



In This Issue...

- Message from Chairman Dick
- Rotary Promotes Youth Leadership
- Conference Tours of Calperum
- The Revegetation Program

Rotary Promotes Youth Leadership

Jim Mason, RC Murray Bridge

The Rotary Club of Murray Bridge recently ran its annual three day youth leadership camp at Calperum Station near Renmark. The station forms part of the Renmark Biosphere Reserve, a declared critical habitat for species conservation managed by the Australian Landscape Trust.

Trip leader, Rotarian Jack Reddin, was happy to report that all went well. "We had twelve students on board including representatives from each of years 8 to 12 from the Murray Bridge High School, so all up it was a good mix. Calperum was ideal for our purposes with a large dormitory for the students and accompanying adults" he said.

The group visited McCormick House, a wetlands information/interpretative centre, "where we were all regaled to and very

Message from Chairman Dick

Well, we have survived and enjoyed another great district conference, with a real focus on environmental issues, and in particular, Calperum, its challenges, its opportunities for Rotarians, and the achievements we have already made. In fact, at times during the weekend I found myself thinking 'this is a great Calperum time, with some district Conference activities as a sideline'.



Our walks and 4WD tours gave more than 150 first time visitors a small taste of the landscape of Calperum, the pastoral and environmental history of the place, and also the current work that is being done by the Australian Landscape Trust, in conjunction with many partners. Our role as an important partner was also very obvious, not just in that we were able to demonstrate some of what we have done, but more importantly the ways in which we worked together on Friday and Saturday, reinforced by Grant's Conference presentation.

Thank you to Don Will for his organisation behind the scenes for all of the tours, and also for the tour leaders, Lou Davy, David Gooley and Elliott Dwyer for the walking groups. Feedback was that all were interesting and informative, perhaps a little overshadowed by their obvious enthusiasm for both Calperum, but also for our participation in the programmes. The 4WD tours were also great. From Grant's short history lesson at the start at the shearing shed, through Casey's Camp and then the pumping programme, and on to Rotten Lake and the Mallee country. Our special thanks to Grant Whiteman and Peter Cale for leading the 4WD tours on both days, and for their information about the various topics and questions en route.

A **VERY** special thank-you to Jan and Bob Arnold for their work, particularly for the afternoon teas on both days. To say we had enough food is to understate the reality. In addition they had a large team of helpers

(Continued P2)

Calperum News

Is issued quarterly and is intended to provide up to date information about Rotary at Calperum. Please let us have the stories and photos of your times at Calperum



Students from Murray Bridge High School at three day Youth Leadership Camp

entertainingly engaged by a man specialising in bats. We travelled to Oak Bore at the top end of Calperum accompanied by John and Hazel Chappell, former school teachers at Murray Bridge High School, who gave us a heads up on the pathway that Calperum is taking. The group was also given a tour of the bush tucker garden being developed on the property. On the way home we visited the Palmer Sculpture Biennial which we thought might not interest the students - but nothing could be further from the truth!" Jack reported.

Rotarian Christine Willersdorf (assisted by her daughter Samara) facilitated the leadership course which was always well attended. On the last night the group was entertained by a concert put on by the students. Rotarian Roxanne Rowland was outstanding with her catering and the supporting adults included Rotarians Lesley Murray, Robin LeGallez and Jim Mason together with Rhonda LeGallez and Vicki Mason.



Chairman's Message from Pr from several clubs, all of whom have helped to make the visitors' afternoons a real pleasure. Thank you to you all.

Past RI Director Stuart Heal, and D9500 DG Doug Layng were two of our visitors, and they told me that our tours left a very good impression on them.

I think that the weekend and the tours were possibly the best introduction to Calperum that I have seen for Rotarians and partners.

Now, where to from here? We plan to follow up our 'tourists' in the next few

weeks, with a view to organising some 'tryout' weekends. Please look out for these if you, or any other of club members, may be interested. For information on bookings, call Elliott. His contact details are elsewhere in the newsletter.

On a very different note, I recently attended a meeting of the Chaffey Learning Exchange at Renmark, and more are planned. One of the aims of this group, of which Calperum is a member, is to promote the use of Calperum for educational programmes. Some support has been given to Kingston-on-Murray Primary School to develop curriculum packages that can be used at Calperum, or other venues along the river. Our meeting was held to start the process of package development for secondary age students. I am hopeful, without being confident yet, that this may give us the ability to start a new 'Health of the River' type programme. Both the primary and secondary school packages will give clubs the opportunity and resources to talk with their local schools and encourage them to take advantage of the educational opportunities available at Calperum.

In conclusion, remember that we have speakers available for your club. Please use us!

