BOOBOROWIE VALLEY

GROUNDWATER LEVEL AND SALINITY STATUS REPORT

2011

Government of South Australia
Department of Environment,
Water and Natural Resources

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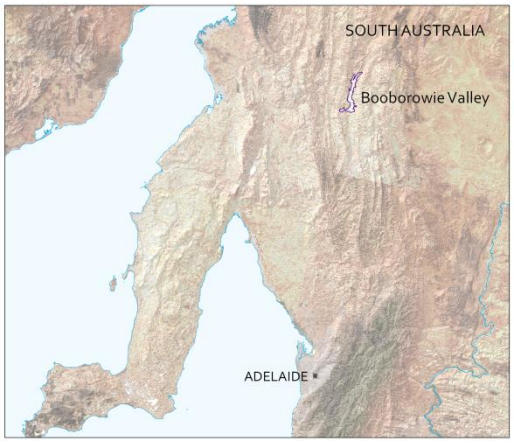
2011 SUMMARY



The Booborowie Valley is situated in the northern Mount Lofty Ranges in the Mid-North of South Australia, approximately 150 km north of Adelaide. It is a local- scale groundwater resource which is not prescribed under South Australia's *Natural Resources Management Act 2004*.

Groundwater extractions in the Booborowie Valley occur from sedimentary aquifers and the surrounding fractured rock aquifer (B). Stock and domestic supplies are obtained from a shallow Quaternary aquifer (Q), while irrigation supplies are provided by a basal gravel aquifer (Qpa) which is up to 10 m thick and provides limited, but important supplies of groundwater to landowners in the region. Recharge to the sedimentary aquifers occurs from rainfall and intermittent flow in the Booborowie Creek only in very wet years, with lateral inflow from the fractured rock aquifer occurring continuously, but at relatively low levels.

Because the Booborowie Valley is not prescribed under the *Natural Resource Management* Act, there are no licences for groundwater extractions and no metering of extractions.

Rainfall in the Booborowie Valley is winter dominant. The long term average annual rainfall from 1925 to 2011 is 441 mm. A declining trend was observed from 2002 until 2009. From 2009 to 2011 above average rainfall was observed, with 545.9 mm recorded in 2011 (Fig. 1).

Groundwater levels displayed a declining trend in a majority of the wells over much of the past 30 years. However above average rainfall in recent years has increased recharge, and hence groundwater levels. In 2011 the majority of observation wells (12 out of 14) display a rise in the maximum groundwater level attained in comparison to the maximum water level observed in 2010. However, two wells continue to display a decline in groundwater level (Fig. 2).

The groundwater salinity observation network for Booborowie Valley is shown in Figure 3. Over much of the past 30 years, 50% of the monitoring wells showed an increasing salinity trend. In recent years this status has improved, with 13 out of 14 monitoring wells displaying declining salinity from 2010 to 2011, most likely due to the recent above average rainfall.

The groundwater resource has been assigned a green status for 2011:

2011 STATUS

"No adverse trends, indicating a stable or improving situation"

This means that observed groundwater level and salinity trends are either stable (no significant change) or improving (i.e. decreasing salinity or rising water levels). The 2011 status for the Booborowie Valley is supported by following:

- 12 out of 14 wells showed a rise in groundwater level during 2011
- 13 out of 14 salinity monitoring well displayed a declining salinity in the recent year
- Monthly rainfall totals for February and March 2011 were considerably above the long-term average monthly rainfall.

A rising trend in the groundwater level in the majority of the wells in 2011 is a response to the above average rainfalls over that period.

To view the *Booborowie Valley Groundwater Level and Salinity Status Report 2009–10*, which includes background information on hydrogeology, location of rainfall stations and relevant groundwater dependent ecosystems, visit WaterConnect.

To view descriptions of all status symbols, click here.

