Status of groundwater resources in the Clare PWRA

Steve Barnett
Principal Hydrogeologist
Water Science Unit

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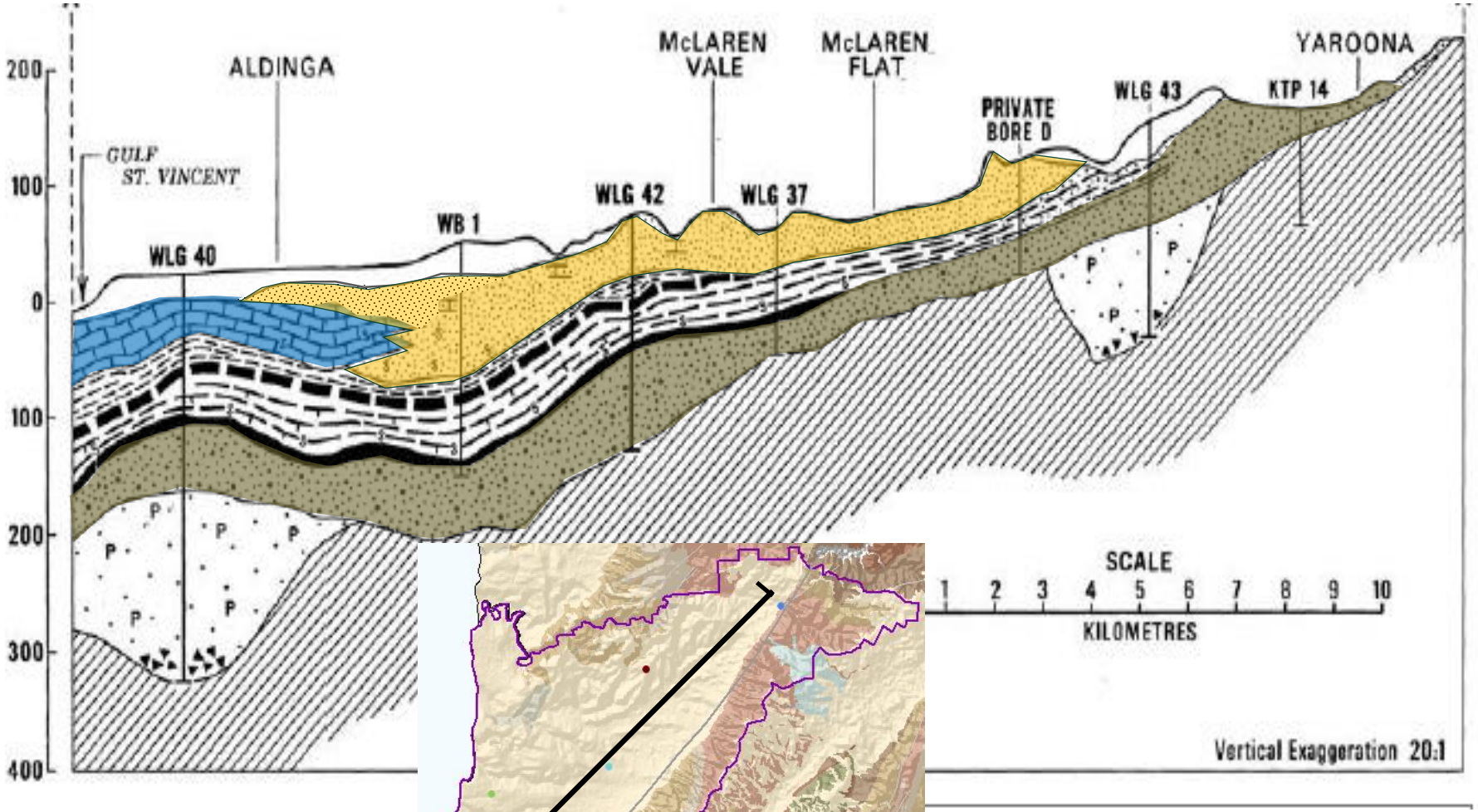
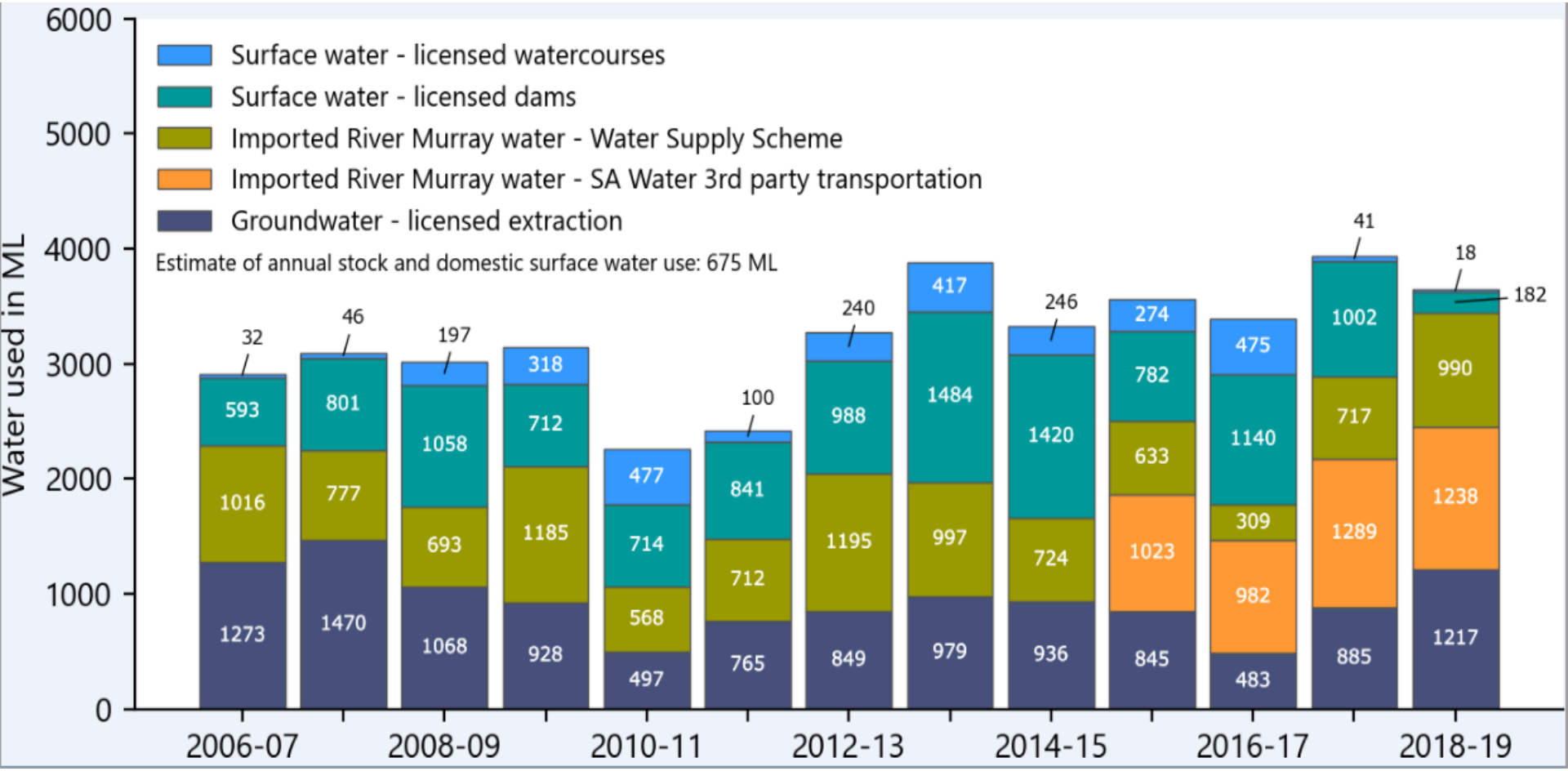
Government of South Australia
Department for Environment and Water

