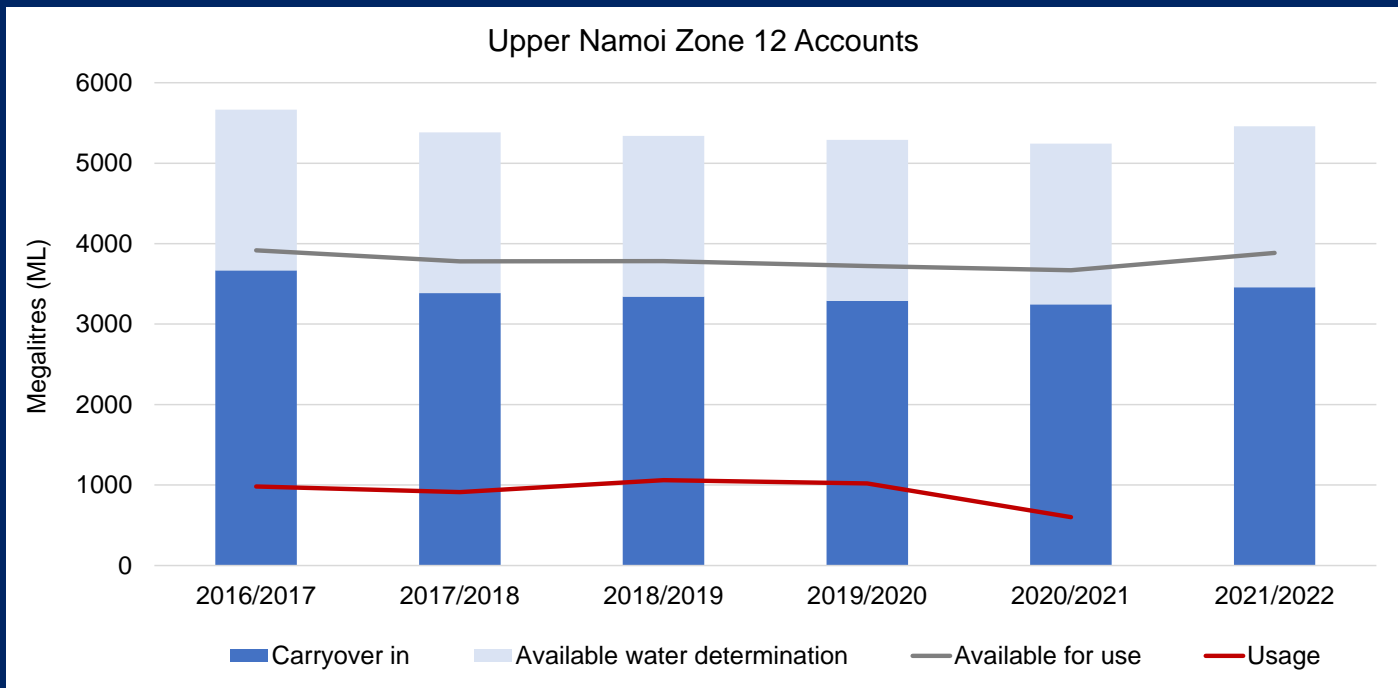
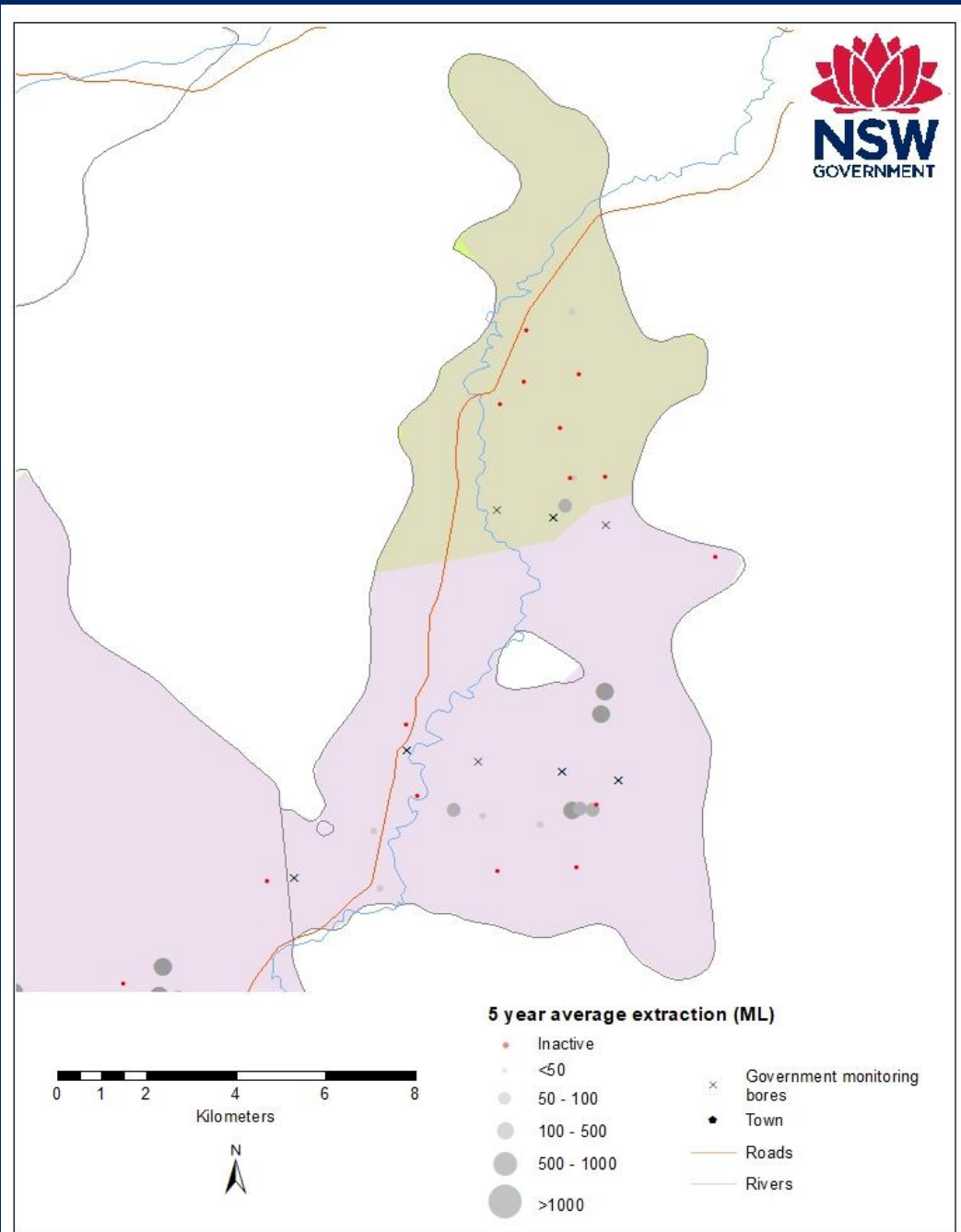


GW036383



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

5 year average use: approximately 900 ML/year



Zone 8 summary

- Long-term overall decline in recovered water levels
- Recovered water level has dropped below the 25% total available drawdown threshold in the south of the water source
- The seasonal drawdown in response to extraction has dropped below the 40% total available drawdown threshold in the south of the water source
- Modelling scenario comparing no groundwater extraction with the calibration period indicates the declining trend is mainly driven by groundwater extraction.

Zone 12 summary

- 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.

Examples of local water level management tools applied in NSW

- Trade management areas:
 - ✓ Lower Murrumbidgee Deep Groundwater Source – local manage area under Section 71Z of the WMA 2000
 - ✓ Lower Namoi and Lower Gwydir groundwater sources – operational rules
- Cease to pump rules set to trigger levels in monitoring bores:
 - ✓ Lower Macquarie Zone 4
- Other:
 - ✓ Upper Lachlan Groundwater Source Management Zone 1 – order under Section 71Z and an order under Section 324 of the WMA 2000
 - ✓ Upper Namoi Zone 11 order under Section 324 of the WMA 2000 (prior to commencement of the 2020 water sharing plan)

Questions / Discussion