

Angas Bremer
Irrigation Management Zone
2007 – 2008 Annual Report
Website: - www.angasbremerwater.org.au



Angas Bremer Water Management Committee Inc

Supported by



Government of South Australia

South Australian Murray-Darling Basin
Natural Resources Management Board

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Angas Bremer Water Management Committee Inc. *Committee Members 2007-2008*

Chairman

Mr. Terry McAnaney

Vice Chairman

Mr. John Pargeter

Treasurer

Mr. Guy Adams

Committee

Ms Sarah Keough & Di Davidson

*Messrs. Colin Cross, John Follett, Rick Trezona, Phil Reilly, Brian Wyatt and
Tony Thomson (DWLBC)*

Non-elected members of the Committee

Ms. Lyz Risby SA Murray- Darling NRM Board

Ms. Lian Jaensch, representing the Langhorne Creek Wine Industry Council

Secretary

Mrs. Barbara Blaser

Program/Project Coordinator

Mr. Bruce Allnutt

Report of the Activities of the Committee 2007-2008

1. Flood Plain Study

The monitoring of well-water-levels and soil moisture along the Angas and Bremer River flood plains has continued since late 2002. The data collected has helped the Committee and DWLBC to understand the groundwater system.

There are currently 23 electronic loggers in Government observation wells, 11 in the confined aquifer (T aquifer) and 12 in the unconfined aquifer (Q aquifer) measuring standing water levels in these wells. As well, there are 8 soil moisture monitoring sites in vineyards on the flood plains and these are located as near as possible to the Govt. observation wells being monitored. The soil moisture logging uses gypsum blocks connected to electronic loggers. The gypsum blocks have a finite life and the Committee decided that each block would not be replaced as the blocks fail but logging is continuing until all the blocks have failed.

Funds have been obtained from the SAMDBNRM (South Australian Murray Darling Basin Natural Resource Management Board) to expand the study of water levels by purchasing another 10 loggers. Sites for the new loggers are being selected and some salinity loggers will be included.

2. Angas Bremer CD map Layers

Two of the new map layers for the Angas Bremer CD that were completed during the 2007-2008 Irrigation year are a map of all the pipelines from the Lake and an updated map of the boundaries of 1992 flooding. The Committee would like to acknowledge the assistance from the Community which enabled the maps to be completed.

The maps that will become available from the Angas Bremer website include: (a) Pipelines map:- 50 pipelines were identified, a small number of pipelines originated outside the ABIMZ (Angas Bremer Irrigation Management Zone) but delivered the water to inside the ABIMZ. By enlarging the map (zooming in) individual pipelines can be identified. While the mapped pipeline route may not be 100% accurate, they are close to the actual route.

(b) 1992 flood map:- the 1992 flood map on the CD used aerial photography that was collected several days after the flood had passed the northern boundary of the ABIMZ. Some Community members had recognised that the map did not show the total area that was flooded in the north. Acting on Community concerns a project was undertaken to improve on the previous map. Most of the long time irrigators of the district were sent a copy of their area and were asked to redraw the flood line from their recollections. When all the maps were received back the data was collated and the updated 1992 area flooded map was produced. Again this map may not be 100% correct but has been compiled from the best available information. The mapped area flooded increased from about 3,500ha to more than 5,000ha.

3. Angas Bremer Database

The database commissioned by the Committee in 2005-2006 has recently been upgraded to enable graphs and charts to be produced such that each year the format of the graphs appear the same (but the data does not, of course). Other changes have been made that will improve the way data is entered.

A further database, nearing completion, is for FullStop data. This database is linked to the original database each using data from the other.

Additional improvements have been identified that will require further changes.

4. Angas Bremer Water Project (contributed by Tony Thomson)

Report on progress to August 2008

1. Aerial Geophysics

- All boundaries of both aquifers have now been more-accurately mapped
- The salt distribution within aquifers has now been more-accurately mapped
- The salt distribution within the top 1 metre of root zone has been mapped

2. Water Chemistry results

- Except for recovered ASR water, the water that is being extracted from the confined aquifer is older than 1,000 years.
- Without ASR, recharge to the confined aquifer of low-salinity water is negligible.
- Natural mixing within the confined aquifer is very slow. Water movement is about 1m per year.

3. Groundwater Height model

This new Mod-Flow model has been built for reasons that include:

- To enable the display of animations that show the movements of the aquifer-pressure-surface as the months and years pass
- To compare possible future scenarios that include a range of ASR policies by calculating the predicted future pressure responses
- To investigate possible future policies by calculating the predicted future pressure responses to various policies that may allow the increased extraction of saline groundwater from selected locations.

The new model has been calibrated at each of 24 Obswell locations for the years 1990 to 2007.

During the calibration the well-water-level heights calculated by using the model were compared with the heights that were measured in the Obswells.

The calibration charts show that

- (a) From about 1970 to 1975, the water-heights that have been calculated by using the model are increasing. From 1970 to 1975, all measurements show that water-heights decreased as would be expected with the increasing district groundwater water extractions.
- (b) In about 1987 the calculated water-heights are typically about 2 metres lower than measured levels.
- (c) after 1990 the calculated water heights increase at rates far greater than the measured levels.
- (d) By 2006, in all wells there are large and increasing differences between calculated and measured water levels. The calculated and the measured water-levels are typically moving in very different directions.

As the model is presently calibrated, these comparisons suggest that it would be unwise to use any outputs generated by the model to inform decisions about management of the Angas Bremer aquifer.

4. Groundwater Salt model

This model cannot be built until accurate outputs become available from the Groundwater Height model.

5. Angas Bremer Soils book

The Soil Management section for each of the 25 soils has been written and included in the now-completed book. Funding to print each \$35 hard-copy, full-colour book was provided by the Murray NRM Board. A copy of the book has been provided free to every Angas Bremer irrigator.

6. Maps from website

The 130 interactive map layers from the Angas Bremer Map Layers computer disc will soon become available from the website

www.angasbremerwater.org.au

7. Additional maps

About 100 additional map layers have been built and they will soon become available from the Angas Bremer website. The information in the new layers includes: Aquifer Storage and Recovery volumes,

Allocation volumes, Extraction volumes, grower pipeline locations, aquifer pressure-surface contours, aquifer salinity contours and flood boundaries.

8. FullStop database

A new FullStop database has been built and all of the FullStop data that has ever been provided by irrigators has been entered. This database will be used to provide Charts so that every contributing irrigator can see how their irrigation practices have been varying from one year to the next and how those changes have affected the salinity in their rootzone. Other Charts will show how rootzone-salt-levels have varied across the district.

5. Mundulla Yellows Project (Preliminary Red Gum Trials Report by Lyz Risby, summary by Sylvia Clarke)

The Full report (with photos) will be put on the website (www.angasbremerwater.org.au)

The cause of Mundulla Yellows (MY) is largely unknown but is believed to be related largely to soil properties. It was advised that the use of iron (Fe) implants could be used to improve the health of the trees in the short term.

The ABWMC resolved to conduct a trial at 3 sites in the Angas Bremer Prescribed Wells Area, with the aim to:

- confirm the diagnosis of MY, and
- test the effectiveness of Fe implants for treatment of the symptoms of MY.

Three sites were selected:

- Site 1. Brian Meakins Horse Radish Farm
- Site 2. Peter Silvers Lucerne Farm
- Site 3. Wellington Road

Soils were analysed for pH, electrical conductivity (EC) and ion concentrations.

Foliage samples were analysed for total nutrient concentrations. The initial diagnosis of MY as being the primary cause of the decline in tree health was supported by the both the soil and foliage properties. At the Meakins and Silvers sites, iron implants were inserted into holes drilled in 2 trees, while a third tree was left as a control for comparison. At the Wellington Rd site 2 branches on one tree were treated and a third branch left as a control. Photographs of each site and tree were taken prior to inserting the iron implants on 31 August 2007, again on the 14 January 2008 and on 12 August 2008. The purpose of the photographs was to record how the trial trees responded to the treatments.

From the photos taken in January, 6 months after the insertion of the implants, it appeared that the control trees had continued to decline in health, while the results of the iron treatment were mixed. New, deep green growth was observed in at least one of the treatment trees or branches at each site, but others showed no improvement.

The photos taken in August 2008 have not yet been analysed closely but in general the trees that had appeared to have responded well to the treatment in January, were displaying yellowing of the leaves again. Photos will be taken again in spring 2008 after the new growth has emerged to further assess the success of the iron implants for treating the red gums.

Further information including the results of the soil and foliage analyses and photos of the trees can be found in the full report.

Irrigator Irrigation Annual Report Forms

Irrigation Annual Report forms (IAR's) were mailed to 141 irrigators, 120 irrigators who returned their completed forms on time have achieved "Accredited Irrigator" status and will be issued with accreditation certificates, 11 IAR's that were received by the Committee after the due date did not achieve accreditation and a further 10 irrigators have not (at the date of this report) returned their IAR forms.

The data from 128 irrigators has been collated and that data is presented in the following graphs and tables. Comments are included with each graph/table.

Flooding:- Flooding by diversion or pumping was reported by 15 irrigators. Most of the flooding events were during the month of July 2007 with 2 events in the first half of August 2007. 281 ha were flooded; this figure includes some properties that were flooded twice or three times.

Revegetation:- The total area of re-vegetation reported in the Irrigation Annual reports is 1686.4ha. This total is made up of 1342.8ha of privately owned, 200.4ha jointly owned, 78ha of leased revegetation, 54.6ha of Community plantings and 10.6ha of revegetation on Council Reserves for which irrigators have an agreement with the Alexandrina Council.

Water Leasing:- Table 1 below shows the amount of water leased in 2007-2008 compared with water leased in 2006-2007.

In 2007-2008 the groundwater ML leased figures differ by 38ML. This difference is caused by an irrigator not submitting his report.