Groundwater System

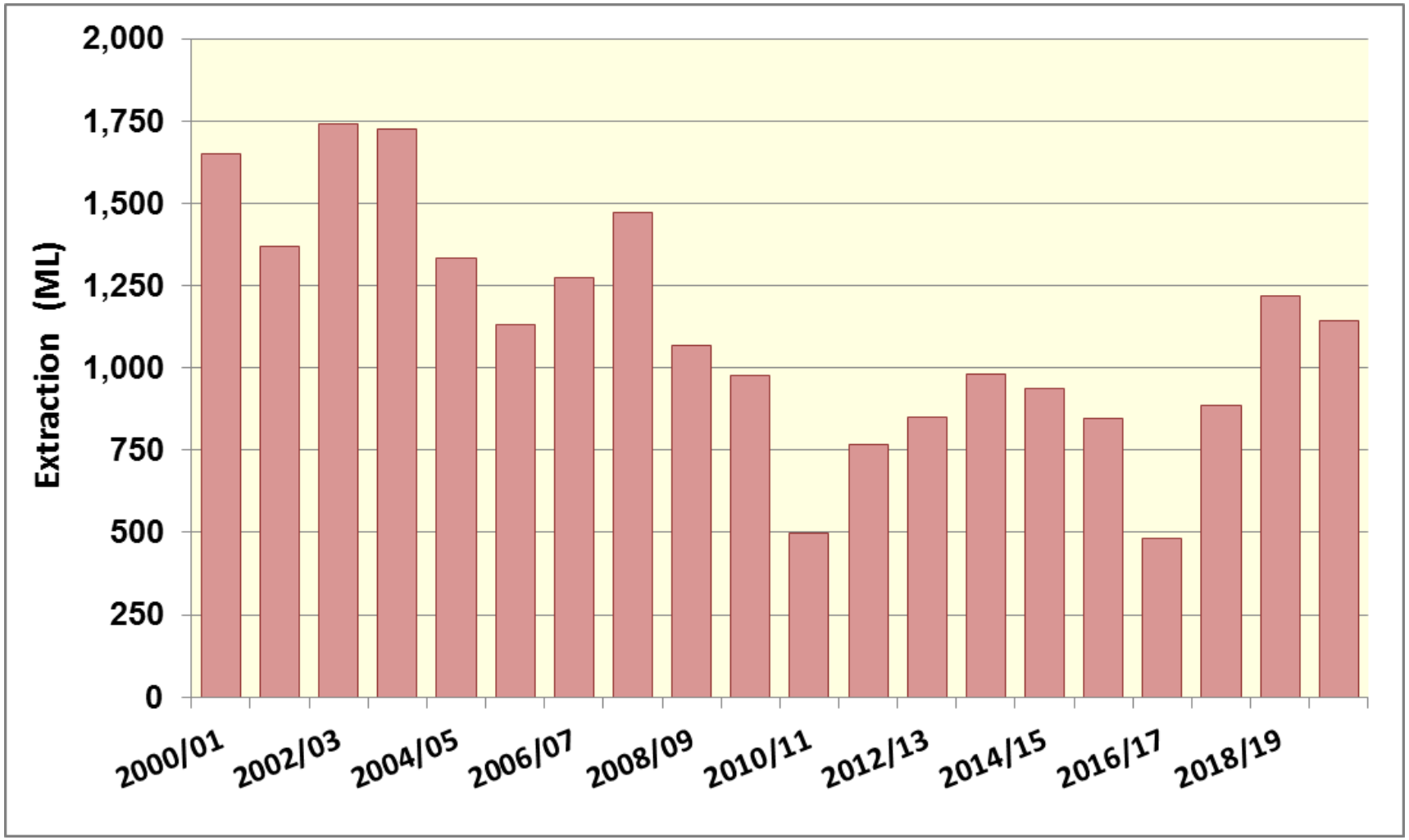
Cross Section



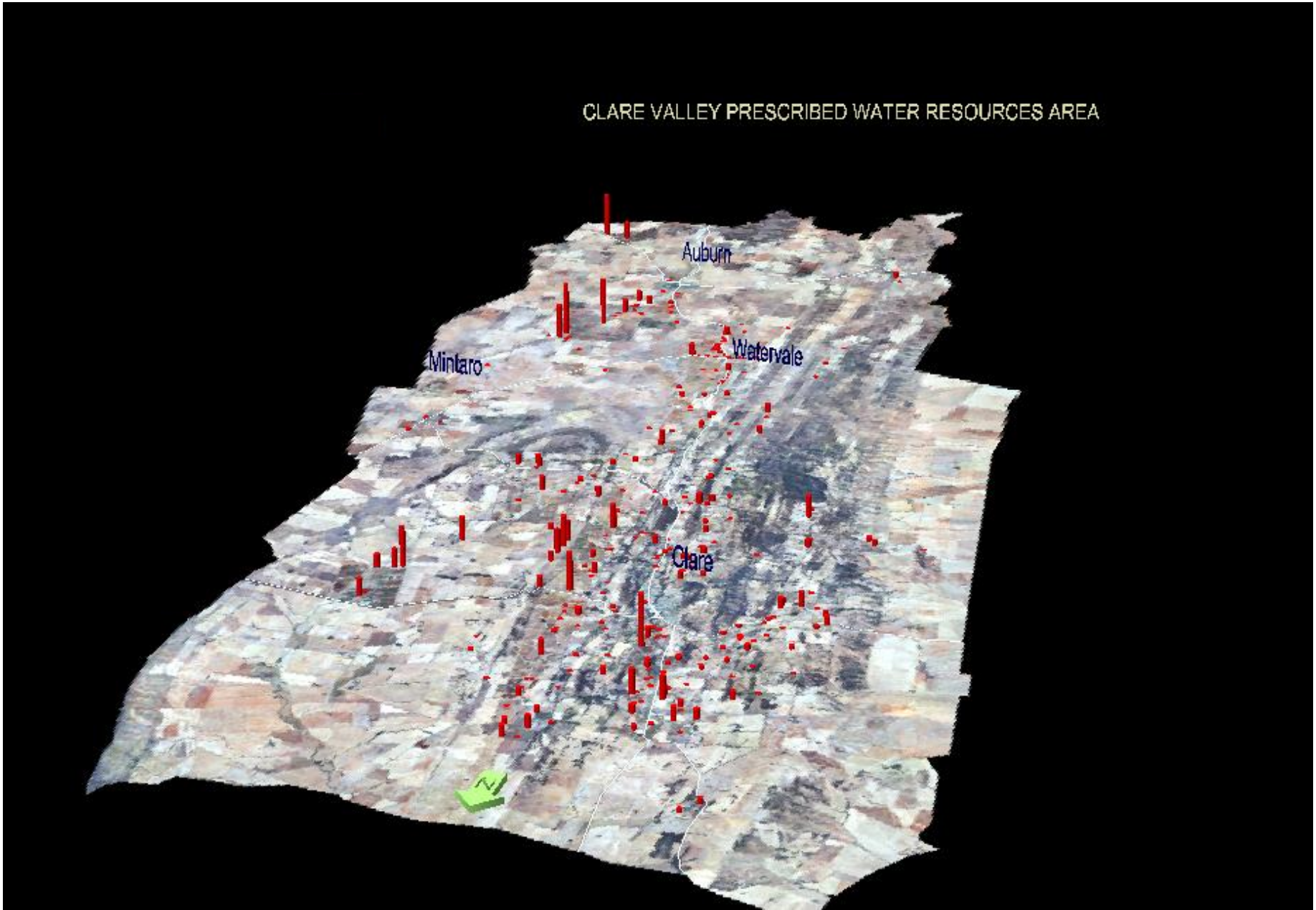
Total water use



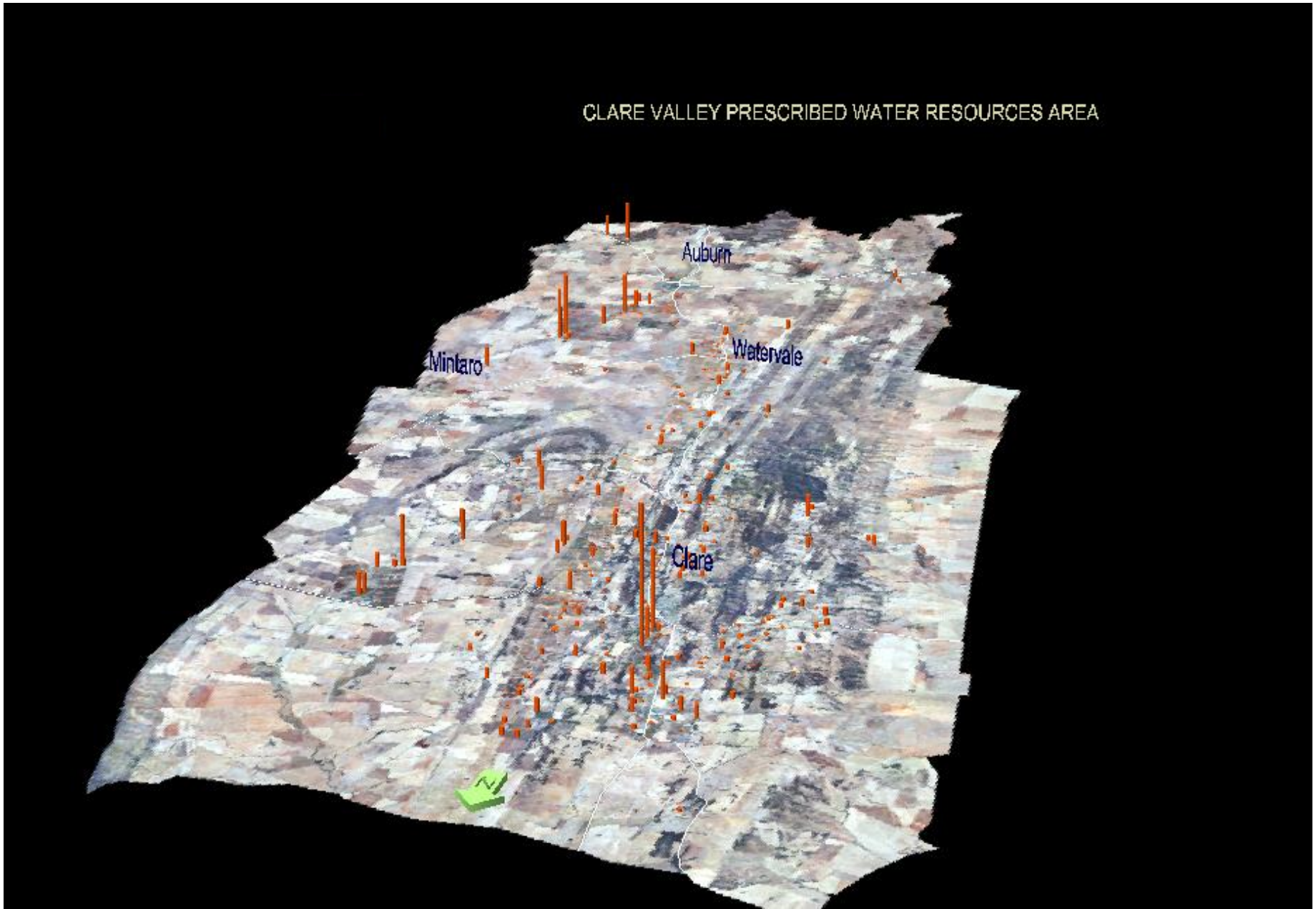
Groundwater extraction



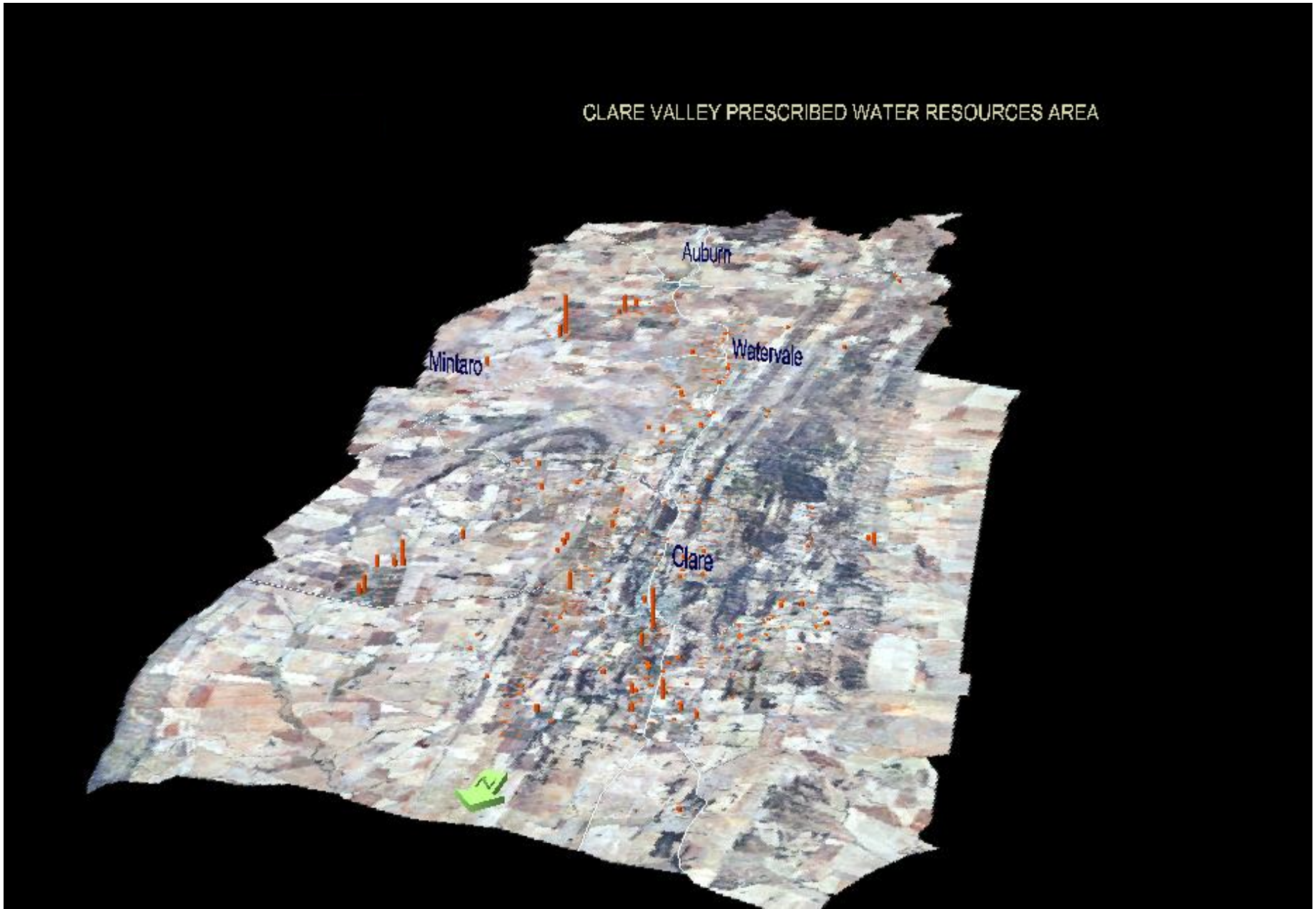
2019-20


CLARE VALLEY PRESCRIBED WATER RESOURCES AREA
Auburn
Watervale
Mintaro
Clare

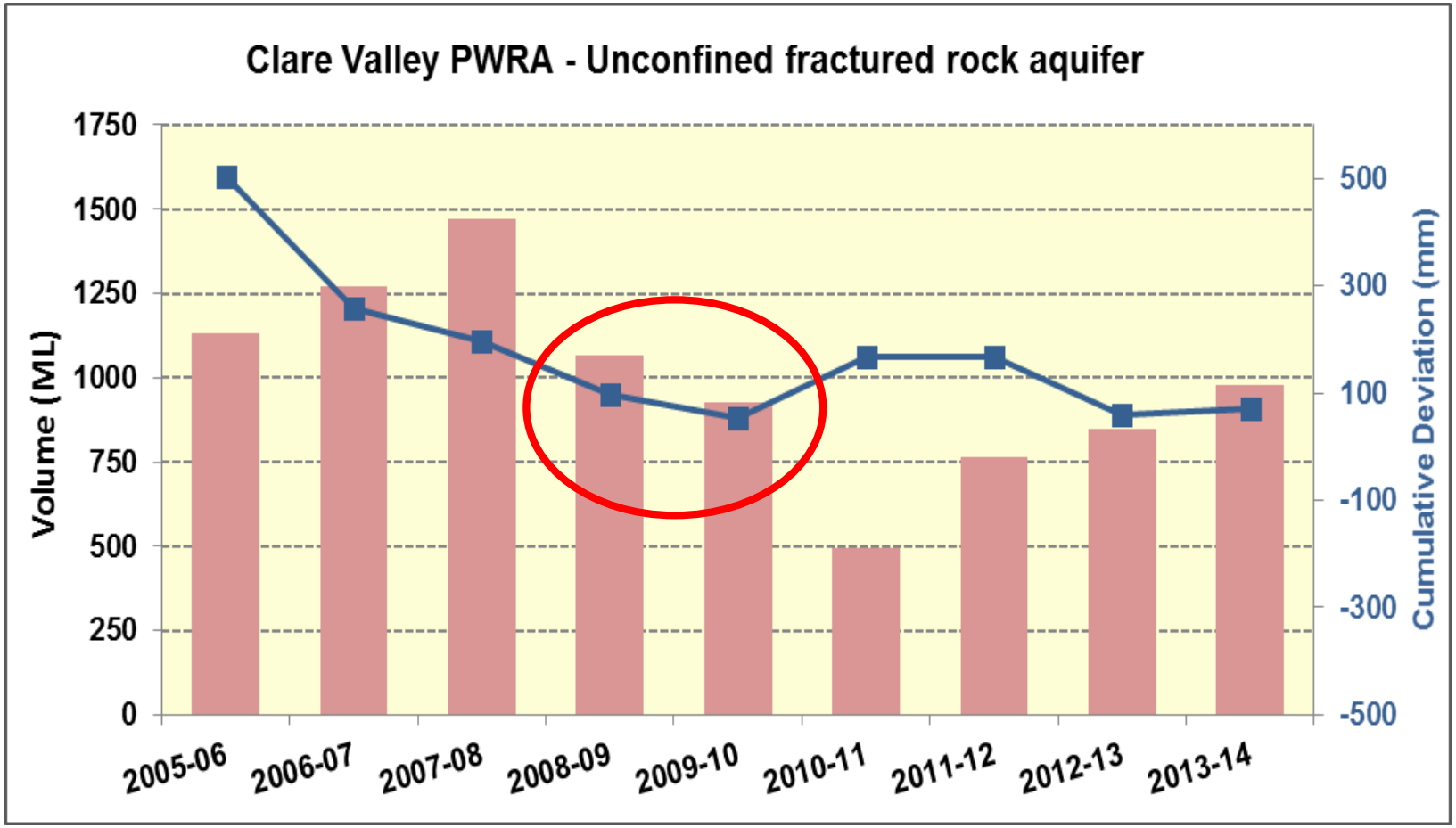
