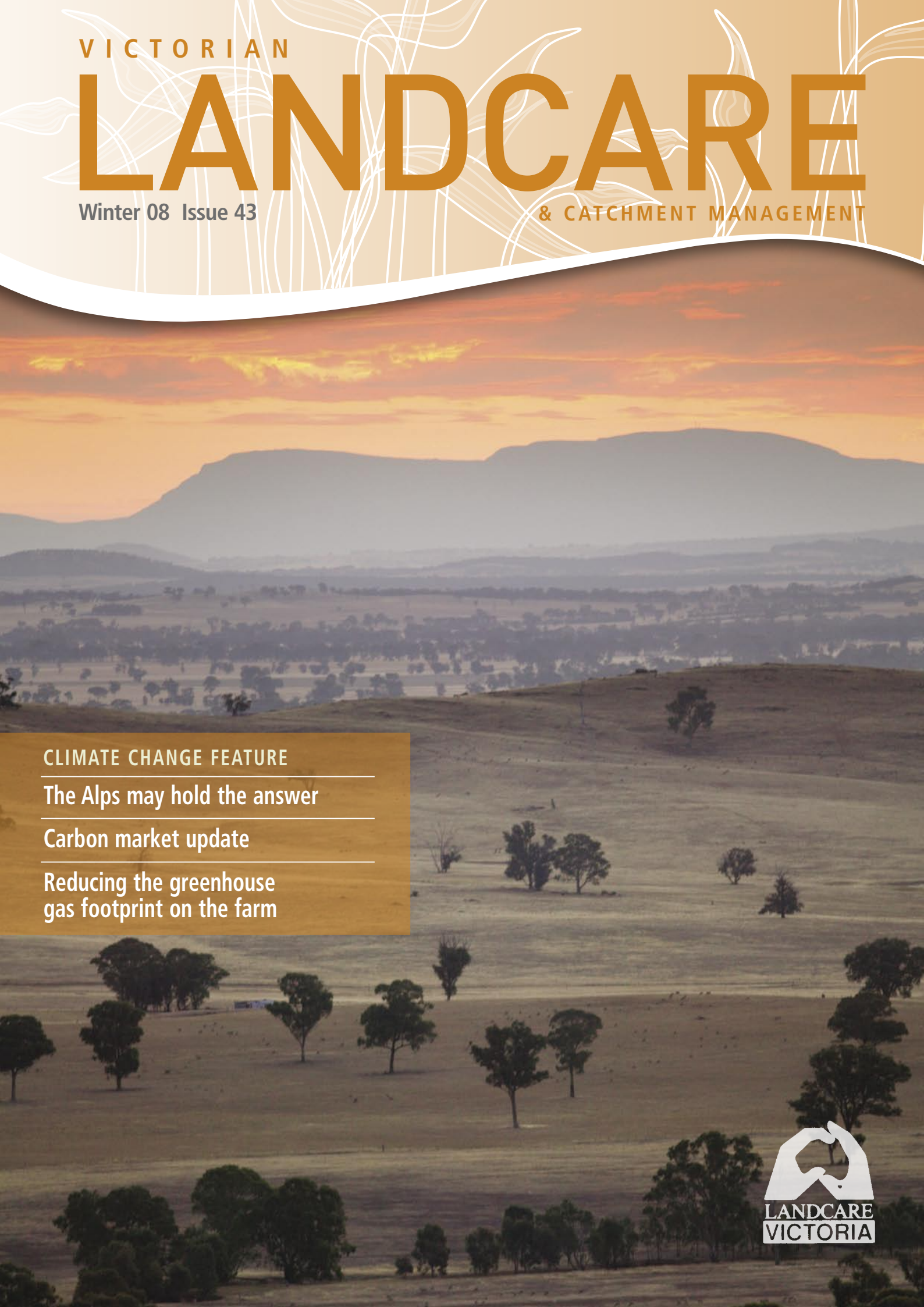
VICTORIAN
LANDCARE
& CATCHMENT MANAGEMENT
Winter 08 Issue 43



CLIMATE CHANGE FEATURE

The Alps may hold the answer

Carbon market update

Reducing the greenhouse gas footprint on the farm

LANDCARE VICTORIA

Victorian Landcare and Catchment Management

WINTER 08 ISSUE 43

Iestyn Hosking prepares to spread lime and compost on his property to balance and stimulate the soil.

Changes to the amount of water coming from the mountains will have a significant impact for our catchments.

A dairy cow fitted with a methane collar.

contents

The Victorian Landcare and Catchment Management magazine is published by the Victorian Government Department of Sustainability and Environment and distributed in partnership with the Victorian Farmers Federation and the Victorian Catchment Management Council. The magazine aims to raise awareness of Landcare among Victorian farmers, landholders, the Victorian Landcare community and the wider community.

Victoria The Place To Be

Victorian Farmers Federation

Victorian Catchment Management Council

Editorial Advisory Committee
Alex Arbuthnot Victorian Catchment Management Council, Doug Evans Port Phillip & Westernport CMA, Susi Johnson VFF, Sally MacAdams DSE, Jenny Pendlebury DPI.

