

# Victorian Landcare

Issue 7 Autumn 1998

**Investing in  
Landcare pays**

**Destroying the secret  
agent of weeds**

**Aquaculture -  
A sea of possibilities**

*March is Landcare Month  
Celebrating people in Landcare*



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Alan Foon - Courtesy Edison Mission Energy.  
One of 90,000 trees planted at Bass celebrating  
90 years of the Scouting Movement.

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'Victorian Landcare' Magazine is a joint publication of the Victorian Farmers' Federation, Alcoa of Australia Limited and the Department of Natural Resources and Environment, with the support of the Victorian Catchment Management Council and Greening Australia Victoria.





# Landcare to benefit from ATCV

*ATCV weekends include many varied activities including fencing, tree planting and weed control.*



The Australian Trust for Conservation Volunteers and Alcoa of Australia have teamed up to broaden the statewide focus of the Alcoa Landcare Program with an innovative weekend program throughout 1998.

The program will see ATCV members assist in landcare projects throughout the state over most weekends of the year, with activities range from one day to three day camp outs.

Ian Smith, ATCV State manager, saw this as a great way of linking urban people with the bush.

"There are numerous urban rural links programmes happening. However Alcoa's

support for the ATCV will enable us to support landcare and



*The ATCV program gives the whole family an opportunity to become involved in the landcare movement.*

Coast Action groups better and give our members a wider choice of activities," he said.

The weekend program will provide support to existing Alcoa Landcare funded projects such as the Woody Yaloak Catchment, Warrambeen Landcare Education Centre, the Portland SeedBank and Serendip Sanctuary, but will also involve other activities being undertaken by Landcare and Coast Action groups.

Alcoa Landcare Coordinator in Victoria, Paul Crock, said the program will give Alcoa employees in Geelong, Anglesea and Portland the opportunity to become involved in landcare in a practical sense.

"As Alcoa is a corporate member of the ATCV, Alcoa employees and staff are paid up ATCV members, and as such are free to join in activities in and around their communities or as far afield as they would like to go." He said

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# / - Alcoa Partnership

Ian Smith agreed. "We are happy to invite all employees of Alcoa and other Corporate members' employees and staff to participate in the weekend program. It provides a smorgasboard of activities in conservation and landcare including seed collecting, tree planting, weed control, building tracks in national parks - the list goes on."

"Activities have been scheduled for nearly every weekend to Christmas. The aim is to provide enough choice to involve everyone," Ian said.

If you are interested in attending any of the weekend projects or joining the Australian Trust For Conservation Volunteers, contact Ian Smith in Melbourne on (03) 9686 5554.

*Seed collecting along the coast helps stock Victoria's seedbanks.*



## Letters to the Editor

Dear Editors

VIVA Landcare

*I have enjoyed your Landcare Magazine right through from the early days when Salt Force News was such a success under the wise guidance of Carri Tiffany. Certainly Landcare today is a winner!*

*In the Summer 1997 issue, one of the articles that really made me sit up and take notice was on page 8 about a group owned loan fund. You can bet your boots that it is the Broken Catchment Group which started this vital initiative.*

*The area south-west of Benalla boasts some of the wonderful people who started the landcare movement in Victoria, specifically Councillor Pam Robinson of Violet Town and Angus Howell of Baddaginnie. So this region remains true to the centre of innovation.*

*Most people have heard of Dr Yunus of Bangladesh, who has made a wonderful success of the Grameen Bank by asking small groups of women to take responsibility for a loan, made without any security or guaranteed backing whatsoever. Of course here the amounts of money would be very much greater numerically than for Bangladeshi village industries, but in relative social significance, how different?*

*I wonder.*

*However the golden principle of group responsibility carries through.*

*I am hoping to offer an article on a large saline land reclamation project for publication in a future issue of the Victorian Landcare if found suitable. At present this project is not far enough advanced to warrant a useful report.*

*Yours sincerely,  
Alan Coad*

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## FROM THE EDITORS

### Landcare Month

March is Landcare Month. Other causes get one day a year to strut their stuff but we get a whole month. The theme for Landcare Month is 'People in Landcare'.

Landcare Australia chose the theme 'People in Landcare' to highlight the hard work and inspiration of individuals and groups involved in landcare. Certainly on our travels around the State, attending field days and interviewing farmers we are continually astounded at how people, often acting alone, can change the face of their local landscapes.

During this month, the Museum of Victoria will launch its major travelling exhibition on sustainability, Future Harvest, at the Gippsland Landcare Festival. Landfest, a huge success last year, will once again bring the crowds to Creswick. A mining and landcare seminar will be held and the winners of the 1997 National Landcare Awards will be announced.

If you would like more details on Landcare Month activities call Landcare Australia's free call number, 1800 151 105.

### Branching out

As well as the usual 'group stories' in this issue of Victorian Landcare we have a feature on Landcare in the city and a profile of several people involved in the aquaculture industry. If you have a particular industry, issue or technique you would like to see raised please drop us a line.

### Spread the word

Victorian Landcare is one of a few, free, quality magazines around, thanks to the support of our sponsors and advertisers. We currently distribute to 35,000 readers, mainly in rural Victoria. If you are not on the mailing list please send your details to the address listed on page three. You may also like to subscribe for a friend or neighbour.

The Editors

Mal Brown, Paul Crock, Sally Gibson



*The group planted nearly half of the 30,000 trees during 1997.*

# Mia Mia Project

## helps Lake Murdeduke

The Leigh Landcare Group, based on the basalt plains 40km west of Geelong, have been successful in obtaining funds from the Natural Heritage Trust and the Corangamite Salinity Fund to revegetate 30km of Mia Mia Creek frontage.

The Mia Mia Creek is a highly salt-affected drainage line and, with the constant grazing pressure over the years, its banks have become eroded and unstable. The erosion and salting in the creek is causing water quality problems in the internationally significant Ramsar wetlands of Lake Murdeduke.

The Mia Mia Project started in May 1997 with 19 adjoining landholders agreeing to fence 30km of creek frontage to protect remnant vegetation and plant a greenlife corridor from Lake Murdeduke to the source of the Mia Mia with over 30,000 trees. So far, nearly half of these are in the ground with the remainder being planted by this coming spring.

Bronte Payne, Leigh Landcare Group President, welcomed the NHT and Corangamite Salinity Fund support.

"Our group has had a real boost. It will go a long way towards helping us in our efforts to protect our local waterways and to enhance our local environment," he said.

Paul Whinney, DNRE's Geelong based Salinity Officer, reinforced Bronte's comments, and highlighted the strategic nature of the task.

"The project compliments other group efforts, especially nearby salinity control demonstrations where increased sowings of perennial pastures are reducing runoff and groundwater intrusion while increasing the productivity of the district."

"Protecting creek lines with native tree cover not only provides wildlife with corridors, but has immense benefits for grazing livestock by providing valuable farm shelter on the harsh western district plains," Paul said.

DNRE Landcare Officer, Graeme Anderson saw the NHT and salinity funding as a wise investment in the region's natural environment.

"The cost of one blue-green algal outbreak in Lake Murdeduke could cost the community hundreds of thousands of dollars. The funding received by the group provides critical financial incentives for the landholders to take on such a large scale landcare project to counter this risk."

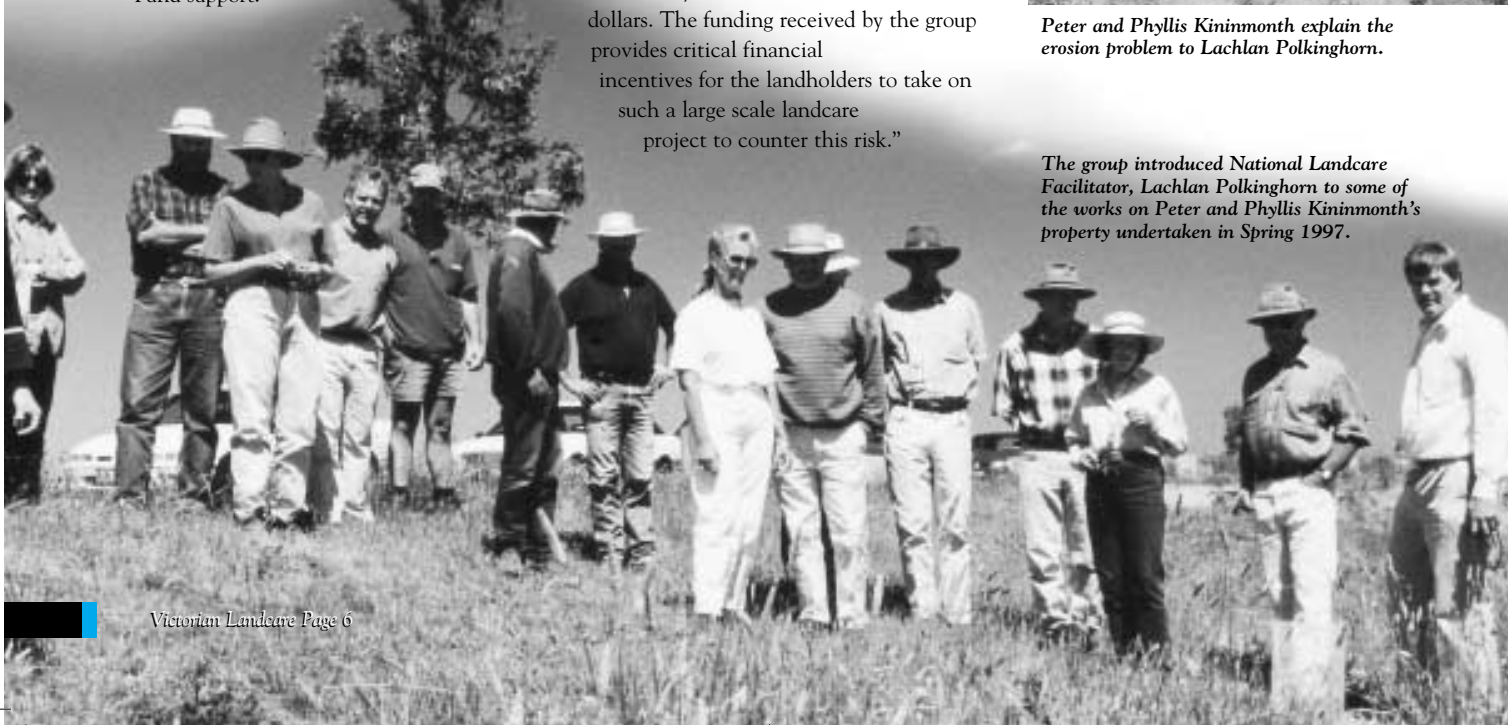
"Money is pretty tight at the moment, but the way in which the farming community has banded together to support the project is a credit to their vision and commitment to the environment," Graeme said.