Table 1

Type of Lease	2006-2007 Megalitres	2007-2008 Megalitres
RM water leased from ABIMZ to outside ABIMZ	862.7	866
RM water leased from outside ABIMZ to inside ABIMZ	4,449.64	2,981.67
RM water leased from inside ABIMZ to inside ABIMZ	891.179	415.21
RM water leased to inside ABIMZ from inside ABIMZ	872.707	415.21
Groundwater leased from AB licence to AB licence	251.405	1022.6
Groundwater leased to AB licence from AB licence	351.405	874.6

Chart 1. Allocation and Use:- Allocation is the volume of water endorsed on licenses and does not include any credits for rollover, recharge etc. Use is the volume of water that was used during the irrigation years.

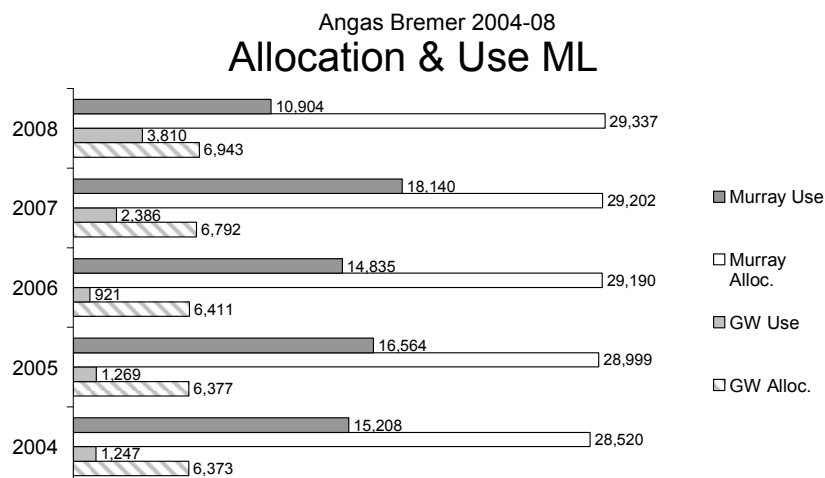


Chart 2. Surface Water Use:- Surface water is defined as water pumped or diverted from the Angas and Bremer Rivers. Not all of the surface water taken from these Rivers is accounted for. The volumes on these bar graphs are volumes reported on the Irrigation Annual Reports.

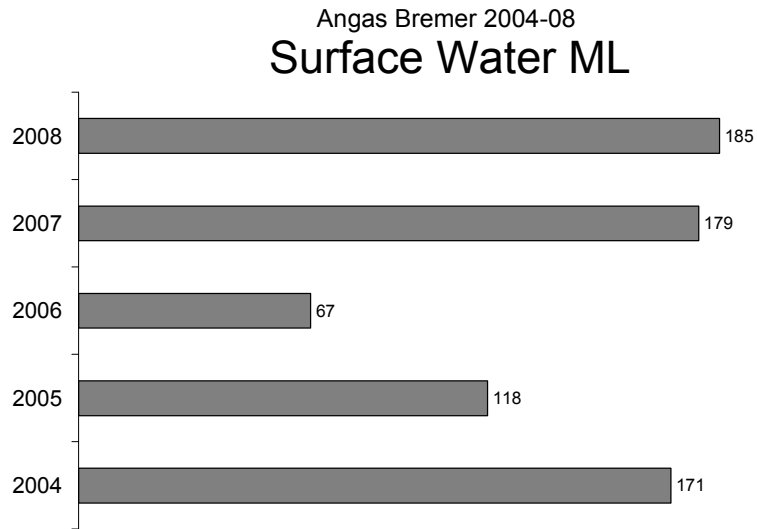


Chart 3 Volume of water used: - This volume is the total used from all sources, Groundwater, Surface water and River Murray water. Chart 3(a) shows the major volumes used and on which crops the water was used, Chart 3(b) shows the lesser volumes used. Total Volume for all uses in 2007-2008 and that used the previous year is shown on Chart 3(a).

Chart 3(a):- Minor values < (less than) 200ML are expanded on Chart 3(b)

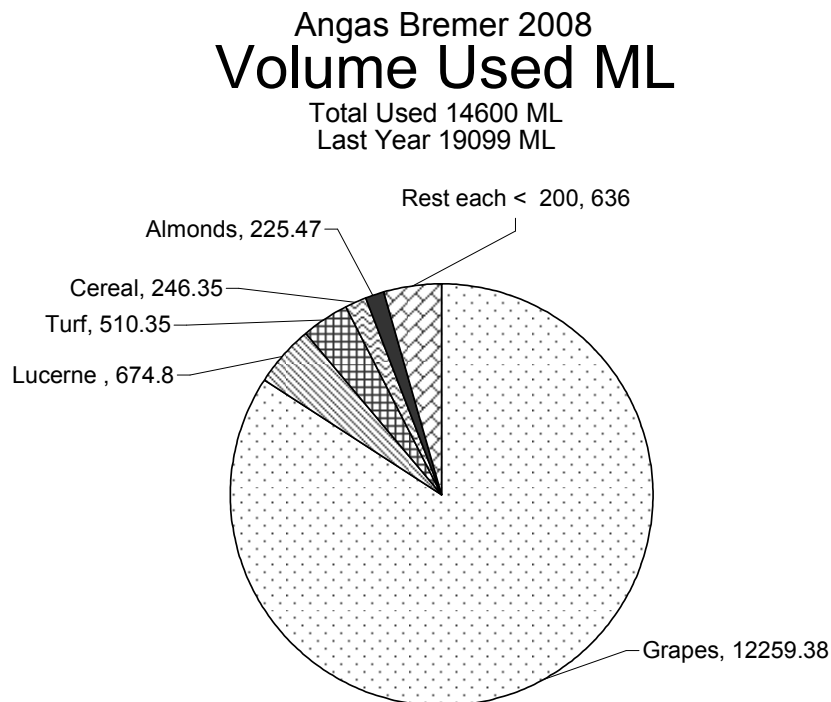


Chart 3(b):- In the following chart, "other" includes all other crops irrigated

Angas Bremer 2008 ML used onto Rest

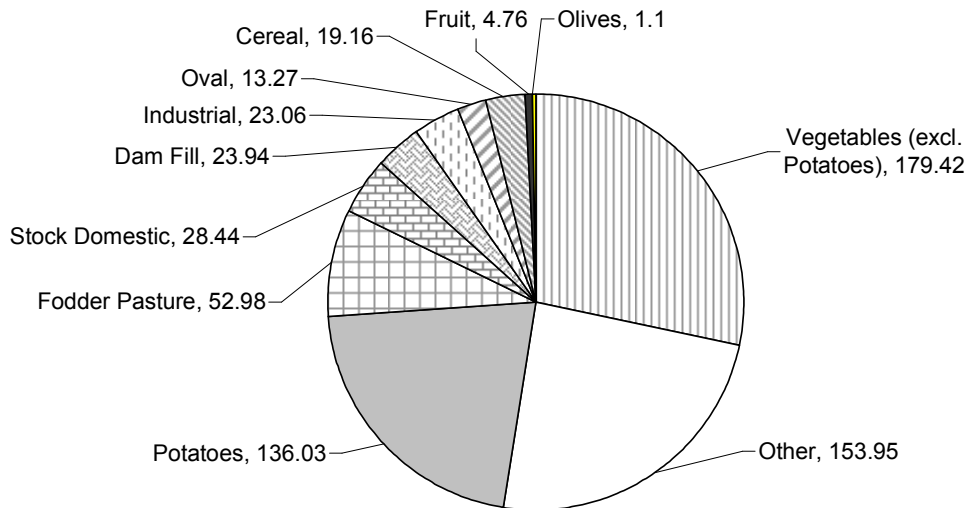


Chart 4 Area Irrigated: - The area of each crop irrigated is shown in hectares; Chart 4(a) Has the total areas for 2007-2008 and for the previous year and shows the larger areas while Chart 4(b) shows lesser areas.

Chart 4(a) "Minor values" < (less than) 100ha are shown on Chart 4(b)

Angas Bremer 2008

Ha Irrigated

Total area irrigated = 7,025ha
last year = 8,307ha

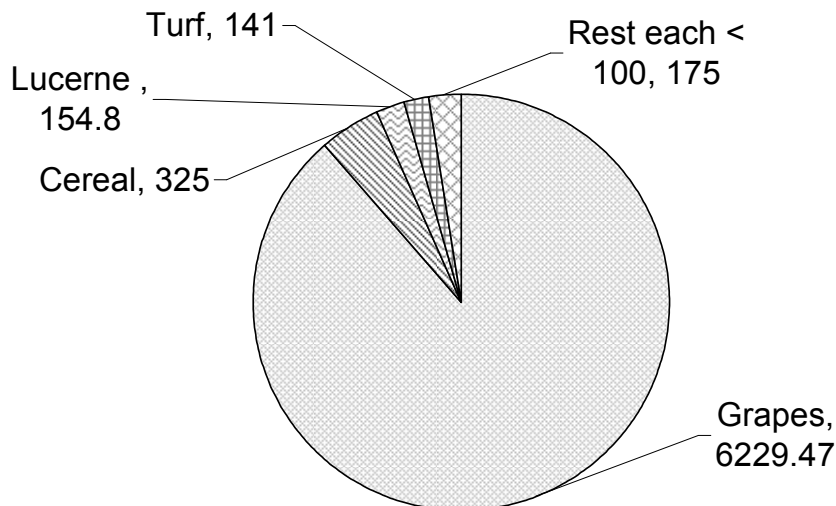


Chart 4(b):-

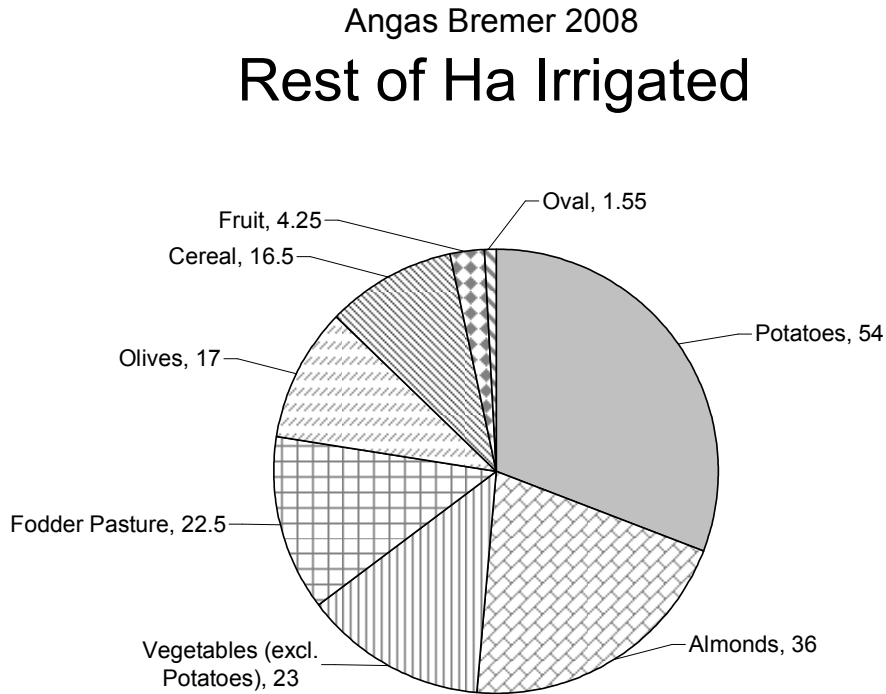


Chart 5:- Irrigators Each Crop: - "Other" includes cereal crops, conservation, fruit, ovals, turf and legumes. The charted decrease in the number of grape growers is because several growers have not submitted their Irrigation Annual Report.