2007-08


CLARE VALLEY PRESCRIBED WATER RESOURCES AREA
Auburn
Watervale
Mintaro
Clare

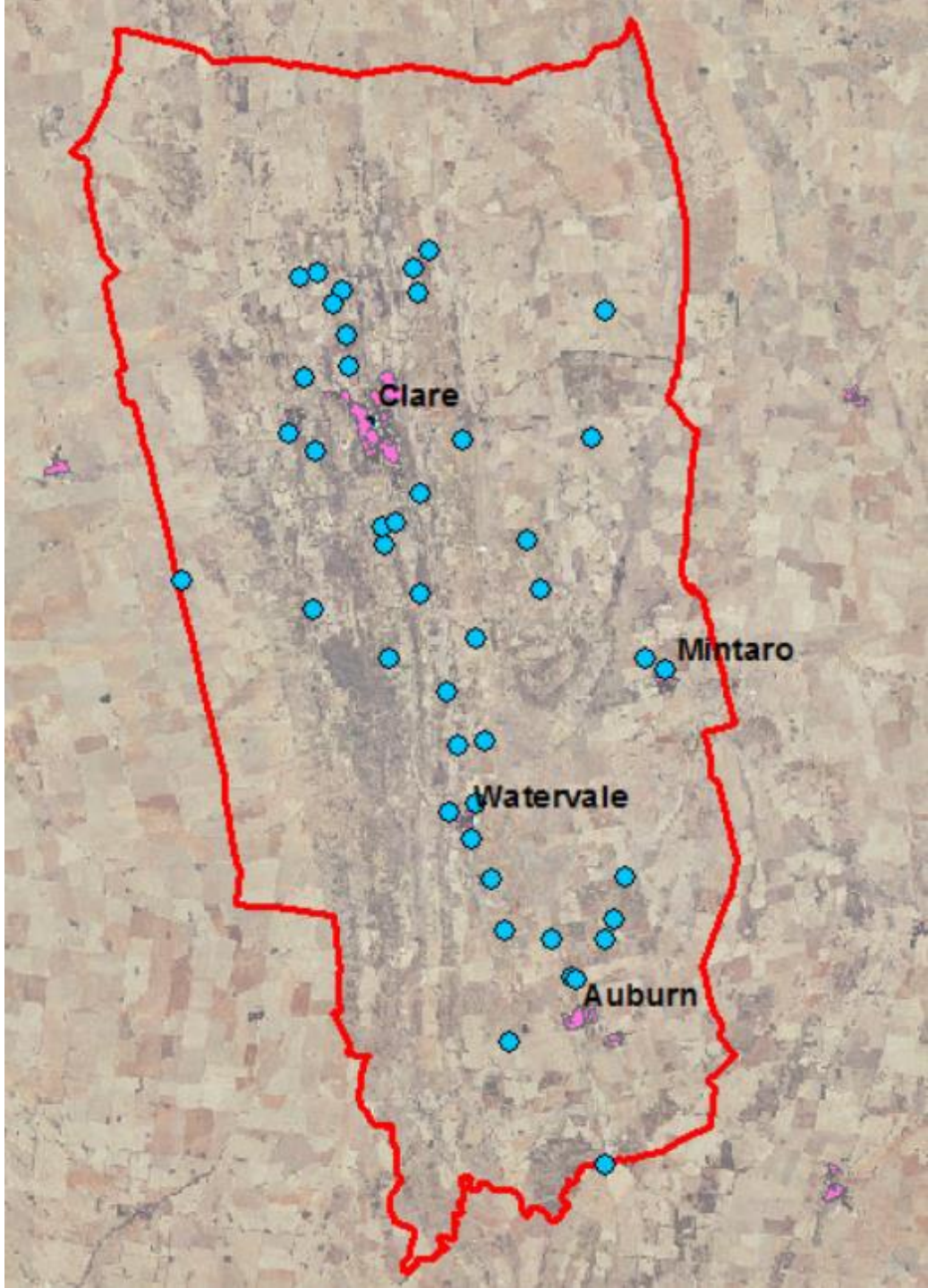
2010-11


CLARE VALLEY PRESCRIBED WATER RESOURCES AREA
Auburn
Watervale
Mintaro
Clare

Clare – water use



Groundwater level network



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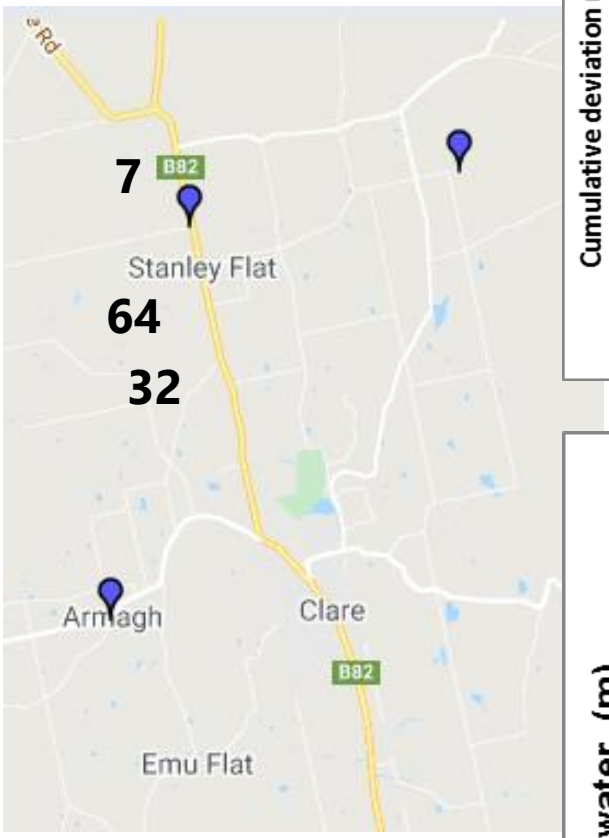