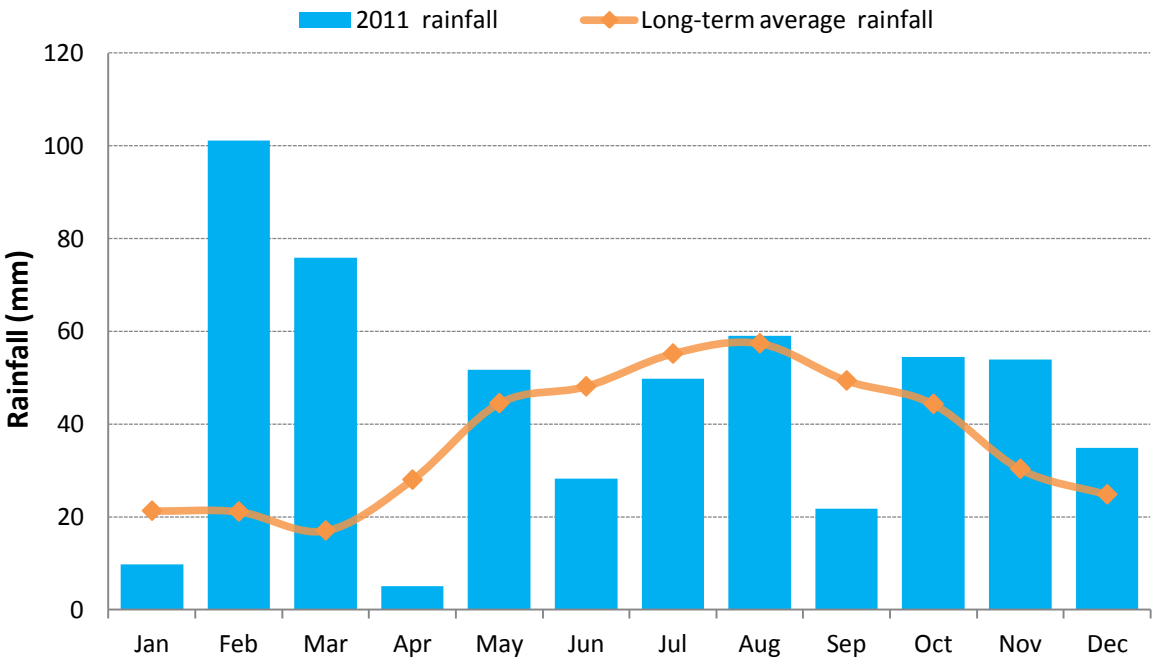


Figure 1. **Monthly rainfalls (mm) for 2011 and the long-term average monthly rainfall (mm) for Booborowie Valley**