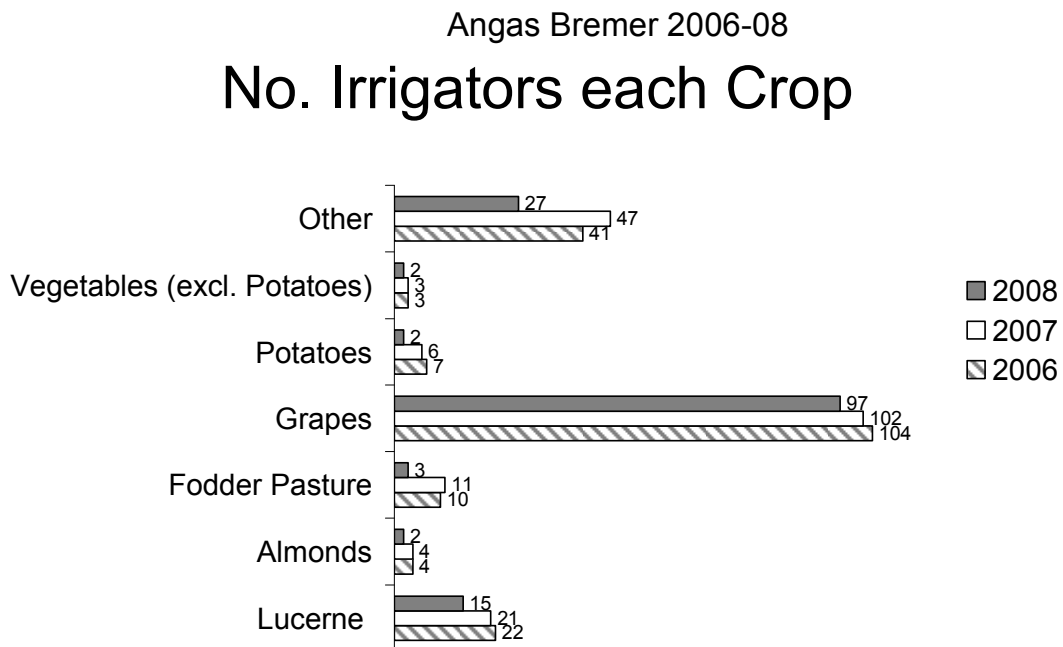


Chart 6:- for each crop, the following 2 charts show the average irrigation in millimetres per year (Chart 6(a)) and the average mm for each irrigation. Both Charts compare 2007-2008 with the previous year. "Other" is all other crops.

Chart 6 (a):-

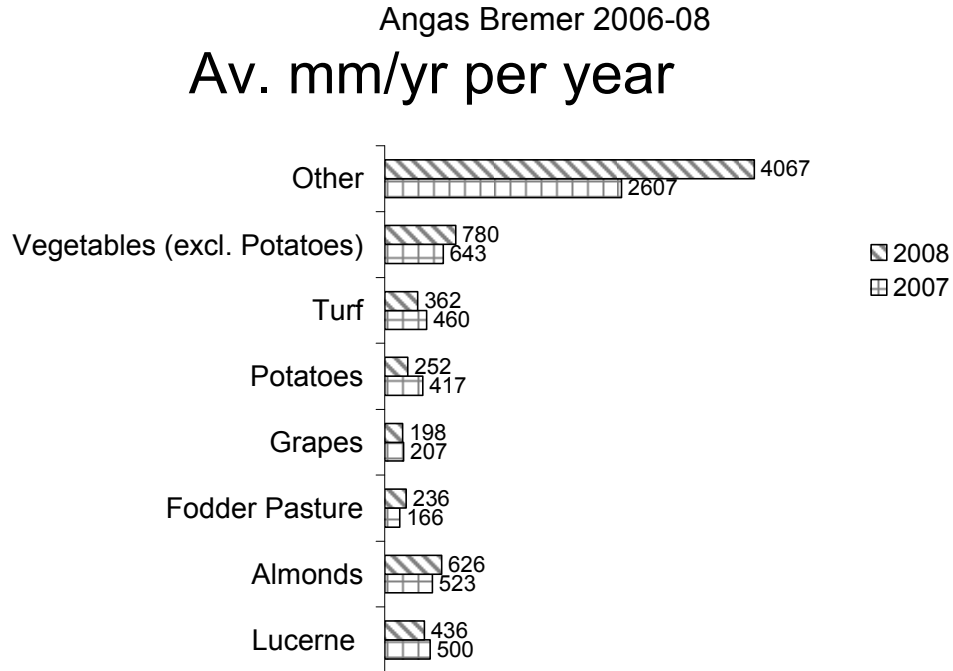
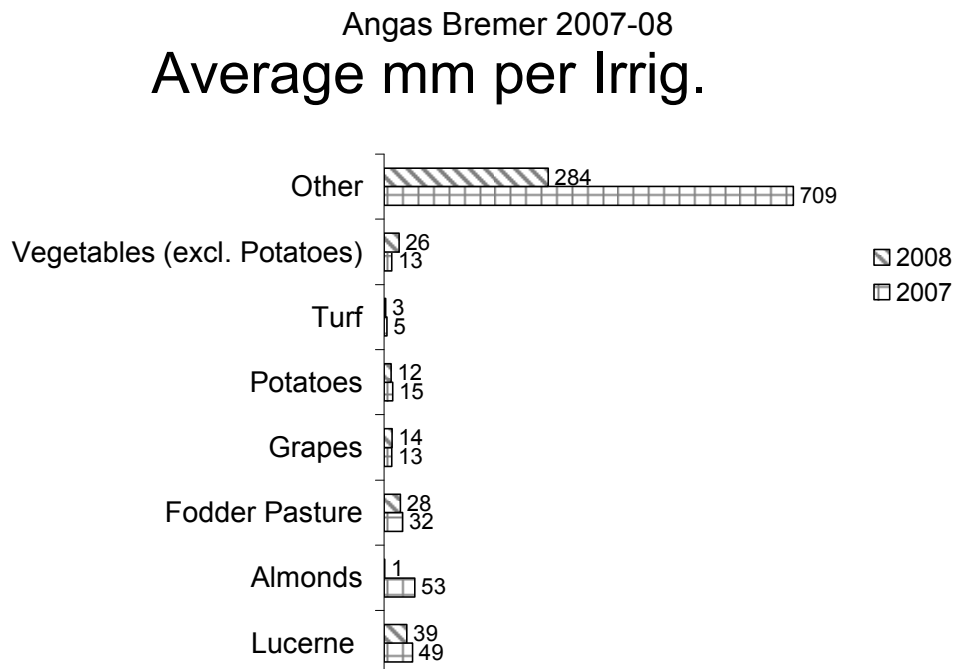
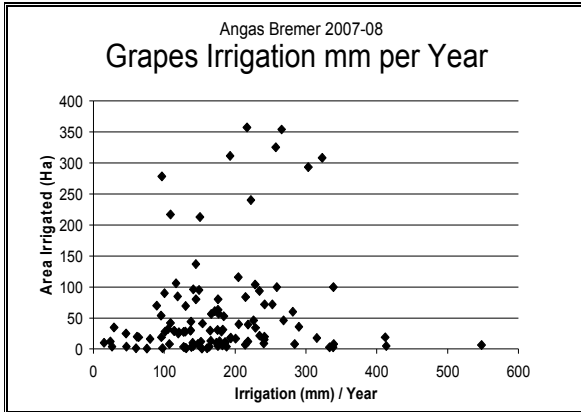


Chart 6 (b):-

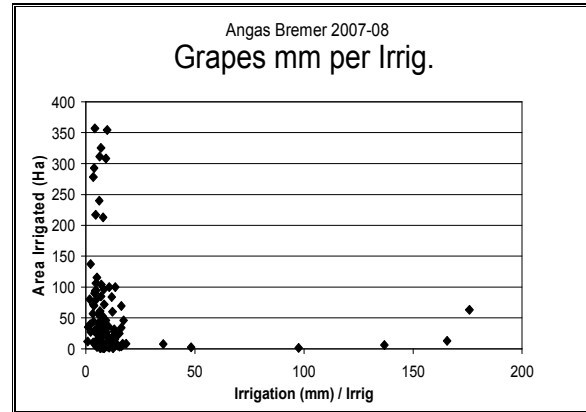


Charts 7 to 13:- These charts are for the larger crops. For each crop one chart shows the mm per year and the second mm per irrigation. For grapes an additional chart (7c) has been included. It excludes those irrigators who used winter flooding using a large volume of water in a single irrigation.

