

# *Angas Bremer Irrigation Management Zone 2011 – 2012 Annual Report*

---



**Project Coordinator: Sylvia Clarke**

Angas Bremer Water Management Committee Inc

*Supported by*



**Government of South Australia**

South Australian Murray-Darling Basin  
Natural Resources Management Board

# Report Contents

<i>Members of the Management Committee 2011-12</i>	<i>Page 3</i>
<i>Summary of the activities of the Management Committee</i>	<i>Page 3</i>
<i>Data summary and comment from 2011-12 Irrigator Annual Reports</i>	<i>Page 7</i>
<i>Mapping of standing water level and salinity in unconfined and confined aquifers</i>	<i>Page 20</i>
<i>Langhorne Creek weather station statistics</i>	<i>Page 26</i>
<i>Minutes of the 2011-12 Annual Public Meeting</i>	<i>Page 28</i>
<i>Angas Bremer Irrigators Revegetation Association Inc update 2011-12</i>	<i>Page 35</i>
<i>Langhorne Creek Wine and Grape Inc 2011-12 update</i>	<i>Page 36</i>

***Angas Bremer Water Management Committee Inc.***

**Committee Members 2011-2012**

*Chairman – James Stacey  
Vice Chairman – Phil Reilly  
Treasurer – Michael Clements*

*Committee*

*Brian Wyatt, Mac Cleggett, Rob Tonkin,  
Dale Wenzel, George Borrett and David Eckert.*

*Non-elected members of the Committee*

*Secretary - Barbara Blaser*

*Program/Project Coordinator - Sylvia Clarke*

*Cameron Welsh and Michael Cutting – SA Murray Darling Basin NRM  
Board*

**Report of the Activities of the Committee 2011-2012**

**1. Salt trends**

The success of the Rootzone Salinity Project to date, and the fact that many of the FullStops on people's properties are now failing, has prompted the Angas Bremer Water Management Committee Inc, the SA Murray Darling Basin Natural Resource Management Board, the Langhorne Creek Grape and Wine Inc, and Dr. Richard Stirzaker (CSIRO) to design a new project to provide more information for irrigators on rootzone salinity.

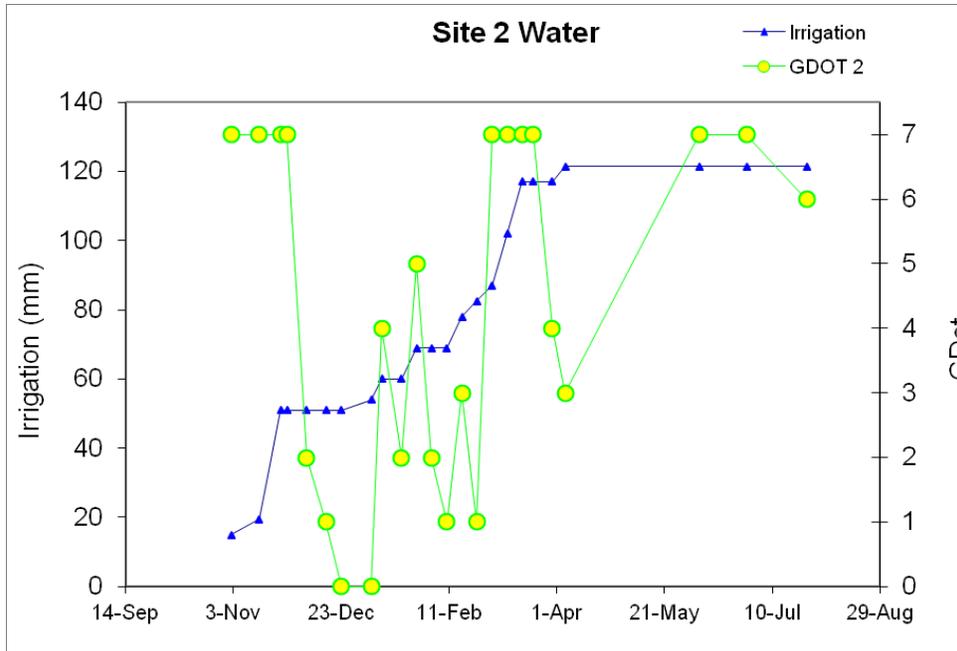
Five demonstration sites have been established on irrigated vineyards with varying soil types, irrigation, water quality, irrigation management practices, and good past root zone salinity record keeping. FullStop devices and SoluSamplers™ (to demonstrate another device), have been installed at varying depths. We have now had a full irrigation season and data is being collected. The aim is that all irrigators in the region will be informed of the progress of the project via field days, fact sheets, newsletters, website, and a final report. The funding for this project has come from the Commonwealth Government's Community Action Grants.

Due to the original scope of the project, only sites in vineyards were established. However, the interest in the project was great enough that the ABMWC applied for a second grant through Caring for Country to expand this project to cover sites other than vineyards and to provide continuing support to the demonstration sites and educational opportunities for other irrigators. This grant was successful and will expand the project to

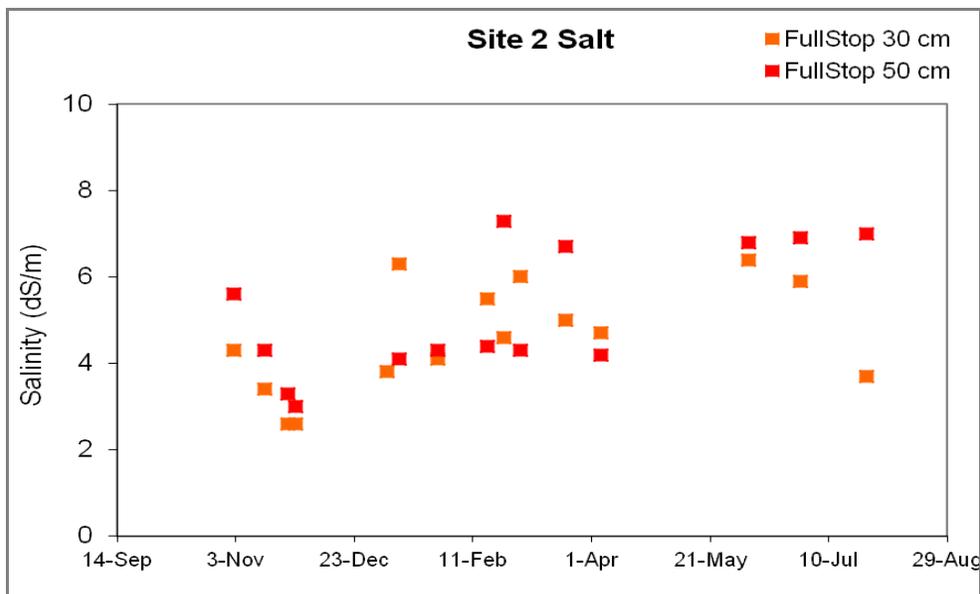
other sites and allow for further development of the technology to deliver the data to other irrigators.

The new sites for the rootzone monitoring equipment have been identified and the rootzone salinity monitoring equipment will be installed in Spring 2012 prior to the commencement of the 2012/13 irrigation season. The technology to relay the collected data to other growers in the district including a web interface and Smart Phone App is still under construction and should be operational shortly.

Outputs of the monitoring are shown in the figures below.



**Figure 1.** Graph showing cumulative irrigation (blue line) and the soil moisture status as measured by the GDot. The greater the number of dots the wetter the soil profile with 7 dots representing field capacity (-8kPa).



**Figure 2.** Graph showing FullStop data trends at 30 and 50cm during the 2011/12 irrigation season. A general increase in salinity is evident during the irrigation season at both depths followed by a reduction in salinity levels at 30cm as the result of winter rainfall. This monitoring site is located on a heavier textured soil profile. 1dS/m = approx 0.65ppm.

## 2. Managed Aquifer Recharge Risk Assessment Project

The Aquifer Storage and Recovery (ASR) risk assessment project was developed with the aim of identifying whether or not there were contaminants present in the surface water used for ASR, now referred to as Managed Aquifer Recharge (MAR), and if present, what impacts could this cause to the aquifer and water users.

Since 2007, water samples have been collected and analysed by the Australian Water Quality Centre (AWQC). The original protocol involved collecting samples from recharge water sources; the Angas and Bremer Rivers, and Lake Alexandrina, and a well used for artificial recharge on a property in Langhorne Creek. Since this time, samples have been collected from relevant source waters or bores depending on the amount of funding available each year (apart from 2010 when no funding was available).

Funding was obtained from the SA Murray Darling Basin NRM Board Volunteer Grants for a further two samples over the 2011-12 year. In June 2012 samples were taken from the Angas and Bremer rivers when river levels were high. The salinity of the Bremer River was 970  $\mu\text{S}/\text{cm}$  and the Angas 840  $\mu\text{S}/\text{cm}$  at this time. Both rivers had levels of phosphorus, iron and bacteria above the Australian Drinking Water Guidelines, with levels in the Bremer higher than in the Angas.

## 3. Biodiversity Fund Project

The Angas Bremer Water Management Committee has been successful in gaining funding through the Commonwealth Government Biodiversity Fund, which aims to 'help land managers store carbon, enhance biodiversity and build greater environmental resilience across the Australian landscape'. The aim of this project is to restore vegetation along the Angas and Bremer Rivers and shore of Lake Alexandrina and associated swamps and wetlands within the Langhorne Creek area to create biodiverse corridors.

The 2 year project will restore a number of sites, up to a total of 30 hectares. This will involve weed control and planting of local native species and fencing of sites where necessary, as well as monitoring water quality, aquatic invertebrates, frogs and birds at each site every 6 months.

Site visits are currently being conducted at the first selection of sites on the Angas and Bremer rivers with interested landholders and photopoints are being established to monitor the progress of the project.

Contractors will be used for site preparation and planting at some sites and for others the landholders will be eligible for incentive payments to undertake the work themselves. The project coordinator will be carrying out the vegetation and frog surveys as well as the water and aquatic invertebrate monitoring. We are hoping to engage members of the Strathalbyn Naturalists Club to assist with the bird surveys.

It is planned that the site preparation, weed control and plant propagation will occur in the first year and planting in the second.



**Figure 3.** Potential site for weed control and native species planting on the Angas River.

## Irrigation Annual Report Forms

Irrigation Annual Report forms (IAR's) were mailed to 134 irrigators. 115 irrigators who returned their completed forms on time have achieved "Accredited Irrigator" status and will be issued with accreditation certificates. 96 of these irrigators submitted their reports on line through the website, slightly less than the 100 who used the on-line facility last year. Seventeen IAR's that were received by the Committee after the due date did not achieve accreditation and a further 2 irrigators have not (at the date of this report) returned their IAR forms. The data from 132 irrigators has been collated and that data is presented in the following graphs and tables. Comments are included with each chart or table.

**Flooding:-** Flooding by diversion or pumping was reported by a number of irrigators. The flooding events occurred during July and September 2011. Only 150 ha was flooded in 2011-12 compared with 1,053 ha in 2010-11, these figures include some properties that were flooded twice or more.

**Revegetation:** - The total area of re-vegetation reported in the Irrigation Annual reports has not changed substantially from the 1,850 ha reported last year.

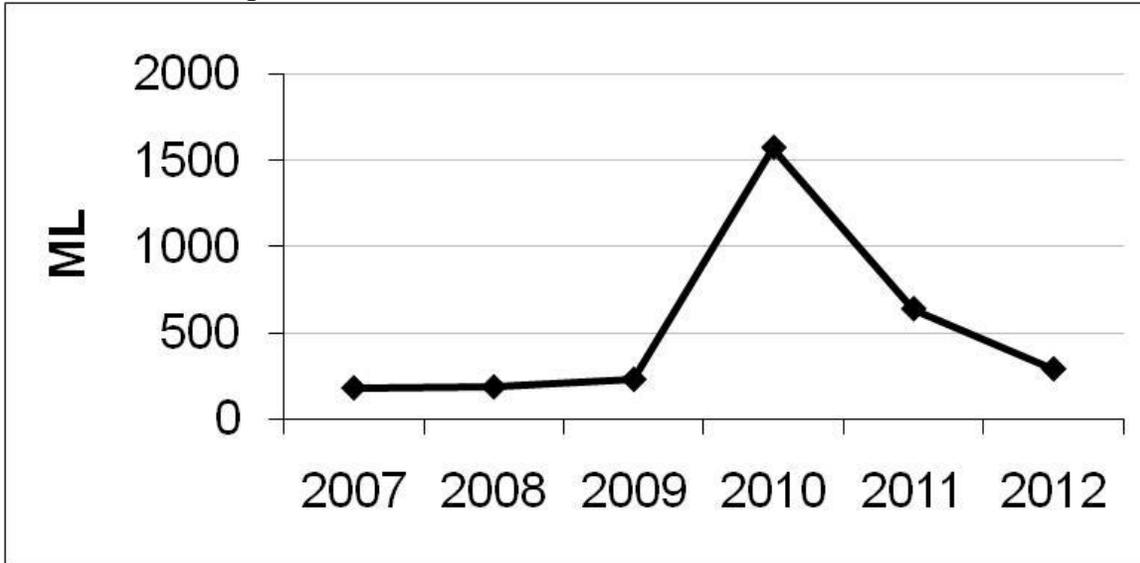
**Red Gum Health:-** 80 Irrigators reported on the health of the red gums on their properties. Health, or otherwise, was rated from 0 to 5, 5 being healthy and 0 being dead. Redgums were generally noted to be in relatively good health. With the continuation of good flows in the rivers and water reaching many swamps, most reported no change or improving health in their trees, although a couple of trees were noted to have died unexpectedly. The red gum trees that were targeted for the Mundulla Yellows trial treatment in 2007 have been photographed over the year by the Langhorne Creek Grape and Wine Inc and are still generally in a poor state of health.