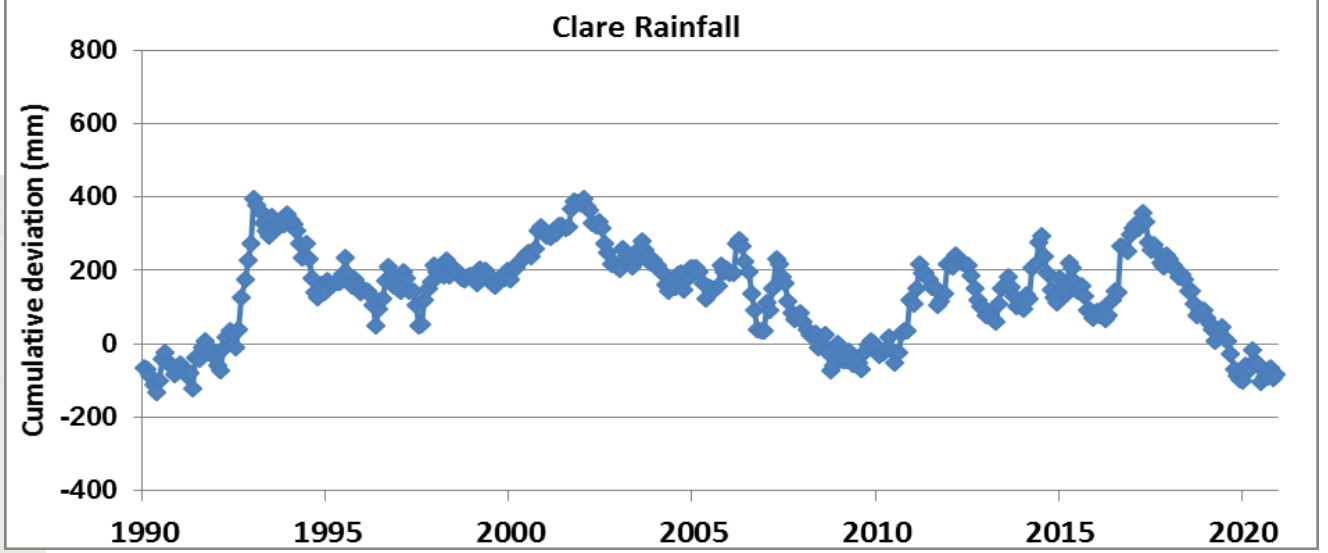
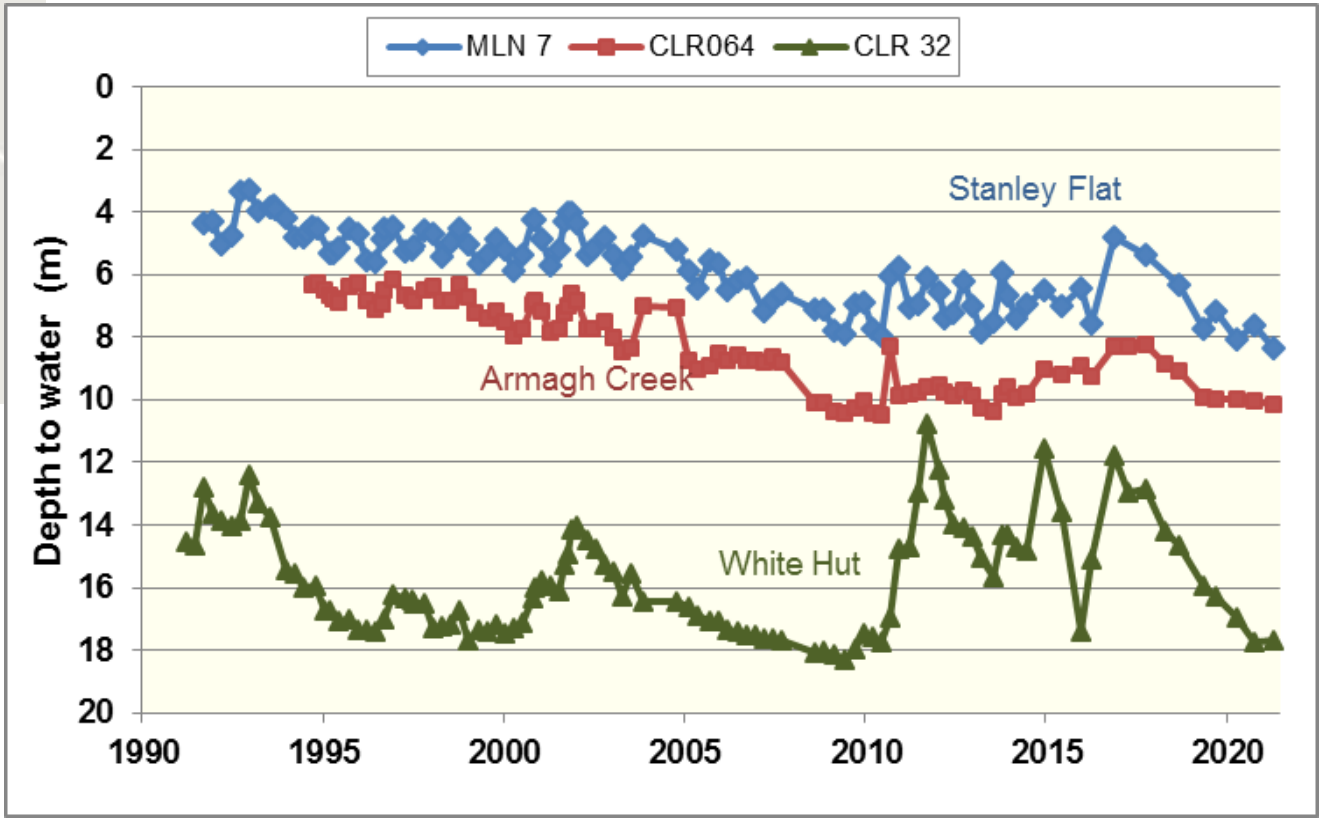
Groundwater levels

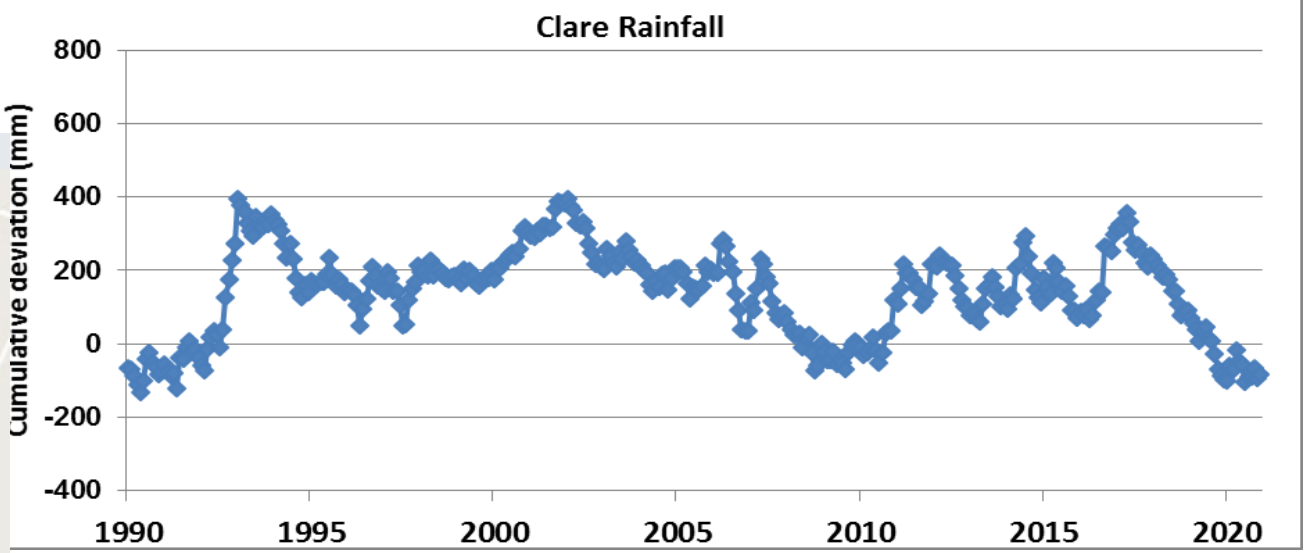
- Water levels in the fractured rock aquifers generally respond to recharge from rainfall ie fall in dry years, rise in wet years
- No evidence of extraction being the dominant driver of water level trends