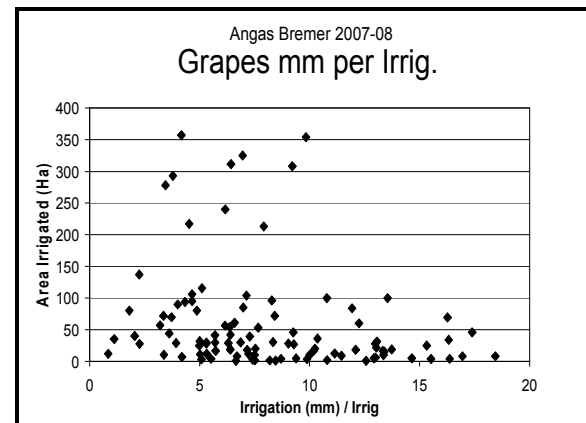
7(a)



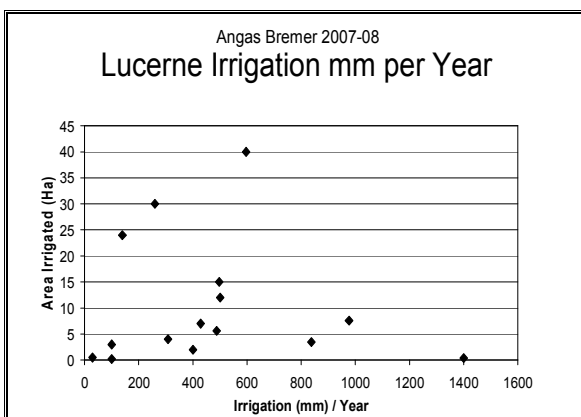
7(b)



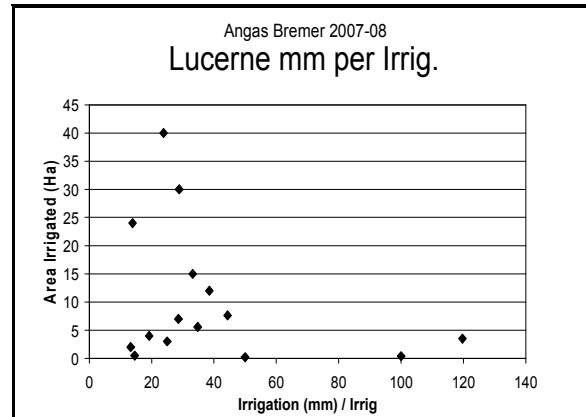
7(c)



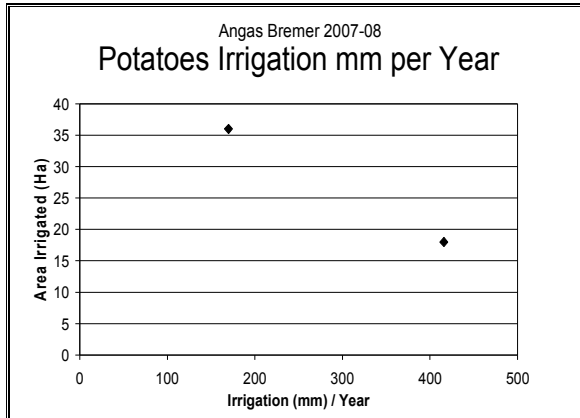
8(a)



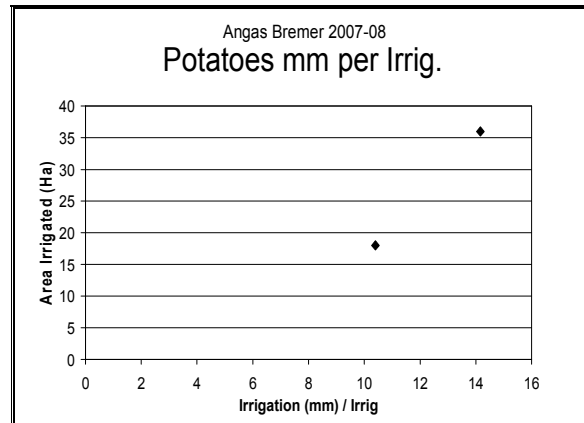
8(b)



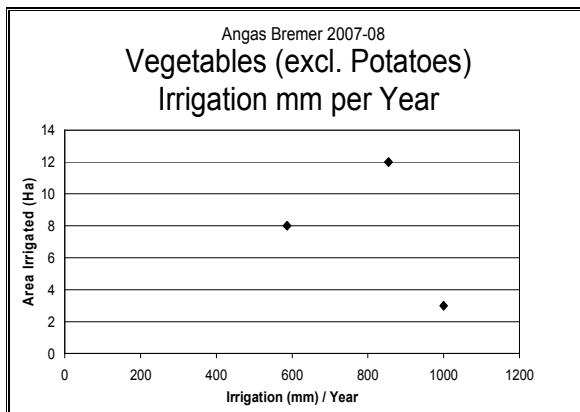
9(a)



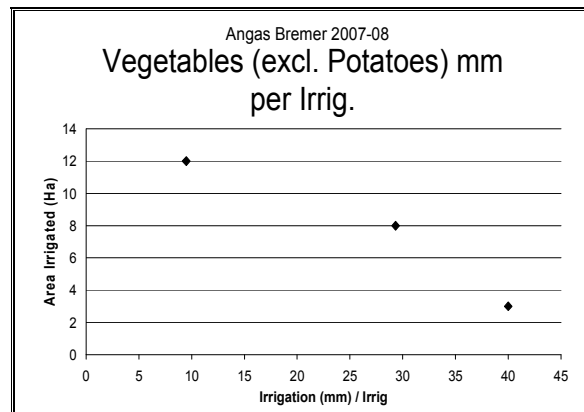
9(b)



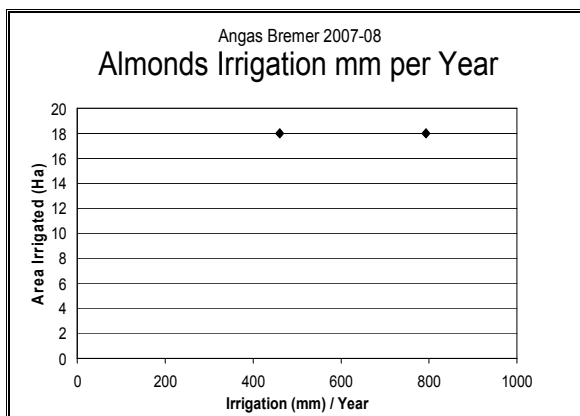
10(a)



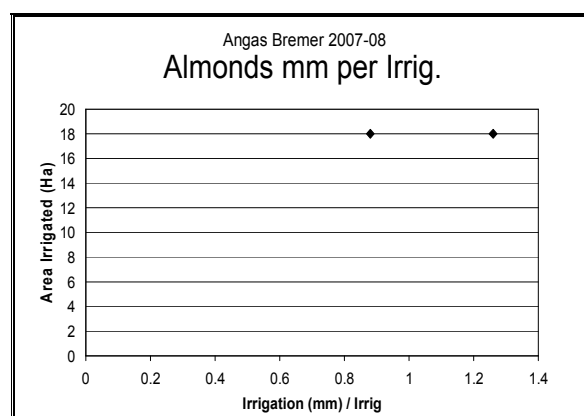
10(b)



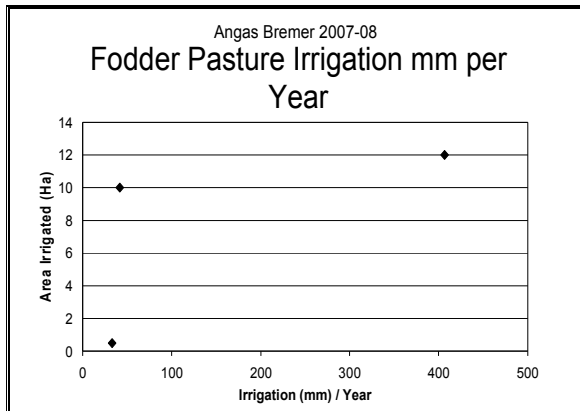
11(a)



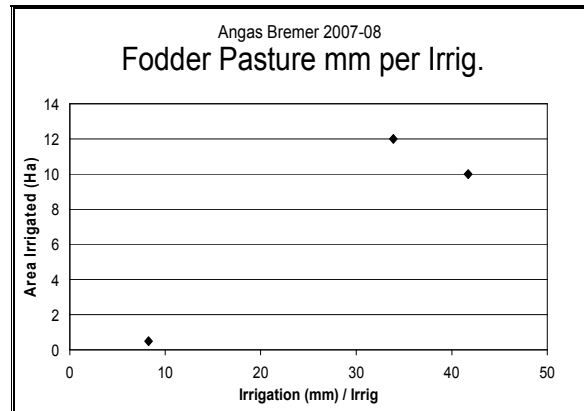
11(b)



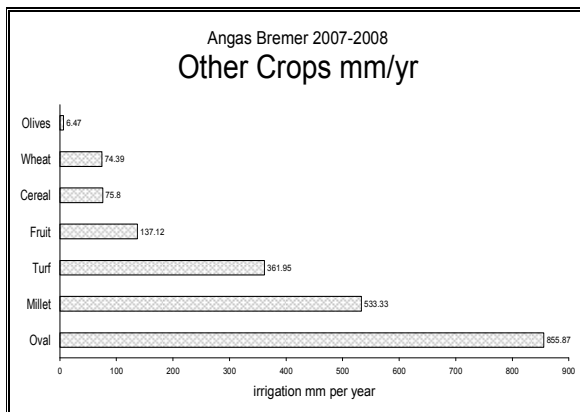
12(a)



12(b)



13(a)



13(b)

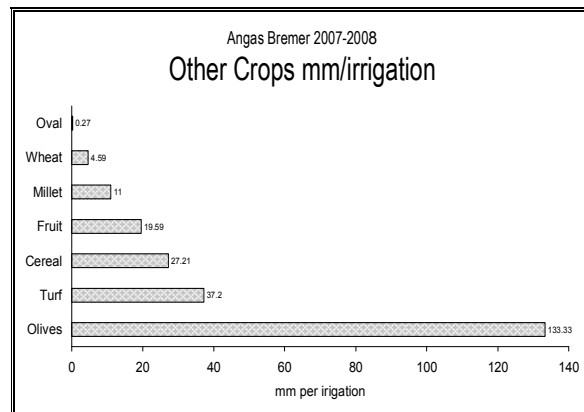


Chart 14:- Number of growers using Soil Moisture Monitoring devices:- “Resistance” includes Gypsum Blocks. “Capacitance” includes Agwise soil moisture probes, Agrilink C probe, Dataflow Gopher, Sentec Diviner and Sentec Enviroscan.