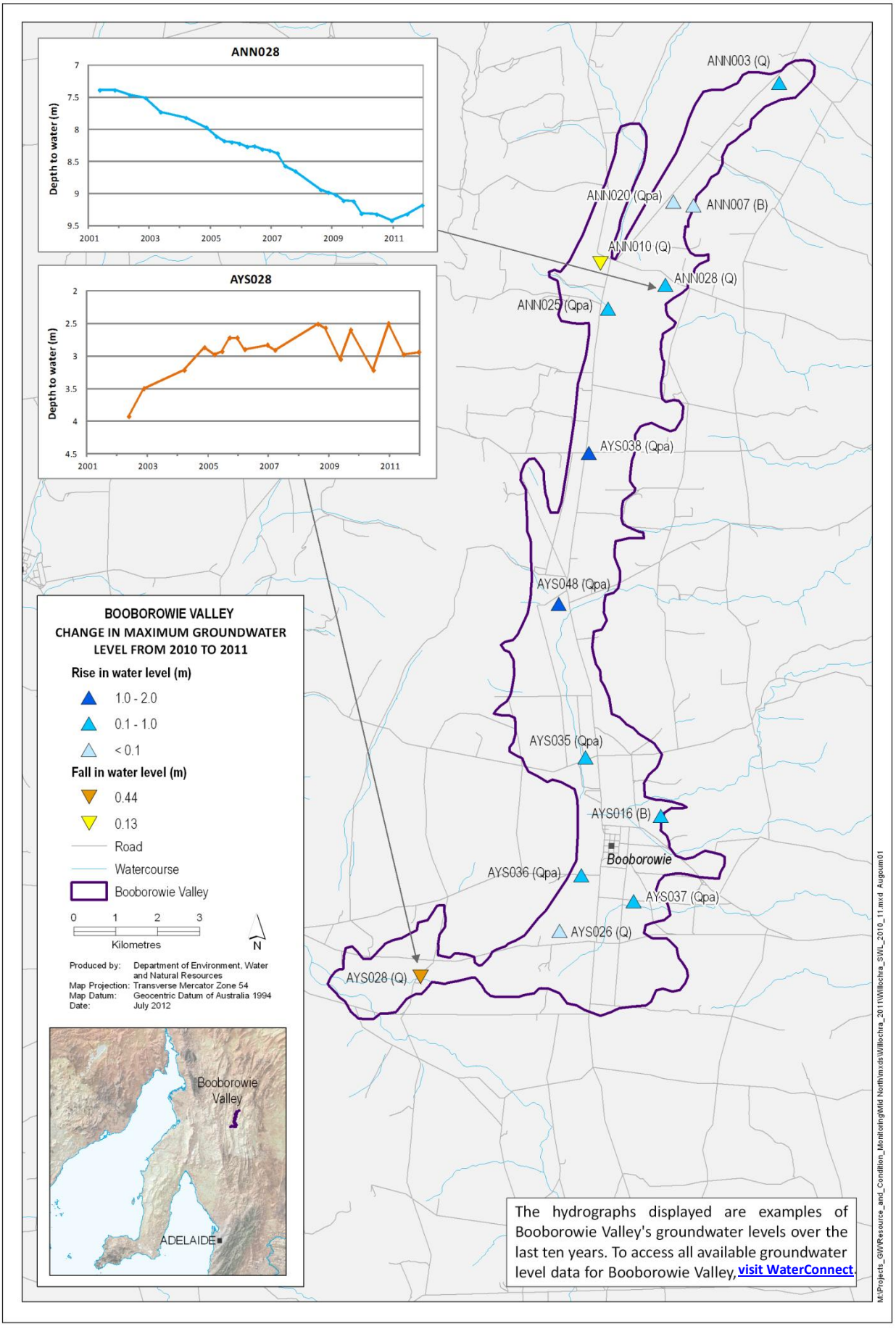


Figure 2. Overall changes in maximum groundwater levels in Booborowie Valley from 2010 to 2011

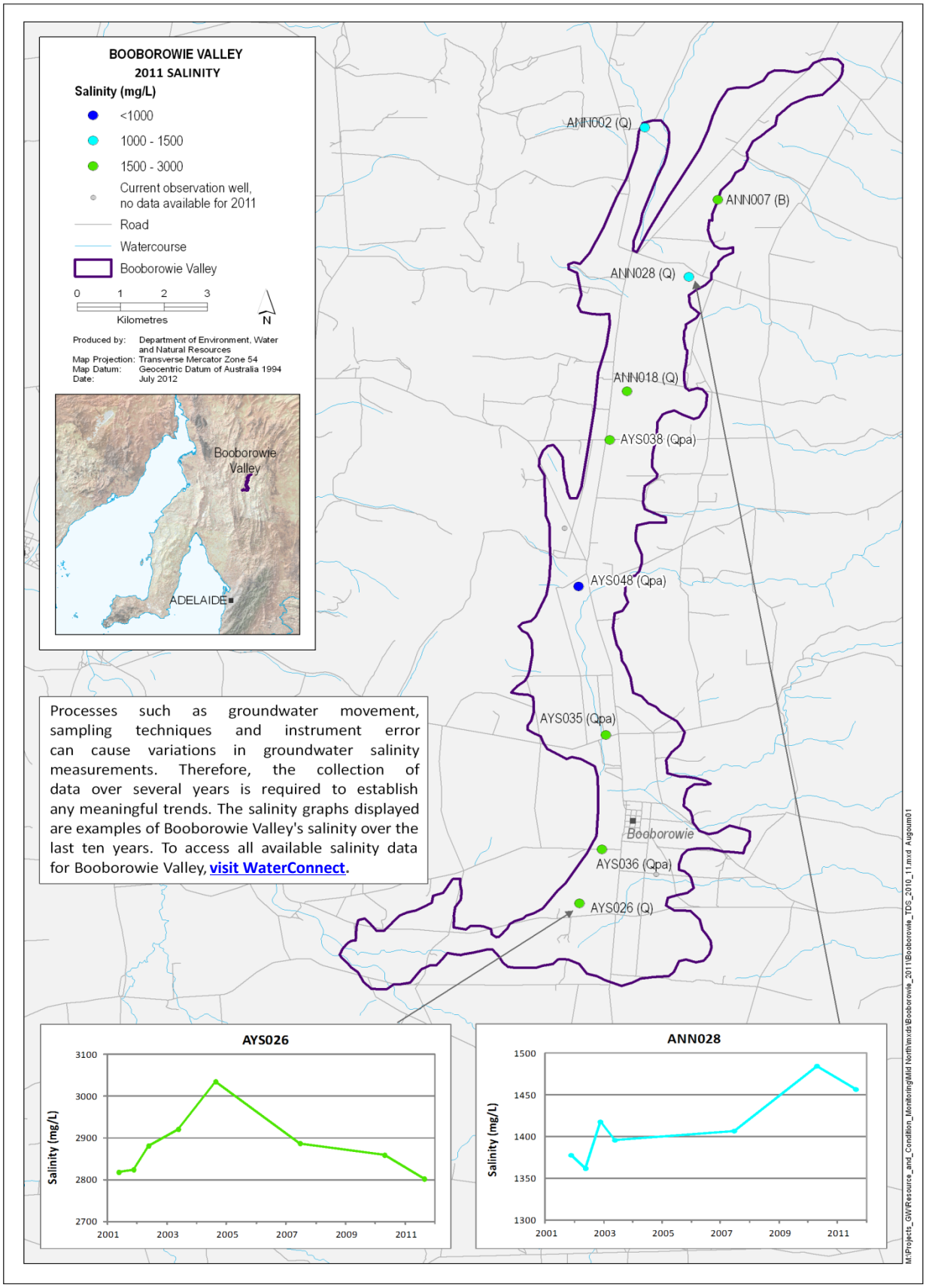


Figure 3. Groundwater salinity of the Booborowie Valley for 2011