For more information about the Mia Mia Project contact Bronte Payne, (03) 5265 1370, Paul Whinney or Graeme Anderson at the DNRE Geelong office on (03) 5226 4667.



*Peter and Phyllis Kininmonth explain the erosion problem to Lachlan Polkinghorn.*

*The group introduced National Landcare Facilitator, Lachlan Polkinghorn to some of the works on Peter and Phyllis Kininmonth's property undertaken in Spring 1997.*





# Native grasses - exploding the myths

Landholders may soon have access to several native grasses suitable for sowing into pastures in upland and hilly landscapes.

Over the last four years, a team of researchers from Victoria and New South Wales has evaluated 800 native grasses representing 30 species in the LIGULE project, a collaborative project under the National Dryland Salinity Program and funded by Victorian and NSW salinity programs and the Meat Research Corporation.

LIGULE means low input grasses useful in limiting environments. It's an apt name for the native grasses being evaluated at sites across Victoria and southern NSW with several showing potential as pasture cultivars requiring low cost management.

According to Bill Johnston, team leader for the project, of the 800 native grasses evaluated in the first phase, 20 have been evaluated in the second phase for their potential as commercial cultivars.

"We're looking for grasses that will survive on harsh, hilly landscapes where soils are often shallow, stony, acid and not very fertile.

**By Jo Curkpatrick**

We want low input, persistent native grasses which make better use of existing water and nutrients, saving the landholder costs in lime and fertilisers. We also want native grasses that dry out the soil profile before the winter, reducing groundwater recharge," Bill Johnston said.

At a recent field day in the Axe Creek Catchment near Bendigo, landholders were shown some of the promising grasses and given details on forage and seed production, persistence and plant water use.

"The LIGULE project is the most comprehensive evaluation of native grasses for agriculture in Australia," said Craig Clifton from the Centre for Land Protection Research at Bendigo.

"Many of these native grasses have never been looked at before," he said.

"The aim isn't to find pastures to replace lucerne or phalaris. We are looking for native grasses that will grow and survive in difficult environments. For example we're not looking for high palatability, because highly palatable grasses are likely to be eaten out in these difficult landscapes."

The project is looking for native grasses showing persistence, good quality forage, an ability to produce seed and importantly to dry the soil profile. Tall Windmill Grass, Common Wheat Grass, Wallaby Grass, and Weeping Grass all show potential and will undergo further evaluation.



*Bill Johnston examines Tall Windmill Grass, a favorite warm season grass that seems to have potential.*

Many of the native grasses already in farm paddocks may well turn out to be a valuable addition to pastures in difficult landscapes.

A new project supported by the Murray Darling Basin Commission is underway to expand some of the research completed in the LIGULE project.

The aim of the project is to develop practical and sustainable grazing management guidelines for grazed hill pastures in the southern part of the Murray-Darling Basin.



*Meredith Mitchell and Craig Clifton from the Department of Natural Resources and Environment show landholders in the Axe Creek Catchment some of the more promising native grasses.*

*Bill Johnston outlines the potential of native grasses for hillside landscapes to landholders in the Axe Creek Catchment.*



# Coordinators Facilitated at Rowsley

Victoria's landcare coordinators and facilitators came together at Rowsley, near Bachus Marsh, late last year to meet, discuss their concerns and set the direction for their future.

The "Open Space" get together was organised by the Victorian Farmers' Federation in response to a call from the coordinators and facilitators for support and assistance in developing clearer communications and direction.

Facilitated by former state landcare coordinator, Viv McWaters, the forum process of "Open Space" involved starting with no set agenda, empowering the landcare professionals with the challenge of identifying their needs, wants and concerns, and discussing ways and means they will work together in the future to fulfill the outcomes.

Within thirty minutes, 27 workshops had been identified, ranging from sharing technical expertise to issue based workshops dealing with coordinator and facilitator networks, professional development needs and wants and "The NHT animal" (eloquently described as either or all of: a) a Boa

Constrictor that squeezes the life out of you;

b) a Chameleon that changes its appearance every year; and, c) a Panther: you can't see it but you know it's there!).

Draft proceedings of the forum were compiled immediately following each workshop, allowing people to read and contribute to the workshops they had missed. The final proceedings were photocopied and distributed by the VFF within two weeks of the get together.

The main outcome of the forum was to initiate a network of coordinators and facilitators that would meet regularly to give each other support and to develop the other recommendations from the forum.

If you are interested in getting more information about the forum, copies of the proceedings are still available from the VFF, contact Paul Crock or Jon Pitt on (03) 9207 5555.

*The Rowsley Forum brought together Victoria's landcare professionals and has helped establish on-going relationships that will strengthen the landcare movement throughout the state.*



*National Landcare Facilitator, Lachlan Polkinghorn, was on hand to hear first-hand what the coordinators and facilitators thought of the NHT animal.*

*L-R, Tracey Delbridge, Yarriambiack, Jane Rapkins, Glenthompson, and Kate Greer, Heytsbury, catch a breath after vigorously helping set the agenda for the coordinators and facilitators' forum.*





# Protecting the Buxton Gum in the Yarra Valley

By Stephen Fletcher

The Yarra Valley Tree Group received funding from the One Billion Trees Program for part of the major Yarra Flats Revegetation Project which included projects at Green Point, Tarrawarra Abbey and Chateau Yering.

In early February 1997, the group identified a site at Yering on a 210 hectare property owned and managed by Valerie and Cathy Withers as one of the only two sites where the Buxton or Victorian Silver Gum (*Eucalyptus crenulata*) is known to be found naturally.

Anecdotal evidence suggests that there may be other rare remnant populations of these trees along the Great Dividing Range in Victoria. As these are yet to be confirmed, the only other known community is at Buxton in the Acheron Valley.

The Buxton Gum is a small to medium, fast growing, tree which grows on swampy sites as an understorey to *Eucalyptus ovata*. While it is very common in cultivation as an ornamental tree or as a tree for supplying cut foliage for the florist trade, remnant communities are extremely rare and isolated.

The community at Yering contains five very old trees which are now in decline, and a number of naturally occurring hybrids of *Eucalyptus crenulata* and *Eucalyptus ovata*.

The area fenced off around these trees to exclude cattle grazing also includes a lagoon and a remnant Swamp Paperbark (*Melaleuca ericifolia*) community. Seed from here was collected and seedlings propagated for revegetating the area.

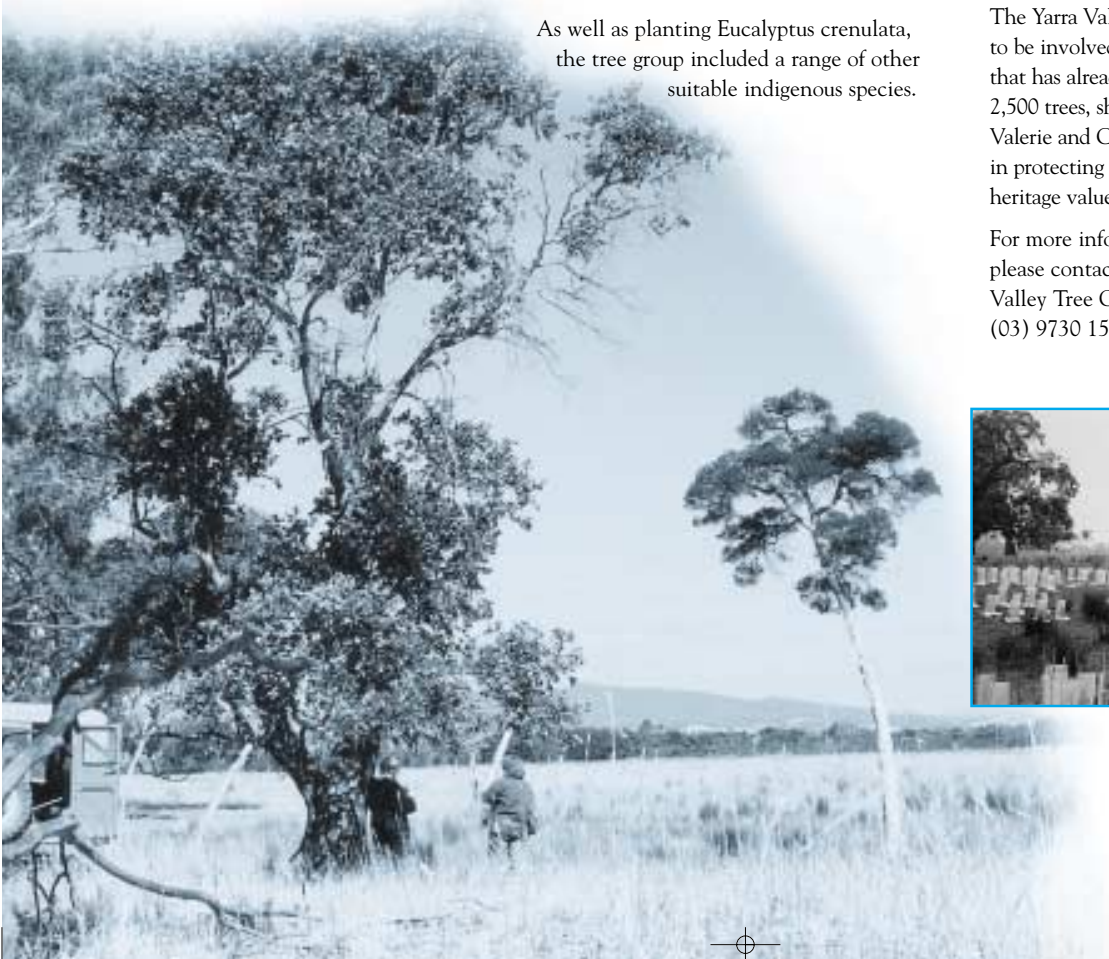
As well as planting *Eucalyptus crenulata*, the tree group included a range of other suitable indigenous species.

While cattle have grazed the property since the 1850's, the rich river flats have also been a home for much wildlife including Eastern Grey Kangaroos and Platypus which occasionally visit, and resident Wombats and Sugar Gliders. The bird life is abundant ranging from Pelicans, Yellow Tailed Black and Sulphur crested Cockatoos, to numerous species of waterbirds, Wedge-tailed and White-bellied Sea Eagles.

The Withers have successfully negotiated with the Victorian Trust for Nature to have a covenant placed on this site to provide legal protection for this valuable ecosystem. They have also been included in the Land for Wildlife scheme and are keen participants in Melbourne Water's Healthy Waterways Program.