**Water Leasing:-** Table 1 below shows the amount of water leased in 2011-12 compared with water leased in 2010-11. This table shows that there was another shift in the way water was traded within the Angas Bremer Irrigation Management Zone over this last year. Overall, there was more water leased by irrigators this year than last. The amount of River Murray water traded was far greater than last year, with a greater amount of water available from Lake Alexandrina as well as being delivered through the pipeline into the region. Most of this was leased in from outside the region. The amount of groundwater leased between irrigators within the zone was much lower this year, reflecting the lower volume of groundwater used generally in the region over the year.

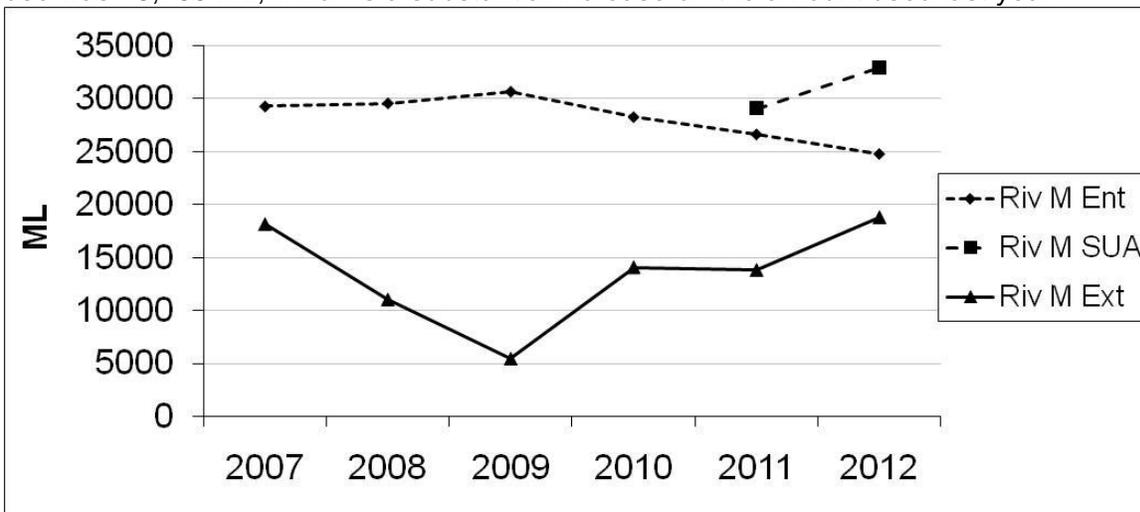
**Table 1**

Type of Lease	Megalitres 2010-2011	Megalitres 2011-2012
RM water leased from ABIMZ to outside ABIMZ	264.5	790.0
RM water leased from outside ABIMZ to inside ABIMZ	1214.3	2473.0
RM water leased from inside ABIMZ to inside ABIMZ	566.98	571.98
Groundwater leased from AB licence to AB licence	425.90	20.71

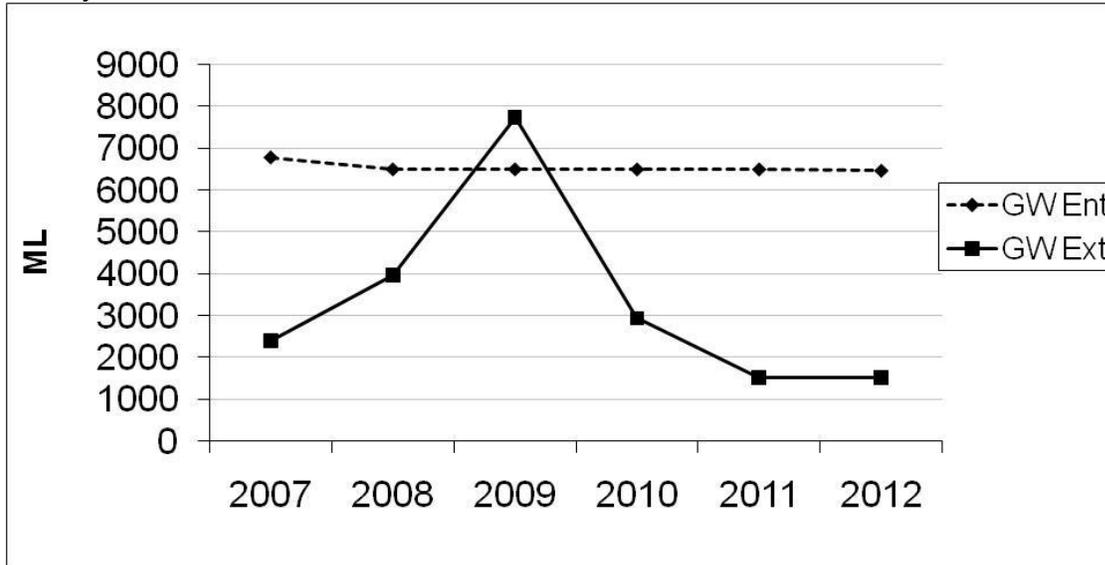
**Chart 1: Angas and Bremer Rivers Water Extractions 2007-2012:-** Not all of the water taken from these Rivers, such as the water diverted through weirs and sluices, is accounted for in this chart. The volumes on this graph are metered volumes as well as the amount recharged into the aquifer from these rivers as reported on the Irrigation Annual Reports. The amount of water that was recorded as having been extracted from these rivers decreased again in 2011-12.



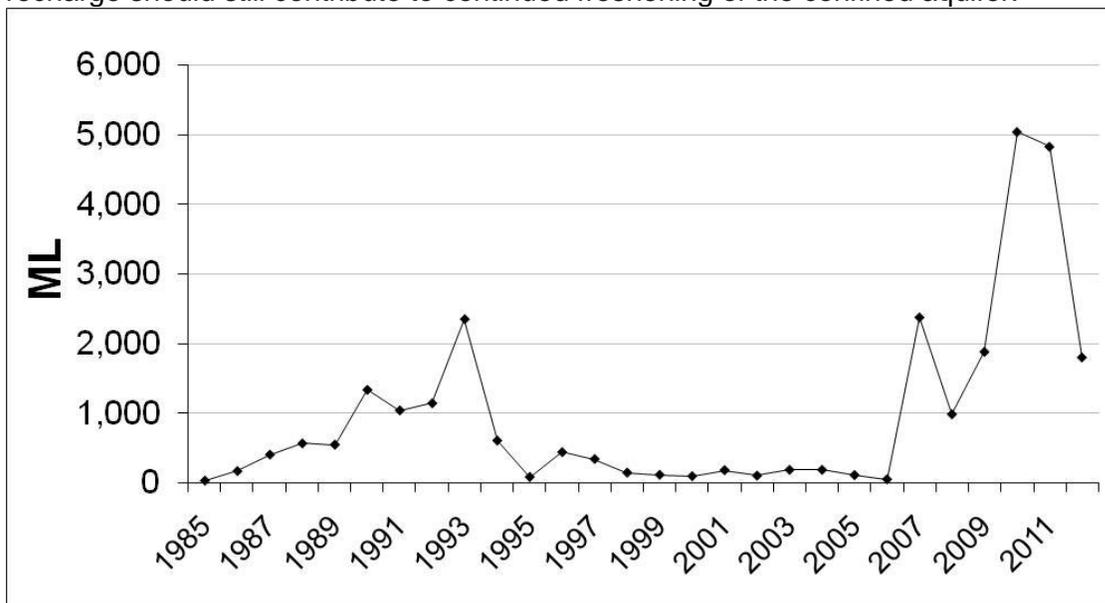
**Chart 2: River Murray Water Entitlement and Extraction 2007-2012:-** Entitlement (RM Ent) is the volume of water endorsed on licenses and does not include any credits for rollover, recharge etc. The River Murray Site Use Approval (RM SUA) is the maximum quantity of River Murray water that can be used for irrigation on land identified as being in the Angas Bremer Irrigation Management Zone in 2011-2012. Extraction (RM Ext) is the volume of water that was used during the irrigation year. The entitlement for 2011-12 was 24,740.5 ML, while the total Site Use Approval volume was 32,876.7 ML, and the recorded use was 18,789 ML, which is a substantial increase on the amount used last year.



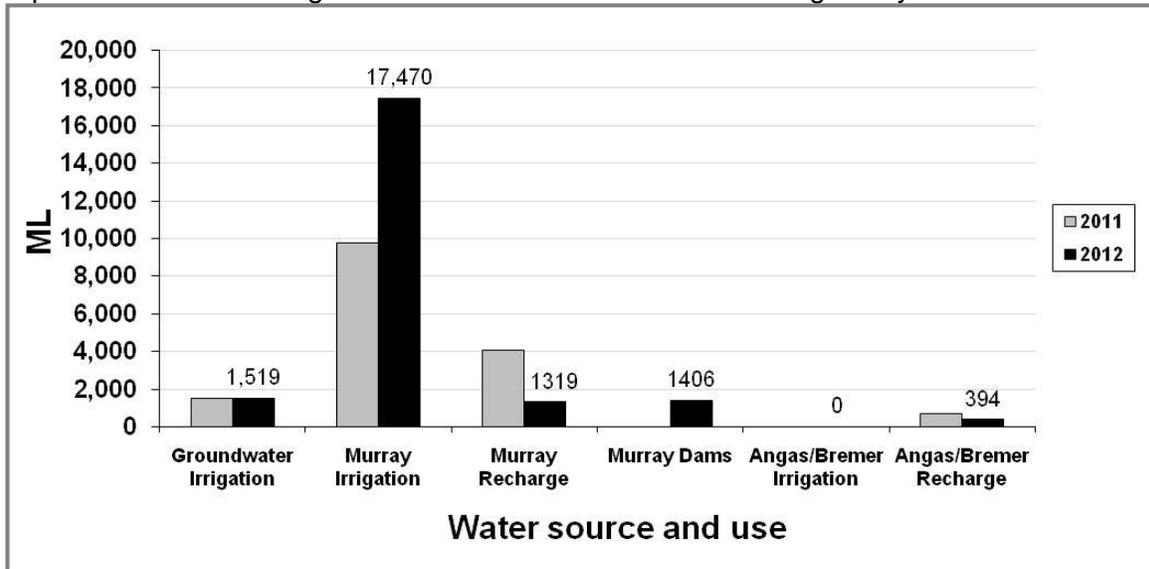
**Chart 3: Groundwater Entitlement and Extraction 2007-2012:-** The maximum entitlement for 2011-12 was 6,500ML and the recorded use was 1,518.64 ML. This is much lower than the 7,700 ML used three years previously and brings the region back even closer to the levels of 2006 when less than 1,000ML was extracted from the aquifer. The impact on the aquifer was again reduced because of the wetter weather and most irrigators preferentially using the better quality water available from the Angas, Bremer and Murray Rivers.



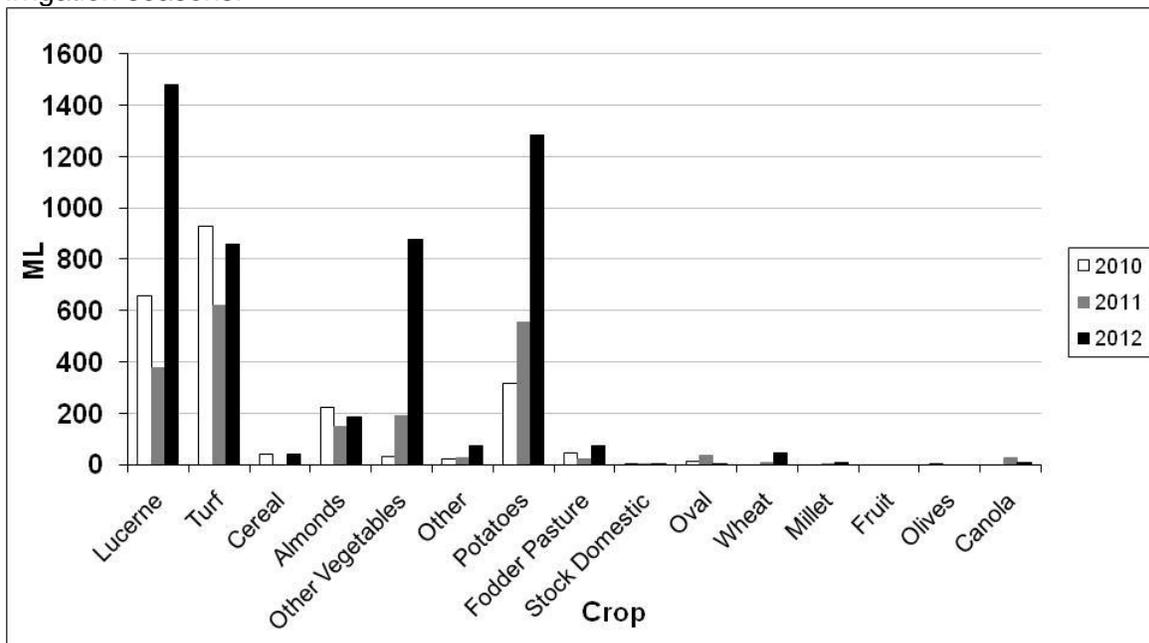
**Chart 4: Managed Aquifer Recharge (formally termed Aquifer Storage and Recovery (ASR)) :-** This chart shows the total volume of water artificially recharged to the aquifer from 1985 to 2012. The 1,803ML recharged from the rivers in 2011-2012 was substantially lower than the record levels achieved in 2010. However, the volume recharged was still greater than the volume extracted from the aquifer over the year, and assuming the salinity of the source water was similar to 2010 (between 150 and 1400ppm) this level of recharge should still contribute to continued freshening of the confined aquifer.