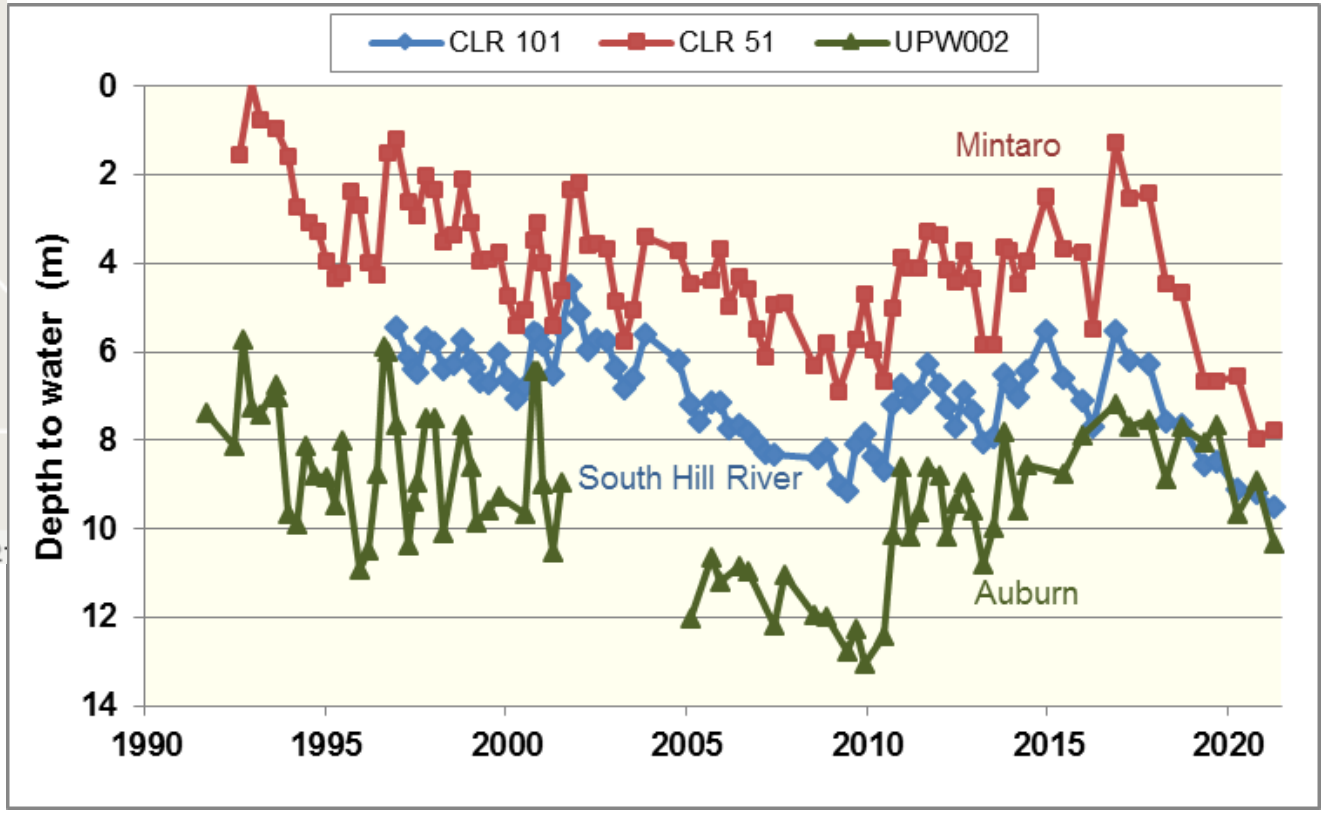

7
B82
Stanley Flat
64
32
Armagh
Clare
B82
Emu Flat

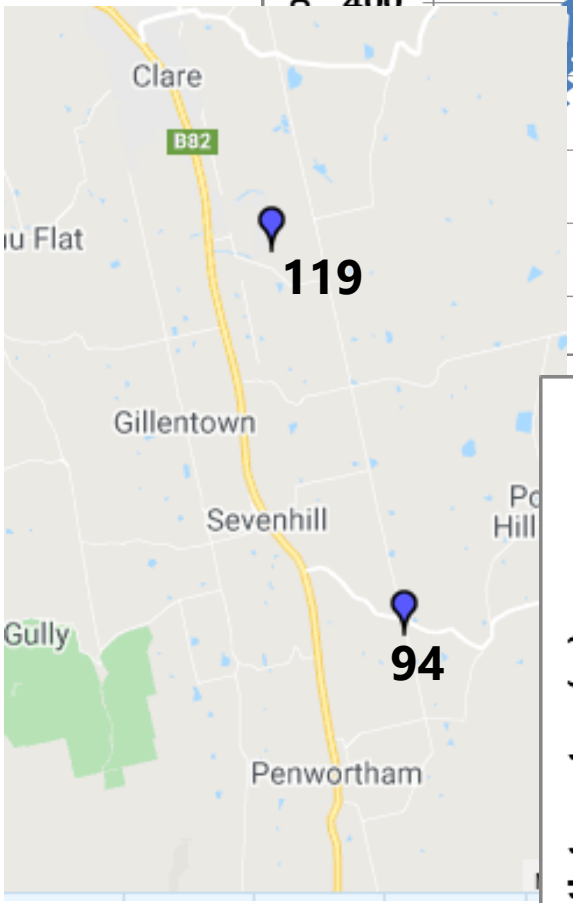

Clare Rainfall
Cumulative deviation (mm)
800
600
400
200
0
-200
-400
1990
1995
2000
2005
2010
2015
2020

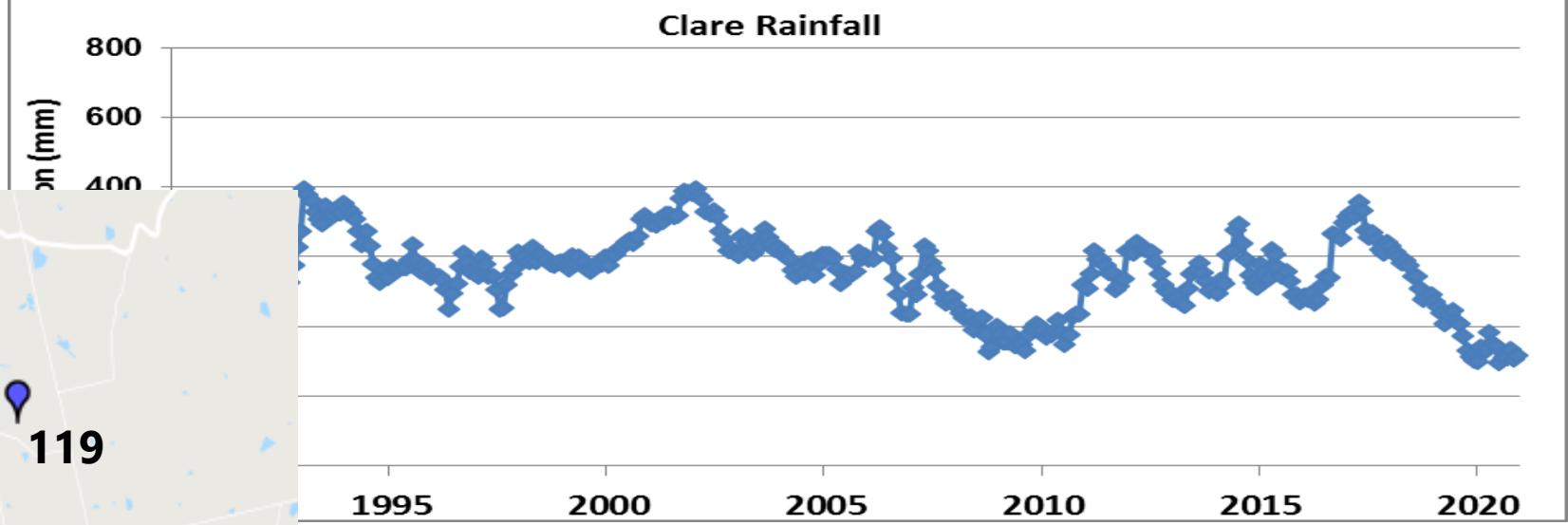

MLN 7
CLR064
CLR 32
Depth to water (m)
0
2
4
6
8
10
12
14
16
18
20
Stanley Flat
Armagh Creek
White Hut
1990
1995
2000
2005
2010
2015
2020

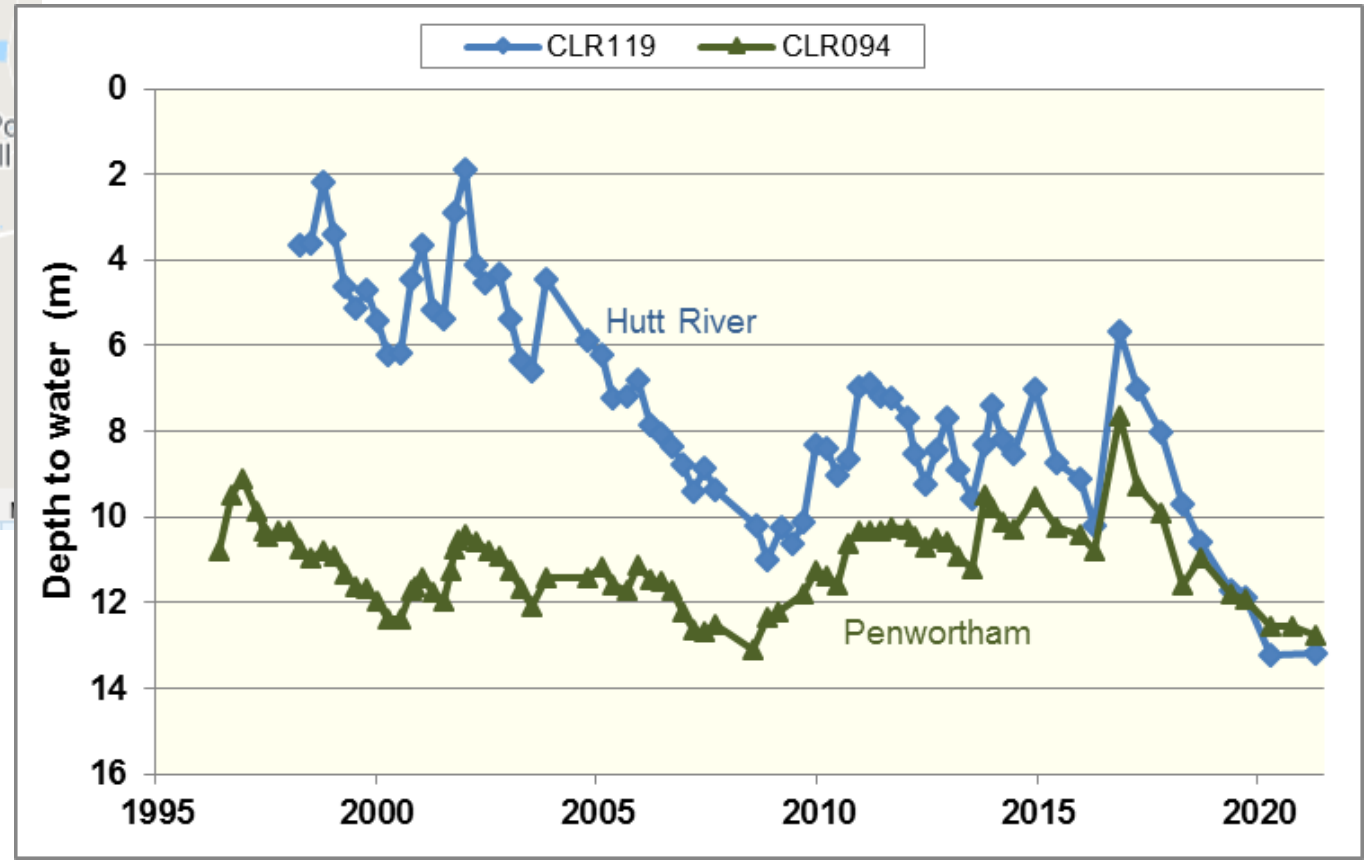

Hill River
101
Clare
Stanley
Polish
Hill River
Sevenhill
51
Mintaro
B82
Watervale
Leasingham
2
Auburn
B84
Map data ©202