“Dig hole” includes Dig stick, spade, auger and post hole digger.

Angas Bremer 2007-08

No. of Growers using Soil Moisture Monitoring Devices

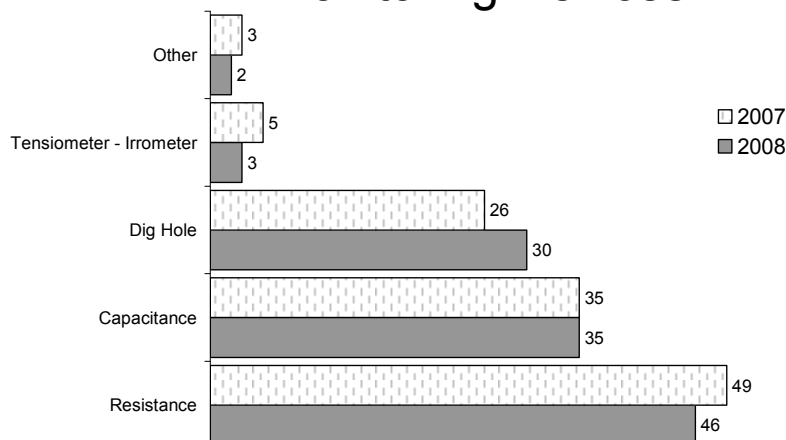


Chart 15:- Aquifer Storage and Recovery (ASR):- This chart shows the total water recharged to the Aquifer from 1985 to 2008, the amount recharged in 2007-2008 is considerably less than 2006-2007, this would be the result of the unsuitability of Lake Alexandrina water due to rising salinity. As of June 2008 there has been 76 permits issued for ASR, 18 permits for water from the Angas and Bremer Rivers (surface water) and 59 permits for River Murray water. Some of the permits are for both surface water and River Murray water.

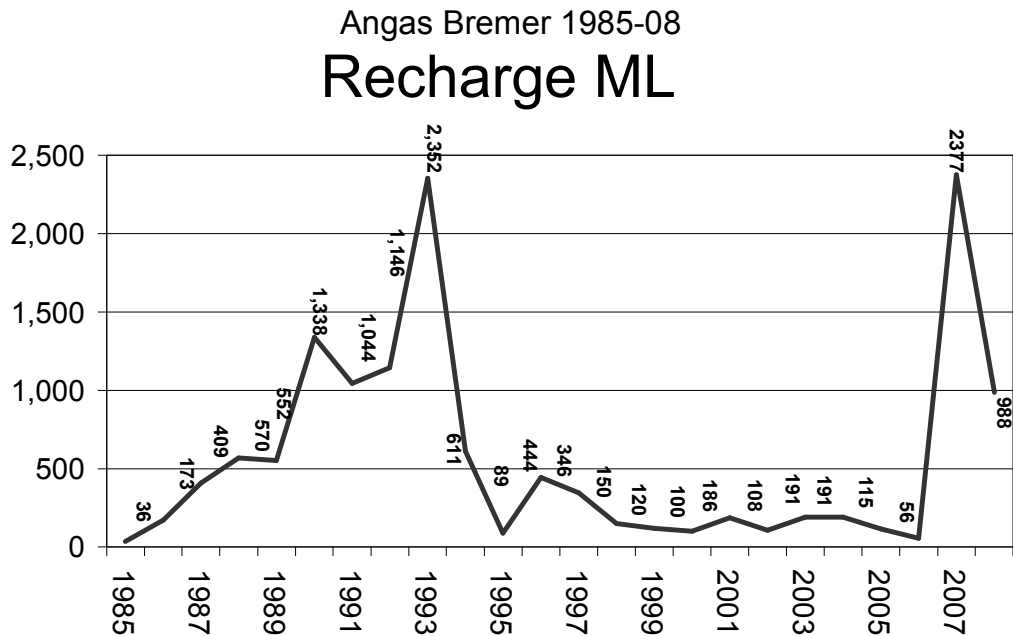


Chart 16 Red Gum Health:- 66 Irrigators reported on the health of the red gums on their properties. Health, or otherwise, was rated from 0 to 5, 5 being healthy and 0 being dead, 16 irrigators (49%) reported their Red Gums as 100% healthy.

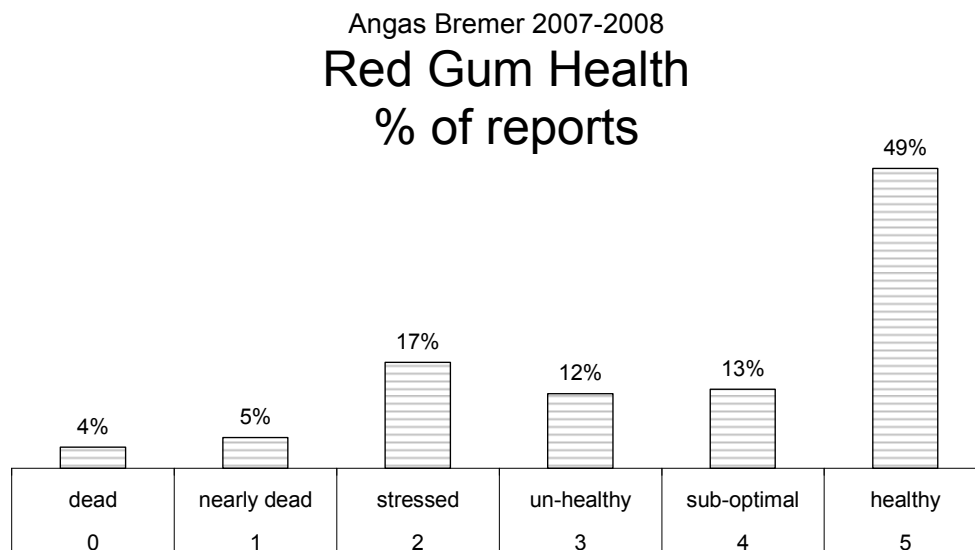


Table 2 Average ML/ha per crop per year:- This table shows the average ML/ha of irrigation water applied to different crop types and compares 2008 with previous years.

Year	Grape	Lucerne	Other	Vegetable	Potato	Pasture	Almond	All Crops
1996-1997	2.0	3.4		4.0				2.7
1997-1998	1.6	4.2	2.6	3.9		4.1	2.4	2.5
1998-1999	2.2	5.1	1.3	4.5		3.8	2.0	2.7
1999-2000	2.1	6.0	1.7	6.3	3.7	3.7	2.8	2.6
2000-2001	2.1	4.8	2.4	5.7	3.6	4.7	3.1	2.6
2001-2002	2.1	4.4	1.7	5.1	4.0	3.3	4.5	2.5
2002-2003	2.2	6.8	2.4	6.0	3.8	4.3	4.0	2.61
2003-2004	1.97	4.5	2.5	8.8	3.5	2.7	4.2	2.28
2004-2005	1.99	5.22	1.69	5.18	3.67	2.74	4.79	2.25
2005-2006	1.8	4.23	1.53	5.04	2.99	1.00	4.06	2.95
2006-2007	2.04	5.13	1.05	6.43	4.12	1.7	5.23	3.67
2007-2008	1.97	4.36	1.57	7.8	2.51	2.36	5.24	2.07

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

	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-2008
Total ML	11,348	16,100	16,509	16,961	17,467	17,428	20,715	17,154	17,719	15,811	20,911	14,743
Total ha	4,156	6,545	6,153	6,625	6,788	7,089	7,934	7,509	7,869	7,739	8,370	7,049
Grape ML	4,332	6,001	8,864	10,021	10,626	11,159	13,165	11,927	11,688	11,293	12,827	12,330
Grape ha	2,134	3,645	4,084	4,665	4,991	5,357	6,059	6,059	5,876	6,170	6,271	6,245
Lucerne ML	2,490	3,700	3,526	2,491	2,040	2,051	2,560	1,608	1,791	1,378	1,437	675
Lucerne ha	741	876	698	418	429	471	376	354	343	325	280	155
Veg ML	1,446	2,670	2,355	761	769	651	647	605	638	363	373	179
Veg ha		679	518	121	134	103	108	69	123	72	58	23
Potato ML				1,812	1,773	1,719	1,504	1,280	1,278	1,171	1,200	136
Potato ha				485	490	425	394	360	348	392	291	54
Fodder ML		1,526	906	358	742	316	752	399	505	144	222	53
Fodder ha	328	369	241	96	157	97	173	146	184	144	130	23
Almond ML		147	119	164	172	246	188	203	230	195	251	231
Almond ha	88	61	61	58	55	55	47	48	48	48	48	44
Other crops ML	3,081	2,248	738	1,354	1,259	1,286	1,899	1,132	1,589	900	2,004	795
Other crops ha		872	555	777	533	583	777	443	936	588	906	505

Thankyou !

For the past ten years I have been fortunate enough to occupy the position of Program/Project Coordinator for the Angas Bremer Water Management Committee. In that time I have come to appreciate the complexities of irrigation in the Angas Bremer area by listening to the local long time residents and the professional Government people with whom I have worked.

I would like to acknowledge and thank the Angas Bremer Irrigation Community, the various members of the Committee over that time, especially Terry McAnaney, Rob Giles and Barbara Blaser. The other person to acknowledge and thank is Tony Thomson who has been a tremendous help to me throughout.