The Yarra Valley Tree Group is very pleased to be involved in such an ongoing project that has already seen the planting of over 2,500 trees, shrubs and grasses and applauds Valerie and Cathy Withers for their efforts in protecting and enhancing the natural heritage values on their property.

For more information on this project please contact Stephen Fletcher, Yarra Valley Tree Group Publicity Officer on (03) 9730 1517.



# 1997 Victorian Landcare Awards

## Winner

## Wyuna Landcare Group

The Wyuna Landcare Group is a good example of an 'outward looking and forward thinking' group. Wyuna has involved government departments, other landcare groups, boy scouts, LEAP groups, school students and Dhurringile Prison work parties in its varied calendar of activities.

The Wyuna Group is located between Kyabram and Wyuna in a dairy farming district of the Shepparton Irrigation Region. They have 74 current members.

Earle Phillips, the group's publicity officer, said good communication is the reason the group has been so successful. "With poor community awareness you won't achieve anything. We operate on a system of small sub-committees, this helps to concentrate our efforts and skills. We use keen and active members to speak to those who are on the outskirts of the group," he said.

The group was formed in 1993 in response to concerns about rising watertables, salinity and the lack of trees in the area. They understood the need to do something visual and started with a massive tree planting exercise. Over 50,000 trees were planted to assist with rising watertables but also to attract the interest of the community.

Watertable Watch has also provided them with good visual impact on the state of local watertables.



*Sharing knowledge: The Wyuna Landcare Group's Watertable Watch training day.*

A grid of 90 Watertable Watch Test Wells has been installed across the group's 15,076 hectare area. The wells are regularly monitored and the information gathered has assisted the group in completing further EM 38 and EM 34 Salinity Surveys of their area. Sixteen farmers from the group are now participating in an exploratory drilling program.

Salinity in the area is severe. The group is at the cutting edge of research on the utilization of saline soils. Members are interested in practical solutions on a 'working farm' that are realistic and affordable for the average farmer.

Advice from both government and the private sector is being used to come up with farmer friendly solutions.

*Earle Phillips accepts the award from the Minister for Conservation and Land Management, Marie Tehan.*

To maintain financial viability the group covers its running costs through sponsorship from local businesses.

The group ran a successful 'twilight tour' of its projects for business and professional people as a way of raising their awareness. Campaspe Shire also helps out. The group sends an itemised and costed application to the Shire each year before the Shire budget is set.

Earle's advice to other groups is to make communication a priority.

Wyuna produces a quarterly newsletter which is mail-dropped to all members. The newsletter includes the current month's watertable map to increase community awareness and interest in the group's work. They also produce a flier just before each meeting and they invite a guest speaker. The average attendance at a meeting is a healthy 25. Instead of a tedious AGM they hold a free community BBQ.

Earle Phillips says he sees a strong future for the group. The drainage sub-committee is working on a plan for a large community surface drain and he is excited at the prospect of seeing it completed.





# The Landcare Community Group Award

## Finalists

## The Upper Murray Catchment Farm Tree Group

The Upper Murray Catchment Farm Tree Group (UMCFTG) may be small, (14 members) but it has a long and impressive history. The group formed in 1985 to increase the awareness of tree decline in the Upper Murray. They have worked hard to identify areas suffering from tree decline and land degradation and to promote the establishment and retention of native vegetation both on public and private land.

The group's achievements are outstanding. Roadside and community plantings have changed the face of the local landscape. To raise funds the group grows trees each year and sells them to the Shire of Upper Murray. The money raised, along with grant funds, is used to grow more trees which are donated to landcare groups, schools and community organisations.

Lyn Coulston has been one of the group's most active members. She puts their success down to persistence.

"We are a small group in a fairly conservative area, but gradually we have been able to demonstrate the benefits of our work to the wider community."

The group has created a niche in providing the best local information on trees and vegetation. They have published a survey of tree decline and land degradation in the area, monitored the effect of dieback and insect attacks on local Red Gums and completed various vegetation, weed control, fertilizer, pasture and agroforestry trials. Along with amassing technical knowledge they have produced pamphlets, display boards and a 'Native Plant Guide for the Corryong Area'.

Lyn Coulston says the group has a unique role in the district, by acting as an 'umbrella' for other groups and various joint projects. Often playing the role of

co-ordinator, the group has been responsible for the formation of five local landcare groups. They are currently mid-way through a three year project with the Tintaldra, Cudgewa and Koetong Landcare Groups to develop a local Waterwatch project and catchment plans for Cudgewa and Koetong Creeks.

The group are great 'promoters', particularly of agroforestry and whole farm planning. They are also working on preserving the past through their management of Avondale Garden. A historic garden south of Shelley, the group carries out the maintenance and has replanted many of the original species.

"I am very positive about the future of our group," Lyn said. "We have focused our future efforts on water quality, protecting catchments and promoting plantations. But of course we'll never stop growing and planting trees."

## Moolort Landcare Group

The Moolort Landcare Group has developed a simple but effective approach to land management. They are aiming to establish deep-rooted plant species on high recharge areas, to protect streams and wetlands and to farm well, (practise sustainable agriculture) in between.

The group formed in 1989 and has 45 members drawn from a 400 square km area east of Maryborough. The main farming enterprise in the area is cropping, sheep and cattle.

The group's work has seen dramatic changes in the landscape of the windswept Moolort Plains. Shelterbelts of trees and shrubs are appearing, placed strategically on high recharge areas and along drainage lines. Fences are keeping stock out of wetlands, enhancing vegetation and improving habitat for waterbirds.

Jeff Mikkelsen, the group's secretary, says while they have achieved a great deal they have a huge area to cover and there is still much to be done. He attributes the group's success to its early links with Project Branchout.



*Moolort Landcare Group members at a soils field day.*

"We are fortunate that the visionary and forward thinking ideas from the early Project Branchout days have come across and helped us with the Landcare group," he said.

The group has made research and data collection one of its priorities and has been the instigator of new techniques.

Aerial seeding is being used to establish better pastures on difficult rocky ground. Using guidelines on revegetation developed by David Holmgren, indigenous species are being planted as multi-purpose east-west shelterbelts against the prevailing winds or along drainage lines to

intercept water and to provide cover on bare rocky volcanic cones and scarps.

The group has initiated an environmental assessment of the Moolort Plains Wetlands which includes around 50 swamps. The more significant swamps are being signposted for the public's interest.

Jeff Mikkelsen said the Moolort Group backs its activities with a strong committee structure and a rotating executive. The group's administration, technical library, seedbank, newsletter and water monitoring projects are all carried out by members.

# Small Landholders blast noxious weeds with GABBA

The Upper Bolinda Creek Land Management Group is a small group based near Romsey, 50km north of Melbourne.

The group formed in 1992 with the aim of making two tributaries in the region more attractive to wildlife by excluding live-stock from the creeks, establishing local species of riparian vegetation, and linking the creeks to other areas of vegetation by forming corridors.

The group has since initiated an innovative noxious weed spraying program involving its smaller landholders.

"One of the main land management issues facing the group is noxious weeds control; mainly gorse and blackberry," said project coordinator for the group, Julie Francis.

"There has not been much action on weeds in the area. Most of the farms are less than 100 hectares, landholders lack a commercial incentive to control weeds, face a lack of knowledge of control measures - in particular, knowing which herbicides to use - and have a reluctance to buy and use expensive chemicals which are only available in large quantities. They also have no access to adequate equipment," Julie said.

"Many of the smaller landowners fear of off-target damage when using herbicides and the recent requirement for a chemical users permit for some herbicides has had quite a negative impact," she said.

These real or perceived issues associated with noxious weed control, motivated the group to short-circuit the problems by engaging a contractor to do the weed control works.

The group and the Shire of Macedon Ranges teamed up to implement the Gorse And BlackBerry Action (GABBA) program. The shire nominated an accredited weed spraying contractor who set aside a week to undertake the program, and funded the printing and distribution of the letters to 120 landholders in the Landcare group area notifying them of the program.

Landholders rang and booked a time during the specified week if they had weeds they wanted sprayed. There was no minimum charge, giving the landholders the option of engaging the contractor for as little as 20 minutes, as work was being undertaken for their neighbours too.

The landowners' concerns were allayed by having a licensed operator spray their weeds, saving the need to hire equipment, buy chemicals or know the right conditions to spray in.



*Terry Davon, Shire of Macedon Ranges, Tim Manifold, licenced weed sprayer and Julie Francis, GABBA coordinator and member Upper Bolinda Creek Land Management Group*

Twelve per cent of the targeted landholders participated in the program with over 45 hours of weed spraying being completed. Feedback from both the contractor and participating landholders was positive.

Julie says the main advantage of the program is that it is a self-funding project with landholders paying for their own weed control.

"The scheme removed complications and hassle and made weed control a simple procedure of a phone call and a payment which suited any budget - we had a range from \$25 to \$1500," she said.

Julie believes the scheme has merit where small landholders don't have the equipment, expertise or time to control weeds. If you are interested in finding out more contact Julie on (03) 9379 2607.

*The roadside gorse problem. The landholder on the left participated in the GABBA program.*



# Groups form shareholder purchasing co-operative

By Catherine Clancey

Members from the well established Swifts Creek - Ensay Landcare Group co-operatively purchased a direct drilling machine to address their issues of soil loss, pasture weeds and farm viability across their catchment in the high country of East Gippsland.

The conservation seeder project has given the community the tools to establish perennial pastures on steep hills under harsh conditions and therefore improve overall farm viability and soil protection.

The group of farmers that form the Swifts Creek - Ensay Landcare Group got together initially to address the issue of the spread of weeds in their pastures, especially Scotch Thistle.

After successful bulk chemical purchases illustrated to the group what benefits can be gained by banding together, the need to have an integrated approach to weed control and pasture management was identified, raising the idea of purchasing a co-operatively owned machine.

Many nights of discussions raised issues about problems with conventional seeders highlighting the requirements for a group owned machine. Some of these were hard wearing, easy to clean, good seed to soil contact, fit through gates etcetera. The list formed a prototype for the heavy duty, triple disc, direct drill modified for harsh conditions and hilly terrain.

The group decided to apply for National Landcare Program funding to cover part of the cost of the machine, but first had to raise its contribution. The test was on for them to put their money where their mouth was. A shareholder model was adopted and \$10,000 raised in one night. And so their co-operative developed.

Guidelines for how to manage the machine, hire costs and maintenance expenses were ironed out, and a competent member of the group was delegated responsibility to maintain and manage bookings. The accountability aspects for the machine were co-ordinated.