Editorial contributions
Carrie Tiffany, PO Box 1135, Mitcham North 3132
Phone 0405 697 548
E-mail: carrie65@optusnet.com.au

Mailing list enquiries
VFF Farm-Tree and Landcare Association
Executive Officer, Victorian Farmers Federation
Phone 9207 5527 Fax 9207 5500
Email: sjohnson@vff.org.au

Advertising
Sally MacAdams Phone 9637 8039
Email: Sally.MacAdams@dse.vic.gov.au

Cover photograph
The Grampians at sunset taken from west of Ararat, by Andrew Chapman.

Back issues of the Victorian Landcare & Catchment Management magazine can be found at www.dse.vic.gov.au/victorianlandcaremagazine

Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

Printed by Bouquet Productions 9646 6071
Printed on 100% Recycled Paper
ISSN 1327 5496

From the editor

"As more and more people understand what's at stake, they become a part of the solution, and share both in the challenges and opportunities presented by the climate crises."

– Al Gore, former US Vice-President.

Welcome to our climate change issue. Did you know that the Goulburn Broken region has its own Al Gore? In 2006 Bunbartha farmer John Pettigrew was selected to be trained as a climate change ambassador by Al Gore in Sydney. Since then John has given over 40 presentations across Victoria.

Also in this issue you'll find stories on reducing the greenhouse gas footprint on the farm, an innovative solar energy project run by the Ovens Landcare Network and an update on the fast-moving world of the carbon market.

Landcare Gateway Upgrade

The Victorian Landcare Gateway website has been revamped and is now easier for groups to use. Go to http://landcarevic.net.au/.

Landcare speaks up on Green Paper

The Phillip Island Landcare Group held a workshop in early May for Victorian Landcarers to meet and respond to the DSE Green Paper on Land and Biodiversity at a Time of Climate Change.

The workshop participants came up with a Landcare point of view with four key themes, and made a call to action for Landcare itself. The themes are: the urgency of climate change and declining biodiversity and land health necessitates stronger leadership from the government; Landcare can be a key part of mobilising the community; improvement is needed across many different land uses; and market-based instruments need to be integrated into community-based change.

The document produced by the workshop is available on the Landcare Gateway website and is intended to provide a window into the Green Paper for Landcare groups and networks.

Peter Huthwaite from the Phillip Island Landcare Group discussed the Green Paper at the recent Victorian Landcare Forum. Peter reported that the Landcare community had contributed to the consultation more than any other community group.

For more information about the DSE Green Paper call 136 186 or go to www.dse.vic.gov.au/landwhitepaper.

Victorian Landcare by email?

Would you like to read the Victorian Landcare magazine online?

To be added to the email list for future issues of the magazine send an email to landcare.magazine@dse.vic.gov.au

Next issue

The next issue of the magazine will feature stories on Landcare futures. We'll have more climate change stories and watch out for a feature on the innovative Western Districts Jigsaw Farms run by Eve Kantor and Mark Wootton.

Contributions to this issue should be sent to the editor by Friday 12 September 2008.

Carrie Tiffany, editor
carrie65@optusnet.com.au

Future Farming strategy

The Victorian Government's recently announced *Future Farming* strategy includes seven broad action areas – boosting productivity; building skills; managing climate change; managing land and water; helping farm families face the future; developing new products and markets; and building the right infrastructure to transport products to market.

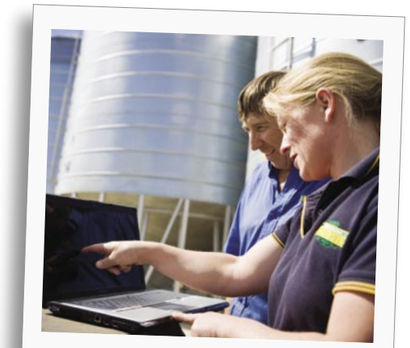
The $205 million strategy package will provide new generation services to improve the productivity, competitiveness and sustainability of farm businesses and support for the farming families and communities who are adapting to a changing environment.

The long-term productivity of the farm sector relies on resources being used sustainably, which means Victorian farmers will need to adapt their practices to manage land, water and environmental risks and improve the natural resource base.

In the area of land and water management, the Victorian Government has committed to an additional $20 million over four years for a range of initiatives to tackle weeds and pests; and $3.79 million over four years to establish an expert group to improve rural land-use planning.

The Government will also progress national water reform, including the $100 million for stage one of the Food Bowl Modernisation Project – the biggest water infrastructure upgrade in Victoria's history; and the Land and Biodiversity White Paper.

For a free copy of the Future Farming strategy or for more information call 136 186 or visit www.dpi.vic.gov.au/futurefarming.

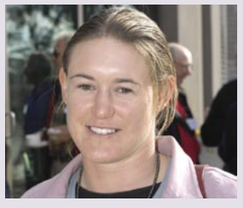


The Future Farming *strategy was launched at the Horsham property of canola grower and mixed farmer Peter Velthuis (pictured above with dietician Judith Ross).*

Victorian Landcare Forum: shaping our future

Close to 300 people attended the 2008 Victorian Landcare Forum on 29-30 May in Creswick. Forum participants talk about what they got out of the event.

By Sally MacAdams



"The Forum brings people together so they can better plan their future Landcare work and provides some good information. It's a great chance to network and is very motivating."

Bianca Shepherd, Kooloonong/ Natya Landcare Group

"This is the community getting together. It's a chance to reconnect and discuss our philosophy and ethos – something we don't do well or often."

Paul Speirs, Bass Coast Landcare Network

"The value of a forum like this is that you don't feel like you are the only one thinking [about these issues]. People all around Victoria are feeling the same way and are facing the same limitations."