I wish my successor, Sylvia Clarke, well

Kind regards to All,

Bruce Allnutt

Angas Bremer Sept 2007
Un-confined depth to water table in metres

Strathalbyn

R Bremer

R Angus

7

5

3

15

20

5

5

3

7

5

3

3

Milang

Lake Alexandrina

Legend

obswell +

swl above 3m

Prescribed Area Boundary

Management Area Boundary

N

Angas Bremer Dec 2007
Unconfined depth to water table in metres

Strathalbyn

R Bremer

R Angas

5

9

5

5

3

3

3

3

Lake Alexandrina

Milang

N

Legend

obswell +

swl above 3m [stippled box]

Prescribed Area Boundary [dashed line]

Management Area Boundary [solid line]

Chart 14(c)

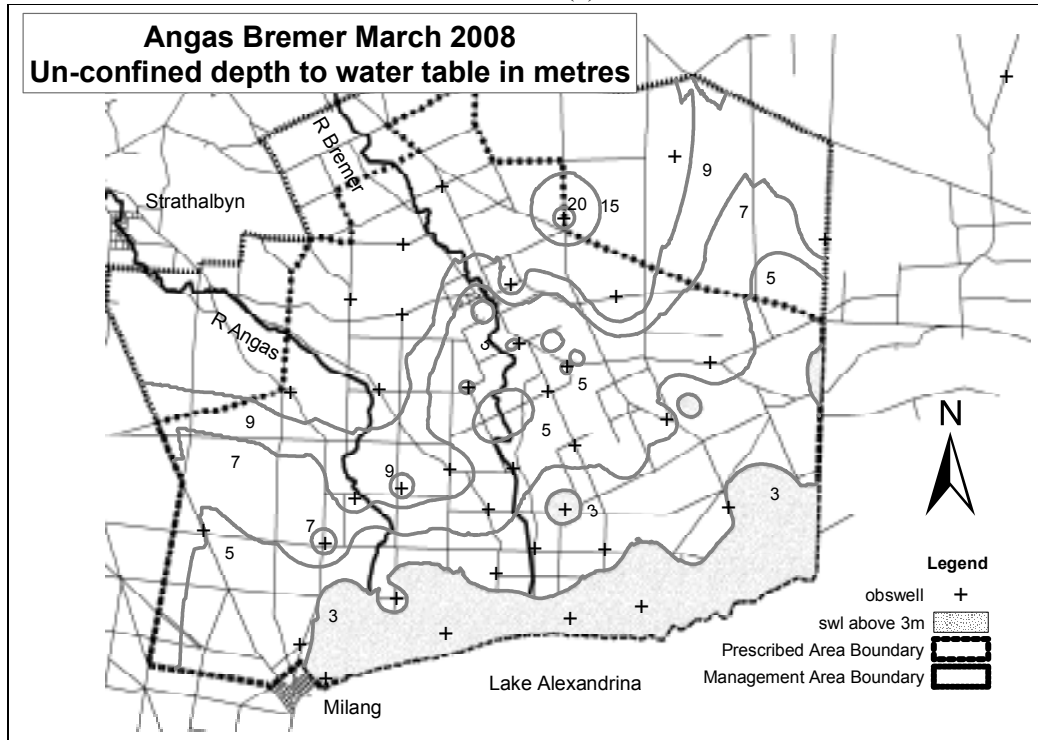


Chart 14(d)

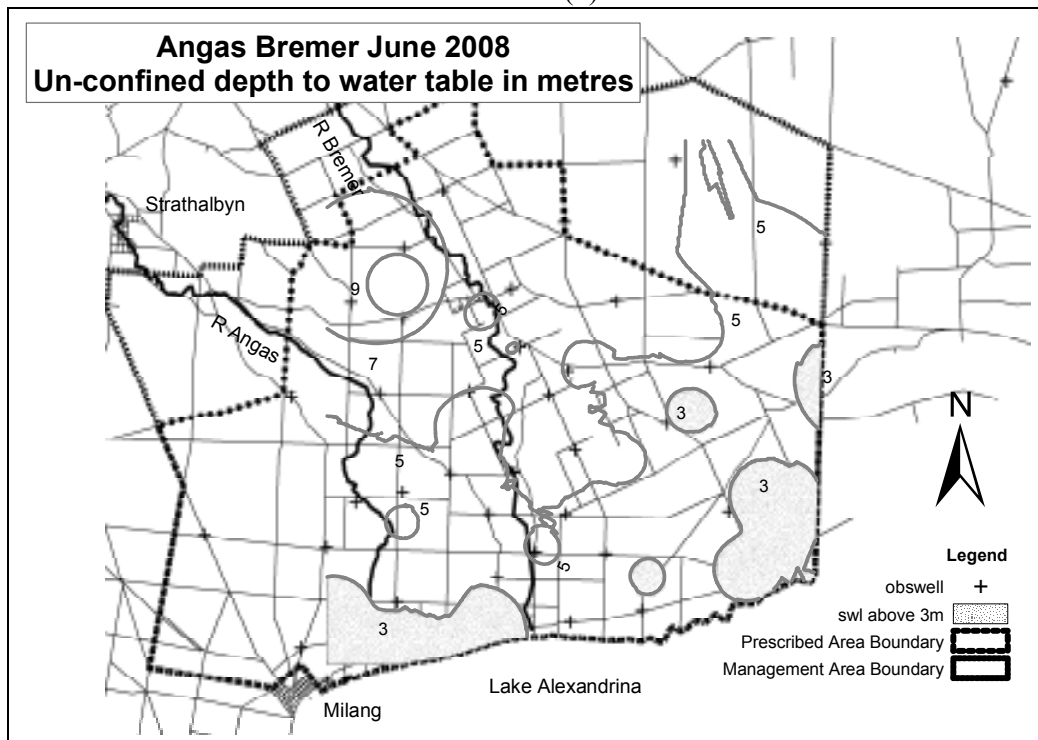


Chart (s) 15 The next 2 charts show the depth to the water table contours of the confined (T) aquifer at October 2007 and at April 2008. The data for the maps came from the Government confined observation wells.

Chart 15(a)

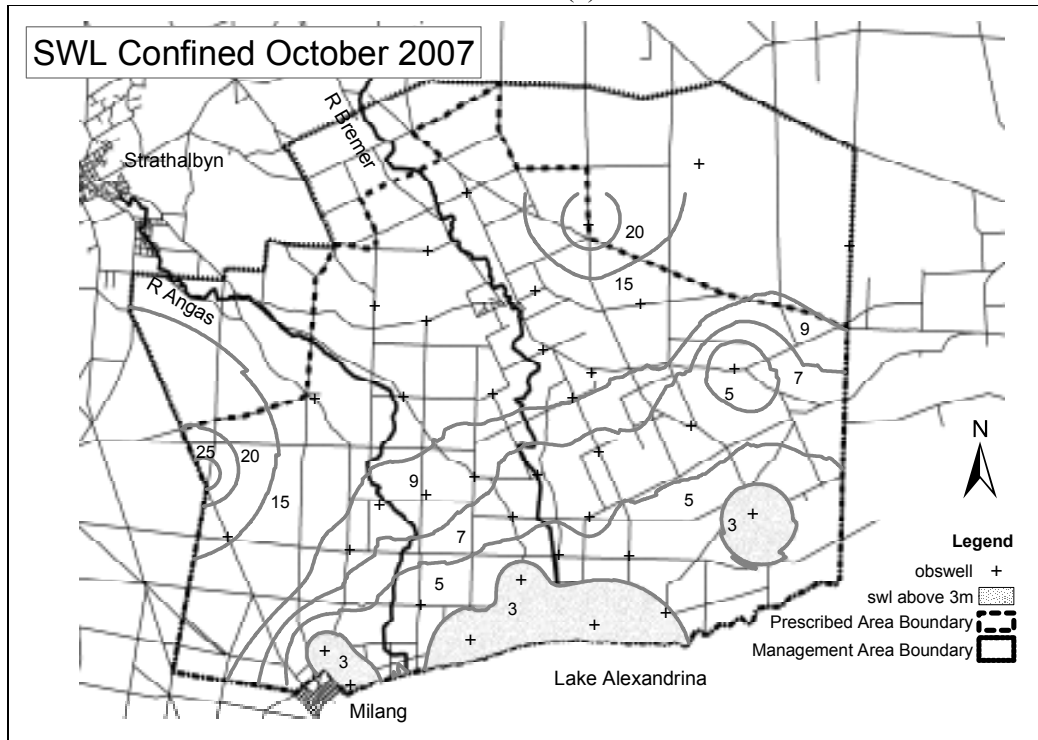


Chart 15(b)

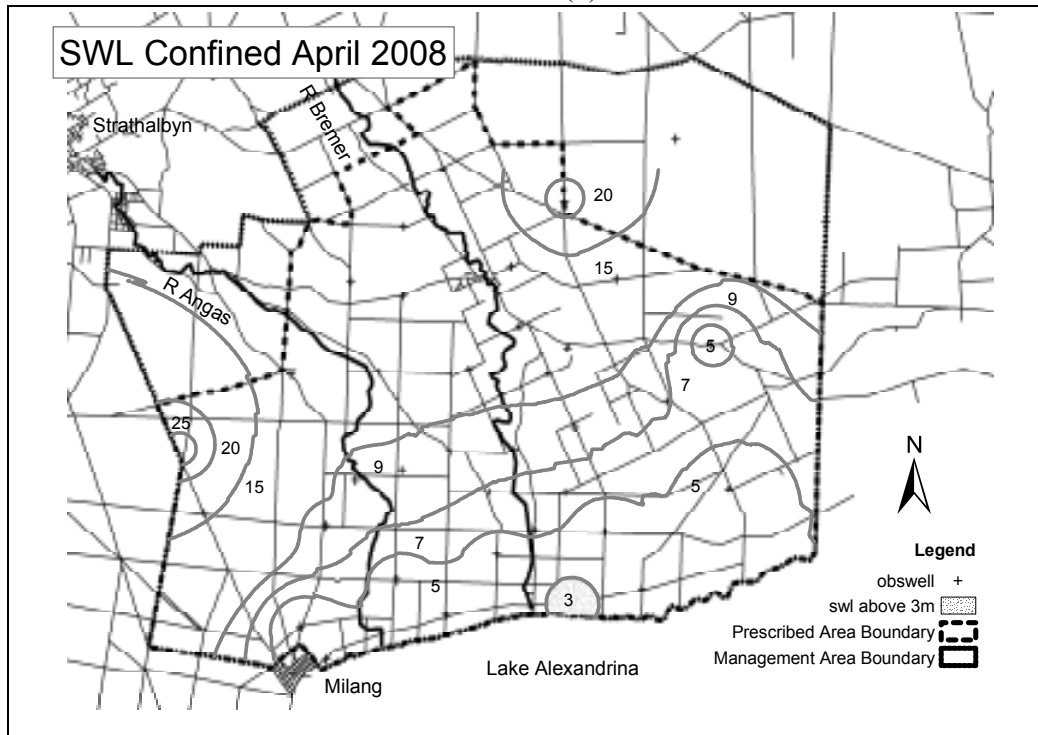


Chart (s)16 The salinity maps below show the salinity contours in October 2007 and April 2008. The data for these maps came from the Govt. observation wells and from the water samples submitted by the growers at the start of the irrigation season and at the end of the irrigation season. October and April were the months chosen to be near as practical to when the samples were submitted. The numbers on the maps are in mg/litre (same as ppm)

