BLUEGUMS, SALT AND RISING DAMP

Some rising water tables on the south coast are being brought under control thanks to bluegum plantations established by CALM and private investors.

Underground water levels are rising in many agricultural areas because shallow-rooted crops consume less water than native vegetation, upsetting the natural balance. This imbalance brings the threat of increased salinity, as the water dissolves salts in the soil and brings them closer to the surface.

In some areas, productive land has already been ruined by salinity and waterlogging. Hydrologists with Agriculture Western Australia estimate that 1.6 million hectares in the south-west land division are affected by salt and that this area may double if remedial action is not taken.

Broad scale tree planting is known to restore the hydrological balance by drawing up ground water in similar quantities to the original vegetation.

The success of such a rehabilitation strategy has been demonstrated in a monitoring project undertaken by Agriculture WA on Crystal Brook, near Mt Barker, since 1990. CALM began planting bluegum trials here five years ago. These trials were followed by commercial plantings in sharefarming contracts with Albany Plantation Forest Company. APFL was set up in 1993 to establish up to 20 000 hectares of bluegum plantations in the Albany region, in a joint venture betwen three of Japan's largest trading companies: New Oji Paper Company, Itochu Corporation and Senshukai Company.

APFL's plantation project, including a program to plant some non-commercial trees in areas too saline for bluegums, earned it the 1995 Ansett Landcare Business Award for Western Australia.

Agriculture WA scientist, Don McFarlane, and technical officer, Arjen Ryder, have measured groundwater levels and soil salinity on the property. Taking seasonal variations into account, the water table under the trees has dropped by 1.5 metres and risen by one metre under pasture since 1990.

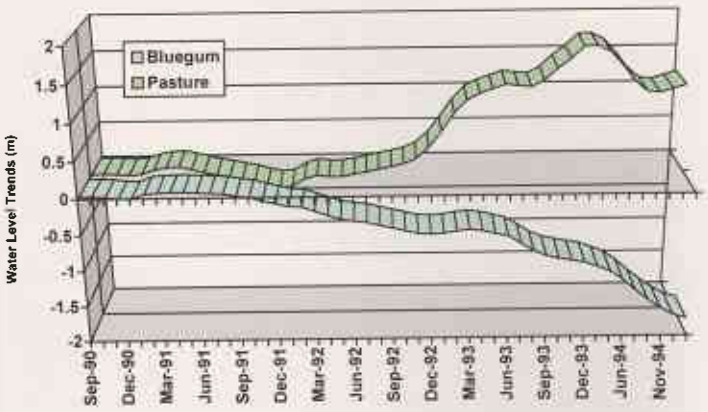
The bluegums began to lower groundwater levels in the area around their roots about 18 months after planting. Deep groundwater continued to rise during this period, but then dropped when the trees were three years old.

One of the pasture bores located 80 metres downslope from a plantation also showed a drop in groundwater levels, indicating that trees can help surrounding areas.

The salinity meters show that the lower groundwater levels around the tree roots have not yet led to salt leaching from the soil.

Dr McFarlane said this was possibly because the rain soaking into the soil was not getting in deep enough to leach the salts. However, the saline seeps in the two creeks have dried out substantially and now contribute little salty water to the main stream.

The project includes monitoring at four other sites in the region, where similar results are being obtained. Readings will be taken until the trees are harvested when they are 10 years old.



Above: *The graph shows ground water trends beneath annual pasture and bluegums at Crystal Brook. Note how the water levels have dropped under bluegums, but continued to rise under pasture.*

Below left and right: *Bluegum plantings on Crystal Brook began in 1990. The landowner believed it would help prevent salt water from contaminating a stream to be used to irrigate grapes. Plantings have been designed to protect and improve stream water quality and to shelter stock.*

Visitors can walk in the treetops along a series of walkways, platforms and stairways at the new Forest Heritage Centre in Dwellingup. (See page 10.)

A major survey of the Carnarvon Basin has recently been completed by staff from CALM, the WA Museum and the University of WA. What did they find? (See page 15.)

LANDSCOPE

VOLUME ELEVEN No. 2 SUMMER ISSUE 1995–96

It was a very good year in the Wildflower State. Find out just how good in our story on page 38.

Australia has its own families of songbirds that are very different from their European namesakes. See 'True Blue Birds' on page 45.

Quokkas were once widespread on WA's mainland, but the most visible populations are now found on just two islands. 'Where Have All the Quokkas Gone?' (See page 49.)

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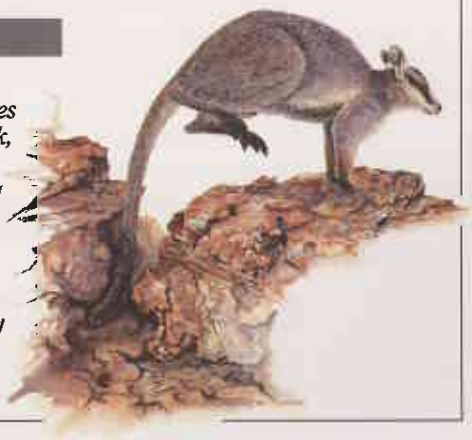
Western black-footed rock-wallabies are on the increase in Yardie Creek, thanks to a CALM fox-baiting program. Their numbers are being monitored by local tour operators Neil and Rhonda McGregor. See our story on page 36.

Illustration by Philippa Nikulinsky



Managing Editor: Ron Kawalilak
Editor: David Gough
Contributing Editors: Ray Bailey, Mandy Clews, Verna Costello, John Hunter, Penny Walsh
Scientific and technical advice: Andrew Burbidge, Ian Abbott, Paul Jones, Tony Start and staff at CALM's Science & Information Division
Design and production: Maria Duthie, Sue Marais
Finished art: Gooitzen van der Meer
Illustrations: Gooitzen van der Meer, Philippa Nikulinsky
Cartography: Promaco Geodraft
Marketing: Estelle de San Miguel ☎ (09) 334 0296 Fax: (09) 334 0489
Subscription enquiries: ☎ (09) 334 0481
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