Editorial

Welcome to the summer edition of Buntine-Marchagee Catchment News. I stepped in as editor while Jodie took a holiday.

Land degradation in the Wheatbelt comes in many forms and levels of severity. While some solutions can be implemented within the farm boundary, others need cooperation across boundaries and land tenures.

In this edition we hear about:

• an integrated surface water management catchment in the BMRC and how it aims to mitigate the effects of waterlogging and salinity. The project combines earthworks, protection of remnant vegetation and revegetation to provide benefits for both agricultural productivity and the natural environment.

• conservation earthworks training course held recently in Coorow. The training provided personnel from industry, government agencies and the community with an understanding of how to apply best management practices to survive water control;

• Kim Brooksbank’s information on the oil mallees and their potential place in our farming systems;

• a visit to the Crago property to find out about a farm forestry project using the swamp sheoak, and

• CALM’s Biodiversity Hotspots Officer, Maria Lee’s, work to rehabilitate a nature reserve in the BMRC.

Hope you had a relaxing summer break.

Fiona Falconer (Acting Editor)

The Recovery Catchment Project’s aspirational goal is ‘for the next 20 years, maintain the 2005 richness, distribution, abundance and condition of a representative sample of biodiversity assets threatened by salinity within the Buntine-Marchagee Catchment’.
Water management is one of the main activities primary producers can use to enhance the productivity of agricultural land and reduce degradation of the natural environment. Water is best managed at a catchment scale to optimise benefits.

With these factors in mind, Sinclair Knight Merz (SKM) were contracted by CALM to produce a surface water management plan (SWMP) for a site within the Buntine-Marchagee Catchment (September 2002). Development of the SWMP involved defining the land and water management issues, researching and reviewing literature and data collection.

The catchment is situated on the Buntine-Marchagee Road, east of the Mamboobie Road intersection within the rejuvenated hydro-geological zone.

The site was chosen because it:

- displays typical surface water management issues encountered across the NAR (for example, sheet and gully erosion on the upper slopes, waterlogging and inundation on the lower slopes, channel erosion and sedimentation);
- is a first and second order stream i.e. it is a manageable size; and
- landholders were willing to work together and integrate other conservation works into the site such as fencing remnant vegetation, revegetating waterways, planting along grade banks and planting and fencing off low lying areas with salt land species.

The catchment project is funded by the National Landcare Community Support Program, Shire of Coorow, landholders, CALM and the Department of Agriculture.

The project includes 16 km of fencing, five km of levees, 25 km of grade banks, eight km of waterways and a gauging station to monitor surface water flows. It also involves an extensive revegetation program of 120,000 seedlings and protection of remnants (additional five km of fencing) that is being funded by CALM.

Implementation of the project begun with the construction of waterways and grade banks in May 2005. Grade bank construction will be spread over 1.5 years to allow sufficient time for waterways to stabilise and to allow works to fit in with normal agricultural practices. All construction works will be completed by December 2006. Revegetation work will be completed during July 2006 to allow sufficient time for seed collection, site preparation and seedling propagation.
In May 2005, the Department of Agriculture ran a Conservation Earthworks Training Course in Coorow at the Buntine-Marchagee Surface Water Management Demonstration Site. The course was delivered to participants from the Department of Agriculture, earthmoving contractors and CALM.

The course started with participants meeting on Irwin Andrew’s property at Beacon, which provided an opportunity to view a site constructed to best management industry standards. The remainder of the week was spent planning, setting-out, implementing and supervising construction of conservation earthworks.

Included in the course were sessions on the design theory of grade banks, waterways and drainage. These sessions were delivered at the Coorow Railway Barracks. Practical sessions on planning and setting out of grade banks and waterways were conducted at the demonstration site on the properties of John and Robyn Stacy, Michael and Julia O’Callaghan, Vern and Jan Muller, and Frank and Jeanie Crago.

The experience for participants was as ‘real’ as it could be. Small teams were formed with the aim of completing a site inspection and gathering information about the properties and issues. At the same time participants had to be aware of the overall plan and aims of the BMRC demonstration site.