Rosemary Trease, Mardan/ Mirboo North Landcare

"The session on Indigenous engagement was one of the best so far…We've pointed out the weaknesses without being negative and highlighted strengths... It's been a dialogue."

Pat Larkin, Warby Ranges Landcare Group

Landcarers from all over Victoria shared their stories at the forum. The stories and group discussions that they produced illustrated Landcare's strengths and limitations. Keynote presentations took participants on a journey through the emerging and future issues for Landcare.

On day two participants got together around the critical areas they had identified and committed to many new actions, including:

- forming a Victorian Landcare Council as a formal link between the Victorian Landcare community and the government, private and non-profit sectors;
- holding a Landcare expo at Birrarung Marr, planned for 7 September, to bring Landcare to the Melbourne audience;
- issuing a challenge to all Landcare groups to make contact with local Indigenous groups to express their interest in being involved in this year's NAIDOC week (6-13 July); and
- agreeing to a motion urging all levels of government to take immediate action to reduce greenhouse gases.

The key themes of the forum and commitments to action are available on the revamped Landcare Gateway and the full proceedings of the forum will be posted on the website by October. Go to http://landcarevic.net.au/

More than 50 Landcarers told their stories across ten themed arenas. Participants in the climate change arena heard how a small rural school and a popular music festival are combating greenhouse emissions.

A carbon neutral school

"At St Michael's Primary School in Springbank we were worried about how much carbon we were producing. We decided to calculate our carbon usage and plant sufficient trees to offset our emissions. As a result, we were recognised as the first school in Victoria to become carbon neutral.

"It didn't take long to calculate how far each family travelled to and from school each year. We added this figure to our gas and electricity usage. We were surprised with the findings: we were travelling collectively over 35,000 kilometres and producing over 17 tonnes of carbon dioxide each year. Jim Mead from the Creswick Landcare Education Centre helped us select indigenous plants and trees to balance our carbon output and attract local wildlife.

"The senior children presented the project and our findings to nine other schools around Ballarat in the hope that they too will become carbon neutral. They booked the talks at other schools, co-ordinated transport and kept staff informed of their arrangements. Empowering the children to spread the news in this way made the project very meaningful for them.

We showed that all schools, even small rural schools, can make a positive difference to our world."

Michael Kennedy, Principal.

(L-R) St Michael's Springbank students Caitlyn East, Tom Quinlan and Ebony O'Neil with Mike Nurse from DSE and Kristen Lees from SOLN during the climate change story arena at the forum.

Festival reduces footprint with plant out

"The Apollo Bay Music Festival was started by the Apollo Bay community 16 years ago. The festival's popularity and size has increased every year and so has its carbon footprint. This year the Apollo Bay Music Festival Committee decided to begin the journey to becoming a carbon neutral festival.

"The committee enlisted the Southern Otway Landcare Network (SOLN) and the Apollo Bay–Kennett River Public Reserves Committee of Management to assist with the project. We offset the festival's direct emissions by planting 1000 mixed coastal forest plants at three prominent sites along the Apollo Bay foreshore.

"Beginning the carbon neutral journey is a big move for any organisation, but these first steps taken by the Apollo Bay Music Festival have shown our community that it can be done.

Carbon neutral kids enjoying the 2008 Apollo Bay Music Festival.

One of the carbon offset planting days for the 2008 Apollo Bay Music Festival.

"The next steps are to conduct an energy audit of all festival venues, work on an energy reduction plan across the whole event, potentially apply a carbon tax on tickets to fund the planting (SOLN and Coast Action Coast Care funded this year's planting), and address the carbon footprint of patrons' travel to and from Apollo Bay.

"Southern Otway Landcare Network has committed to helping the festival achieve these next steps."

Kristen Lees, Southern Otway Landcare Network.

The biological farmer strives to produce top quality food rather than just another commodity. Negative effects, such as erosion, chemical use and fertilisers, are minimised and frequently reversed through conservation farming practices.

No-till guidance machinery is becoming more common. It reduces the physical degradation of the soil.

Sowing rate is very important in drier years. The difference is a harvest compared to none. On the left of this picture Federation wheat was sown at 10kg/ha, on the right of the picture it was sown at 80kg/ha.

Catching weed seeds can really help with weed control... No weed seeds means no chemical needs.

What is biological farming? A new farmer's perspective from the cropping areas of the Wimmera

By Iestyn Hosking

Controlled traffic farming keeps machinery on track to help reduce fuel use and improve the timeliness of work.

I have been asked many times the question of what biological farming is. The best way I can describe it is that the farmer is always thinking further than just the problem at hand and how to prevent it occurring in the future. The focus is on soil and plant health through soil microbial health. Through this process a more nutritionally dense food that can attract a product premium can be produced. The food will be more sustainable and costs should be reduced.

The biological farmer strives to produce top quality food rather than just another commodity. Negative effects, such as erosion, chemical use and fertilisers, are minimised and frequently reversed through conservation farming practices.

It is the balance between the negative and the positive effects that counts, with an increasing soil quality over time.

What is the best conservation farming practice? It all depends on who you are, where you are from and what your past experiences are. For some it is high input zero-till, for others it is one to two workings to manage weeds prior to sowing the crop. These are both best practices, all depending on how they are done, when they are done, where they are done and who is doing it. There is no right or wrong practice, just different techniques and timing.