*Background: The contrast between one of the initial trial sites and the hill country demonstrates the challenges being faced by the group.*

*Left: Steve O'Brien (L) and Chips Boucher (R) inspect some of the pasture establishment work done with the new machine.*

*Right: Chips explains the tripple disc system to members of the group*

Despite the continuing dry spell since the machine arrived, the area sown down has already exceeded the target set by the group. The machine has had a new set of bearings, is greased and ready to go in anticipation of welcome rain.

Although there are still challenges to establishing perennial pastures in the high country, such as unreliable rainfall,

steep hills, high intensity summer thunderstorms and lack of topsoil, the Swifts Creek - Ensay Landcare Group has the tools to begin to turn around the land degradation on their hills.

For more information about the seeder or the Swifts Creek - Ensay Landcare Group pasture projects, contact Catherine Clancey DNRE Swifts Creek on (03) 5159 4344.



# Poowong East property

Located near Poowong in South Gippsland, Peter and Wilma Mackay moved to "Arnum" in 1974.

Faced with pastures in average condition, inadequate subdivisional fences, eroded gullies and sparse remnant vegetation, 25 years of hard work has seen a dramatic improvement in the property and rewarded them with the 1997 Port Phillip Hanslow Award for farm management best practice.

## Revegetation

In 1975, Peter and Wilma set about turning around the property. Wilma highlighted the approach to their ambitious revegetation strategy. "Gullies were planted to control erosion, areas that were too steep for stock were revegetated to minimise sheet erosion and make the farm safer. But the trees were also seen as the best way to shade and shelter stock and hence play a part increasing productivity," she said.

"There are now over 15,000 trees on the property, 75% of which we planted by hand - the others regenerated from fenced off remnants. The focus of ongoing plantings is now filling in existing plantations with understorey species where required and planting more for shade and shelter."

With the revegetation plan underway, Peter and Wilma worked hard to maximise productivity in an environmentally sensitive manner. "In 1977 we milked 88 cows, now our herd numbers 200 dairy cows and 50 beef cattle. We milk off the the best 85 ha and run the heifers and beef cattle on the steeper parts of the property," Peter said.

"Our management decisions are predicated on optimising herd size to minimise pasture damage and erosion problems rather than trying to stock at the highest possible rate."

"We join our cows with superior genetics, to calve 40% down in early autumn, and the remaining 60% during winter," he said.

## Production

The earliest production records Wilma could easily unearth for the dairy enterprise were the 1977 figures when they milked only 88 cows.

"In 1977 our production figures per cow were 3,121 litres and 129kg butter fat per cow (no protein figures were available). Since then we have increased our herd number to 200, and production figures per cow have lifted to 7,451 litres, 291 kg butterfat and 246 kg protein."

During the 1995/6 wet season, the Mackay's cows averaged 7,794 litres, 293kg butterfat and 246kg protein, compared to district average figures of 4,600 litres, 180kg butterfat and 148kg protein per cow.

## Loafing Barn

"We attribute the success over the last wet spell (and the following dry season) to our loafing barn. It was our biggest leap in faith. Our figures tell us the punt was a right one," Peter grinned.

Built in 1994, the 61m x 24m barn is designed to feed and house 200 cows. They are fed all year on a ration of brewer's grain and triticale, and silage as needed. (Peter and Wilma conserve 400-500 T of wilted silage annually).

Peter outlined the rationale behind the barn's construction.

"Pugging of pastures can be minimised in the wetter months, minimising pasture damage from compaction of the clay soils (which results in reduced pasture growth and increased runoff in summer), there is much better fodder utilisation as feed is eaten and not trampled into the mud by the cows.





# Property highlights dairy best practice



There is also the safety benefit of not having to feed out with machinery on steep wet hills," he said.

"The barn has revolutionised pasture management on the property by giving us the option of taking the pressure off paddocks at crucial times of the year," Wilma said.

"During winter we can overnight the cows in the barn and hence greatly reducing pasture damage allowing a quicker recovery in the spring."

## **Grazing Management**

Peter highlighted the contribution grazing management and pasture renovation had in productivity at "Arnum".

"The cows run on an average rotation over the year of 25 days, with a shorter rotation in spring of 12 days, and a longer rotation of 35 days in winter."

"Turnips still play an important role in our summer grazing program, giving the cows the fresh feed they need to maintain production while preparing the ground for sowing improved perennials in autumn." The Mackay's aim to establish at least 12 hectares of new pasture annually, while boosting existing pastures by direct drilling quick growing annual ryes.

## **Nutrient Management**

Fertiliser management to match the improved pastures has also been a key to increasing the productivity of the Mackay's property. In a split application, the Mackay's spread 400kg/ha Super Potash 3 and 1 (or 2 and 1 in late summer), fowl manure in mid autumn, and DAP or similar nitrogen fertiliser mid-winter.

Both Peter and Wilma are conscious of water quality issues and manage their nutrients accordingly. Dairy effluent is collected in a concrete sump and pumped on to pastures via a sprinkler. The hose is moved regularly to avoid pasture waterlogging and nutrients flowing into the creek.

## **Water and Wildlife**

"We have a large dam on the property which serves three purposes: It neutralised a serious gully erosion problem, it provides a large water storage for the dairy, and now fully revegetated, provides an important wildlife haven for birds and animals in the area," Peter said. "Any water quality problems in the dam would directly impact on the dairy, and on water siphoned to the troughs around the property."

## **Community**

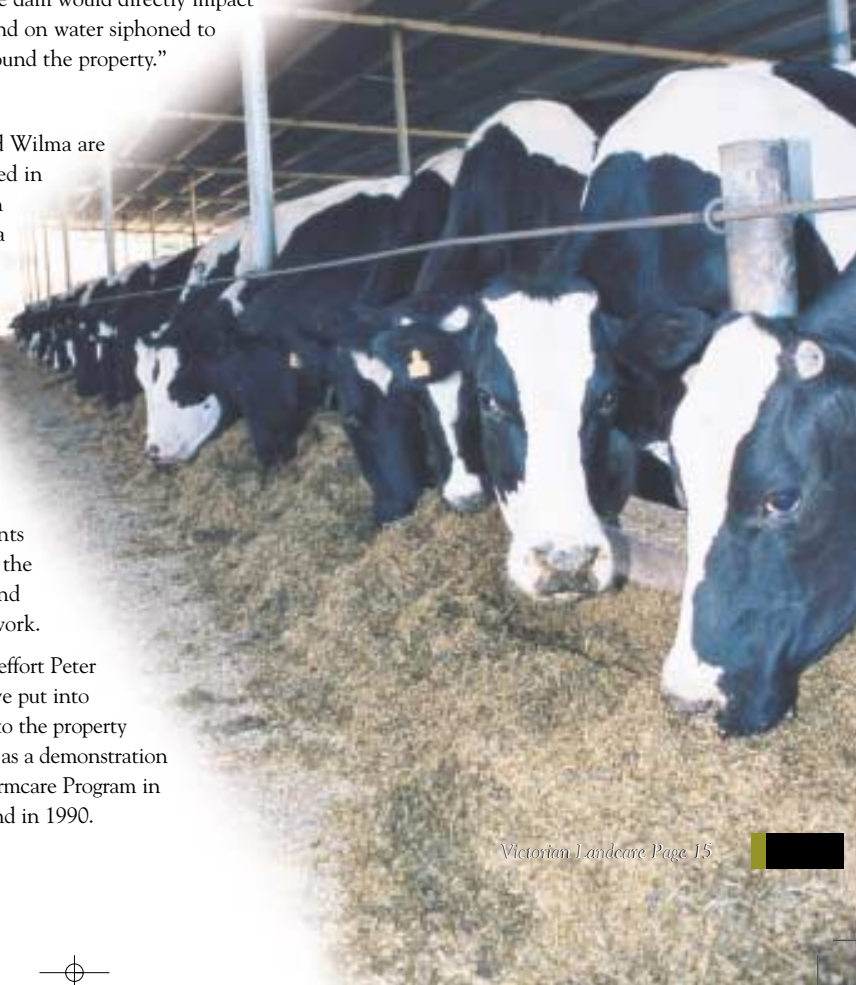
Both Peter and Wilma are heavily involved in Landcare, both locally and at a regional level. Peter is the president of the local Triholm Landcare Group and Wilma represents their group on the South Gippsland Landcare Network.

The successful effort Peter and Wilma have put into "Arnum" lead to the property being included as a demonstration farm for the Farmcare Program in South Gippsland in 1990.

David Ziebell, South Gippsland Landcare Facilitator, nominated the Mackays for the 1997 Hanslow Farm Management award. "While the farm speaks for itself, the Mackays are enthusiastic promoters of the whole catchment effects of sustainable farming and have been integral to the success of Landcare and the Farmcare program throughout the region," David said.

"Their demonstrated ability to link nature conservation with increased productivity makes them worthy regional winners of this award".

For more information about "Arnum" or the Mackays contact David Ziebell on (03) 5662 9212.



# AQUACULTURE - a sea change

Australia's aquaculture industry is worth around \$515 million per annum. Victoria accounts for around \$18 million of that total, a modest share compared to the other States.

Aquaculture in Victoria is highly diverse. Most of the activity is in specialised cold water trout farms. Smaller scale operations grow warm water fish and yabbies as a supplement to agriculture, produce tropical fish for the ornamental market or work in marine environments, mainly growing mussels.

According to Victoria's most recent Aquaculture Strategy the industry is on the verge of developing into a major growth area and investment opportunity. The Strategy aims for Victoria to triple its production by the year 2001.

Aquaculture offers many benefits to the landcare community. It can provide a profitable and diverse use of water on the farm.

## ***Luscious caviar from Yarra Valley Salmon***

Patience and absolute dedication have been the keys to success for Greg Wallace's business, Yarra Valley Salmon.

Greg can no longer meet the demand for his popular Atlantic Salmon and caviar product, but he has plans on hand to increase production.

An economist by training, Greg began his love affair with fish more than 16 years ago when he bought some trout for a dam on his country property.

"I literally fell into it," he said. "I enjoyed the trout production so much that I bought into another farm so that I could expand."

In those days most of the trout went to Safeway stores and this provided a financial basis for the move into the more exotic Atlantic Salmon a few years later. Greg's main aquaculture and fish growing base is at Rubicon near Alexandra in Victoria. He has other farms at Monbulk and Kallista.

Greg produces 50 tonnes of fish each year. Most of the caviar is absorbed by domestic markets but because of the purity of the production process, the products are highly sought after by overseas countries, particularly Japan.

"At Rubicon we endeavour to replicate as closely as possible, a natural freshwater environment by raising the salmon in long, deep earthen ponds which are fed by artificial waterfalls. The waterfalls create a strong current for the salmon to jump and swim against just as they would do if they were living in a wild stream where salmon swim upstream to spawn," Greg said.