Teams presented their plans and designs to the other groups and a combined plan was discussed and agreed on. Each team became responsible for sections of the overall plan and surveyed the earthworks. At the completion of the course, participants watched as earthworks were constructed and they assessed the standard of earthwork construction.

The course was a great success. Participants appreciated the hands-on approach and the opportunity to demonstrate their capabilities in a practical situation. The training was planned and delivered by John Firth. Martyn Keen supervised the construction of earthworks and the Coorow CWA provided plenty of good food.
One of the questions you may ask when deciding whether or not to plant trees is how fast will they grow? The answer to that question is ‘it depends’. Growth rates are affected by a lot of things including rainfall, soil type, weed control, and other establishment variables, but the main thing it will depend on is where you plant them. Oil mallees are a great choice when looking for trees to plant on your farm, because most are native to the Wheatbelt WA area and, therefore, well-adapted to the climate and soil conditions.

Lower down in the landscape towards the valley floor, trees have much more water available to them because they can access the water table. Assuming the water is not too salty, the oil mallees will grow much faster there than higher up in the landscape where they often rely on annual rainfall. Using an example of trees planted near the Buntine-Marchagee Road, the graphs below show heights and volumes per hectare for three landscape positions. The advantage of the extra water is obvious.

Tree height is important if you are growing them for use as stock shelter or windbreaks. If you are interested in harvesting the trees to sell, a timber volume would be more appropriate. Looking at the volume graph you can see that trees of the same age in the same paddock produced more than 10 times more timber when they had more water available to them!

If you are growing trees for shelter, another important point is how long will it take for the trees to be big enough to shelter sheep. If you plant them in the right place they will be big enough in one year, but in a slower growing area it may take two or three years to get to that size.

If you are thinking about putting some oil mallees in next year, it may be tempting to put them in a corner of a paddock – somewhere that hasn’t been that productive. Hopefully the numbers presented here will encourage you to think about why you are planting them, and where would be the best place to put them to fulfil your requirements.

Although oil mallees survive just about anywhere, their growth rate will be heavily dependent on the amount and quality of water available to them in the soil.
A collaborative approach to land degradation between researchers and landholders is being taken on Frank and Jeannie Crago’s property at Marchagee, in the Buntine-Marchagee Recovery Catchment. A Farm Forestry Demonstration Project has been established trialling swamp sheoak (Casuarina obesa), a species with commercial potential for its timber properties. The site chosen is a sandplain seepage area that is susceptible to water and wind erosion. The project is being overseen by Paul le’Gear, Forest Products Commission’s Regional Natural Resource Officer.

Swamp sheoak is a well-known species in southern WA, occurring naturally in the 275 mm to 700 mm per annum rainfall zone. Swamp sheoak is adaptable to most soils and can tolerate highly saline conditions. The property receives an average annual rainfall of 370 mm.

The 12 ha plantation of swamp sheoak was planted in July 2003. For the trial, six provenances of seed were used, including local provenance (swamp sheoak occurs naturally on the property, growing adjacent to the plantation site). Initial planting densities of trees were 1250 stems per ha and 1667 stems per ha. Site preparation included chemical weed control in the first year. The site has been fenced from stock.

The trees have established well. Swamp sheoak is known to be highly palatable to grazing livestock, rabbits and kangaroos. There has only been minimal impact from grazing kangaroos where the site adjoins bush. Form pruning is underway to direct new growth to produce a single, straight and erect stem.

In the early days of European settlement in WA sheoak species had many uses. For example, shingles for roofing, high grade furniture, mantelpieces, staves, casks and vats, ox yokes and fruit cases. Today, swamp sheoak is recognised as having potential as a commercial species because its timber is easily worked and has an appearance that suits the specialty timber market. The aim is to have these trees ready for harvest in 25 years time. In the meantime, the trees are reclaiming a sandplain seep, reducing erosion and providing habitat for native flora and fauna. From the Cragos’ perspective it is a win-win situation.