A farmer who is looking at soil health as their prime focus needs to be open minded to all types of farming, as you never know where the next solution to a problem may come from. It may come in the form of pasture cropping, organics, no-till or zero-till, minimum till, crop rotations, summer and winter cropping, carbon farming, cell grazing, or crop grazing.

The Rhodale Institute in the US has started organic no-till using a cover crop (rye, oats, barley, wheat) that is then rolled for the summer crop of soy or maize. No chemicals are used which means higher yields and a premium price. The soil is getting better every year through the increased biomass for the soil microbes and carbon being sequestered through the crop rolling process.

To take grazing a crop to the next level, Trevor Dawson of NSW recently talked at the Victorian Landcare Network conference about repeated crash grazing crops to manage the weeds until the crop stems start to elongate. It is worth trying if you are already set up for rotational or cell grazing. Use the weeds for feed instead of spraying them out. The ideal seems to be grazing for three to four days and again once the plants have recovered.

Something as simple as making sure dung beetles are present if you have stock can massively increase the level of soil nutrient cycling while decreasing the flies. Looking for organic matter to compost can make a big difference in promoting increased organic matter and nutrient availability. This really is an art, so expect it to take some time before you get the really good, dark, great smelling compost. Compost is the best way to get things moving in the soil and can be added at the same time as lime as they are synergistic.

In the UK organic farmers are starting to use tractor guidance to be able to inter-row-till for weed control. A sub two-centimetre tracking system linked to the steering allows ploughing between rows of crops without killing them. It makes sense if you already are set up for control traffic or guidance.

Which is cheaper, the chemical or the plough? Plough tynes can be used in the crop to knock out the inter-row weeds as well as aerating the soil. Vegetable growers have been doing this for many decades.

Catching weed seeds can really help with weed control. Using a chaff cart catches not only the weeds, but also the screenings that would otherwise end up as a next season problem – we used to do this prior to the current large harvesters. No weed seeds means no chemical needs.

To get microbial populations back into the soil it is best to use a variety of sources. BD 500, Vermicast (worm poo) juice, or compost teas can be used as foliar applications or on the moist ground post-harvest. These are a great way to start the soil biology recovering after being hammered by chemicals for a number of years. Why use such a variety? Because they all have different biological activity and can help give the soil a greater diversity.

This is a case where bigger numbers are better numbers, but they still need to be in balance. With the soil biology improving, then other nutrients that are locked up like potassium and nitrogen start to release. If these elements keep being added at high levels with fertiliser the microbes that fix and release get lazy and stop multiplying.

Any additive put on as a fertiliser or spread as a soil correction can have its effect amplified and extended by using a compost or carbon source with it. This gives the microbes food that can make the additive more available for the plants over the length of the season.

Probably the most important thing is to have a trial paddock for either short- or long-term assessments of different methods and practices from the rest of the farm. In times of drought it can be as simple as sowing grain at a lower rate, or using a positive seed dressing instead of a fungicide. While it may not work all the time, unless it is tried how will you know when it is the right thing to change to?

Iestyn Hosking is a Wimmera farmer and the chair of the Natimuk Urban Landcare Group. For further information contact Iestyn on 5387 1503 or by email at iestyn@vic.chariot.net.au

Protecting fragile soils from extreme weather events with shelterbelts can save valuable topsoil.

Iestyn Hosking prepares to spread lime and compost on his property to balance and stimulate the soil.

The East Otway Landcare Group has a long-term commitment to the revegetation of the Yan Yan Gurt Creek and is educating the public about this important work.

News from the VFF Farm Tree and Landcare Association

By Susi Johnson

The Farm Tree and Landcare Association's review of internal processes is underway. The review has involved consultation with members and stakeholders, the development of a risk management framework and a review of our business and communication strategies to ensure that the best possible service can be provided to Landcare groups.

The Association gratefully acknowledges the support of the CMAs and DSE with the review.

The Association has joined with VFF member services to meet the governance training needs identified by our members. Sessions cover basic governance issues, how to identify strengths and weaknesses of volunteer groups, how to attract and retain members, and committee succession issues. Sessions have recently been held in Bendigo and Wangaratta.

The Association continues to represent our members on a variety of committees, including the newly announced Landcare Volunteer Recruitment Initiative Reference Group, which is a DSE program designed to boost numbers of Landcare volunteers and the capacity of Landcare groups.

As part of continuing education and communication, the FTLA Committee of Management went on a recent field trip to Yan Yan Gurt West. The trip involved a visit to the Landcare property of chairman Andrew Stewart. The property is a mix of farm forestry and sheep farming plus native revegetation and salt reclamation sites, ably demonstrating farming ingenuity in developing a sustainable and profitable enterprise.

Like many active Landcarers, Andrew Stewart wears several hats. He is also an active member of the Otway Agroforestry Network and the East Otway Landcare Group, whose restoration of the Yan Yan Gurt Creek catchment area testifies to the commitment shown by Landcare volunteers.

After spending a day seeing how other farmers are achieving sustainability and the progress Landcare is making, the committee felt a renewed sense of enthusiasm and determination to make it as easy as possible for our volunteer members to continue their Landcare work.

Susi Johnson is the Executive Officer of the VFF Farm Tree and Landcare Association. She can be contacted on 9207 5527.