Dick

Please contact me, at 0418106673 or dickcuttle@gmail.com for more information or to arrange a guest speaker about Calperum

D9520 Conference Tours of Calperum Hailed as Great Success



Above and L. A group of interested conference delegates watch Don Will demonstrating ground water salinity checks and R. Lou Davy answering some of the many questions



At this year's District 9520 Conference, the advantage was taken to introduce as many Rotarians and partners to Calperum as possible. It was decided that the Calperum Committee would organise and conduct two types of tours - one being a 4WD tag-a-long tour and the other a walking tour of Calperum's many features

commencing from the headquarters buildings. Both of these tours were each held on the Friday and Saturday afternoons.

Lou Davy (RC Onkaparinga) and Elliot Dwyer (RC Eastwood) and David Gooley (RC Mitcham) conducted a total of five five Walkabout Tours to widespread acclaim of the features and history revealed during the two-hour walk.

Rotarians and partners visited Ral Ral Creek, an anabranch of the Murray River, the boat launch and water sampling sites, and went on to view Reny Island where they were delighted to see emus and kangaroos up close and friendly. Nearby were scratchings in the sandy clay made by the local echidna - sadly, the echidna were foraging elsewhere during our visit.

Groundwater monitoring techniques and boreholes - regularly utilised by Rotary teams - were demonstrated by the indefatigable Assistant Governor, Don Will, who explained how important the

quality and depth of groundwater resources is to the well-being of trees and other vegetation. By way of example, guides pointed out the stunning growth of River Red Gums on the floodplains adjacent to the Creek which had germinated in 2011 following the break of the Millennium Drought.

Water management in this semi-arid environment is a critical concern to property managers, the Australian Landscape Trust, and visitors were shown two of the three "regulators" that control the flow of waters from the Murray into Lakes Woolpolool and Merriti. These regulators were installed in 2015 at a cost of around \$1.25 million to improve flows, enable irrigation of lakeside vegetation and reduce salinity in the lakes.



One of the locals

Some of the eagle-eyed tourists spotted

fragments of Aboriginal artifacts, middens (campsites) and ancient shells from riverine bivalves that provided food for the indigenous population. And further on, they saw an old "canoe tree" from which a three-metre canoe had been hewn. And, adding to the 200 year history of Calperum, were remnants of pipes and tanks used to provide river waters to stock and residents of the former sheep station.

Calperum - What a wonderful and Unique Experience

To make a booking:

Contact Elliot Dwyer on 0427 397536 or email him at eadwyer@hotmail.com.au

Use this as a great opportunity for club fellowship and be engaged in interesting and varied environmental projects

The pumping station at Ral Ral Creek was in operation and visitors noted the smart new water treatment plant near the Headquarters, partly funded by Rotary. Finishing the tour, they were shown the old wool-shed - still with most of its shearing equipment, but now used for constructing tree-guards to protect young seedlings - various workshops, and the Calperum Fleet of flat-bottomed boats used for sampling the adjacent lakes and creeks.

At tour completion, the visitors enjoyed tea and coffee and scones with jam and cream, lovingly prepared by Jan Arnold, Karina Cuttle and their mighty team!

The Revegetation Project at Calperum Station

David Gooley (RC Mitcham)

During 2005, Dr. Grant Whiteman joined the Australian Landscape Trust (ALT) staff at Calperum. Dr. Whiteman, an experienced ecologist, wanted to further enhance the philosophy of the ALT at Calperum Station. This was to “promote the conservation and sustainable development of Calperum and Taylorville Stations through community involvement, local capacity-building and innovative approaches to land management.”

Dr. Peter Cale joined the staff in 2008. Also an experienced ecologist, Peter’s vision for Calperum is similar to that of Dr. Whiteman. Using the ALT philosophy, the pair have been working together, leading the staff and volunteers, to achieve the common goal. Dr. Cale’s responsibilities also included the restoration program. His plan covers two areas,

- (1) the Floodplain and
- (2) the Semi Arid Woodland,

each to be managed to assist the natural recovery of components damaged or lost by pastoral activities.

Ultimately the goal is to reconnect the floodplain to the mallee. This is a long term goal when one considers the natural regeneration of the native trees and plants will take decades.

Murray River Floodplain.