Reserve rehabilitation in the Buntine-Marchagee Recovery Catchment

The versatile swamp sheoak

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The vegetation within the 122-hectare reserve is shrubland dominated by Tamma thickets (Allocasuarina campestris). In the northwest corner of the reserve is a five hectare ex-gravel pit which was in need of rehabilitation. Gravel pits are common relics from previous land vesting.

Marie Strelein (former BMRC Acting Revegetation Officer) and Maria Lee developed a revegetation plan. 7000 seedlings were planted in winter 2005. The main actions were pit reshaping, deep ripping, seed collecting and planting.

Monitoring and evaluation will continue until 2007 and then the plan will be reviewed.

Rehabilitation of reserves in the Midwest Region is a major component of CALM’s Crown Reserves program.

Reserves are prioritised according to nature conservation values. The main factors being the amount of native vegetation in the surrounding landscape and the presence of threatened flora and fauna in the reserve.

Nature Reserve 21175 is located on the Buntine-Marchagee Road within the Buntine-Marchagee Recovery Catchment. It is one of six nature reserves managed by CALM in the catchment.

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Scumbook!
This book is produced by the Swan River Trust, Department of Environment, Murdoch University and the Water Corporation. It is a user-friendly guide to identify algae, scum and aquatic plants in south-western Australia. This waterproof book also includes detailed descriptions, photos and symbols that indicate if the plant is an important or normal component of wetlands, if it is undesirable, and if it may pose a health risk. Copies retail for $30 and can be purchased through the Murdoch University bookshop (Phone: 9360 2540), with proceeds going towards a second print run. Email co-author Dr Jane Chambers (aquatic management lecturer at Murdoch University) on J.Chambers@murdoch.edu.au for more information or to order a copy.

A Vision Splendid
The inspiring new book ‘A Vision Splendid: Dreams, inspirations and experiences of farm forestry in Australian landscapes’ presents the fascinating first-hand accounts of eight farmers who are ‘having a go’ at something different. This unique compilation glimpses the journeys taken by these remarkable farmers and their families as they strive towards their own evolving visions of enjoyable, profitable, and environmentally sustainable farming and country living. The book costs $22 and is available from Greening Australia on (02) 6281 8585, www.greeningaustralia.org.au or email: general@greeningaustralia.org.au.

Websites
Natural resource information on the web.
The Australian Natural Resources Atlas and Data Library combine to form one of the most comprehensive natural resource information systems available to the government and public.
The systems were developed by the National Land and Water Resources Audit, a program of the Australian Government’s Natural Heritage Trust.

The atlas and data library provide free internet access to Australia-wide information about natural resources, the environment and primary industries.
www.environment.gov.au/atlas

Australian Nuffield Farming Scholarships
This enables young Australian farmers to travel internationally, expand their personal horizons and learn from leading agriculturalists around the world. www.nuffield.com.au

Did you know?
• What is a sandplain seep? Sandplain groundwater causes sandplain seeps. Seeps occur downslope of an area of deep, sandy soils where they are in contact with finer textured soils such as clays and clay loams. The water perches in the sand on top of the clay and moves downslope through the sand, coming out at the base of the sand body.

• There is usually a time lapse of about 15-20 years between clearing and the appearance of saline seeps in valleys. In some higher rainfall areas (>600mm) the time lag is much less, about 5-10 years.

Coming events
• Bunyine-Marchagee Recovery Catchment Steering Committee meeting 30-31 March 2006

Book review
Water bugs, birds, bush and boreholes....

are just some of the topics you can learn more about from publications produced, by the Buntine-Marchagee Natural Diversity Recovery Catchment.

  Department of Conservation and Land Management and Colmar Brunton

- A Baseline of Vegetation Health for the Buntine-Marchagee Recovery Catchment
  By Jeff Richardson, Greg Keighery and Wes Manson

- Groundwater Investigation Buntine-Marchagee Natural Diversity Recovery Catchment
  Prepared by Russell Speed and Marie Strelein February 2004

- Buntine-Marchagee Natural Diversity Recovery Catchment Surface Water Management Plan March 2003
  By Sinclair Knight Merz (SKM)

To order or find out more about the publications available, contact: Buntine-Marchagee Recovery Catchment Officer (RCO)

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