In brief

Saltland Prospects

The Future Farm Industries Cooperative Research Centre has released a valuable new tool for farmers dealing with salinity and waterlogging. *Saltland Prospects* contains the new national saltland classification system and some practical case studies of how farmers are managing salt-affected land for profit.

According to *Saltland Prospects* the economic prospects from managing salt-affected land are good, and in some cases even excellent, depending on regional, local and property characteristics, the level of salinity, the plant systems selected and the management attention paid. Specific recommendations are given for managing salt-affected land in northern Victoria, south-west Victoria and Gippsland.

Free copies of *Saltland Prospects* are available by emailing greg.madison@futurefarm.crc.au

Climate tools for farmers

Two new tools have been developed as part of a Bureau of Meteorology project sponsored by the Managing Climate Variability program.

One tool shows a range of rainfall scenarios for most rainfall recording stations in Australia and the other is an online product to find out what factors are influencing the climate in their region by clicking on an interactive map. For further details visit www.bom.gov.au/watl.

Australian Landcare International

Several Landcarers have set up a not-for-profit organisation, Australian Landcare International (ALI), to assist overseas groups to take up Landcare ideas. With many years experience of Landcare action at all levels, ALI members want to help establish Landcare programs and projects in other countries.

To date Landcare can be found in over ten countries and interest is growing. Interested visitors from numerous countries have seen Landcare at work in Australia and are keen to apply Landcare actions to overcome natural resource problems and improve lifestyles in their own countries.

ALI already has several projects on the go, including a new book on global Landcare, Landcare Travel Fellowships for overseas study visits, and a database of Landcare expertise across Australia to assist overseas project managers, as well as a regular newsletter on international Landcare activities.

For more information about joining ALI contact Horrie Poussard, 32 Loch Avenue, St Kilda East 3183 or by email at poussard@thereef.co.au Membership is $40 per year.

More thoughts on climate change and Landcare…

The website of Triple Helix Consulting at www.triplehelix.com.au has a good range of reports and writings on natural resource management, Landcare and climate change. All of the reports are downloadable as PDFs and many of them would make good discussion starters for Landcare group meetings or workshops.

There is a climate change primer written for the Department of Climate Change and a copy of an opinion piece published recently in the Financial Review, *Stop Treating Soil Like Dirt,* that raises a lot of issues we discussed in our previous issue of the magazine on soil health.

Floodplain woodland plants guide

The Wangaratta Urban Landcare Group has recently published *Floodplain Woodland Plants of North East Victoria: Identification of natives and weeds and practical management for bush regeneration projects.* The book describes the regeneration and rehabilitation of floodplain woodland areas.

This practical field guide describes and identifies 56 native plants and 79 weeds with coloured images and includes herbicide and other treatments for the weeds. It is available for $16 including GST and postage. Go to http://northeast.landcarevic.net.au or contact Helen and Peter Curtis on 5721 8937, or at email helenc4@westnet.com.au

A Landcare project on a model farm at Mindinao in the southern Philippines.

> *Where blackberry is threatening quality remnant vegetation or riparian areas it is important to act quickly to protect these assets and then work to keep them free of blackberry while other areas of the property are being treated.*

Workshop participants inspect blackberry control works at Hancock's Victorian Plantations. A demonstration trial is underway assessing the main chemicals used for woody weed control, different wetting agents, application rates and the timing of treatments.

Community tackles a thorn in its side

By Michael Reid

When blackberries became too much of a thorn in the side for landholders in the North East, the locals decided to take the issue into their own hands. In 2005 the North East Blackberry Action Group was formed, an initiative of the Upper Murray Landcare Network.

In March 2008 the group celebrated their outstanding success by showcasing their approach to private landholders, local and State government departments. Nearly fifty people attended the event and were bussed around Burrowye, Walwa, Tintaldra and Cudgewa to see presentations on the different management approaches used to control blackberry infestations.

The group is a leading example of how a small band of thoughtful and committed people can get together to make great inroads to generating change in their landscape. The group generally meets four times a year with fifteen land management groups, including eight Landcare groups, farmers, the Towong Shire Council, plantation owners, Parks Victoria, DSE and VicRoads.

The group's project officer works with landholders across the region through direction from the action group. Three-year voluntary blackberry management agreements are negotiated with landholders and management techniques are also discussed. Weed mapping is also initiated by the group, using global positioning technology, to pinpoint infestations on private and public land, and roadsides. The maps are then given to land managers so they can co-ordinate future works in conjunction with the group.

Group chairperson Lyn Coulston says discussions with private land managers show that those with serious blackberry problems often see no way forward and think that those around them see them as poor land managers, causing them to become reluctant to take action.

"However, often all that is needed is an outsider to come in and listen, provide information and support and then they get on with it. Also getting access to blackberry infestations is the largest single barrier to treatment," Lyn Coulston says.

"We are able to give landholders a helping hand by providing a contribution to the cost of installing access tracks in some cases. Where blackberry is threatening quality remnant vegetation or riparian areas it is important to act quickly to protect these assets and then work to keep them free of blackberry while other areas of the property are being treated.

"This allows the farmers to get into the hard to reach country areas to continue follow-up spraying,

"The program isn't just about removing blackberry; we are starting to witness landscape change as once infested areas are reclaimed for production and in steep areas information about management of the existing native pastures is provided."