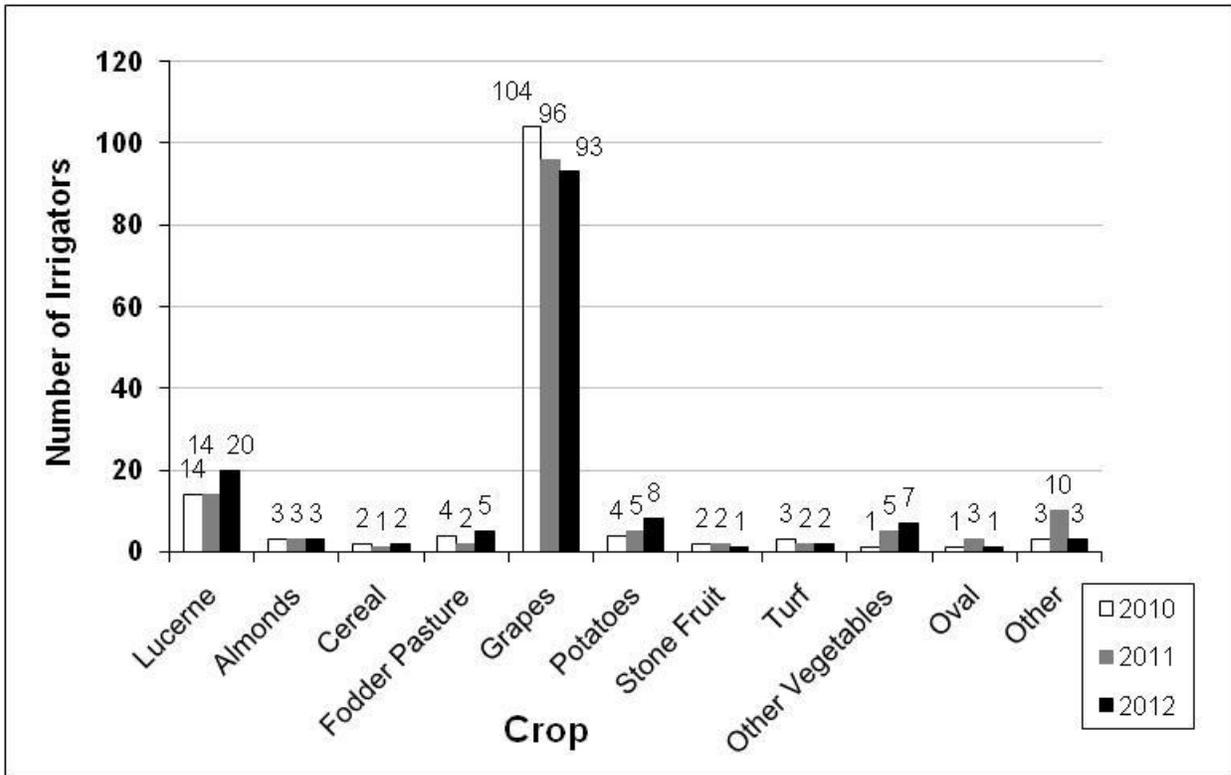
**Chart 5: Total volume of water used 2011-2012:** - The total volume of water used from all sources within the region over the year was **20,308 ML**, higher than last year's total of 18,479 ML. The amount of River Murray water used for recharging the aquifer was much lower than in the previous year, while a substantial amount of Murray water was reported to be remaining in dams at the end of the 2011-12 irrigation year.



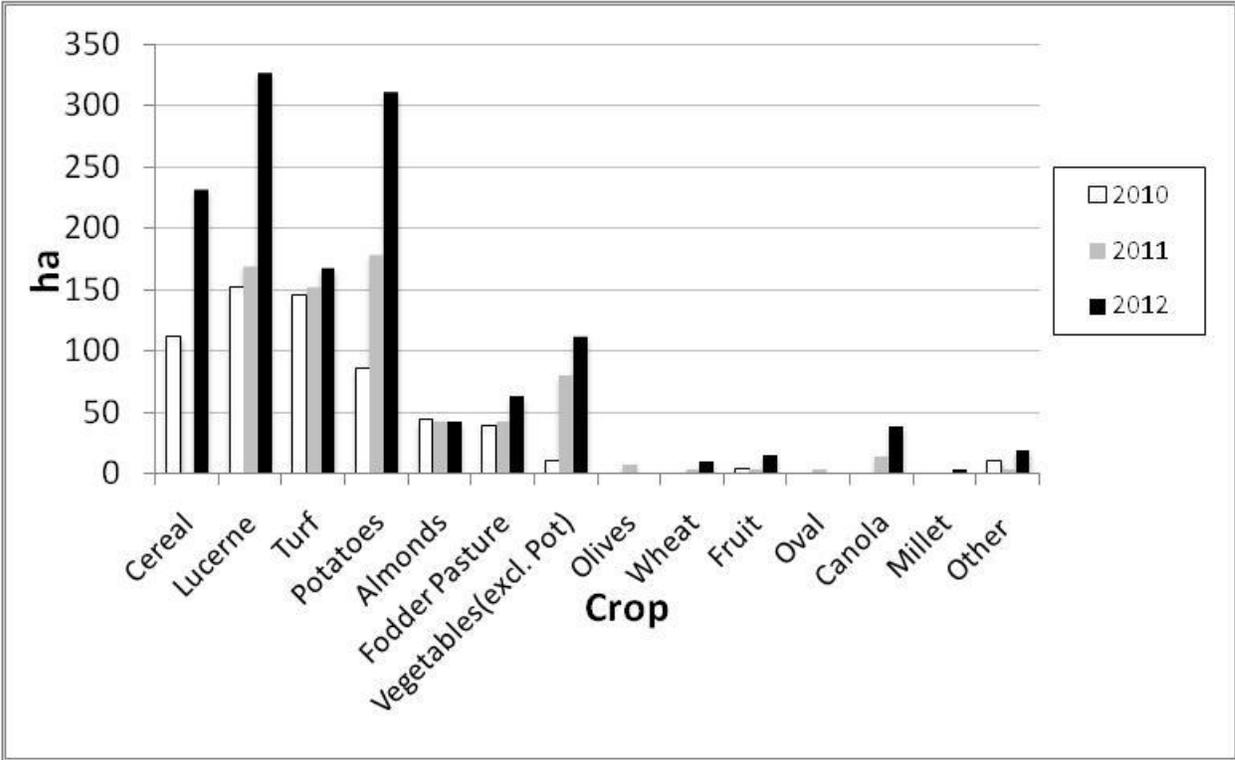
**Chart 6: Total volume of water used for each crop type:** - This volume is the total used from all sources; groundwater, watercourse water and River Murray water that was applied to each crop type (grapes excluded). **The total volume of water applied to grapes was 11,990 ML in 2011-12 compared with 11,274.51ML in 2010-11 and 13,718.65ML in 2009-10.** The volume of water used on lucerne, potatoes and other vegetable crops increased substantially in 2011-12 compared with the previous two irrigation seasons.



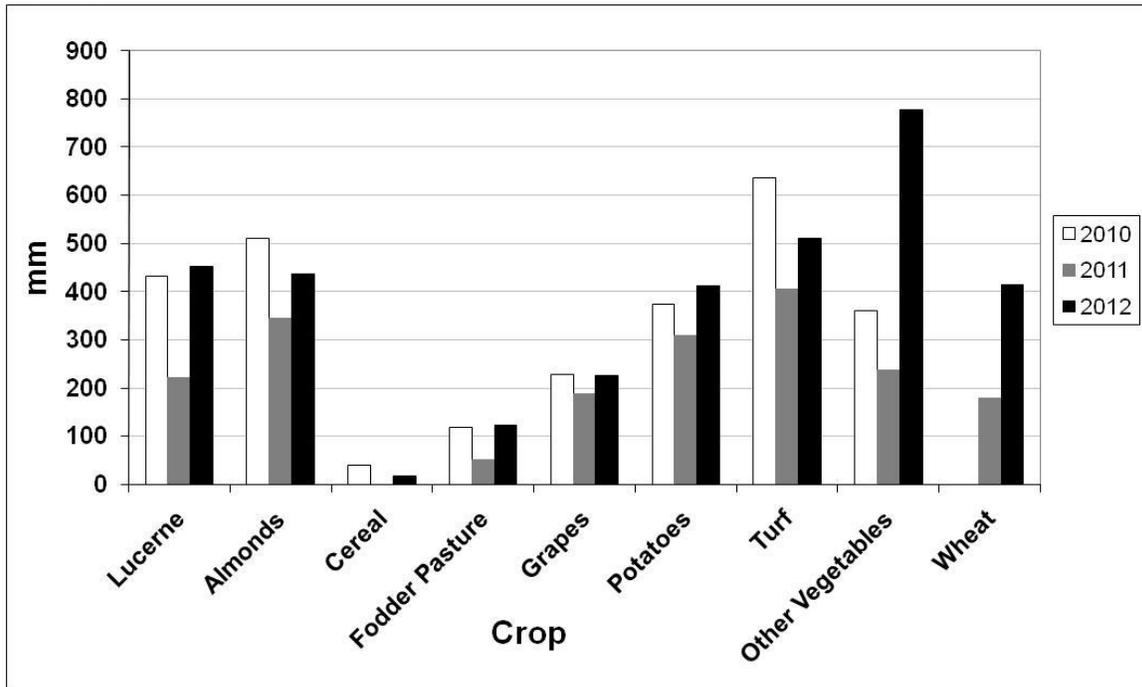
**Chart 7: Number of Irrigators for Each Crop Type:** - The number of irrigators growing each crop type in the region appears to have changed slightly over the last couple of years with less irrigating grapes and more moving into other areas of horticulture such as vegetables.



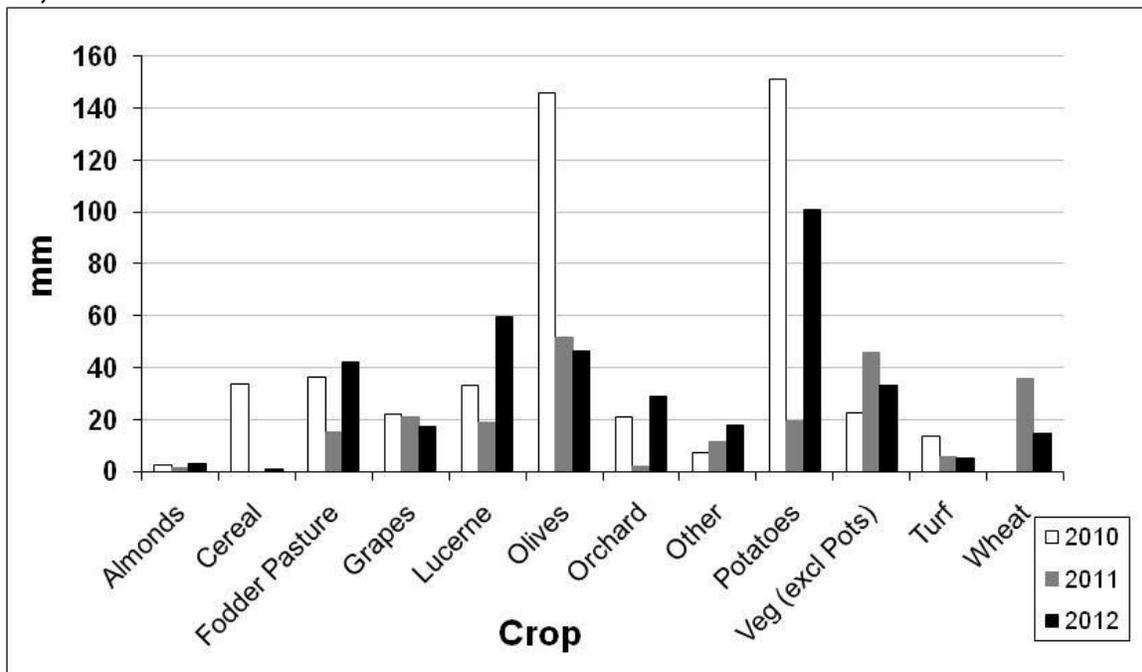
**Chart 8: Area Irrigated by Crop Type:** - The area of each crop irrigated is shown in hectares. **The area of grapes in 2011-12 was 5,323 ha, which represents a decrease from the 5,965 ha of 2010-11 and 5,971 ha of 2009-10.** The total area under irrigation in 2011-12 was 6,687 ha. This has not changed substantially since 2009 (in comparison in 2007-8 over 7,000 ha was irrigated and in 2006-7 the area was over 8000 ha). The greatest increases over the last couple of years appear to be in the area planted under lucerne, cereal crops, potatoes and other vegetables.