The floodplain has altered significantly since European settlement as a result of (1) changing the water flow in the River Murray, (2) increasing soil salinity (3) grazing by introduced animals and (4) construction of various structures on the floodplain. In the 1980’s, installation of regulators on the inlets to Lake Merreti and Lake Woolpolool enabled some return of a more natural cycle of wetting and drying but water did not flood onto the floodplain. The project was started in the period between 1998 and 2004. During this period, a number of suitable species were planted in areas of the floodplain. These included the Kangaroo Island Tea Tree (*Melaleuca balmaturorum*), Saltbush (*Atriplex nummularia*) and Green Box which is a hybrid between Black Box and a mallee (*Eucalyptus gracilis*). The long term drought (2003 – 2009) adversely affected these plantations. The Kangaroo Island Tea Tree plantation was on the edge of Lake Woolpolool and received water from the occasional introductions of water through the regulators, resulting in reasonable survival and growth rates. The Saltbush plantation, on the slightly higher sandy ridges on the floodplain, appeared to have poor germination and growth of plants while the section of the Green Box plantation on the floodplain had minimal surviving trees and slow growth while that part on the sandy ridge at the western edge of the floodplain had better growth.

This is the second of a series of articles, written by David Gooley of the Rotary Club of Mitcham, covering the revegetation program of the Floodplain and the Semi Arid Woodland at Calperum Station. David went to Calperum Station in 2009 on a weekend visit where he was introduced to the diversity of the restoration and conservation project at the station. He was particularly enthused regarding the revegetation part of the project. The success of the planting of the seedlings themselves and the weather (rainfall and temperature) but also flooding, grazing by animals, both native and introduced, and introduced weeds among other things.



**Green Box Trees planted in 2000.
Trees in middle distance and floodplain in foreground
where trees died in flood.**

Dr. Cale's 2 year project was designed as a pilot project for the long term aim, using the earlier work as a guide. The project primary aims were to,

- (1) restore the vegetation around the two lakes, Merreti and Woolpolool , and
- (2) to restore the floodplain vegetation and monitor the recovery to be aware when adverse affects occurred and hence have a better understanding of their causes so that more efficient and cost-effective processes can be adopted.

From these 2 primary aims, 5 specific objectives were targeted. The floods in 2010 and 2011 caused a change in some of the objectives because some parts of the project could not be done and other parts were changed to take advantage of the presence of the flood water.

Three new objectives were centred around,

- (1) The restoration of the vegetation around Lake Woolpolool .
- (2) Management of the grazing pressure and weed growth to help regeneration from seeds deposited by the receding flood,
- (3) Revegetation of the eroded areas on the floodplain

Restoration of the vegetation around Lake Woolpolool.

The flood in 2010/11 resulted in water up to a metre deep covering the floodplain. The existence of the levee bank along Ral Ral creek reduced the rate of return of the flood water back into Ral Ral Creek as the water level fell in the creek. The Kangaroo Island Tea Tree Plantation, planted in approximately 2002, had grown very slowly throughout the 2000s due to lack of inundation. This species can survive relatively long periods of inundation so long as part of their canopy is above water. The slow growth meant these plants had not reached sufficient height to survive the 2010/11 flood, and as a result all but a couple of plants died. The section of the Box tree plantation on the western edge of the floodplain also died because they were in the wrong place. In 2010, prior to the floods, over 3000 plants were planted to the south and east of Lake Woolopolool. The species included, Kangaroo Island Tea Tree, Black Box, (*Eucalyptus largiflorens*), Cooba, (*Acaicia stenophylla*) and a range of shrubs. All of these plants were lost due to the prolonged floods.

During the flood, the approach to the restoration of vegetation around Lake Woololpool changed. As the water receded, species such as Kangaroo Island Tea Tree, Black Box, Cooba (*Acaicia stenophylla*) were planted on the floodplain in the wet soil and in some cases in the shallow water around the south, east and west edges of the lake. Hundreds of suitable seedlings were planted, during a few weeks. Where a guard could be fitted and was available it was fitted but most of the seedlings were planted



Kangaroo Island Tea Tree plantation planted after 2010/2011 flood



KI Trees 2012: Plantation of KI Tea Trees which died during flood

unsupported in any way. One species, Black Box, was planted in dead plants to help shield it from grazing animals, others including the Black Box and the Cooba were planted in the slightly higher areas where the soil was drier and slightly more sandy, while others including the Kangaroo Island Tea Tree and Lignum (*Muehlenbeckia florulenta*) were planted in the shallow water.

In late 2011 a second but smaller flood covered the lower areas of the floodplain around Lake Woolpolool. Most of the recently planted seedlings were under shallow water for a short time, resulting in some failures, but the surviving plants appreciated the water and grew well. Further planting occurred as the water receded after the second flood, but on a much smaller scale due to fewer areas available for planting and shorter suitable time available for planting.

Surveys have shown survival rates of between 35% and 65% in different areas.

Regeneration from seeds.