Lyn Coulston is also the elected chair of the Victorian Blackberry Taskforce (VBT). The VBT provides a statewide approach to blackberry management that aims to try to duplicate the North East's success.

For further information contact Michael Reid on (02) 6043 7975 or go to www.vicblackberrytaskforce.com.au.

North East Blackberry Action Group achievements:

- Over 2500 hectares of blackberry treated
- 49 land managers on voluntary work agreements
- 783 kilometres of roadside mapping completed
- 34 kilometres of access tracks built

Farming in a changing climate

By Susi Johnson

On a breezy day last February we headed to Lakes Entrance for the Farming in a Changing Climate conference, held by Agribusiness Gippsland in partnership with DPI and East Gippsland Landcare. The theme had generated a lot of interest, with the conference being fully subscribed and similar events planned for other regions.

The conference speakers included leading climate change scientist Dr Graeme Pearman plus other CSIRO and DPI experts, with Birchip Cropping Group's Alexandra Gartmann, Gerry Leach from the National Farmers' Federation Climate Change Working Group, and Claire Penniceard from the VFF representing the farming community.

While recognising the scale and seriousness of the risks attached to a changing climate, speakers discussed positive ways to enhance profitability while reducing emissions and successfully taking advantage of change.

A presentation by Kevin Hennessy (CSIRO) on climate change projections for Gippsland enabled locals to start planning for the future on a regional scale (other regional projections are available at http://www.climatechange.vic.gov.au). Kevin also discussed the reliability of projections, noting that temperature projections are very reliable, but that rainfall projections are currently less certain, with more work being done.

Dr Christine Jones and Claire Penniceard spoke about actions that farmers can take that provide wins both for the farmer and for sustainability. Christine Jones, a soil carbon expert, discussed the benefits of increasing soil carbon, not only for natural systems but for vastly increasing soil water-holding capacity: a benefit close to any farmer's heart. Emission trading possibilities are still uncertain, but if farmers can sell credits from soil carbon, a triple win is possible.

Claire Penniceard's presentation was inspiring and practical, given what she has already achieved – a highly profitable zero waste piggery. Claire revealed her secret for a sustainable enterprise – her advice is to plan for 40% of long-term average rainfall. Her description of constructing her 10 metre-deep, narrow and therefore low evaporation, cool and algae-free dam is an amazing example of farming innovation.

The exception to the general approach on the day came from Professor Robert Carter, who spoke as a climate change sceptic. Robert Carter was a persuasive speaker and sections of the audience responded to his argument that we need not worry about climate change.

A huge audience listens intently at the Farming in a Changing Climate conference held at Lakes Entrance in February.

The response by the speakers and the audience emphasises that despite almost unanimous agreement among scientists, the battle for hearts and minds is still ongoing.

Graeme Pearman acknowledged the value of scepticism in keeping the science rigorous, stating that he would be thrilled if climate change did not eventuate, but that we need to be prepared for the more likely outcome.

Susi Johnson is the Executive Officer of the VFF Farm Tree and Landcare Association. Further information on upcoming conferences is available from www.gippslandagribusiness.com.au.

> *Climate change projections for Gippsland enabled locals to start planning for the future on a regional scale.*

> *Members of the Ovens Landcare Network were keen to investigate new technologies that they could use on their farms, but realised that local information was lacking.*

Farmers in Victoria's North East are investigating new ways to boost farm profits and reduce greenhouse emissions. Wooragee dairy farmer Neil Arnold now uses solar power to pre-heat milking machine clean-up water.

Wangaratta lifestyle farmer Jackie Reid. Only four weeks after installing a grid connect solar system, the Reids saved 157 kilograms of CO^2 emissions.

Landcare goes solar in the Ovens

By Mary-Anne Scully

Daily operations at Neil and Wendy Arnold's Wooragee dairy farm are now cheaper and generate lower greenhouse emissions thanks to an innovative project of the Ovens Landcare Network in North East Victoria.

The Arnolds recently installed a solar pre-heating system for their milking machine clean-up water after winning a comprehensive energy audit and $10,000 towards a technology retrofit.

The Arnolds were one of two farms selected as a demonstration site through the Ovens Landcare Network Energy Efficient Farm Practices pilot project.

The project is supported by the North East CMA, the North East Greenhouse Alliance and funded by the Australian Government's National Landcare Programme.

The project came about because members of the Ovens Landcare Network wanted to find new ways to simultaneously boost farm profits and reduce greenhouse emissions.

According to project officer Sean Guinane, most agricultural greenhouse projects have focused on reducing farm emissions from soil or livestock management practices.

"The Landcare network wanted to find new ways to more efficiently use fossil fuels and electricity or replace these energy sources with alternatives," Sean said.

Research by the North East Greenhouse Alliance highlighted that lack of awareness was a key barrier to uptake of alternative methodologies and technologies in North East Victoria.

Members of the Ovens Landcare Network were keen to investigate new technologies that they could use on their farms, but realised that local information was lacking. To fill the gap they ran a series of practical information workshops about alternative fuel sources hosted by local Landcare groups throughout the catchment.

The workshops focused on solar, wind and micro-hydro power sources and highlighted energy efficient practices including compressors, pumps and invertors and alternative energy sources such as bio-fuels. Speakers included energy experts, local businesses who demonstrated products and discussed after-sales service and local landholders with first-hand knowledge and experience of alternatives.