**Chart 9: Average total irrigation for the year by crop type:-** Irrigation is shown in mm for 2009-10, 2010-11 and 2011-12. Most crops received more irrigation water this year than last.

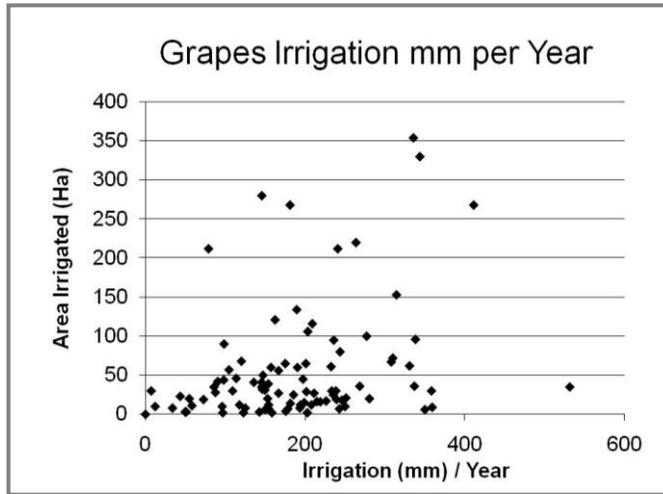


**Chart 10: Average mm of water applied per irrigation for each crop type for 2009-10, 2010-2011 and 2011-12.**

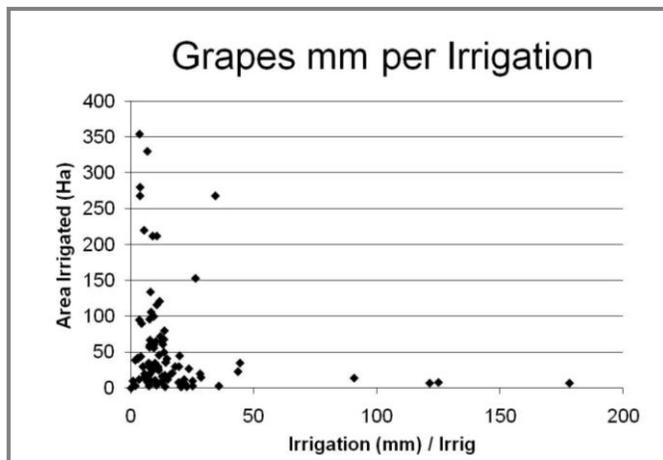


**Charts 11 to 15:** These charts are for the larger crops. **For each crop one chart shows (a) the mm per year and (b) the mm per irrigation.** For grapes an additional chart (11c) has been included. It excludes those irrigators who used winter flooding and applied a large volume of water in a single irrigation.

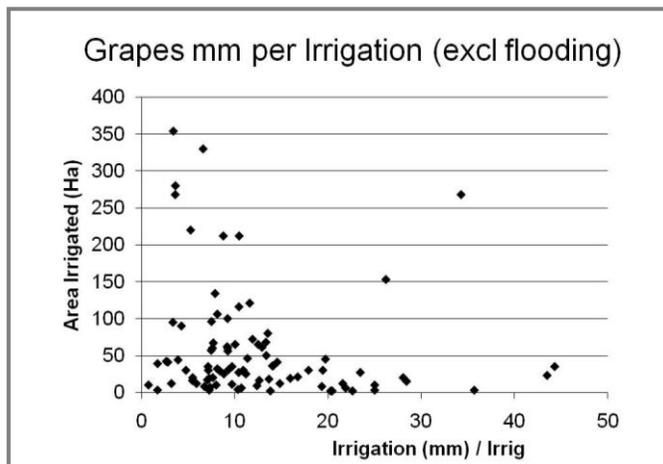
11a)



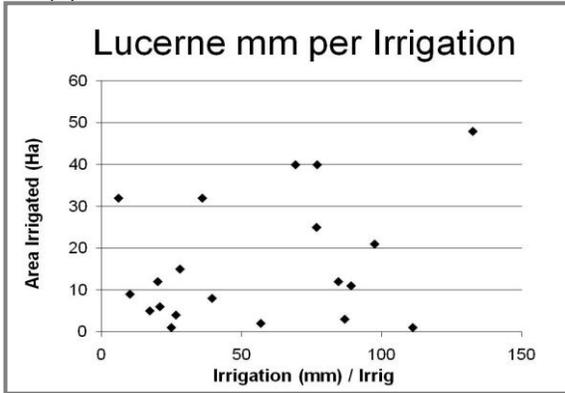
11b)



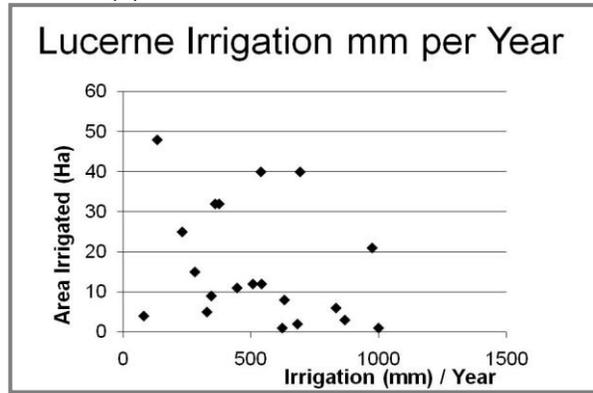
11c)



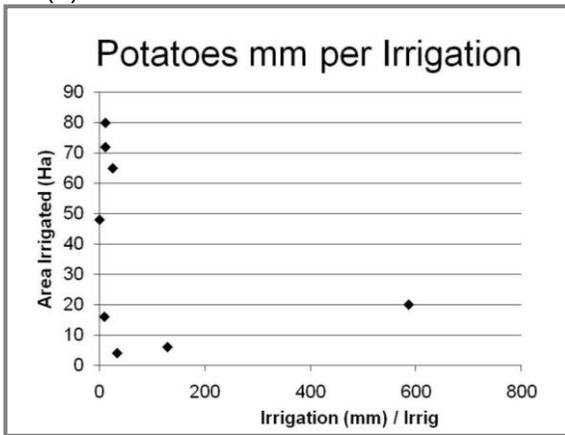
12 (a)



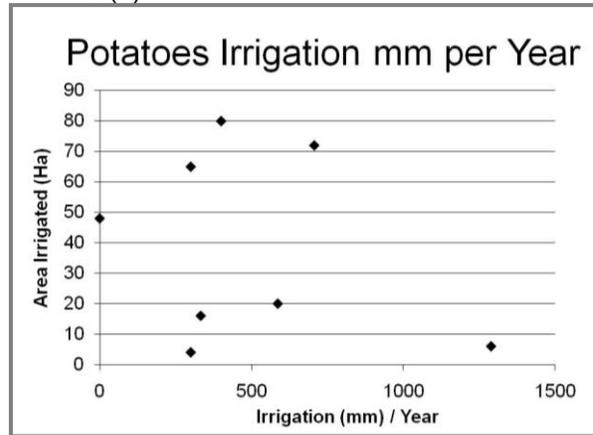
12 (b)



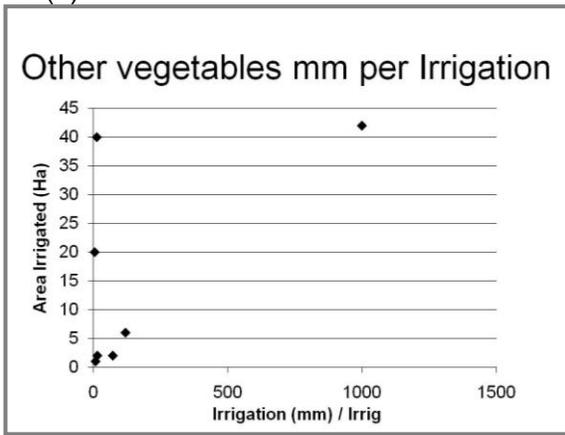
13 (a)



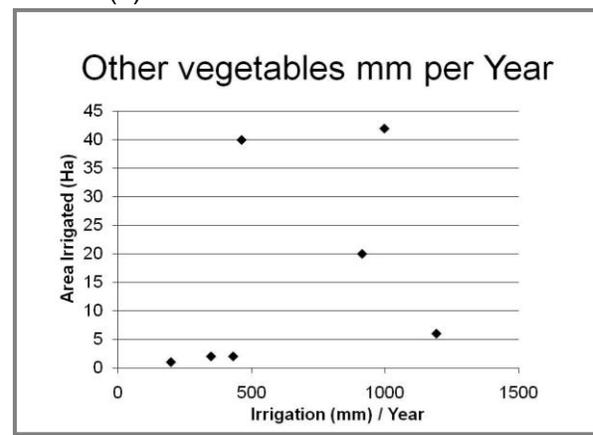
13 (b)



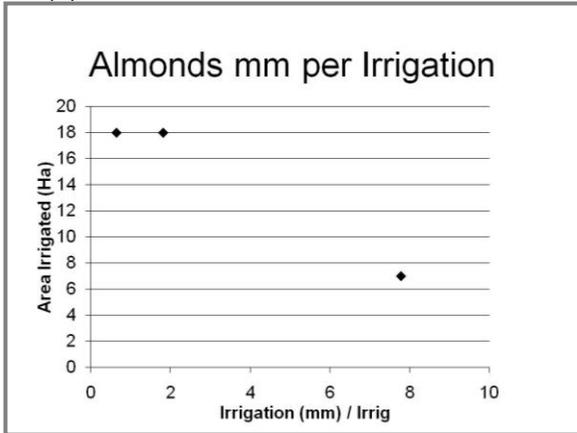
14 (a)



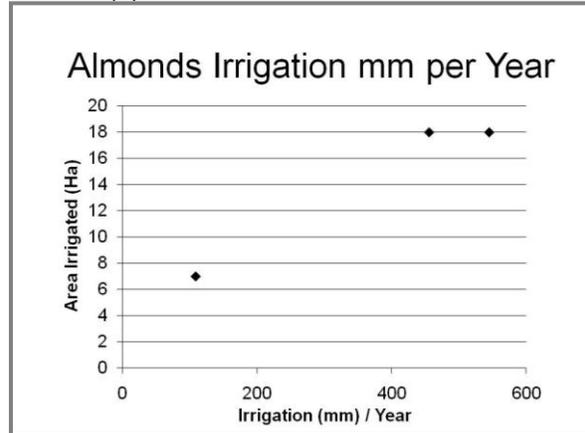
14 (b)



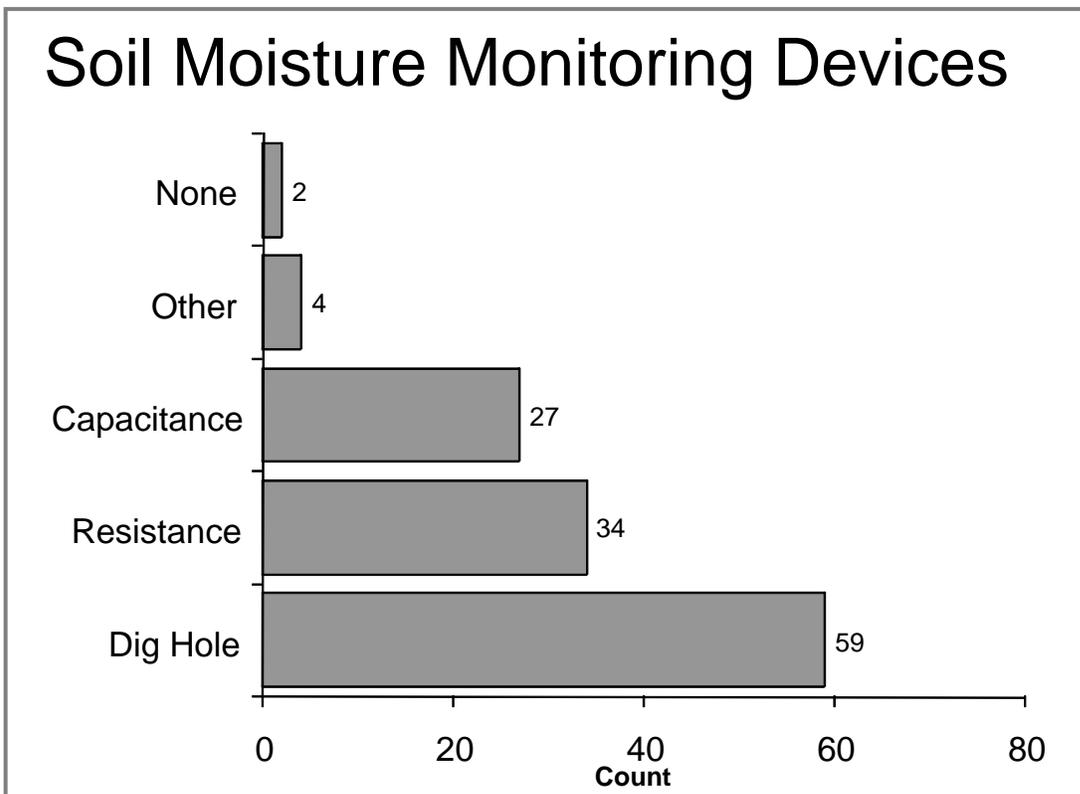
15 (a)



15 (b)