Yarra Valley Salmon take longer to grow than the same fish raised in a sea cage. The slower more natural growth results from lower water temperatures and the need for the fish to exercise as they swim and jump against the water flow.

"The end result is that we produce fish with a slightly firmer body tone and a low fat level which more closely resembles wild salmon," he said.

Yarra Valley Salmon's most popular fresh fish are the "baby" Atlantic Salmon ranging from 300 - 400 grams which mostly go to Sydney's restaurants via the Sydney Fish Market. The farm also produces a small quantity of two to four kilogram fish which are sold in Melbourne, Sydney, Adelaide and Brisbane.

*Greg Wallace displays his produce. His farm tries to replicate the natural environment of the Atlantic Salmon as closely as possible.*





# a of possibilities

**By Carri Tiffany  
and Liz Brown**

"All of the product is fresh and it reaches the customer within 24 hours of it being harvested," Greg said.

Also popular and selling at \$100 a kilogram retail is the Atlantic Salmon caviar which is milked by hand from the female salmon just before the natural spawning process. The hand milked roe is then cured in small batches to produce a premium caviar product. The criteria for caviar include the size and flavour of the eggs.

"From our experience we have found that there is a period of approximately two weeks and this varies from one female to another, when the roe is ripe for curing into premium caviar," Greg said.

"Apart from the normal issues related to primary production of a new species, the most difficult problems Greg faced were the significant lead time of four years to raise female salmon to a sufficient size that would produce the very large eggs preferred in the Japanese market, together with the development of a particular diet that the female salmon require about six months prior to spawning," Greg said.

And as for advice for those willing to venture into a different type of farming he had this to say.

"Like anything that you feel is worthwhile in life you have to be prepared to invest five to ten years of hard work if you want to produce a unique quality product and reach the point where the marketplace recognises the true value of that effort."

"You have to be dedicated and prepared to wait."

*The brine shrimp  
production facility  
at Pyramid Salt.*



*Part of the Yarra Valley Salmon operation at Rubicon.*

## **Happy fish from Pyramid Salt**

Gavin Privett's aquaculture business fits in neatly with his primary production interest: salt. Gavin is the Manager of Pyramid Salt Pty Ltd at Pyramid Hill, a raw salt production facility with the capacity to produce 5,000 tonne of high quality sodium chloride salt each year. Pyramid Salt is a National finalist in the 1998 Landcare Awards.

Saline groundwater is pumped from bores and passed through a series of ponds. The water increases in brine density until it reaches a crystalliser pond and is harvested. Along the way brine from the third, saltiest pond is bypassed through a series of intensive culture tanks where the brine shrimps are grown.

Gavin says he's been playing around with brine shrimps for a couple of years and has only been harvesting them commercially for five months. "The small eggs are imported from the Great Salt Lakes in Utah. We hatch them out in intensive tanks and feed them on ground wheat. The food and saline water is continually moving through the tanks and in about 14 days they reach full size."

The shrimps are washed in fresh water, sieved and vacuum packed for freezing. They are sold to other aquaculturalists who use them as food for small fish and also to the aquarium trade under the brand name "Happy Fish Brine Shrimp."

Gavin says the market for his brine shrimps is dependant upon a growing aquaculture industry in Australia or his ability to break into exporting. He's not the only brine shrimp producer in Victoria - but certainly the only one with the luxury of free brine.

For further information about aquaculture contact Anthony Forster at the Department of Natural Resources and Environment on (03) 9637 8527.



### *A piece of country*

People love coming to the Collingwood Children's Farm to experience the vivid contrast to the city. There are big paddocks, bluestone barns, vegetable gardens and lots of animals. The team of staff and volunteers run a range of farming enterprises on the 17 acre property beside the Yarra river.

*Greg Milne with another friend of the farm.*



Victorian Landcare Page 18

The Victorian era convent buildings next door take us back in time, enhancing the rural atmosphere and the remnant bush escarpment of Yarra Bend Park wraps around the little peninsula of fertile land, hiding it from suburbia.

The farm is much more than a city playground for kids to come and cuddle cute animals. We work at connecting city people with the land, animals and natural cycles. It's public land managed in a way that invites community participation. And with the help of landcare and permaculture the Farm is becoming a unique example of sustainable landuse.

### *In the beginning...*

In 1994, the Federal Government launched the City Landcare Program. It was concerned that the rural enthusiasm for landcare was virtually unheard of by city people. With 15 years of experience behind us, the farm was exploring ways to extend people's interest in animals to caring for the land.

# Landcare

*By Greg Milne*

A farm in the city was a great place to start and so began a Landcare group in Collingwood.

The farm's Landcare Project was one of three pioneering City Landcare projects in Melbourne that ran for two years. Now, nearly four years down the track, the farm is giving visitors a real picture of sustainable agriculture.

People have fun getting their hands dirty, learning about Landcare and improving their local environment. Field days, workshops and family days have provided a forum for the general public to get involved. Regular visitors, which include school groups, community service groups and local teenagers have all been involved in a variety of hands on projects. The farm's good work in involving the urban community in Landcare was recently recognised. We were a state finalist in the Victorian Landcare Education awards.

### *Permaculture in practise*

As a result of the Landcare project, the farm has developed a management plan, based on permaculture principles. It has proved to be a great asset to the farm, acting as a reference and training tool for staff and volunteers. The aim is to shrink water, nutrient and other resource cycles to within the boundaries of the farm. We do this by minimising what comes into the farm, and re-using and re-cycling water and nutrients to replace what leaves the farm. Good planning like this ensures that the needs of each part of the farm are provided by the products and wastes of other parts.

On the ground, we are starting to reap the rewards of thoughtful planning and hard work. We are now harvesting fodder for the goats grown in pig manure and the waste water from the dairy and duck pond is irrigating the orchard. The farm is reducing its consumption of outside resources by growing and utilising more animal food on-site.



# Landcare in the city



*The farm's community garden.*

Simple lids on the chook feeders have restricted ad-lib feeding and encouraged more active foraging. Ask a visitor who has had a sandwich pecked out of their hand!

Coppicing ash, willow and poplar have provided a healthy diet for the goats, reduced our feed bill and their spread as environmental weeds along the river.

The sheep, cows and goats all make the most of the tree lucerne planted around the edge of our plantations. A solar-powered electric fence has enabled us to use pig ploughing to grow annual crops. All these changes reduce pollution, make the farm more self-sufficient, and create a healthier environment.

*The farm is nestled in bushland along the Yarra River at Abbotsford*

## *The landcare group*

The farm now holds monthly Landcare working bees where people have the chance to turn landcare and permaculture ideas into reality. These working bees involve people in the sustainable management of the farm, encourage understanding of broader food, sustainability and equity issues and show people how they can be more involved at the farm. The working bees are attracting new people to the farm, but we could always do with more helpers.

The farm also has a Landcare Trail, the first of our new set of tours. The Landcare Trail is an interesting walk around a number of sites at the farm, each with their own stories and activities about sustainable farming. Learn about bush tucker, harvesting tree fodder for the goats, farming trees, creating habitat for native animals and re-cycling nutrients and waste.

An information kit is available for the trail which summarises the key concepts and includes follow up actions and activities. The kit is designed for middle to upper primary age students but the Landcare Trail can be tailored to many different age groups and interests.

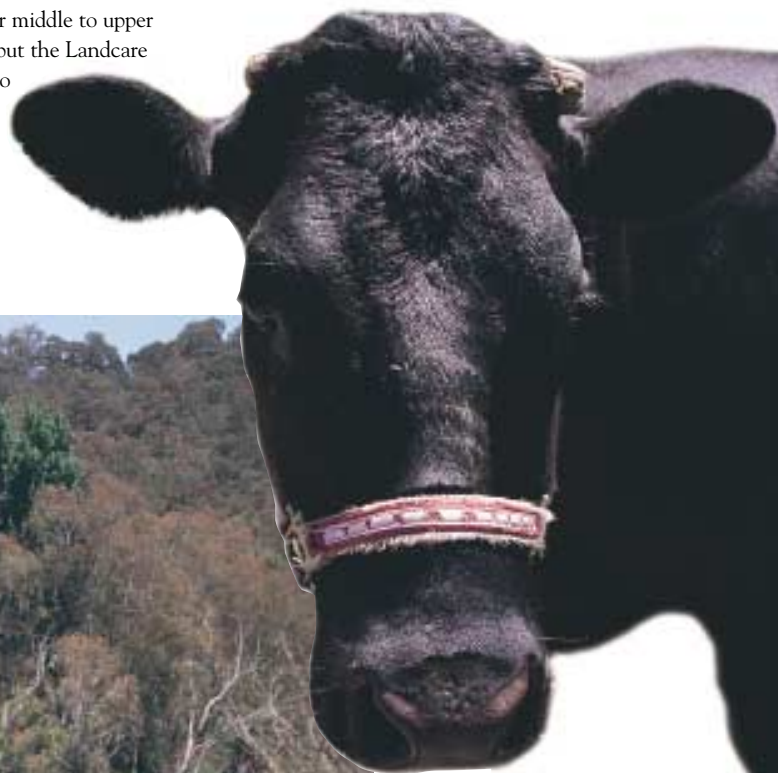
## *A green future*

The farm's Landcare Project has been a major catalyst in our search for sustainability. It's giving city people a real feel for what Landcare is doing in the bush and a chance to help out. There are no better places than city farms to develop understanding between city and country and raise awareness of landcare.

With the initial financial support from Landcare finished, the farm is planning for a more independent future. The new management plan provides the direction for the physical development of the farm, the Landcare Trail will be an important part of our educational approach, and we are encouraging wider community input into our Landcare group.

Collingwood Children's Farm is at St Helliers Road, Abbotsford. For bookings and enquiries phone (03) 9205 5469.

**Photographs by Carri Tiffany**



# What's for dinner?

By Darren Peacock - Senior Curator of Museum of Victoria

Future Harvest, a new exhibition produced by the Museum of Victoria, will tour Victoria in 1998.

The exhibition explores the future of farming and food through the issues of innovation and sustainability. Sustainability is about maximising productivity without degrading the environment. Using inspiring case studies from across Victoria, Future Harvest will show how farmers, companies and community groups are taking up the challenge of sustainability in the way they manage the land.

Future Harvest is an opportunity to showcase successful attempts to tackle the problem of land degradation and establish more sustainable farming practices.

The exhibition will be launched in Gippsland in March, 1998, before travelling to Ballarat, Shepparton, Mildura and Wodonga. Each of these venues will feature three local case studies of innovative responses to the challenge of sustainability.

All of the regional components will be brought together for display at the Royal Melbourne Show in September. Future Harvest will then be on display at Scienceworks Museum in Spotswood until April, 1999.