Clare Rainfall
Cumulative deviation (mm)
800
600
400
200
0
-200
-400
1990
1995
2000
2005
2010
2015
2020

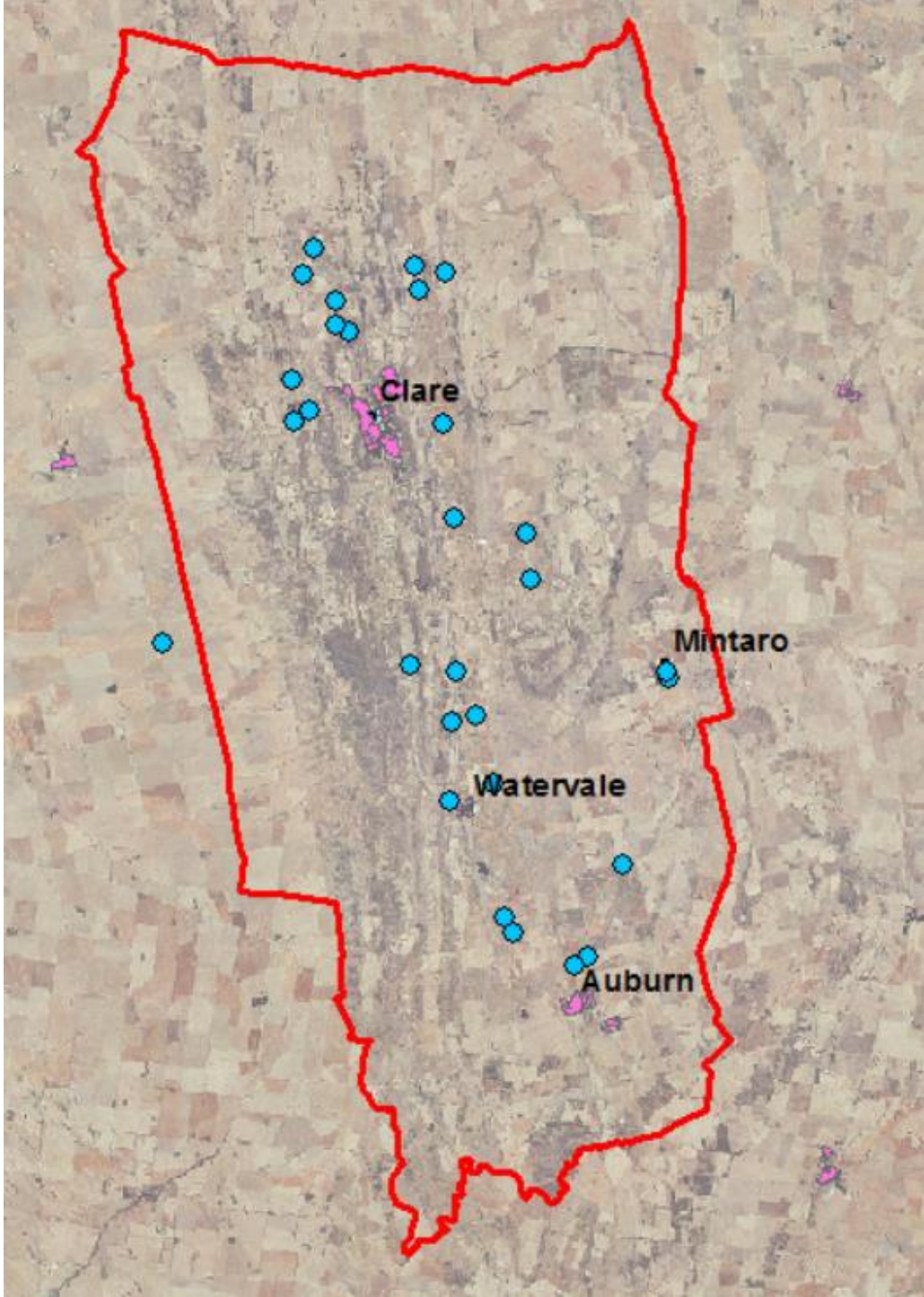

CLR 101
CLR 51
UPW002
Depth to water (m)
0
2
4
6
8
10
12
14
Mintaro
South Hill River
Auburn
1990
1995
2000
2005
2010
2015
2020


Clare
B82
119
Gillentown
Sevenhill
94
Penwortham


Clare Rainfall
800
600
400
1995
2000
2005
2010
2015
2020


CLR119
CLR094
Depth to water (m)
0
2
4
6
8
10
12
14
16
Hutt River
Penwortham
1995
2000
2005
2010
2015
2020

Groundwater salinity network



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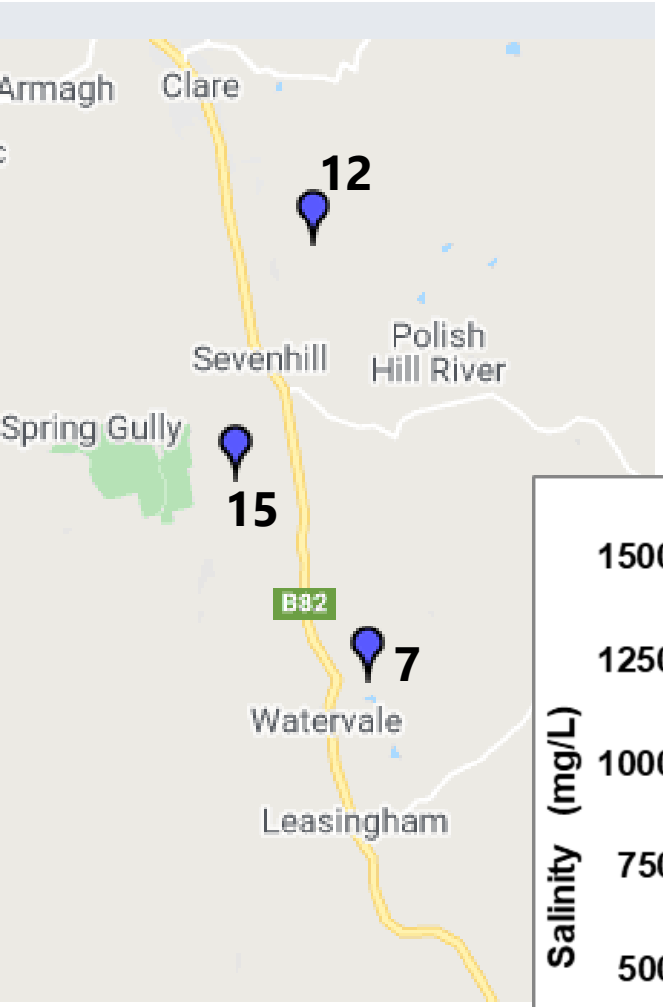
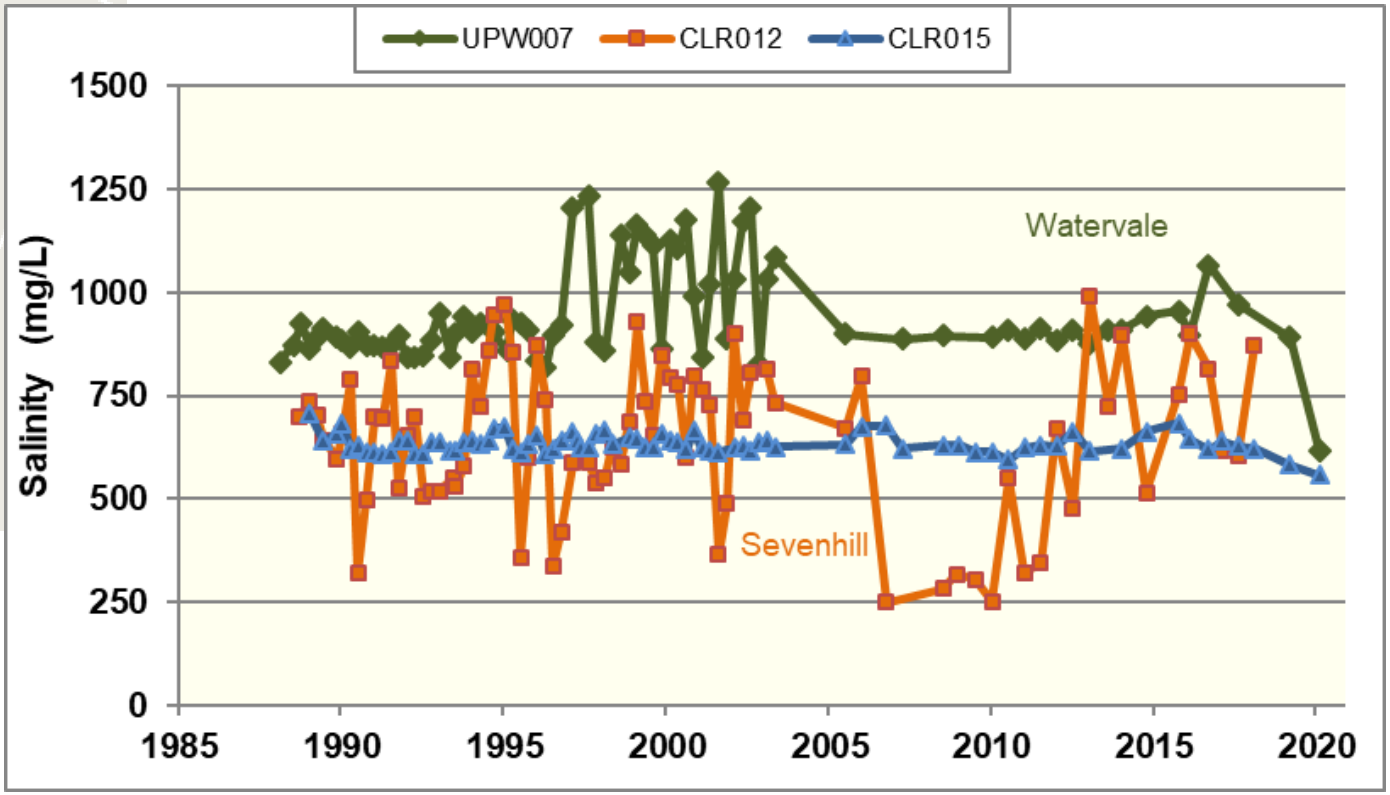
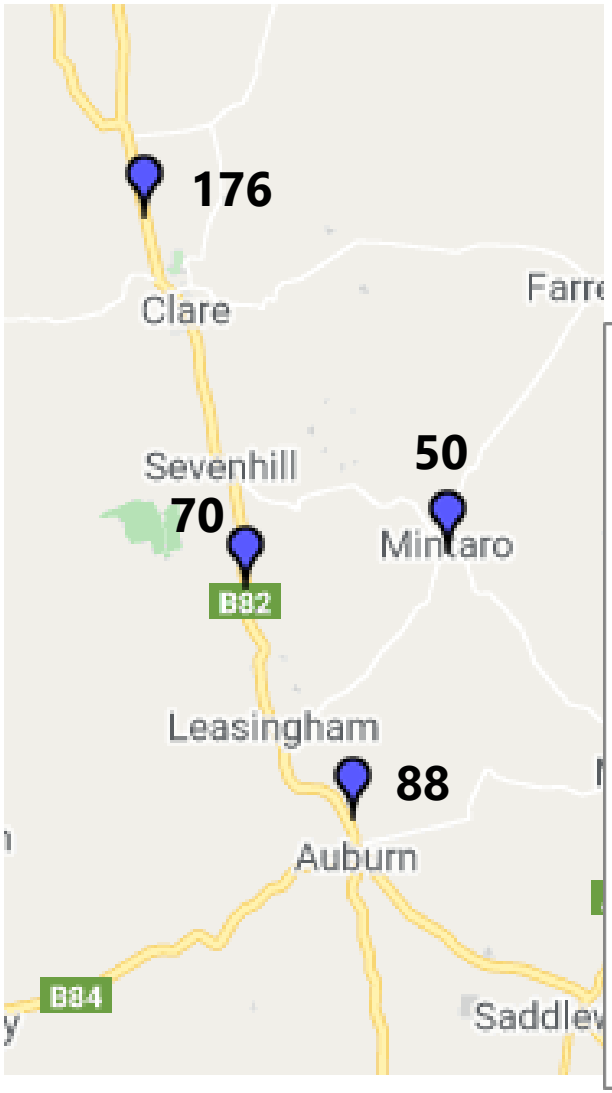
Groundwater salinity