Chart 16(a)

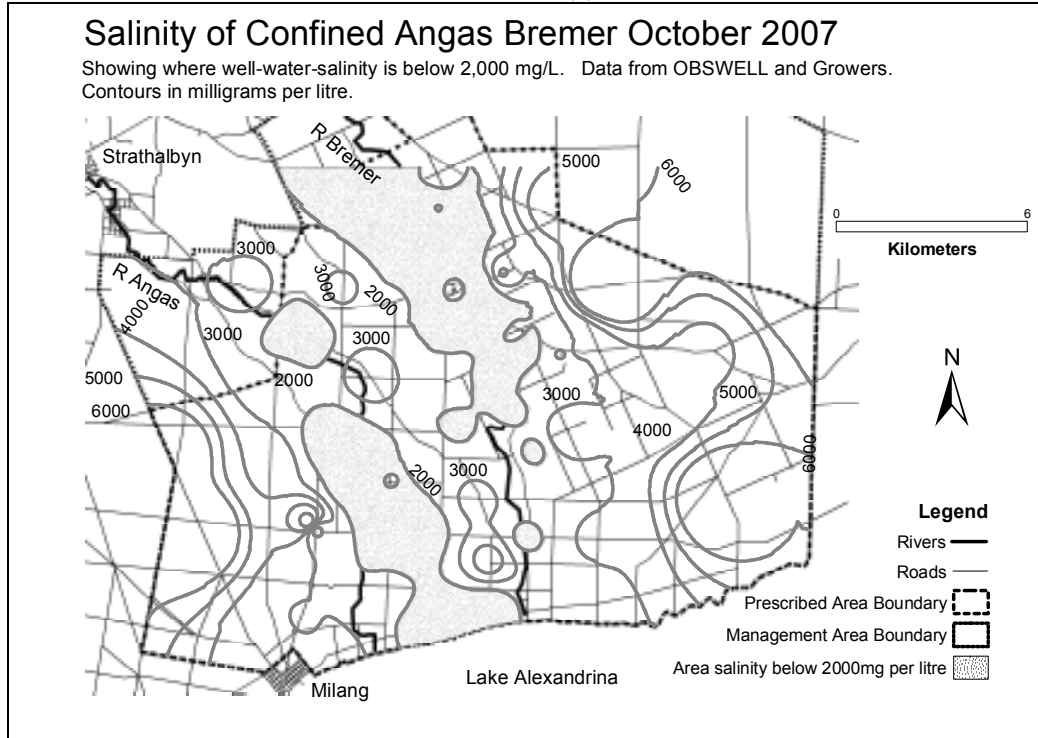


Chart 16(b)

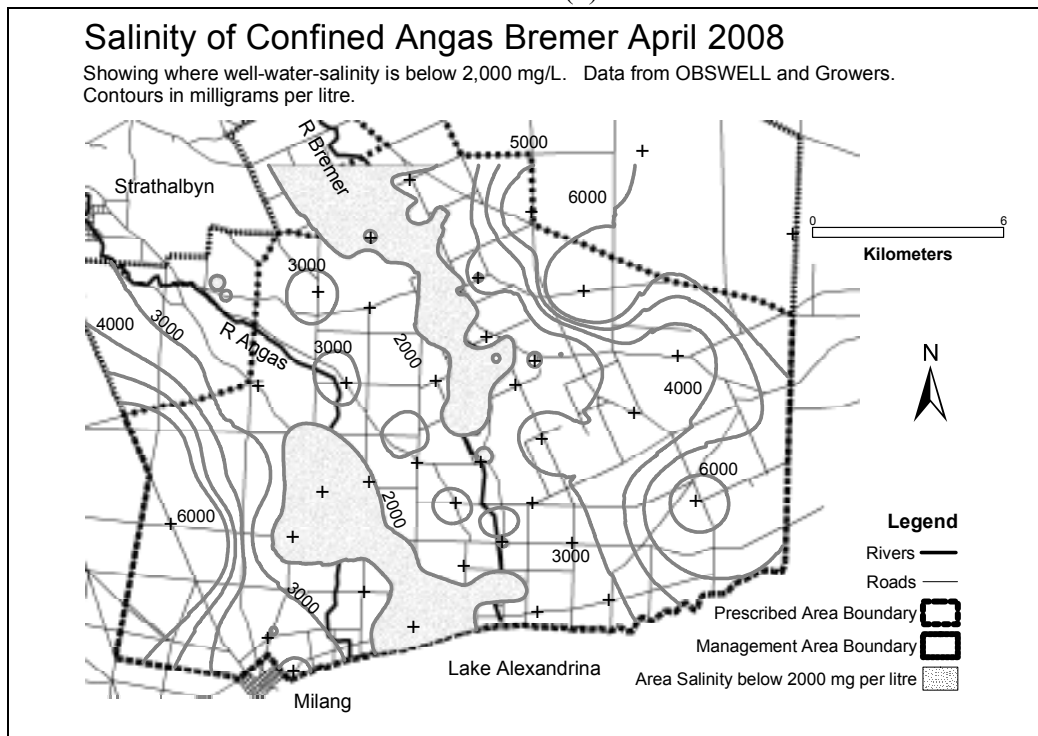
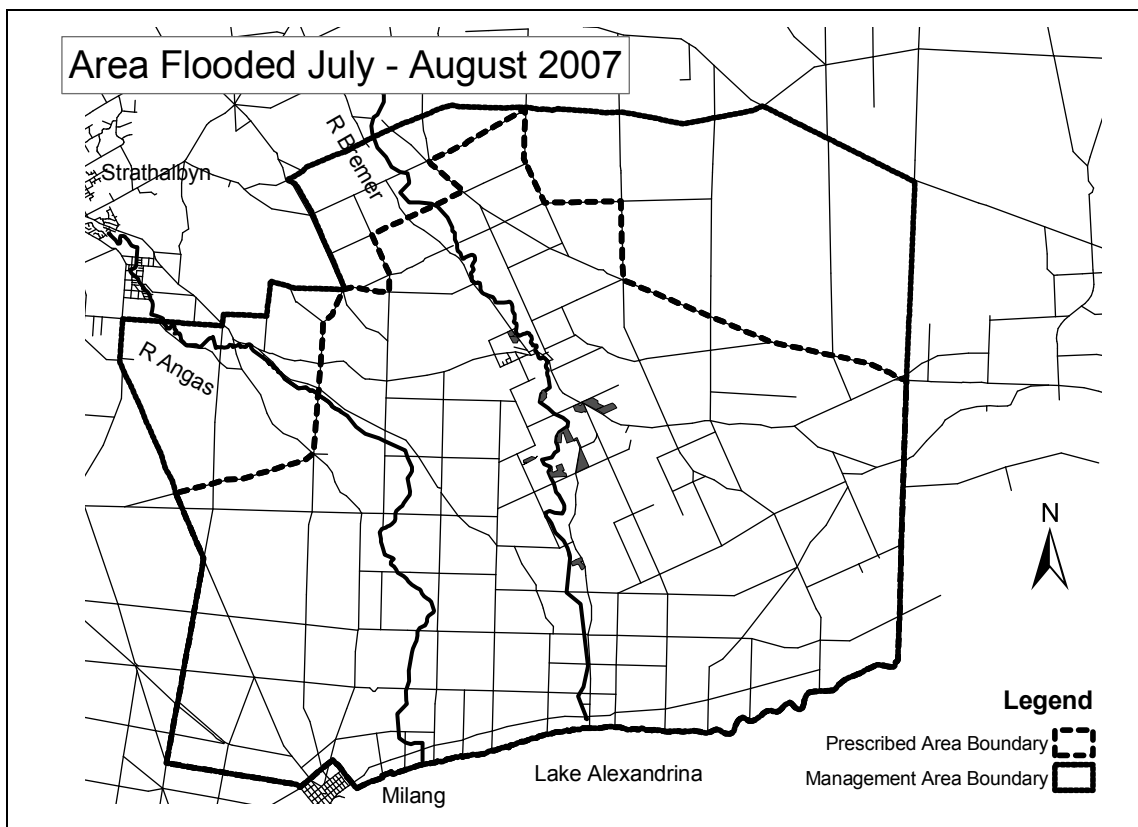


Chart 17 Area Flooded 2007-2008

The small areas shown to be flooded on the map below is by no means the total area flooded in 2007-2008. No maps of the other areas flooded were provided by the growers.



**Angas Bremer Water Management Committee
Annual Public Meeting
25th August 2008
Langhorne Creek Football Clubrooms**

Meeting opened: 7:45 pm

Apologies: Angus Davidson, Di Davidson, Lyz Risby, Mark Cleggett, Guy Adams, Rex Jaensch

Chairman's report:

A very disappointing year for the region this year with the effect of drought and low Murray inflows increasing water shortage and salinity pressures on Angas Bremer irrigators. The region faces salt threats from three crucial areas. 1. A build up of salt in the root zone. 2. The slow increase in the salinity of the good water in the confined aquifer despite minimal extractions in recent years. 3. The increase in Lake Alexandrina salinity to above useable limits with the threat of seawater being allowed into the lake to combat acid sulphate soils. The next irrigation season is going to be very difficult for many irrigators as much of the underground water is of marginal quality and quantities insufficient to maintain all plantings. Efforts to obtain alternative water have been disappointing with one private pipeline to Wellington being installed and the promise of the COAG funded pipeline but not for the coming season. A small number of private desalination plants are being installed but disposal of brine creates problems. Efforts by the committee to provide a framework for permits under section 128 from the minister to take saline water from the margins of the proclaimed zone proved legally impossible but individual applications can be made.