The case studies show how diversification, new technology, organic and permaculture methods, revegetation and investments in water quality are improving farm productivity and profitability, as well as restoring degraded farming land. They include stories from the Undera Landcare group near Shepparton and the Upper Murray Catchment Farm Tree Group in the Corryong area.

Also featured are the Crawford family from Gippsland, innovators in agroforestry. Winners of a 1992 National Tree Farmer Award, the Crawfords complement their beef cattle operation with a native revegetation program and a sideline in timber growing: pine for paper and willow for future cricket bats.

The Giant Gippsland earthworm features in the story of a dairy farm operated by Brian and Cheryl Enbom at Korumburra. Revegetation of streambanks on their property preserves the habitat of the earthworm, an endangered species. In turn, the worm provides a unusual form of pasture improvement, aerating the soil as it burrows underground.

Future Harvest will encourage school groups to explore the connections between farming and the environment in their local area.



Moreover, it provides an opportunity for rural communities to promote local initiatives to urban audiences unfamiliar with the issue of land degradation.

The Future Harvest art competition will be run in conjunction with the exhibition by the Royal Agricultural Society of Victoria and the Weekly Times newspaper. School children will be encouraged to create, in visual form, their own vision of the future of food and farming. Competition entries will be on display at each of the venues. Statewide prizes will be awarded at the Royal Melbourne Show.

The competition is just one of the ways in which regional communities can make their own contributions to Future Harvest. Local working groups have been formed in each of the regional centres to promote community participation and public events to coincide with Future Harvest.

To get involved in the regional exhibitions please contact one of the following:

## Gippsland:

Geoff Hill (03) 5173 1462

## Ballarat:

Geoff Park (03) 5345 2200

## Shepparton:

Liz Dobson (03) 5832 9849

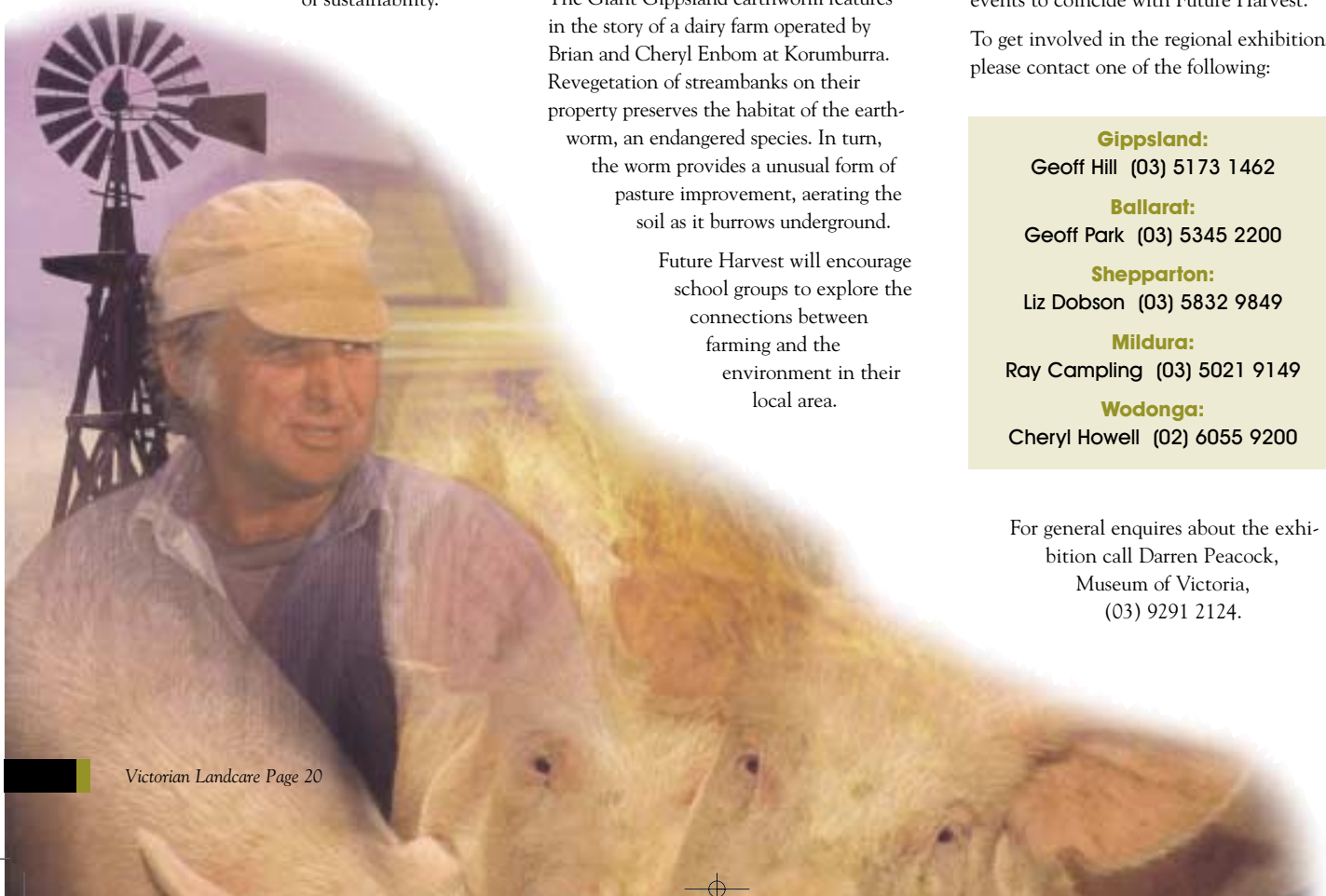
## Mildura:

Ray Campling (03) 5021 9149

## Wodonga:

Cheryl Howell (02) 6055 9200

For general enquires about the exhibition call Darren Peacock, Museum of Victoria, (03) 9291 2124.







*Greening Geelong West: restoring indigenous vegetation in an urban community along Geelong's foreshore.*

# Landcare and

**By Carri Tiffany**

Landcare and local government have much in common. They are both about community, about local level improvements and future planning. But for many years local governments have been reluctant to get involved in landcare. A rural shire engineer once told me that admitting the reality of the salinity problem in his area would mean an instant devaluing of land prices - a risk the council couldn't afford to take.

There has also been the lengthy process of local government amalgamations.

With many councils so closely involved in re-writing their municipal planning schemes they've had little time for forging relationships with landcare groups.

But things are changing. Peter Lyon, Environment Resource Officer with the Municipal Association of Victoria says Councils are becoming increasingly aware of the advantages of becoming involved in landcare, as the landcare movement itself gains in recognition and stature.

Peter points out that catchment management structures have also been changing and that Councils must take an active role in working with their regional Catchment Management Authority (CMA). He says it's a two way process: "CMA's need to use the skills and data collected and 'owned' at a local level."

Peter says that Local Conservation Strategies form the basis of council involvement in landcare. And that many of these are now being updated and re-written to include information about salinity, soil erosion, weeds and other landcare issues.

He advises landcare groups to be aware that communicating with local councils can mean more than just speaking with a councillor. "It may involve officer contact at a number of different levels until you develop the right relationships."

## *Greater Geelong, a mix of city and country*

The City of Greater Geelong's involvement with landcare really took off when they appointed their own Landcare Officer. Gavan Mathieson sees himself as a 'hunter and collector' for the 11 landcare groups within the City. He also works closely with industry, helping to link them up with groups and projects.

Serrated Tussock is a big local problem, along with Chilean Needle Grass and Patterson's Curse. The Council is targeting small property holders, offering to meet up to 50% of the cost of weed control. Property holders who have completed a property management plan, attended training sessions and are members of a landcare group will receive the maximum entitlement.

Much of Gavan Mathieson's work is with schools. He assists with the Corangamite Waterwatch Program and with running special activities like Arbor Week where over 50 schools will participate in revegetation projects.

Gavan says there are many challenges. His time is divided between supporting the local groups and also trying to give the large urban population a "taste of landcare."

## *Casey fights Alligator Weed*

The City of Casey became involved in landcare because of a serious weed threat. According to researcher, Dr Lalith Gunasekera, Alligator Weed is one of the worst weeds in the world and 125

infestations of it have been found throughout the City of Casey.

Alligator Weed is a cultural as well as an environmental issue.

*Members of the Casey Aquatic Weed Community Action Group plan their campaign against Alligator Weed.*





# Local Government

The weed is being spread unwittingly by the City of Casey's Sri Lankan community who grow it as vegetable plant which is cooked and eaten with rice. The weed quickly spreads along rivers and watercourses infesting and choking them.

David Westlake from the City of Casey says that local government was the right agency to tackle the weed as it is a local and community type problem. "Our first task was to convene a working group. We call it The Casey Aquatic Weed Community Action Group, it's made up of scientists, members of the Sri Lankan community and City of Casey Officers."

A \$12,500 grant under the Victorian Government's Community Weed Control Scheme has helped the group get under away. Their first task has been to identify the sites of infestation. Now they are visiting each site and discussing control with the landowners. The group will also grow Mukunuwenna, an alternative Sri Lankan vegetable to offer to people as a replacement plant.

David Westlake is enthusiastic about their chances of controlling the weed. But he doesn't downplay the seriousness of the problem. "Alligator Weed spreads like wildfire. A piece of leaf or root can travel for miles and miles down a stream or river."

David took a small piece of stem home and put it in a jam jar of water. Now he has a big healthy plant with six roots.

## ***Mitchell acts on weeds***

Mitchell Shire Council services 27,000 people around Kilmore, Broadford and Seymour. In August 1997, it introduced its first land management policy to encourage residents to confront land degradation problems.

The policy identifies issues like salinity, erosion, pest plants and animals. It provides for a 10% rate rebate for eligible landholders doing 'targeted works.' In the first year, council is targeting weeds and has identified target species in order to co-ordinate efforts across the region.

According to Ian Haynes, Group Manager of Corporate Services at Mitchell Shire Council the rebate has been very well received by residents.

"The paperwork is kept to a minimum and those property owners who regularly undertake environmental enhancement works will not need to do anything extra to get the rebate."

Ian Haynes says the Council's policy is designed to complement the initiatives being taken by the State Government in controlling weeds throughout Victoria.

***The City of Greater Geelong assists in running the Waterwatch program at local schools.***

## ***Greater Bendigo promotes perennial pastures***

The City of Greater Bendigo has been offering a Salinity Rate Rebate Scheme since 1994. The rebate scheme was introduced in recognition of the seriousness of salinity in the area. By offering a rate rebate on land that is taken out of production, the scheme encourages landholders to revegetate high recharge areas that contribute significantly to increasing dryland salinity.