The plantation of Saltbush, (*Atriplex nummularia*) on some sandy areas of the floodplain done around 2002 came to life. With the drought from 2003 to 2009 this plantation was considered to be a disappointment. Some of this area was covered by approximately 300mm of water during the flood. As the soil dried after the water receded, the seeds from the few surviving Saltbush plants germinated. Now the area is covered with growing plants and the result is now considered a success.

Another event caused by the receding water, was the deposition of seeds from various species carried in the water. As time passed after the water receded, many of the seeds germinated and we can now see

large numbers of River Red Gum (*Eucalyptus camaldulensis*), Black Box and Coobah seedlings and growing. In some areas, many of these will die over the next few years because they are too far from a good source of water, which is required for their continued growth. However, there has been a substantial improvement in the Black Box and Red Gum woodlands around the Calperum floodplain. Another observation has been the germination of seeds from parent trees. These

trees in some cases had been dead for some years and the seeds have been waiting for the right conditions to germinate. Again many of the seedlings will die leaving the strongest with the deepest root systems to survive.

The regrowth of the under-storey is a slightly different story. Some recovery after the two floods occurred, but many of these species are relatively short lived and so the dry years of 2012 and 2013 have resulted in some level of return to previous conditions. Despite control programs for rabbits, goats and pigs that have reduced grazing the ongoing problems with kangaroos will continue to reduce the recovery of the under-storey vegetation.

Similarly the control and removal of introduced weeds is an ongoing task. Twelve species have been identified as requiring action and a removal project conducted in one site has been completed and monitoring will follow. Different species and sites will require different actions. In late 2010, a trial of the removal of Salvation Jane (*Echium plantagineum*) by a rotary cultivator was conducted, followed by hand removal of those plants missed by the cultivator. After the flood, no Salvation Jane was seen in the trial areas. There have been a number of groups of volunteers involved in the weed eradication project. Other weeds to be targeted include Bridal Creeper, (*Asparagus asparagoides*) Boneseed, (*Chrysanthemoides monilifera*) and Boxthorn. I, along with many

The biggest issue for the under-storey is the continued grazing levels due to the overabundance of kangaroos



Removal of Matchhead weeds

other volunteers, have assisted in removing, with a garden hoe, Match Head plant (*Psilocaulon granulicaude*), usually around the base of a tree or bush and Salvation Jane, (*Echium plantagineum*) Repeated visits to these areas will be needed over a number of years because dormant seeds remain in the soil.

Regeneration of the eroded areas of the Floodplain

The third focus of the project was the regeneration of vegetation in areas, called scalds, of the floodplain that has been caused by vegetation removal due to past sheep grazing, which is then eroded by wind over a number of years. Germination of the seeds became difficult because the soil has changed in structure and chemistry. Two methods were trialled in the one scald, one method called “branching” and the other “water ponding”. Branching involves laying tree branches in the hollow to help the deposition of dust and soil by the wind resulting in a layer of soil into which seeds can germinate. Water Ponding involves the construction of banks and aims to collect water and hold it behind the banks of soil. The water will form cracks in the clay into which windblown dust and soil will collect, along with seeds which will germinate. The 2010 floods prevented access to the site, although it was not inundated. The result has been that the branching has produced a good cover of vegetation, while the water ponding site produced less consistent results. The site will continue to be monitored.

Branching involves laying tree branches in the hollow to help the deposition of dust and soil by the wind resulting in a layer of soil into which seeds can germinate

Restoration of the vegetation around Lake Merreti.

A number of “tree health” surveys have been conducted and a data base of over 3,000 trees has been established. The earliest surveys were done prior to the floods. Repeated surveys after flooding showed that 63% of the Black Box and 43% of the Red Gums improved their condition. The Black Box grow further away from the water sources and hence would have suffered more during the drought of 2003 to 2009. Continued monitoring will be carried out to observe the health now that more frequent filling of the lakes and occasional flooding with River Murray water will occur. This more frequent filling and drying out of the lakes has come about by an agreement reached between ALT and the Australian Government, enabling water to be supplied from the River Murray for environment purposes.

References.

Cale. P. 2013. Restoration of the Riverland Ramsar floodplain. Final Report to the Native Vegetation Council of South Australia, Australian Landscape Trust.

Discussions with Cale P. and Davis L.

Calperum Rotary Activities

- Rotary Club Work Parties
- Health of The River Forums
- Camp Calperum Programme
- RYWELL - Rotary Youth Wellbeing
- Youth Exchange Schoolies Week
- International Student's Group
- RYLA - Rotary Youth Leadership Awards
- ROTARACT
- District Management Committee meetings
- PETS - President Elect Training Seminar
- Rotary Training Seminars

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