During the year the committee received the Angas Bremer PWA Groundwater Status Report from Dragana Zulfic and Steve Barnett indicating that much of the previous data indicating direct recharge of the confined aquifer was not correct and that the water was over four thousand years old creating debate amongst the community. A workshop was held on Thursday 21st August 2008 to discuss the new water allocation plan. The new WAP will have to address the continuing decline in water quality of the confined aquifer in the lower salinity areas either from reduced allocations or recharge with good quality water when available or both. The community should not forget the sacrifices and hard work of the previous committee and continue to keep Angas Bremer as the leading irrigation region.

Bruce Allnutt is going to retire on completion of the annual report in September and on behalf of the committee I wish him well in his retirement and thank him for his many years of dedicated service. Sylvia Clarke has been appointed as the new project coordinator and I congratulate her on her appointment. Lyz Risby is taking 7 months temporary leave and will be back in April 2009. Consultants REM will take over WAP development. Cameron Welsh will attend ABWMC meetings. Thanks to Lyz for her help and we wish her success in her temporary job.

My thanks to Barb for another years dedicated work and to the committee for their support during these difficult times with special thanks to Deputy John Pargeter, treasurer Guy Adams and Rick Trezona. A note of concern that at times during the year the committee's role as the community's contact on water and irrigation seems to have been overlooked with direct approach to government departments.

Terry McAnaney
Presiding Member

Mayor Kym McHugh, Alexandrina Council

The mayor congratulated the committee on its proactive approach in the past. He suggested that now the whole Murray Darling Basin is not sustainable. Many areas are not as sustainable as the Angas Bremer area, using open channels etc, and a single body is needed to manage the system. This is the greatest issue the council has had to face. It is having an enormous impact on the community and all water users. There are economic and social effects as well as on the environment and ecology of the area. It will take a while to

move on from this. The council has taken up the baton to look after the community and to let the rest of Australia know what is going on. They are carrying the burden for the mismanagement of the whole system. He commended the government for their medium to long-term strategies but there were also immediate problems that needed to be addressed. He is opposed to the weir and is lobbying for water downstream to save the lakes and help them get over another year. The mayor has spoken to a range of politicians including the Prime Minister, Kevin Rudd, Penny Wong, Mike Rann, and Karlene Maywald. They understand the economic loss it is causing but we are yet to see any outcomes. He praised the great support of the community and the media, and promised to keep pushing for freshwater flows for one more year and then to go from there. He acknowledged those that have put time into lobbying, sitting on boards etc.

Question to the Mayor:

Q. Is the issue of ground water ever raised when talking to politicians about the impact of letting seawater into the lakes? As we don't know the impact should it not be done?

A. It has not really been discussed. The lakes don't need to be filled. The levels may need to fluctuate in future.

Jarrold Eaton – DWLBC

See attached notes from presentation

Questions for Jarrold Eaton:

Q. Shouldn't they start to build the weir now, seeing as the model suggests we are 9 months away from the projection of -1.0m level in the lake?

A. Other considerations are being taken into account. The government doesn't want to spend the money if they don't have to.

Q. Would snow melt improve the situation?

A. Snow melt contributes less than 10% of inflow.

Q. How is it that 80% of the water would be lost if it was released from a long way upstream?

A. The worst loss occurs if all the water was released together. Some is lost through inappropriate taking. This needs to be managed and policed differently. There is currently a project to obtain better information on water being taken from the river.

Q. How will the \$610M Murray Futures Program be spent?

A. Consultation with communities will occur.

Q. Are the tributaries like the Murrumbidgee to be regulated by the Murray Darling Basin Commission?

A. They are not likely to be included, but they will come under the cap, which should lead to greater flows into the Murray.

Tony Thomson – DWLBC

See attached notes from presentation

Questions for Tony Thomson:

Q. If 3ML was put into a well, what volume would it take up?

A. In the confined aquifer it would increase the height because of the pressure increase. We need better numbers to model the impacts of ASR and make informed decisions.

Q. Is there a gradation in the age of water in the aquifers from north to the lake?

A. There is evidence of this but ASR confuses the situation a bit.

Bruce Allnutt – Project Coordinator ABWMC

See attached graphs. Further graphs and explanations will be provided in the Irrigation Annual Report.

Mr Allnutt also thanked the community for their support and the committee, especially Rob Giles and Terry McAnaney, the NRM board and DWLBC, especially Tony Thomson.

Nominations for committee:

1. Brian Wyatt
2. John Pargeter
3. Mac Cleggett
4. John Follett
5. Rick Trezona

Di Davidson has not renominated.

As there were 5 nominations for the 5 positions, all nominees were appointed as members.

Mention was made of the need to conscript members of the younger generation to the committee throughout the year.

General Business

The issue of trading of licenses potentially leading to the loss of environmental flows was raised. It was suggested that conditions on license transfer should be set to protect environmental assets. Cameron Welsh (SAMDBNRM Board) explained that authorisations will be converted to licenses and that allocations will only be made once environmental water requirements are met.

The Chair thanked all for attending

Meeting closed 9:55pm.

Climate Change Planning - Submitted by Rick Trezona.

With the support of the ABWMC, the group of local grape growers involved with the development of the Langhorne Creek Environmental Management System embarked on a Climate Change Risk Management exercise in 2007. After identifying the likely impacts of climate change with the vulnerabilities, a plan was formed with associated strategies. Many of the strategies have been taken up as measures to address the issues arising with the present drought, although some obviously require resources that are not available.

The work has continued this year through a series of workshops and in consultation with NRM officers to develop Climate Change policies and Best Management Practices for grape growers in the region to support the plan. The activities cover purchasing, transportation, vehicle and machinery maintenance, work practices, emission reduction and monitoring, mulching, training and information, biodiversity and business planning. Presenters at the workshops have given the group the opportunity to gain a greater knowledge and understanding of climate change, weather and associated issues.

The activity continues with a further workshop to be held Tuesday 21st October 2008 when presentations will be made on the affect of extended high temperatures on vines plus carbon/emission reporting, the Federal Government's Carbon Pollution Reduction initiative, carbon farming and sequestration and the wine industry tools for calculating carbon emissions.

Angas Bremer Irrigators Revegetation Association Inc.

September 2008

The Angus Bremer Irrigators Revegetation Association Inc. (ABIRA) has had a relatively quiet year. Much of the in fill work, extra direct seeding and a broadening of species at some sites, has been on hold due to the drought conditions.

Generally all the sites have done extremely well with the plantings along the Wellington and Lake Roads providing a great visual boost to all irrigator plantings on the area.

Other than the work above our planting project is complete. There have again been no new members seeking revegetated area since we commenced and all that needs to be done is the completion of the legal agreements.

The agreement process has been moving very slowly but progress has been made. An independent solicitor has reviewed the draft agreements the main impediment is that the Water Allocation Plan, the legislation, does not at present support the ABIRA model. This has been known since we commenced and should be amended when the legislation is updated at its review date. Angus Bremer Water Management Committee asked for an update on how the agreement process was progressing earlier in the year. At that time the Government departments had not done any more and were going to review the process before proceeding. As of the time of writing this report no feedback has been received.

Once this is done ABIRA members will be pleased to sign the agreements and the process will be complete.

Once again ABIRA would like to mention our supporters –

The Angus Bremer Water Management Committee, for the idea and financing the legal assistance in dealing with the Government bodies, along with The River Murray Catchment board.

The National action plan - Salinity, Goolwa - Wellington LAP, E-tree and Landcare, for help with funding the work.

The landholders who have keenly offered land for the planting - The McAnaney family, Guy Adam's Metala, Dennis Elliot and Colin Wilson, Belvidere.

Community groups - Langhome Creek & District Landcare, Langhome Creek EPS R-6 Campus and Strathalbyn Scout Group.

Jeff Whittaker, our revegetation contractor, who has done a great job getting the plants in and growing. Many thanks Jeff for your guidance.

Simon Chinner – Secretary ABIRA Inc.

Sub-surface Drainage Trial Kayinga Vineyard

FABAL Operations



20th August, 2008

Introduction

Areas of Kayinga Vineyard are threatened by shallow water tables. Sub-surface drainage has been installed to lower the water table in order to sustain vine growth. Funding from the Angas Bremer Water Management Committee (ABWMC) via the Natural Heritage Trust allowed for a trial of varying drain spacing. The aim of the trial is to determine whether closer drain spacing increases their efficiency in dropping the water table. This is the sixth annual report.

Background

? depth of drains ?

There are 2 main sites at Kayinga Vineyard which had sub-surface drainage installed in 2000. Site 1 covers 5.62ha while Site 2 covers 0.75ha. Site 1 had drains installed every 10m. However in a small section drains were installed every 5m. Site 2 had drains installed every 20m. However, again, in a small section drains were installed every 10m.

In order to measure whether narrower drain spacings have an effect on water table height test wells were installed in the middle of each drain spacing.

Season 07-08

Water table depth is directly related to rainfall. The drought conditions during season 07-08 meant the water table within the drainage areas was at a low level and was never at a depth that would have a negative effect on vine growth.

Static water level data collected over FY08 from test wells installed in the middle of the various drain spacings, as described above, have continued to show that:

1. All drains have maintained a water table depth for the 12 month period that is considered adequate for sustainable vine growth.
2. The narrower drain spacings at each site continue to maintain a lower depth to water table than the wider drain spacings.

Conclusions

1. All drain widths have increased the depth to water table.
2. The narrower drain spacings have a greater depth to water table than the wider drain spacings.