The rebate specifies the area must be an identified high recharge area and that it must be revegetated with trees or perennial pastures. The sites are inspected by the Department of Natural Resources and Environment.

Greater Bendigo has many other landcare projects underway. Their Community Environmental Officer, Anthony Sheean, co-ordinates Waterwatch and Saltwatch, manages a \$20,000 environmental grant scheme and participates in the Rural/Urban Links Program.

## **Campaspe wins Landcare Award**

The Shire of Campaspe's commitment to landcare won them the 1997 Telstra Landcare Local Government Award.

In 1996, the Shire initiated a Community Grants Program for Landcare Groups and has given \$40,000 in funding to 12 groups. It also helps groups with photocopying and provides office accommodation for a local Salinity Link Officer.

Campaspe operates a free tree scheme, encourages wholefarm planning through its planning controls, facilitates the Community Surface Drainage Scheme, and has trained its outdoor staff in roadside management.

*The Landcare Magazine would like to run regular articles about local council involvement with landcare. Please send us your news and photographs.*



# Destroying the secret

Gazing round at the treeless, tussock-covered walls of the Rowsley Valley, David Boyle describes Serrated Tussock as "the secret agent of weeds," a weed so innocuous-looking, yet so insidious that it has the ability to largely replace pasture species without a landholder knowing - until it is too late.

Similar in appearance to the native Silver Tussock, a paddock of Serrated Tussock exhibits one fatal flaw: it is useless to stock. Even if they do in desperation graze this South American import, sheep and cattle will still die of starvation. Serrated Tussock has only a four per cent nutrient level - well below the threshold for livestock to survive.

The costs of failure to contain and then eliminate Serrated Tussock are high. An economic analysis undertaken by the Victorian Serrated Tussock Working Party estimates that without control measures the area infested by Serrated Tussock can be expected to increase two and a half times over the next 30 years with net annual losses to primary production totalling \$298 million.

Just north west of Bacchus Marsh, almost all of the Rowsley Valley's 24,000 ha are heavily infested with Serrated Tussock. "This is the motherlode," David said, gesturing down the valley. "This is where we have to fight and beat Serrated Tussock if we are to stop it spreading through 4.6 million ha of farmland to the north and west."

*The Serrated Tussock-covered walls of the Rowsley Valley.*



## **\$1 million offensive**

As the executive officer of the Victorian Serrated Tussock Working Party, David Boyle is in charge of a \$1 million offensive to be mounted against the weed. Funded by the Victorian Government and jointly co-ordinated by the Corangamite Catchment Management Authority and Port Phillip Catchment and Land Protection Board. Working Party members directing the offensive also include representatives from landcare, local government and the community.

Chairman of the Working Party and president of Corio Landcare Group, Scott Chirnside believes that the weed initiative will focus attention on what he describes as "the biggest potential landcare issue bar none."

A descendant of one of Victoria's pioneering graziers, Scott farms 3,000 ha under the You Yangs, directly in the flight path of Serrated Tussock seeds in spring time.

"Until the late '80s, I'd only noticed one or two, then suddenly I had an explosion on my hands," Scott recalled.

First discovered in a paddock behind a butcher's shop at Broadmeadows in the 1940s, Serrated Tussock spread into the Melton area as it was broken up for urban development, then colonised much of the non-arable rain shadow country around Bacchus Marsh. By 1984, it had built to a critical mass, heavily infesting some 30,000 ha. Seed heads in their millions began journeying on prevailing winds heading north-east during spring and south in summer. Each seed head carries up to 100,000 seeds and can travel up to 50 km.



*Similar looking to the Native Silver Tussock, the Serrated Tussock's major differences are that it is useless for stock and has a distinctive seed head.*

Today, an estimated 131,400 ha of land within the Melbourne-Ballan-Geelong axis is infested with Serrated Tussock.

## **One weakness only**

Serrated Tussock has one weakness, said Lisa Miller, a Serrated Tussock researcher and extension adviser who operates out of the Geelong office of the Department of Natural Resources and Environment.

"It has very low seedling vigour and is initially slow growing," she pointed out. "You can outcompete Serrated Tussock seedlings with improved pasture." That's the good news, but then she adds: "No amount of pasture competition will, however, kill mature plants."

Trials have found phalaris and clovers are best at crowding out Serrated Tussock seedlings. One of the few places Serrated Tussock is absent in the Rowsley Valley are on the rich flats on either side of the Parwan Creek.

But once Serrated Tussock gains a foothold, it moves inexorably taking over from other pastures. Stock and even rabbits avoid it, accelerating the advance. Within seven to ten years a lightly infested paddock is transformed to a sea of Serrated Tussock.



# t agent of weeds

Serrated Tussock germinates on bare ground establishing quickest in autumn when pastures are weakest. The most dramatic expansion of the weed's boundaries and density took place after the 1982/83 drought.

With this year's El Nino showing no signs of moderating, Scott Chirnside believes the scene is set for another break out of Serrated Tussock from its core area.

"I've got rainfall records for our property going back 120 years," he said. "It looks like we're facing the worst El Nino event ever."

## **Control measures**

Phase 1 of the Serrated Tussock Working Party's new management strategy is to stop seed setting in the weed's core areas.

In the Rowsley Valley, a helicopter will this summer spray the heavily infested valley walls with a sub-lethal dose of glyphosate which freezes seed set. This will be followed up in winter by burning the tussocks.

"It won't kill the plant," David Boyle said, "but the green stubble which comes up after burning won't have any seed. People outside the area will gain a respite."

With only a thin, infertile soil cover and a white clay sub-surface, the valley walls are not suitable for pasture improvement. Instead, the strategy chosen to outcompete Serrated Tussock is reforestation.

"Last century, the valley's sides were clothed in trees," David said. "We're going to put them back."

Lisa Miller is growing trial plots of indigenous eucalypts, acacias and shrubs to determine which are best suited to the site. Once the trees are in place, a final spray with Frenock will kill the Serrated Tussocks.

## **Systems approach**

The Working Party's management strategy recognises that to control Serrated Tussock in the long term, there needs to be an education and awareness campaign

coupled with changes in farming practices such as incorporating cropping regimes as well as pasture improvement.

"Department staff have visited all 80 farmers in the Rowsley Valley and set up management plans for each of the properties," David Boyle said. To ensure compliance the Working Party has already recruited two enforcement officers and another six are scheduled to commence by early 1998.

On grazing land unsuitable for cropping, the Working Party is pursuing other strategies to outcompete the weed. Aerial sowing of phalaris on a trial plot with a 475 mm rainfall has met with "moderate success" claimed Scott Chirnside. Other trials involve utilising free range pigs to lift soil fertility, looking at ways of improving the weed's palatability, species testing for tree and pasture planting, and a search for biological controls.

"We have to take a lateral approach to find solutions," Scott said. "And we have to combine this with a systems approach which is capable of delivering more sustainable forms of agriculture."

*Chairman of the Victorian Serrated Tussock Working Party and President of the Corio Landcare Group, Scott Chirnside inspects the rate of growth of a trial plot of aerially-sown Phalaris-one of the pasture plants best able to outcompete Serrated Tussock.*

*By Gib Wettenhall*



# CATCHMENT M



*Above: Chairman Mr Jeremy Gaylard, re-appointed to the new Council*



*Above - from top: New members of the Victorian Catchment Management Council, Mr John Delzoppo, Mr John Tilleard and Mrs Faye Holt.*

October saw the end of the first term of the Victorian Catchment and Land Protection Council.

The council, now known as the Victorian Catchment Management Council advises the State Government on Statewide catchment management priorities and the condition of land and water resources. It is also Victoria's peak body on landcare.

With the departure of five former members and the addition of three new members, the Council becomes a leaner group of eleven.

Chairman Mr Jeremy Gaylard, also Chairman of the Melbourne Market Authority, has been reappointed Chairman for another three-year term.

Minister for Conservation and Land Management, Mrs Marie Tehan, thanked former councillors for their work: primary producer and dairy industry exporter, Mr Ian Wood; Mr David Clark (North Central CMA); Mrs Joan Bennett (Wimmera CMA), Mr Ian Everist, Mr Angus Pollock (now Chairman of the Private Forestry Council) and Professor Robert White of Melbourne University.

Many initiatives were undertaken in the first life of Council including a report into the strategic support needs of Landcare,

'Caring for Landcare in Victoria' and 'Know Your Catchments', Victoria's first catchment condition report, a project headed up by Council and supported by a team of specialists from the Department of Natural Resources and Environment and Environment Protection Authority.

Mrs Tehan also welcomed new Council members: the former Member for Narracan and former Speaker of the House of Assembly in the Victorian Parliament, Mr John Delzoppo of Neerim South; community-based sustainable agriculturalist and farmer, Mrs Faye Holt of Wedderburn; and waterway management expert, Mr John Tilleard of Sale.

Council has now commenced its second term and is committed to pursuing many of the important initiatives it commenced in its first term including the implementation of recommendations in the Landcare report through Victoria's Catchment Management Authorities.

Council has also undertaken to intensify its Statewide communications and raise the level of co-operation and understanding between bodies involved in catchment management. The forum of NGOs and the first catchment management conference in May 1998 are important commitments for the coming year.

## News from the Regions

### Corangamite

Don Forsyth is the Authority's new Chief Executive Officer (CEO). Chairman Bob Carraill said that Don would settle quickly to the new role having been Executive Officer of the former Catchment and Land Protection (CaLP) Board.

Imminent appointments include an executive support officer and a floodplain management officer to develop a regional floodplain strategy.

The Authority has also appointed two program managers to oversee implementation of its regional catchment strategy and will produce directions and priorities for its implementation in the new year.

### East Gippsland

Chris Barry has been appointed CEO with Linda Youngs as Executive Assistant.

Both had previously worked for the CaLP Board.

Representatives of the Authority recently inspected a range of landcare sites and projects during a review held in the region of previous National Landcare Program projects.

Authority chairman, Duncan Malcolm, said the quality of the projects was excellent and congratulated Landcare Group members, River Management Groups and Landcare co-ordinators who assisted in mounting the review.



# CATCHMENT MANAGEMENT NEWS

## Glenelg-Hopkins

Colin Dunkley, former executive officer of the CaLP Board, has been appointed CEO for this catchment region.

Cate Mercer-Grant has been appointed Executive Assistant.

The Authority has recently been linked with Landcare groups and associations in the region including the associations of Dundas Tablelands, Glenthompson and Central Hopkins.

A Landcare sub-committee has also been established by the Authority and forums are being planned in the new year on landcare and waterways.

## Goulburn-Broken

Bill O'Kane, former CaLP Board Executive Officer, has been appointed CEO.