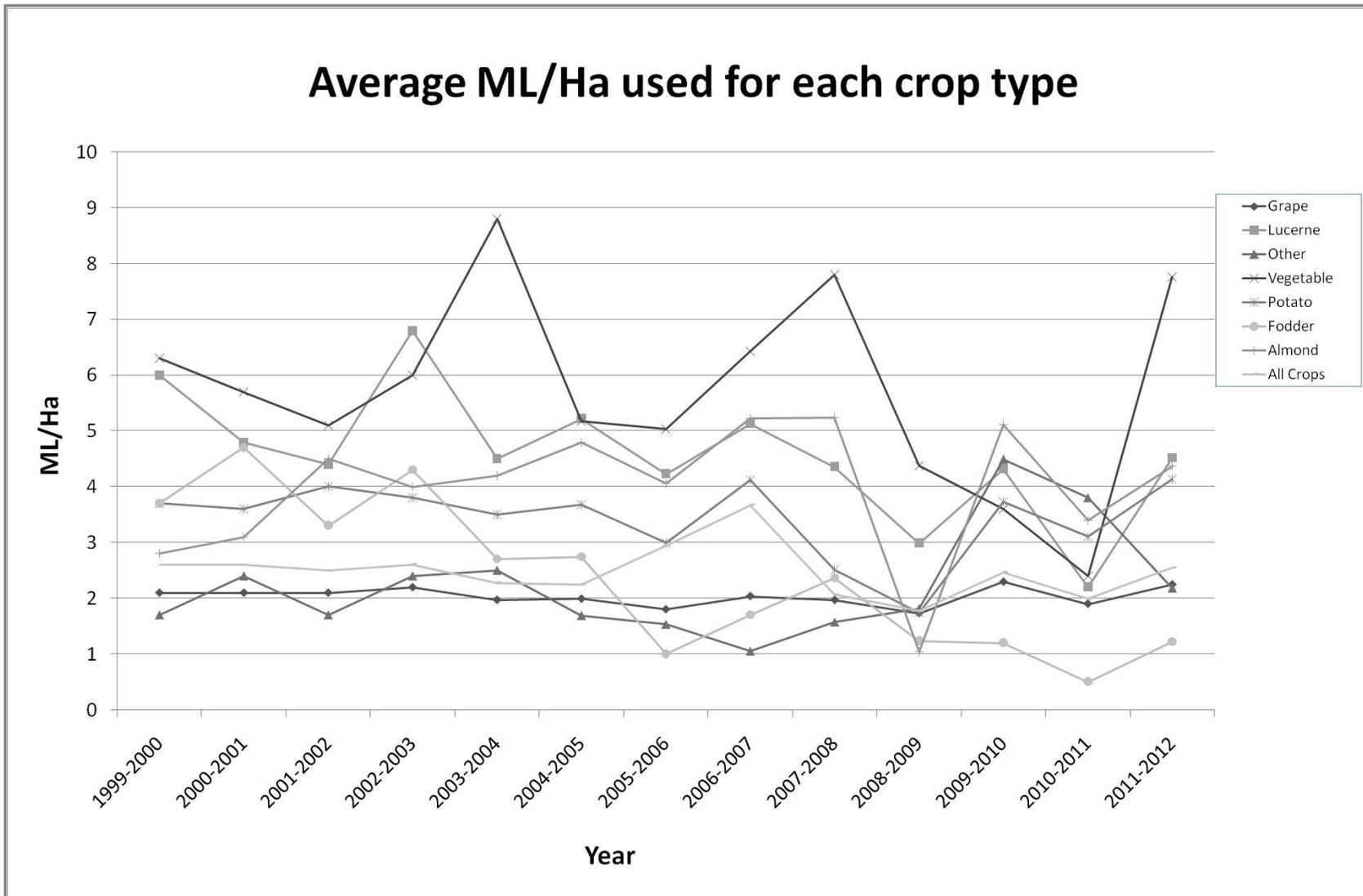
**Chart 16: Number of growers using Soil Moisture Monitoring devices:-** "Resistance" includes Gypsum Blocks. "Capacitance" includes Agwise soil moisture probes, Agrilink C probe, Dataflow Gopher, Sentek Diviner and Sentek EnviroSCAN. "Dig hole" includes Dig stick, spade, auger and post hole digger.



**Table 2: Average ML/ha per crop per year:-** This table shows the average ML/ha of irrigation water applied to different crop types and compares 2012 with previous years. This information is also displayed in the following Chart 17.

<b>Year</b>	<b>Grape</b>	<b>Lucerne</b>	<b>Other</b>	<b>Vegetable</b>	<b>Potato</b>	<b>Fodder</b>	<b>Almond</b>	<b>All Crops</b>
2011-2012	2.25	4.52	2.18	7.76	4.13	1.22	4.37	2.55
2010-2011	1.9	2.2	3.8	2.4	3.1	0.5	3.4	2
2009-2010	2.3	4.32	4.49	3.6	3.72	1.2	5.11	2.47
2008-2009	1.73	2.99	1.81	4.38	1.74	1.24	1.04	1.78
2007-2008	1.97	4.36	1.57	7.8	2.51	2.36	5.24	2.07
2006-2007	2.04	5.13	1.05	6.43	4.12	1.7	5.23	3.67
2005-2006	1.8	4.23	1.53	5.04	2.99	1	4.06	2.95
2004-2005	1.99	5.22	1.69	5.18	3.67	2.74	4.79	2.25
2003-2004	1.97	4.5	2.5	8.8	3.5	2.7	4.2	2.28
2002-2003	2.2	6.8	2.4	6	3.8	4.3	4	2.61
2001-2002	2.1	4.4	1.7	5.1	4	3.3	4.5	2.5
2000-2001	2.1	4.8	2.4	5.7	3.6	4.7	3.1	2.6
1999-2000	2.1	6	1.7	6.3	3.7	3.7	2.8	2.6

Chart 17



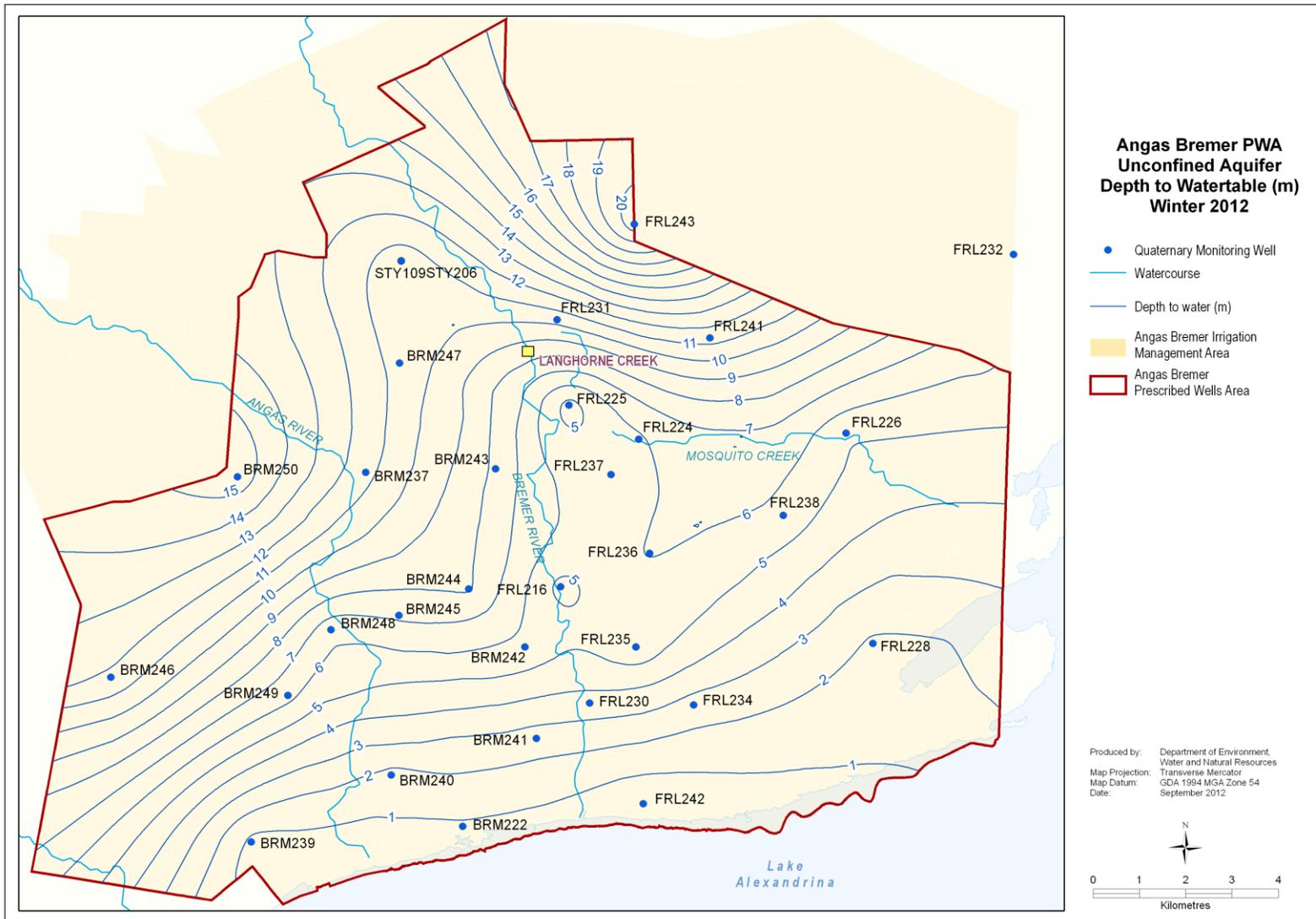
**Table 3: ML used and ha irrigated comparison chart:-**

	2011-2012	2010-2011	2009-2010	2008-2009	2007-2008	2006-07	2005-06	2004-05	2003-04	2002-03	2001-02	2000-01	1999-2000
Total ML	17,056	13,346	16,241	12,001	14,743	20,911	15,811	17,719	17,154	20,715	17,428	17,467	16,961
Total ha	6,687	6,687	6,578	6,748	7,049	8,370	7,739	7,869	7,509	7,934	7,089	6,788	6,625
Grape ML	11,990	11,275	13,718	10,738	12,330	12,827	11,293	11,688	11,927	13,165	11,159	10,626	10,021
Grape ha	5,323	5,965	5,971	6,199	6,245	6,271	6,170	5,876	6,059	6,059	5,357	4,991	4,665
Lucerne ML	1,477	376	657	326	675	1,437	1,378	1,791	1,608	2,560	2,051	2,040	2,491
Lucerne ha	327	170	152	109	155	280	325	343	354	376	471	429	418
Veg ML	877	193	36	57	179	373	363	638	605	647	651	769	761
Veg ha	113	81	10	13	23	58	72	123	69	108	103	134	121
Potato ML	1,283	555	320	131	136	1,200	1,171	1,278	1,280	1,504	1,719	1,773	1,812
Potato ha	311	179	86	75	54	291	392	348	360	394	425	490	485
Fodder ML	78	22	47	32	53	222	144	505	399	752	316	742	358
Fodder ha	64	43	39	26	23	130	144	184	146	173	97	157	96
Almond ML	188	148	225	193	231	251	195	230	203	188	246	172	164
Almond ha	43	43	44	44	44	48	48	48	48	47	55	55	58
Other crops ML	1,094	777	1,238	524	795	2,004	900	1,589	1,132	1,899	1,286	1,259	1,354
Other crops ha	501	206	276	282	505	906	588	936	443	777	583	533	777

**Chart (s) 18 a + b (Pg 21-22):** These and the following charts were produced by the Department of Environment, Water and Natural Resources (previously Dept for Water). These two charts are contour maps of the Quaternary (Q) unconfined aquifer. The first is from the 2011-2012 water use year (Winter 2012), the second from 2010-2011 (Winter 2011). The shallowest reading from each monitoring site over the year or season has been mapped. The data for each map came from the growers monitoring wells and from Government Quaternary aquifer observation wells. The numbers on the maps are metres below ground level of the standing water table. Winter was selected as it is the time of greatest risk of shallow watertables. When compared to last year it is shallower (i.e. closer to the ground surface) near the shore of Lake Alexandrina, but deeper further away from the lake. Near Langhorne Creek it was between 2 – 4 m in Winter 2011 but the depth had increased to between 8 – 9 m in Winter 2012.

**Chart 19 a + b + c (Pg 23-25):** The next charts show the potentiometric surface contours of the Tertiary (T) confined aquifer and salinity in March 2012 (post irrigation) (19a) and the potentiometric surface contours in the confined aquifer in February 2011 (19b) and salinity contours in the confined aquifer produced using the most recent value obtained from each monitoring point during 2010-2011 in mg/litre (equivalent to ppm) (19c). The data for the charts came from the Government confined observation wells and from the water samples submitted by the growers at the start and end of the irrigation season. February 2011 (post irrigation season) was selected as it shows the greatest level of impact due to extraction from the aquifer.

In 2011 there was an improvement in the water level pressure compared with March 2010 and there is further improvement noted in the March 2012 water level elevations. Salinity levels measured in 2012 appear to have increased in some areas compared with 2011.