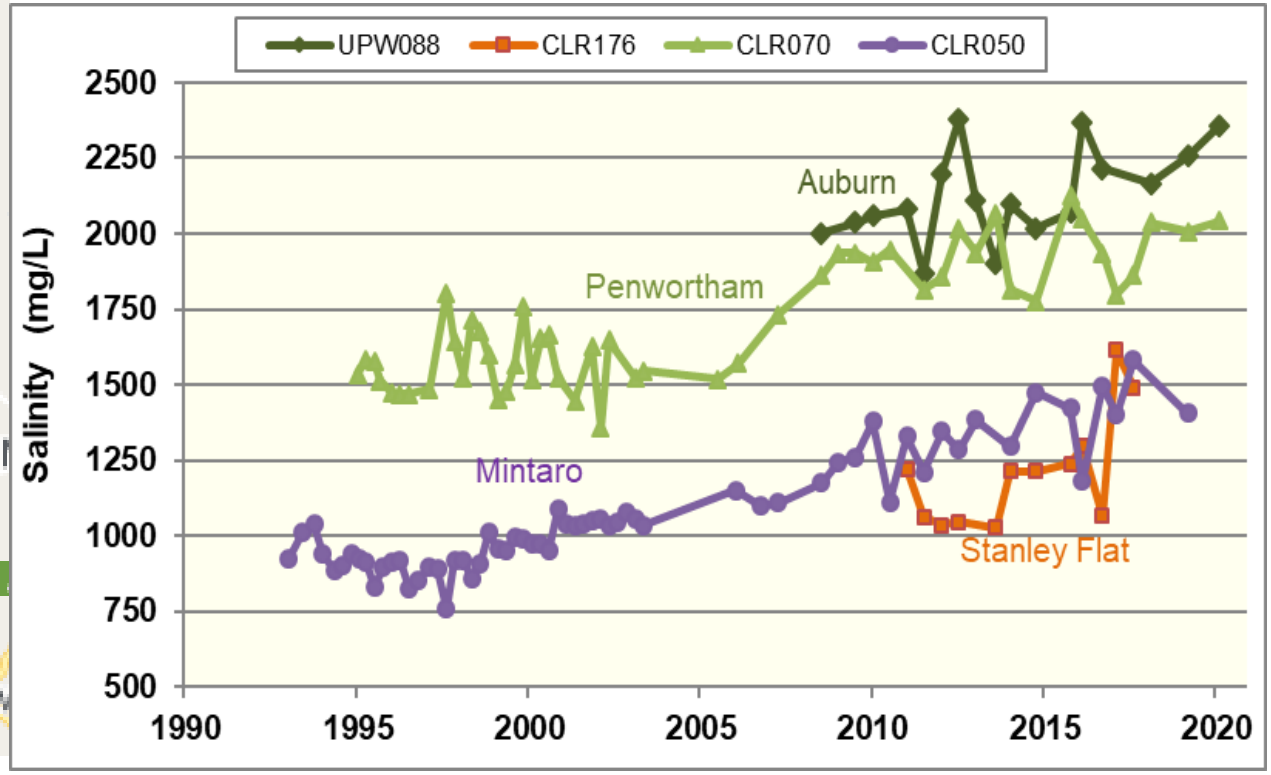
Overall, majority of wells are showing stable trends over the long term



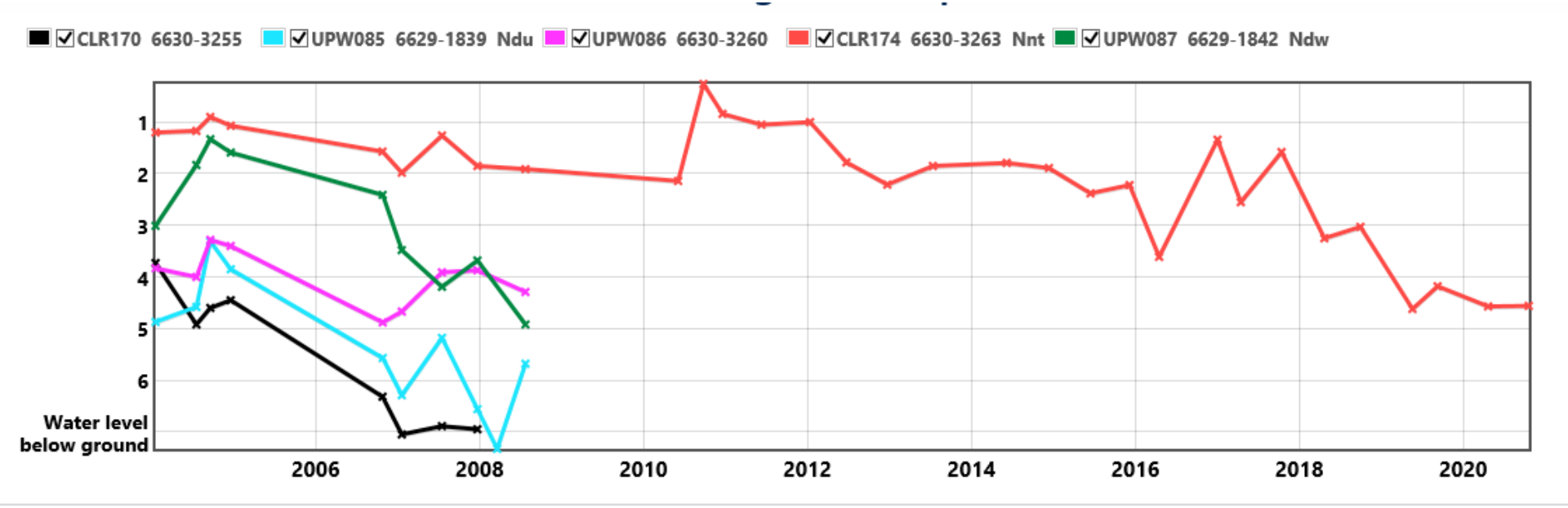


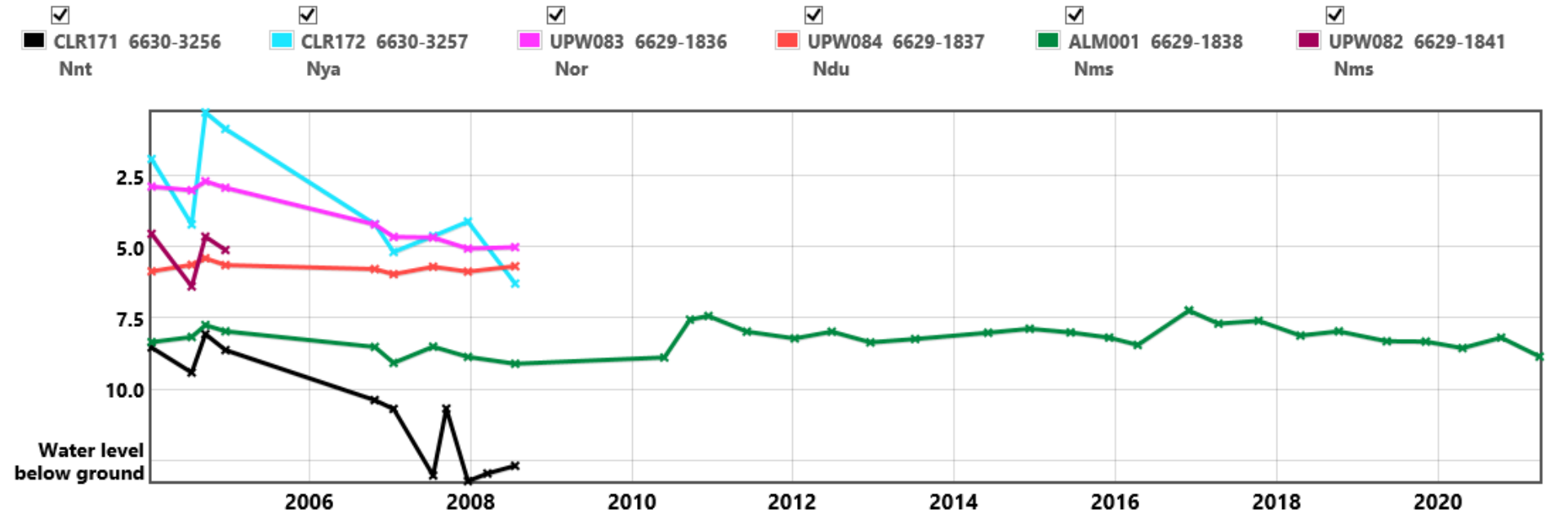
Only four are showing rising trends - response to local influences