The Authority was recently pleased to receive notification of the allocation of \$90,000 to 34 salinity projects in the region under the Community Salinity Grants Scheme. The scheme plays an integral role in increasing awareness of salinity issues and increasing works to combat the problem.

This year, the scheme attracted a large number of innovative projects aimed at raising awareness and behaviour change.

Successful projects included the Goulburn Valley Landcare network's bus tour to raise awareness of irrigation farmers of salinity in the upper catchment and its effect on the Shepparton Irrigation Region.

## North Central

Former Campaspe Shire General Manager Strategy and Planning, Jan Boynton, is the new CEO.

Chairman, Drew English, said that Jan came to the job with a solid understanding of catchment issues and a good knowledge of the north central region.

The Authority is undertaking a consultation process with catchment stakeholders to encourage debate and input to a new catchment structure. A discussion paper has been released outlining its guiding principles including the establishment of four implementation committees (one for each river catchment) and that linkages with landcare groups be strengthened.

## North East

John Riddiford has been appointed CEO.

John comes to the Authority with 13 years' experience in natural resource management, 11 of those in the water industry. He was responsible within Melbourne Water for catchment management, water quality improvement programs and strategy planning for water supply.

He is keen to continue and initiate programs to reverse land degradation and improve water quality in the region.

## Mallee

The Authority has appointed Scott Glyde CEO.

Landcare activities will form a major component of the Authority's activities.

Accordingly, it has resolved to support Mallee landcare groups including by developing a database of all community groups involved in land and water management activities. It also aims to improve the interchange of ideas and resources between more than 40 groups presently operating in the Mallee.

## West Gippsland

Ken Ashton has been appointed CEO.

Ken has more than 27 years' experience in land and water management complemented by his senior management experience and strong administrative skills.

## Wimmera

Former CaLP Board Executive Officer, John Young, has been appointed CEO.

As well, the Authority has commenced establishing its implementation committees. Waterways, Land and Biodiversity committees will address issues and develop the works program for implementation of the regional catchment strategy.

The Authority has also held a forum for regional business and community people to meet and exchange information and ideas. Two dinner forums in August and October were well attended.

An economic perspective for the region has been developed and was launched in late January. This is the first stage of a regional sustainable development plan.

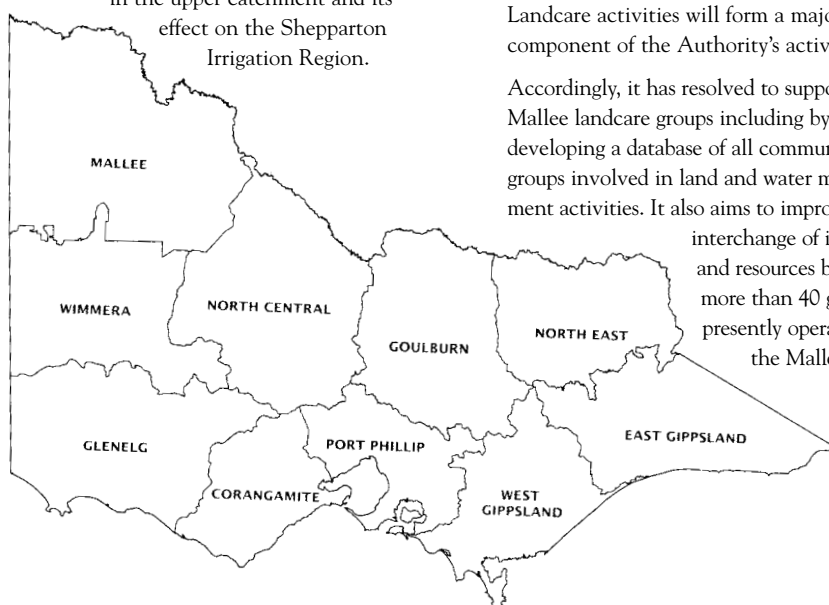
## Port Phillip

Board members have been re-appointed by the Minister to 30 June 1998, and Executive Officer Bill Thomas will continue for the same period.

A review of catchment management in the Port Phillip and Westernport Region will be undertaken during 1997/98.

The Board has recently appointed a catchment implementation committee in each of its five major catchments. These committees are assisting with the implementation of the regional catchment strategy and providing coordinated advice on catchment programs, projects, and identifying priorities for new funding opportunities.

Landcare groups and interests are well represented on the committees.



# ON THE SHELF - New Publications

## *Listen...Our Land Is Crying*

The author of this very impressive book, Mary White, is a palaeobotanist. She brings a rare geological perspective to the land degradation debate. Mary White says in order for us to understand land degradation problems and find long-term solutions, we need to see the big picture.

"When Australia is seen in the global context, we find that it suffers the same problems as the rest of the world, created by pressures of expanding human populations, and unsustainable use of basic resources."

*Listen...Our Land Is Crying* documents the geological history which has made Australia unique and enables us to understand why using European agricultural and land-use practices and the introduction of foreign plants and animals has led to the land degradation we experience today.

A thoughtful and engrossing read.



Professor John Lovering, (left) President of the Murray-Darling Basin Commission with South Australian Minister for Environment and Natural Resources, David Wotton, launching the Murray-Darling Basin Resources Book.

*Listen...Our Land Is Crying* is available from Simon and Schuster, 20 Barcoo Street, East Roseville, NSW 2069. The book costs \$59.95 plus \$7.50 postage and handling.

## *Murray-Darling Basin Resources*

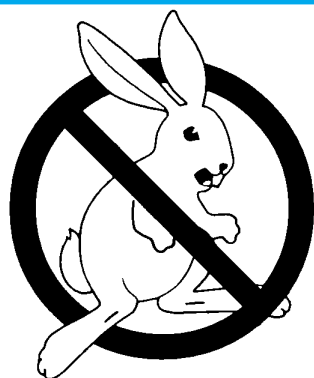
The Murray Darling Basin Commission has produced many big, colourful and interesting books about the Basin.

Their latest publication, *Murray-Darling Basin Resources*, is no exception.

This book of annotated statistics for the Murray-Darling Basin is the first attempt at producing a comprehensive audit of the natural, economic and human resources of the region. It provides an extraordinary variety of information and is packed with excellent photographs and illustrations.

*Murray-Darling Basin Resources* was compiled by Dr Peter Crabb from the Geography Department of the Australian Defence Force Academy. Understandably, it has taken him several years to complete. The book is a good reference tool and one-stop-shop for statistical information on all aspects of the Basin.

*Murray-Darling Basin Resources* is available from the Murray-Darling Basin Commission on (02) 627 90100 for \$35.



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# Investing in Landcare



*Creekline revegetated with Blue Gums*

A cost benefit study in Western Australia has produced evidence that investment in landcare does pay financial dividends.

The study was aimed at assisting farmer groups in the central wheat belt of WA to identify, analyse and adopt land uses and conservation strategies that are biologically and economically sustainable.

Farmers in each catchment group provided details on what landcare projects had been undertaken on their farms since their groups were formed. Their projects were costed and opinions were obtained from the farmers about project benefits. The benefits were calculated from cash flows as well as taxation benefits, assuming 100% deductions for landcare expenditure.

## **Improving planning**

The study analysed what landcare strategies the farmers in various catchment groups had already implemented and this information was used to develop the techniques for assessing the benefits of landcare.

The major advantage in using cost benefit analysis is in determining which strategies are profitable and therefore those which might be given priority.

## **Determining profitability**

The study was able to determine the overall profitability of each farm's landcare activities and rank each strategy on the basis of profitability - despite the fact that the benefits of some landcare strategies are not realised for several years after the initial investment cost.

If farmers know which landcare strategies are profitable, they can make the choice of investing scarce resources in strategies with the greatest pay-off.

## **Analysing costs and benefits**

In this study, the costs and benefits were analysed at the following three levels:

- Whole catchment level - total expenditure and benefits calculated across all farms in the catchment.
- Farm level - actual investment by individual farmers compared with the impact on that farm only.
- Individual Strategic level - each project on each farm subjected to a cost : benefit analysis.

The study only considered the direct financial benefits - those activities that have a direct effect on farm cash flow. It did not consider aesthetic or environmental benefits for example stream water quality nor off-site benefits such as impacts on downstream landholders and protection of habitat reserves.

<b>Whole catchment benefits</b>			
The results of the cost benefit analysis for three catchments were as follows:			
	<b>Catchment A</b>	<b>Catchment B</b>	<b>Catchment C</b>
<b>Number of farms</b>	13	14	13
<b>Total catchment expenditure on landcare<sup>1</sup></b>	\$473,0713	\$450,154	\$324,843
<b>Total on-farm benefits for the catchment<sup>2</sup></b>	\$855,860	\$751,217	\$758,945
<b>Cost : Benefit ratio</b>	1.81	1.67	2.34

### **Notes:**

1. The expenditure values include all grants for landcare work.
2. Farm financial benefits only. Does not include non-financial or off-farm benefits.
3. The benefit values are expressed in net present value terms, i.e. all the expected future financial benefits are discounted back to present day values.



# e pays benefits

## *Financial benefits to individual farms*

The financial benefits to farmers implementing the landcare works were found to come from three sources:

1. a reduced loss of land compared to the 'do nothing' approach;
2. production is maintained, and may even improve, on the land influenced by the landcare work; and,
3. a change to a farming system, for example converting low producing pasture on poor, sandy land types into a tagasaste plantation as a fodder source.

## *Profitable strategies*

Data from the study produced the following cost benefit ratios for various on-farm strategies:

Strategy	Cost : Benefit ratio
Fodder crop (ie tagasaste)	3.1
Liming for acidification	1.8
Earthworks	1.77
Saltland revegetation	0.7

Some landcare strategies were shown to be not as profitable from a financial perspective, however other benefits, such as an improved environment and aesthetics, motivated farmers to implement these strategies.



*Drainage and fencing of creek line to control waterlogging and salinity*

For example, revegetating creek lines may not be considered a rational financial investment when the cash flow impact alone is taken into account, however wildlife values, aesthetics and so on are seen as positive reasons for implementation.

## *Who should pay*

Knowledge of who is benefiting from the landcare effort will help farmers and communities identify who should pay for landcare works.

The cost:benefit information gleaned from this project provides a basis for rational debate that advocates government grants and corporate sponsorships be directed to landcare activities that have a high community benefit and less direct financial benefit to the farmer.

It could be argued that the community should participate in this cost sharing by direct subsidisation by Government or through assistance by government agencies, taxation relief or environmental levies.

Further information on the study can be obtained from Allan Herbert, Economics Branch, Agriculture WA on (08) 9368 3680 or Darrel Brewin, Manager of the Avon Catchment Project, Agriculture WA on (08) 9622 6100.

*Red Knoll Creek, fenced and revegetated*