**Chart 18a Standing Water Level in Quaternary Unconfined Aquifer Winter 2012**

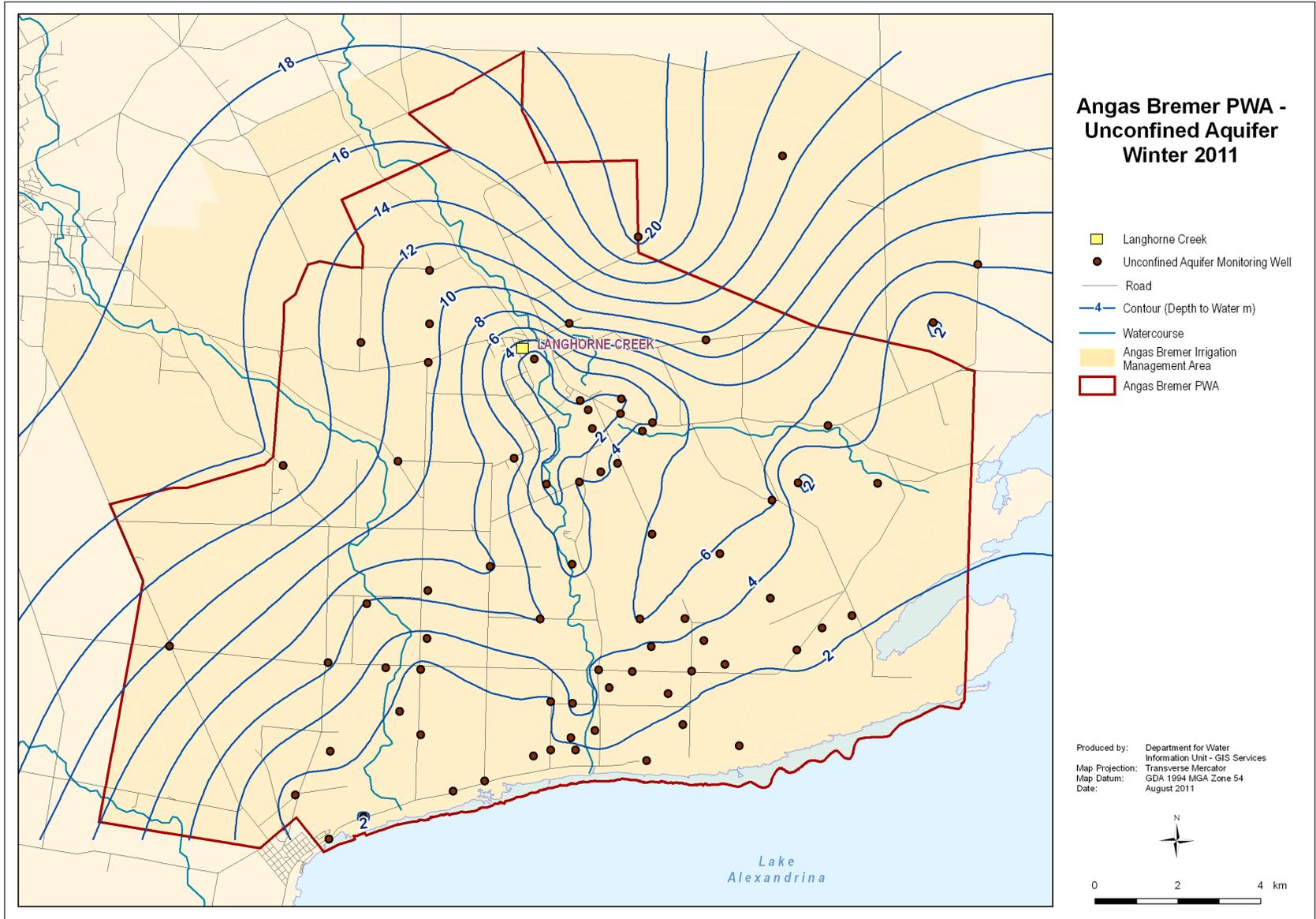
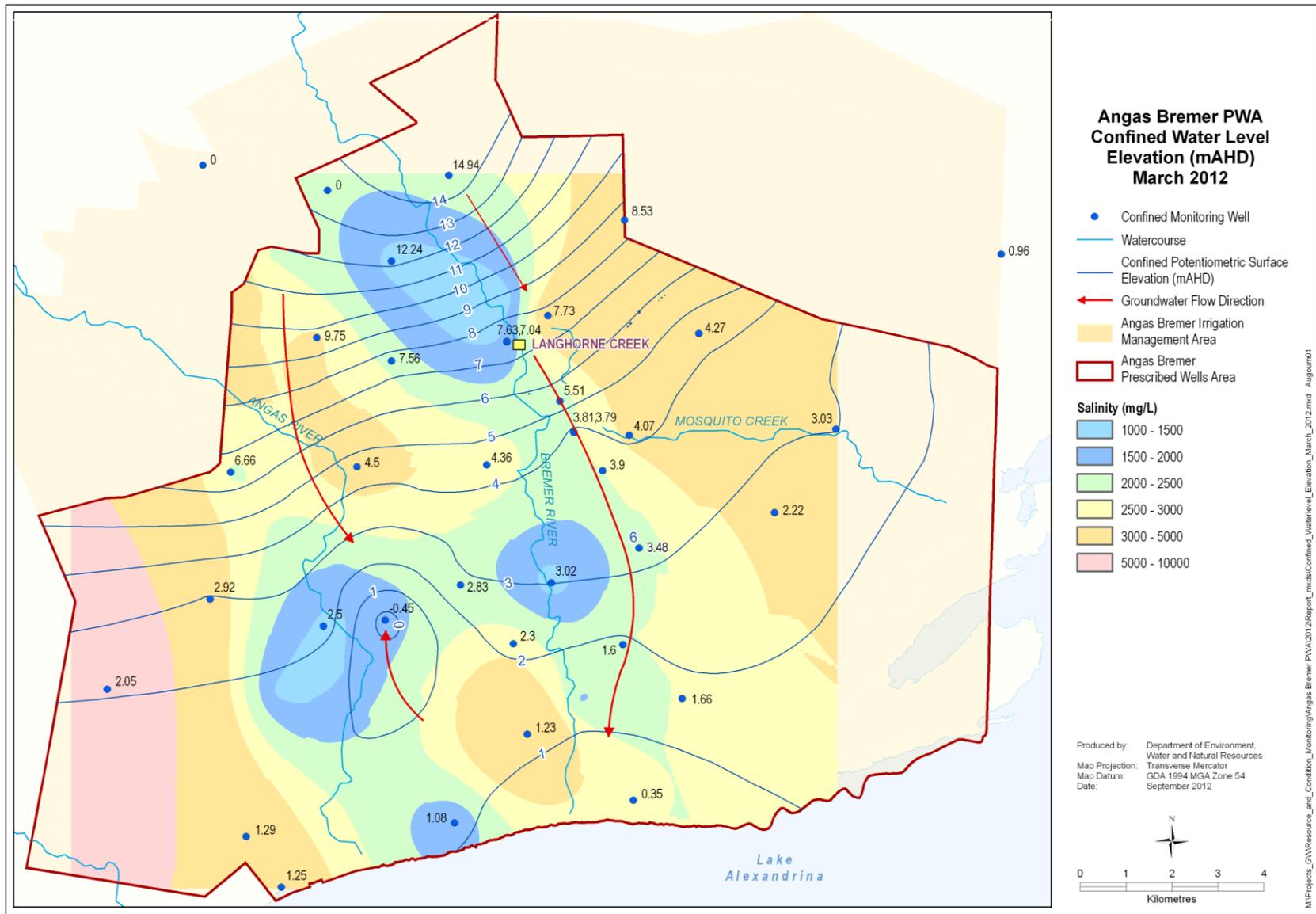
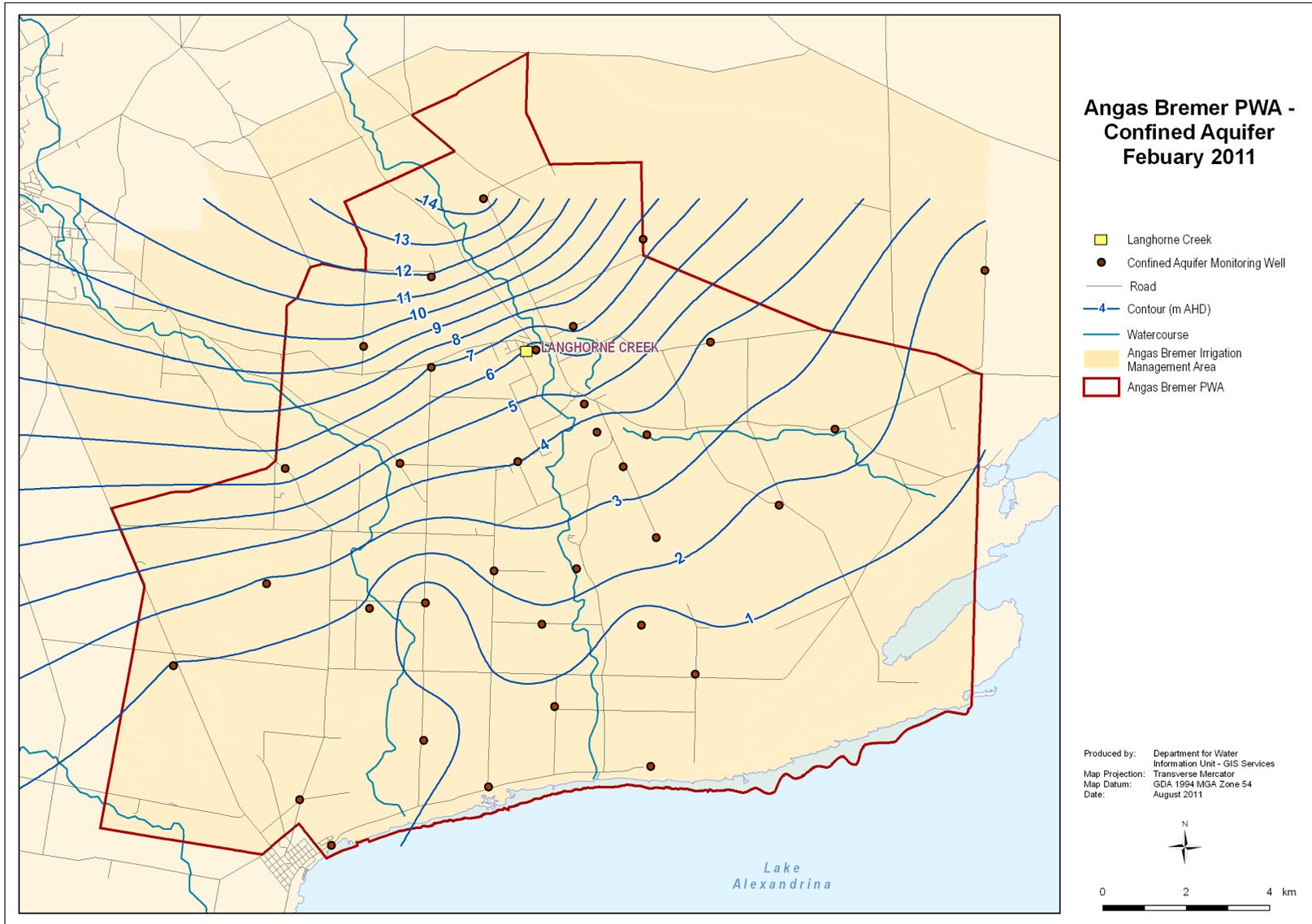


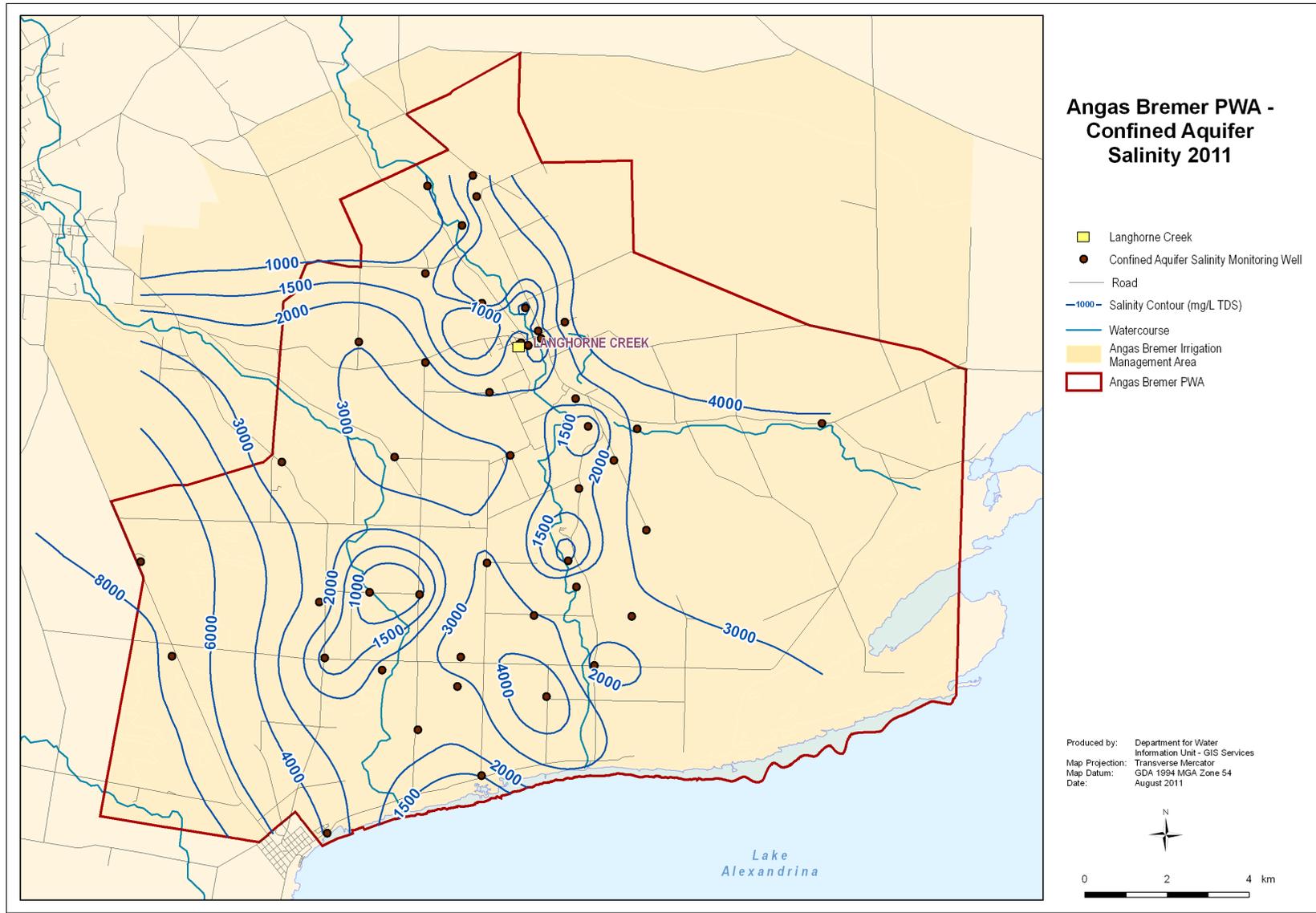
Chart 18b Standing Water Level in Quaternary Unconfined Aquifer Winter 2011