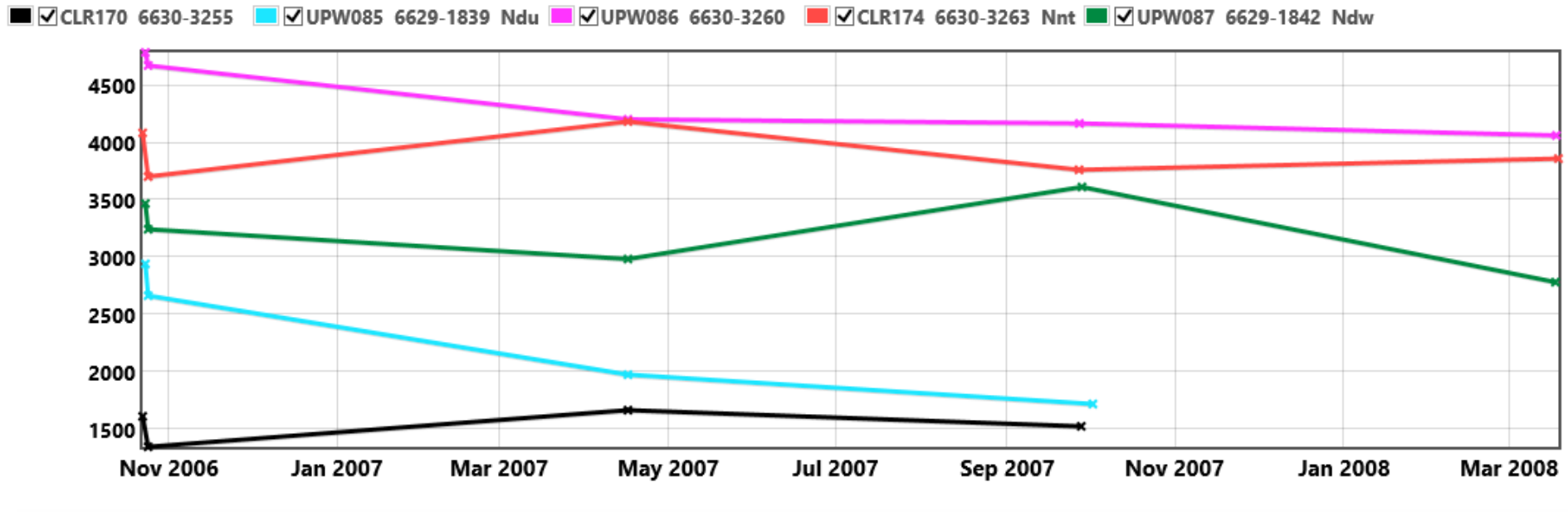


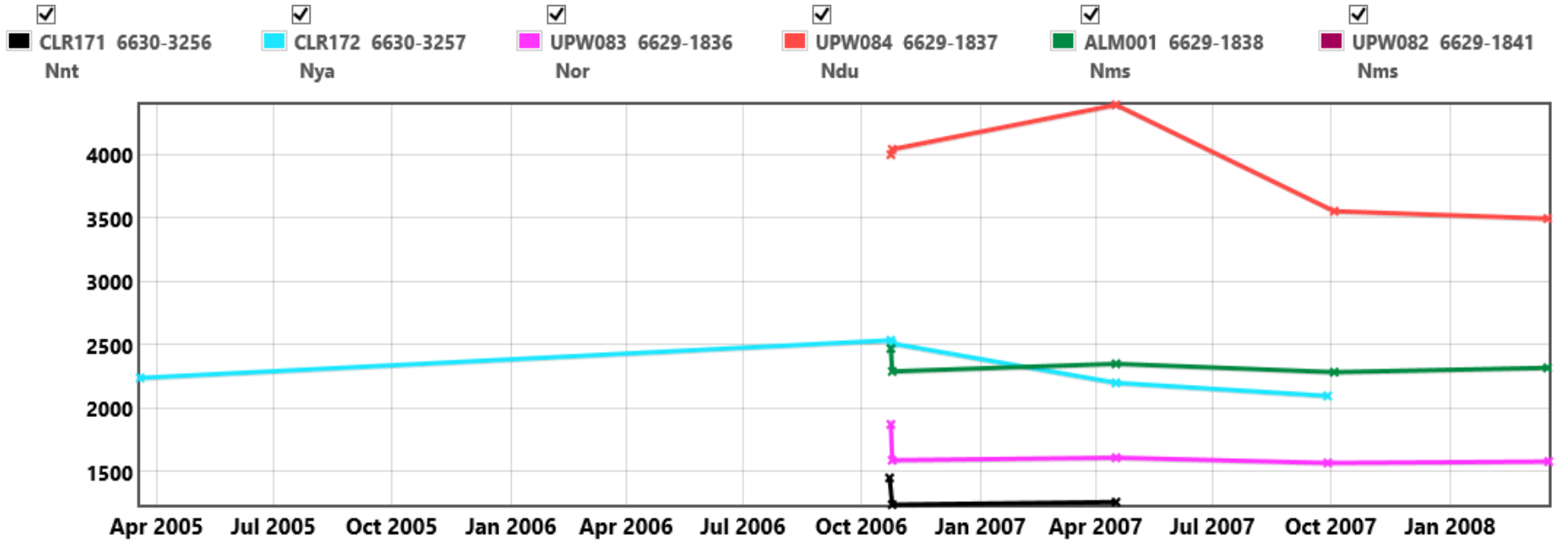
Imported water – water level





Imported water – salinity





Water sample testing

Testing could take several weeks

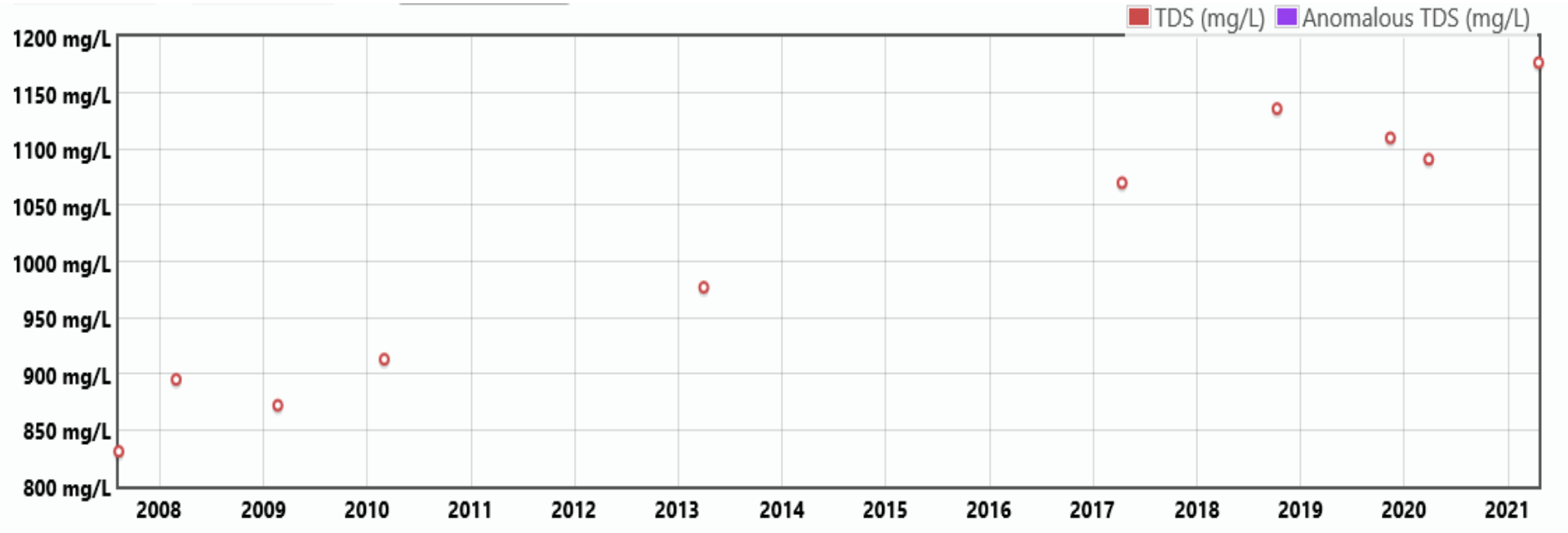
Dear Troy and Melissa,

The result for the sample you submitted is listed below.

Unit No.	Date sampled	**Salinity (mg/L)**
6627-11268	12/04/2017	**1070**

To view this result together with your previous ones, go to
https://www.waterconnect.sa.gov.au/Systems/GD/Pages/Details.aspx?DHNO=209634&PN=410744589740#Salinity

Just below the graph, click the TDS button to view the results in milligrams per litre



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Summary

- Water levels in the fractured rock aquifers generally respond to recharge from rainfall ie fall in dry years, rise in wet years
- If drier climate eventuates in the future, water levels may show a long term gradual decline
- This may result in a long term decline in the productivity of the fractured rock aquifer

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