Attendees were asked to complete detailed questionnaires relating to their farm enterprise and energy use at the workshops and the information was used to select two farms to become demonstration sites, monitoring and highlighting the savings that can be achieved by installing solar power.

North East CMA Landcare Co-ordinator Sue Leavold explained that the properties were selected because they demonstrated the greatest possible energy savings from installing alternative technology.

"We chose a commercial operation and a small farm/lifestyle operation to reflect the mix of farming enterprises within the Ovens Landcare Network. In the small farm/lifestyle category, Rob and Jackie Reid were incurring significant pumping costs. They water fine wool merinos from troughs supplied by well water that used a pressure pump," Sue said.

Based on the results of their energy audit, the Reids chose to install a grid connected solar system on their house at Londrigan, north-east of Wangaratta. The system has reduced running costs on the farm and the Reids receive 61 cents per kilowatt for excess power generated and returned directly to the grid.

Special meters were installed at the two demonstration properties before the solar system was installed so the Ovens Landcare Network will be able to accurately monitor and report on energy savings derived through the project.

Sean Guinane believes that farmers need to be confident in how solar power works in order to make the change.

"When a piece of equipment breaks down on a farm it usually needs to be fixed or replaced as quickly as possible. As a result, people will usually turn to what they know works. We're aiming to give farmers the necessary knowledge, local contacts and confidence they need to implement changes that can deliver improved profit and positive environmental outcomes," Sean said.

For further information contact Sue Leavold at the North East CMA on 5727 9266.

> *Farmers need to be confident in how solar power works in order to make the change.*
> *– Sean Guinane*

Shepparton's own global warming ambassador

John Pettigrew and his wife Robin are fruit growers at Bunbartha near Shepparton. They have many years of experience in primary production and environmental management between them.

John is passionate about managing our natural resources and sustainable farming. He is a Board member of the Goulburn-Broken CMA and a member of the Bunbartha-Kaarimba Landcare Group. He also chairs The Environmental Farmers Network and is a member of the VFF and the Goulburn Valley Environment Group.

But in 2006 John's life took yet another turn when he was selected to train as a climate change presenter with former US Vice-President Al Gore.

John was one of the initial 85 presenters selected from across Australia trained to give a challenging climate change presentation based on Al Gore's slide show and the movie, *An Inconvenient Truth*.

"That weekend in Sydney, where we met Al Gore and the other presenters, was nothing short of inspirational. There was a lot to learn too. Our presentations review historical data and scientific information, look at the causes and evidence for global warming and climate change and the likely local and global impacts and solutions," John said.

A very busy 18 months has followed with John giving over 40 presentations to Landcare groups, schools, service and Probus clubs, environmental groups, and State government departments.

John has been very encouraged to learn about the huge range of Landcare and community projects that are protecting and enhancing the environment and have a positive effect in removing carbon from the atmosphere.

"The Superb Parrot Project, which is revegetating parrot habitat and the Strathbogie Tableland Landcare Group's Bridge to Bridge Project restoring the Seven Creeks are great examples."

John has encountered some sceptical responses to some of his presentations, but he's been impressed by the responses from young people to the issue.

Shepparton farmer John Pettigrew has spent the last two years spreading the word about climate change around Victoria.

"The leadership, talent and commitment of our younger generations to the environment was very evident at schools visited at Yea and Shepparton and at a public information evening organised by Zoe Swager a student at the Wangaratta High School Community Learning Centre.

"I am far more confident if our future is really in the hands of the younger generation."

John has met many people in the community committed to reducing energy consumption and living more sustainably, but he remains concerned that Government actions and policies relating to renewable energy, greenhouse gas emissions and carbon trading still lag far behind community sentiment and our global responsibilities.

Further information is available at www.acfonline.org.au then go to climate project.

> *John was one of the initial 85 presenters selected from across Australia trained to give a challenging climate change presentation based on Al Gore's slide show and the movie,* An Inconvenient Truth.

The forest at Mt Pilot was devastated after the 2007 fires.

> *The cypress pines show excellent drought tolerance and as such have great potential for farm plantings, especially given that we can expect to experience further droughts because of climate change.*

Drought and fire shape our future

By Margrit Beemster

Dr Ian Lunt (right) advises students on the monitoring project at Mt Pilot.

Climate change won't just mean more fires and floods and less rain, it will also mean our forests and bushland will change.

According to Dr Ian Lunt, an ecologist from Charles Sturt University's Institute for Land, Water and Society, future scenarios suggest drier weather with more extreme weather events and severe fire weather will greatly change bushland in eastern and North East Victoria.

"There are serious ramifications for the people who live in the region from the perspective of changed fire hazards and impacts on tourism. Tourists and residents may like or dislike how the bush might change," Ian says.

"How to address this expected change is a challenging issue."

Ian Lunt's approach to understanding future changes is to study how the bush has responded after a severe fire that coincided with a drought. He is working collaboratively with Parks Victoria and DSE on a long-term study on post-fire regeneration at Mt Pilot.

"The fires of 2003 and 2007 help us understand how different tree species have been able to regenerate during a really severe drought. The 2003 fires were exceptionally intense. A third of Victoria's largest remaining stands of native black cypress pine (Callitris endlicheri) in Chiltern-Mt Pilot National Park was destroyed," Ian says.

After the fires, areas were fenced to see what effect grazing animals (wallabies and rabbits) had on regeneration, and since 2004 university students have been monitoring plots in burnt and unburnt areas annually.