**Chart 19a Water Level Elevation (m AHD) and salinity in Tertiary Confined Aquifer March 2012 Post Irrigation**



**Chart 19b Water Level Elevation (m AHD) in Tertiary Confined Aquifer February 2011 Post Irrigation**



**Chart 19c Salinity in Tertiary Confined Aquifer 2011 Post Irrigation**

## Langhorne Creek Weather Station Statistics

### Background

An automatic weather station owned and operated by the SA Murray-Darling Basin NRM Board was installed at Lake Breeze vineyard in November 2006 and has been collecting local weather information since this time.

The Langhorne Creek station is part of an extensive automatic weather monitoring network operated by the SA MDB NRM Board consisting of 30 automatic weather stations and 7 rainfall only monitoring sites. All sites report data to a dedicated website on an hourly basis which is available for viewing at: [www.aws-samdbnrm.sa.gov.au](http://www.aws-samdbnrm.sa.gov.au). The website was upgraded during 2010.

### 2011/12 Seasonal Summary

As illustrated in Figure 4, 377.8mm of rainfall was recorded at the Lake Breeze weather station during 2011/12 which was significantly less than the 508.6mm which was observed in 2010/11. Evapotranspiration (ET) was significantly higher in 2011/12 compared with the previous season however during 2010/11 weather station data records were transferred onto a new website and 33 days of records were lost as a result. This would account for some of the increase in observed ET and as shown in Figure 4, 2011/12 ET is quite comparable with the levels recorded in 2008/09 and 2009/10.

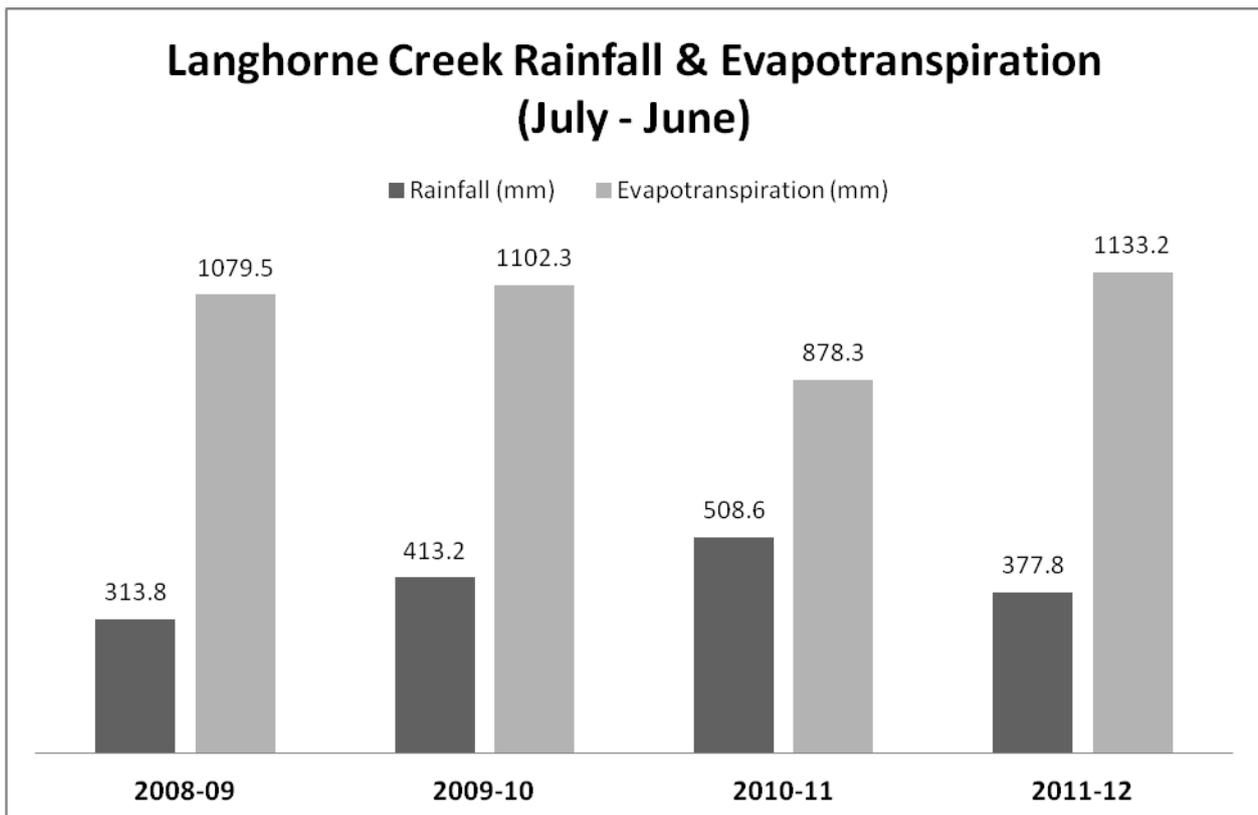
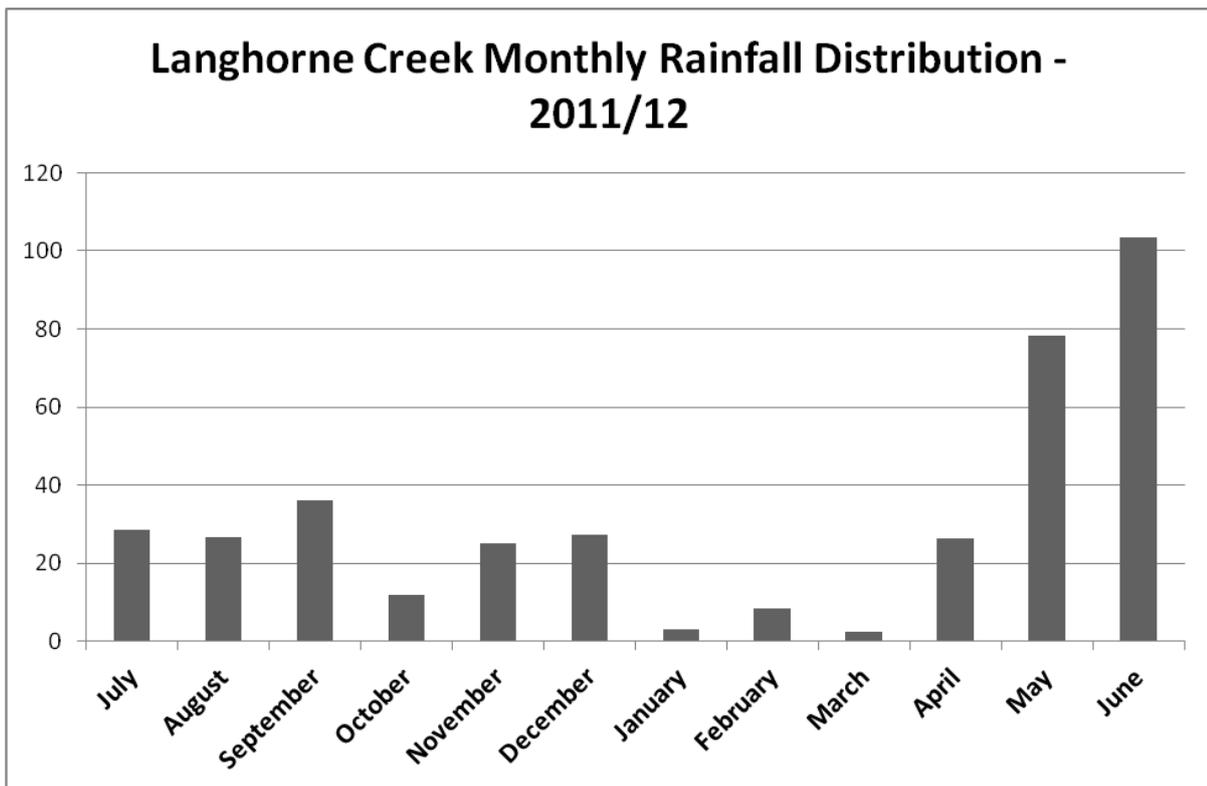


Figure 4



**Figure 5**

Figure 5, shows the distribution of rainfall during the 2011/12 irrigation season at Langhorne Creek and highlights a return to a more normal rainfall pattern compared with 2010/11 when significant rainfall totals were recorded in December 2010 (81mm) and January 2011 (66mm).

In terms of temperature extremes the hottest daily maximum recorded at the Lake Breeze site was 40.5°C on the 25<sup>h</sup> January 2012 and the coldest -2.6°C which was recorded on the 11<sup>th</sup> June 2012. During 2011/12 only 3 days of above 40°C were recorded at the Lake Breeze weather station site. The maximum daily evapotranspiration figure of 10.9mm was recorded on the 2<sup>nd</sup> January 2012 and the highest daily rainfall total of 50.6mm was observed on the 24<sup>h</sup> June 2012.

**Angas Bremer Water Management Committee**  
**Annual Public Meeting**  
**27<sup>h</sup> August 2012**  
**Langhorne Creek Bowling Clubrooms**  
**Minutes**

**Attendees:**

Sylvia Clarke, Steve Barnett, Ray McDonald, Darren Aworth, Brett Cleggett, James Stacey, Bruce Nelson, Mac Cleggett, Graham MacGillivray, Rob Giles, David Eckert, Len Case, David Hender, Loene Furler, David Kohl, Geoff Warren, Mark Potts, Dale Wenzel, John Follett, Terry McAvaney, Michael Clements, Barry Potts, Nick McDonald, Richard Stirzaker, Michael Cutting, Lian Jaensch.

**Apologies:**

Cameron Welsh, Trevor McLean, Di Davidson, Dennis Elliott, George Borrett, John Pargeter, Barry Featherston, Heather Webster.

**Meeting opened:** 7:10 pm

**Chairman's report - James Stacey - Presiding Member**

James thanked all those for attending. He highlighted the fact that funding from the SA MDB NRM Board for the running of the Annual Irrigation Reporting process and the committee has been light on recently and that it had been difficult to get money in. He thanked Cameron Welsh and Michael Cutting for assisting the committee with finding money to keep the committee going over the last couple of years. In December 2011, James and Sylvia Clarke attended the SA MDB NRM Board meeting and presented the Business Plan of the committee requesting on-going funding of \$20,000 per annum for 6 years for Annual Reporting and committee running costs. Only one year's funding of \$20,000 was granted and this is therefore an on-going issue. \$127,000 has been awarded to the committee through the Australian Government's Clean Energy Future Biodiversity Fund for riparian restoration work.

The ABIRA contracts are still not official but should be able to be signed off once the Eastern Mount Lofty Ranges Water Allocation Plan (WAP) is signed by the minister. The WAP has now been through Crown Law and is sitting with Minister Caica, once signed, it will be back out for public comment again.

The Rootzone salinity project is continuing with 5 more sites to be installed by summer.

The ABWMC has provided a submission to the MDB Plan and to the EPA in regards to their proposed fees for desalination plants. A meeting was also held with the EPA to discuss this further, which was not well received by the community. We will wait and see how this progresses.

**Steve Barnett discussed the Groundwater Status Report**

The Groundwater Status Report for 2010-11 will be available at [www.waterconnect.sa.gov.au/GSR](http://www.waterconnect.sa.gov.au/GSR) from the end of October. Unfortunately, the reports are still undergoing the approval process which is taking longer than it took to prepare the document.

Overall, the results show that recharge exceeded extraction in 2010-11. From the data collected from the government monitoring bores, there was a direct relationship between salinity in the limestone aquifer and the amount pumped out. The main cause of these salinity increases is vertical leakage of saline water from the overlying aquifer which occurs when pumping from the limestone aquifer causes drawdown.

Water levels are higher now in some bores than they have been historically because of localised ASR, while salinity has generally been dropping over the last few years.

He suggested that extraction above 3000ML was not sustainable if it was maintained for a long period of time (greater than 5 years).

**Project Coordinator, Sylvia Clarke, gave a presentation of the interim Irrigators Annual Report for 2011-12 and an update of the committee's other projects.**

**Michael Clements provided the Treasurer's report**

Due to a number of grants coming in, the amount of money in the account has increased this year and is currently around \$90,000.  
Budget and auditor's report attached.

***Michael Clements moved that the Annual Accounts be accepted, seconded David Eckert.***

**Election of Committee Members**

**Current members:** David Eckert, Rob Tonkin, James Stacey and Mac Cleggett.

**Retiring members:**

Michael Clements, Brian Wyatt, Dale Wenzel, John Pargeter, Phil Reilly were all due to retire by rotation.

Michael Clements and Dale Wenzel declared that they would stand for re-election and were renominated at the Annual Public Meeting and their nominations were accepted.

**No formal nominations for other committee members had been received prior to the meeting.**

Nominations were called from the floor. None were received.

***The Chair moved that the renominating members be accepted for positions on the committee.***

***Seconded – Mac Cleggett. Carried by the meeting.***

The Chair outlined the relatively good position that the committee was in with grant funding coming in and enthusiastic staff in Sylvia and Barb. He asked if anyone else was thinking of joining could they let the committee know before the next meeting in September. The Chair also announced that he will be stepping down from his position as Chair of the committee but will remain as a committee member.

**Richard Stirzaker, CSIRO ran a discussion on Innovation in Irrigation in the Angas Bremer Zone**

**Summary –**

What have we learnt from reporting and monitoring? What did growers learn? What did the ABMWC learn? What did the NRM Board learn?

- You need to be collecting the information before you really need it. For example, you didn't need to know about salt in 2003 but in 2008 when it was a more critical issue, you were more prepared.
- There is evidence that some irrigators have used FullStops to change their management practices to try to flush salt from the root zone.
- Collecting data has enabled businesses and the committee to identify risks earlier so they could respond before going out of business.
- Over a long history, irrigators in this region have become familiar with data collection, working with scientists and government agency staff and know the terminology. This has enabled them to have healthy debate when needed.

- When the region got through the previous crises, government agency staff were sitting on the committee and they worked through the problems together. This doesn't happen any more due to a lack of staff within the government. It's getting harder for farmers to get their voice heard.
- There is a view that perhaps the social capacity that was there in the past that helped during times of crisis isn't great enough anymore. It is hard to get people to join any committee in the region in the current climate, but perhaps it will improve in a year or two.
- We need dialogue between scientist and farmers to get the detail as well as the full picture, and to solve management problems. Providing more money to make better models won't necessarily fix the problem.

## **General Business**

Graham MacGillivray asked about the current status of the Willunga Basin Water Company. - Steve Barnett informed him that the Willunga Basin Water company has a website. The effluent is treated and used for irrigation around McLaren Vale and a smart system is used where you can't use more that you are allowed or it shuts off. After this occurs 3 times, you're disconnected. The availability of this water has doubled the area irrigated.

The outgoing Chair thanked Steve Barnett, Michael Cutting and Richard Stirzaker and all for attending.

Meeting closed 9:10 pm.

After the meeting, Loene Furler, Nick McDonald and Darren Aworth offered to become committee members.

# Audited Accounts 2011-2012

## ANGAS BREMER WATER MANAGEMENT COMM INC: Profit & Loss Statement - 2012

1/07/2011 through 30/06/2012 (in Aus. Dollars) (Cash Basis)

7/07/2012

Page 1

Category Description	1/07/2011- 30/06/2012
<b>INCOME</b>	
AB BUSINESS PLAN-22.2012 AB Business ...	10,000.00
ABWMC Interest Income	
Other ABWMC Interest Income	85.57
TOTAL ABWMC Interest Income	85.57 ✓
ASR WATER QUALITY	
Income	1,000.00 ✓
TOTAL ASR WATER QUALITY	1,000.00
DAFF 2011	
Income	17,253.00 ✓
TOTAL DAFF 2011	17,253.00
L&WMP Sus. Dev 2010	
2010 2011 Additional	8,403.00 ✓
TOTAL L&WMP Sus. Dev 2010	8,403.00
LC ROOTZONE INCOME	
Income-Project 11.2012	10,003.00
Other LC ROOTZONE INCOME	4,003.00
TOTAL LC ROOTZONE INCOME	14,003.00
SEWPAC	
Income	24,903.00
TOTAL SEWPAC	24,903.00
<b>TOTAL INCOME</b>	<b>75,633.57 ✓</b>
<b>EXPENSES</b>	
Angas Bremer Retained Funds Exp	
Expense	
Other Angas Bremer Retained Funds E...	3,595.70
TOTAL Expense	3,595.70
Other Angas Bremer Retained Funds Exp	4,846.91
TOTAL Angas Bremer Retained Funds Exp	8,442.61
CAG09-00028 Exp	
ASR Risk Ass	1,722.76
TOTAL CAG09-00028 Exp	1,722.76
DAFF 2009 Web Reporting Expense	
Daff Project	460.24
Other DAFF 2009 Web Reporting Expense	3,998.61
TOTAL DAFF 2009 Web Reporting Expense	4,458.85
HISTORICAL DATA - GOVT	1,023.16
Interest	
Expense	171.00
TOTAL Interest	171.00
L&WMP Sus.Dev 2010	
Community Data Manager	14,510.17
Venue Hire Catering Post Print e	572.77
TOTAL L&WMP Sus.Dev 2010	15,082.94
LC ROOTZONE SALINITY	
Expense	5,585.00
TOTAL LC ROOTZONE SALINITY	5,585.00
<b>TOTAL EXPENSES</b>	<b>36,486.32</b>
<b>OVERALL TOTAL</b>	<b>39,150.25</b>

ANGAS BREMER WATER MANAGEMENT COMM INC: Balance Sheet - As of 30/06/2012

As of 30/06/2012 (in Aus. Dollars) (Cash Basis)

7/07/2012

Page 1

Account	30/06/2012 Balance
<b>ASSETS</b>	
<b>Cash and Bank Accounts</b>	
Angas Bremer Water Managemnet	91,008.07
<b>TOTAL Cash and Bank Accounts</b>	<b>91,008.07</b>
<b>TOTAL ASSETS</b>	<b>91,008.07</b>
<b>LIABILITIES &amp; EQUITY</b>	
<b>LIABILITIES</b>	
<b>Other Liabilities</b>	
ABN Whitholding	7.34
Tax Control	4,089.19
<b>TOTAL Other Liabilities</b>	<b>4,096.53</b>
<b>TOTAL LIABILITIES</b>	<b>4,096.53</b>
<b>EQUITY</b>	<b>86,911.54</b>
<b>TOTAL LIABILITIES &amp; EQUITY</b>	<b>91,008.07</b>

**INDEPENDENT AUDIT REPORT  
TO MEMBERS OF ANGAS BREMER WATER MANAGEMENT COMMITTEE INC**

**Scope**

**The financial report and Member's responsibility**

The financial report comprises the Profit and Loss Statement and Net Worth Statement for the year ended 30 June 2012.

The Committee of the association are responsible for the preparation and true and fair presentation of the financial report in accordance with the Association Incorporation Act 1985. This includes responsibility for the maintenance of adequate accounting records and internal controls that are designed to prevent and detect fraud and error, and for the accounting policies and accounting estimates inherent in the financial report.

**Audit approach**

We conducted an independent audit in order to express an opinion to the members of the association. Our audit was conducted in accordance with Australian Auditing and Assurance Standards, in order to provide reasonable assurance as to whether the financial report is free of material misstatement. The nature of an audit is influenced by factors such as the use of professional judgment, selective testing, the inherent limitations of internal control, and the availability of persuasive rather than conclusive evidence. Therefore, an audit cannot guarantee that all material misstatements have been detected.

We performed procedures to assess whether in all material respects the financial report presents fairly, in accordance with applicable Accounting Standards and other mandatory financial reporting requirements in Australia, a view which is consistent with our understanding of the association's financial position, and of its performance as represented by the results of its operations and cash flows.

We formed our audit opinion on the basis of these procedures, which included:

- examining, on a test basis, information to provide evidence supporting the amounts and disclosures in the financial report, and
- assessing the appropriateness of the accounting policies and disclosures used and the reasonableness of significant accounting estimates made by the Council.

While we considered the effectiveness of management's internal controls over financial reporting when determining the nature and extent of our procedures, our audit was not designed to provide assurance on internal controls.

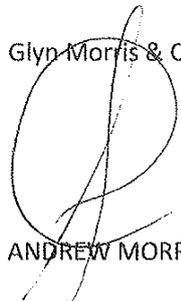
**Independence**

In conducting our audit, we followed applicable independence requirements of Australian professional ethical pronouncements.

**Audit opinion**

In our opinion, the financial report of Angas Bremer Water Management Committee Inc presents fairly in accordance with Australian Accounting Standards and other mandatory professional reporting requirements in Australia the financial position of Angas Bremer Management Committee Inc as at 30 June 2012.

Glyn Morris & Co Pty Ltd

A handwritten signature in black ink, appearing to be 'Andrew Morris', written over the printed name below.

ANDREW MORRIS MIPA TIA

Signed this 2<sup>nd</sup> day of August.

2012

# Angas Bremer Irrigators Revegetation Association Inc.

## ABIRA Annual Report 11/12

- The committee has been dysfunctional for the last 4 years as the original presiding office bearers and other committee members have left.
- With little or no activity undertaken since 2009 the ABIRA committee has been relatively obsolete in functionality or activities undertaken.
- Current Unofficial Committee representing ABIRA
  - Darren Aworth, Russell Schutz, Nick McDonald, Len Case, John Cranwell, Graham Burgess
- Two meetings were held in January and May of 2012 at the Rosemount Vineyard. Clarification was needed on where ABIRA is at the moment.
- Points of concern and still to be rectified;
  - Official election of Office bearers
  - New landholder agreements to be finalised
  - New finance signatories
  - Persons now representing ABIRA landholders don't know where sites are located.
- Vegetation sites are managed for weed control and general wellbeing by Jeff Whittaker. Sites were inspected by Len case and John Cranwell on the 4th June 2012 and all reported that sites were in good shape.
- Main issue is the sign off on Landholders agreement– Minister to sign off on Eastern Mt Lofty Ranges Water Allocation Plan before this can be finalised. Meade, Robinson Solicitors at Mt. Barker have looked at the proposed agreements and also Crown Law.
- Other matters raised due to inactivity and with no more vegetation sites to be planted; Is the viability of ABIRA as an entity on its own worth continuing? Could the committee be rolled over in with Angas Bremer Water Management Committee? All concluded to remain on own as ABIRA.
- Financial summary \$32, 000 in account approx.
- Only Outgoings Paid was to KTA General Insurance / Farm Insurance for \$1902.72.
- Next proposed meeting early November 2012.

## Langhorne Creek Grape and Wine Inc

Activities for the 2011-12 year include:

- The Climate Change native vegetation monitoring sites have again been photographed each 6 months. At the end of summer in 2012 water was still in the creek, foliage was thick and lush with an abundance of insects and birds at all sites. Bridal Creeper continues to flourish, other weeds also evident. New growth was detected on what appeared to be a sick old red gum. A photographic record is also maintained of the ABWMC's Mundulla Yellows trial sites. These trees show no signs of recovery, some showing further decline in health.
- A State NRM Community grant has been received to trial the restoration of the health of Redgums with the establishment of indigenous understory under Redgums in poor condition. Two sites were established, weed control was undertaken and plants propagated. The species list includes medium shrubs supported by low shrubs and a range of salt bushes, spear grasses, tussock grasses and lilies. The GWLAP contributed to the supply of seeds, the species list and to propagation and planting methods of the 1,500 seedlings. Local volunteers assisted with planting over winter, and with good rainfall, the understory plants have had the opportunity to become well established.
- A Vineyard Biodiversity Networking Workshop was hosted at Wirra Wirra Vineyards with some great case studies discussed, including Langhorne Creek.
- Work continues in Alfred Langhorne Park by volunteer's of the Progress Association. A small rainwater tank has now also been installed at the barbeque shelter shed. The Langhorne Creek Progress Association has started work on a Petanque playing area adjacent to the shelter having successfully received some small grant funding.
- Workshops for Freshcare Environmental (Viticulture and/or Winery) were held in Langhorne Creek in May.
- Work has been completed on the upgrade of the bird hide at Mosquito Creek. It has been cleaned and new gravel flooring put in. New screens have been fitted and a seating form installed. Boys and their fathers from Langhorne Creek Primary School had a busy day picnicking and repairing the mud brick seats. Golan's Waterhole is now full and the bird life is fantastic. This delightful reserve is now available to school children and locals to enjoy and observe the wildlife.
- A school Environmental Discovery Day was also held at Mosquito Creek in March. Harry Beauchamp from the SA MDB NRM Board led students on a water watch activity to net and identified macro invertebrates from Gollan's Water hole. Linley Cleggett spoke about the trees established at the reserve, presented some snippets of history and stories of the water hole and led students on a guided tour of the reserve flora and fauna trail. Local identity Len Potts is a participant of the Alexandrina Council "community connect" program and was on hand to share his knowledge of the local environment and birds. Students enjoyed bird spotting with field binoculars.

The continued support from the GWLAP with these environmental initiatives is acknowledged and appreciated.