A major focus this year was to find out how many seedlings had died because of the drought.

"One of the valuable things about Mt Pilot is that because the native pines are intermixed with eucalypts, we can compare species that are killed by fires (the pines) against eucalypts that are able to regenerate after fire by coppicing," says Ian.

In the first year after the fires the native pines regenerated very densely in nearly all the sites where they had been before. Many tiny pine seedlings died in that first year, but since then there have been hardly any deaths despite the severe drought.

The eucalypt seedlings, on the other hand, grew very fast in the first three years after the fires. At first it looked as if they would out-compete and dominate the slower-growing native pines. But by this year, because of the drought, many of the eucalypts are extremely sick and have started to die.

The three eucalypt species that regenerated after the fire were red stringybark, long leaf box and red box. Results indicate that red stringybark is the least drought tolerant of the three species.

"The cypress pines show excellent drought tolerance and as such have great potential for farm plantings, especially given that we can expect to experience further droughts because of climate change," says Ian.

"They are slow-growing to start with but are very long-lived, and will live a couple of hundred years. However, the concern for the future is fires. Pines are sensitive ecologically as they are only able to regenerate from seed. If there is another fire in the area before the new seedlings have had a chance to mature and produce seed, then the pines could be wiped out."

Ian Lunt says climate change will undoubtedly substantially change the bushland around us.

"Understanding which species are going to be promoted, and which are going to decline is a key challenge. One thing is certain, the forests of the future are likely to be very different from those that exist today."

Farming carbon – an update

By Graeme Anderson

There is a great thirst for information about the fast-moving world of climate change and the new carbon market.

This is a brief update. It is important to remember that many details and key rules will continue to unfold over the coming year as the national emissions trading scheme is designed. But we are already seeing an active voluntary carbon market emerge in Victoria which offers insights into the new world of carbon trading.

We all need to take climate change seriously. Scepticism is being replaced by the need to take action. Climate change is serious and the carbon market will be a key plank in the global effort to reduce greenhouse emissions and the risk of dangerous climate change.

Graeme Anderson says landholders need to take climate change seriously.

The market

The carbon market is a growing market, it is changing quickly and it will be big. At present the market is trebling each year. Carbon prices will be determined by supply and demand forces. Should climate change unfold more quickly than anticipated, emissions reduction targets within trading schemes may set tighter emissions limits which would have the effect of increasing prices. Over the longer term most people expect carbon prices to increase – however, like all markets there will be periodic fluctuations.

The emerging carbon market has two parts: firstly, the compliance or regulatory market is based around an official emissions trading scheme. Australia is designing one of these at present. Secondly, the voluntary carbon market is servicing corporate and community demands such as offsetting vehicle travel, air flights, or those aiming for a carbon neutral business or home. In these cases someone volunteers to pay a carbon brokerage business in exchange for an equivalent carbon offset.

We know that forests have a role – for example, 20% of global emissions currently come from permanent clearing of forests.

New forestry plantations offer a key mechanism to remove existing CO^2 from the atmosphere – but they are only one of a number of solutions to mitigating climate change. Reducing emissions in the first place is always a priority. Forest offsets will only be a part of the overall carbon market activity and this will be in competition with other forms of eligible emission reduction techniques.

The farm

While building stores of soil carbon does offer promise, currently more investigations are required to enable this to be included in trading schemes. Forestry is largely in a better position to enter a trading arena thanks to a century of commercial trade – where there are reliable growth, yield and production figures and systems which enable affordable accounting of forest biomass and carbon. This provides confidence for buyers and sellers in the carbon market.

Landowners already have a number of carbon sink options to choose from in Victoria. There is a range of products and landowners should think and plan carefully to make sure they make the right decision for the longer term.

Whilst previously most of our natural resource management revegetation projects have been led by public funding, new carbon sink projects will be driven by private investors and service providers.

Existing biosequestration projects in Victoria have a very strong desire to achieve catchment and biodiversity benefits in regional areas and are keen to collaborate with regional CMAs and Landcare communities.

The pool

Most carbon projects will be managed and delivered by private brokers or pooling agents. It will be a competitive market and no single pooling agent will be able to control the market, as landowners will choose the models and products that suit them best.

Carbon pooling is a complex and risky business and requires sophisticated carbon management and accounting expertise. If a local group, CMA or local government wishes to establish their own carbon pool, they too will be operating in a competitive environment – with no guarantee that local landowners will choose their offer or product.

For landowners to participate in the voluntary or emerging emissions market, currently the route to market is via carbon brokers/pooling agents. Just as with other products produced on-farm, your carbon enters a supply chain. The cost of carbon at the end point of the supply chain will not be the same as that paid at the farm gate.

Not all of the carbon grown and stored on a farm is able to be traded into a market – more realistically only some forms of carbon will be eligible. Getting carbon to market will require it to be produced at a sufficient scale to meet all of the eligibility and verification requirements and demonstrate the permanence of the sink (possibly 100 years).

There may be other options for landowners to convert on-farm carbon into financial gain. If agriculture is eventually covered by an emission trading scheme farmers may wish to use their own carbon stores as an offset against any of their own agricultural emissions.

Landholders in the Corangamite region at a carbon field day.

Some markets are also appearing which are seeking a low greenhouse footprint or carbon neutral farm-grown product. Future farmers may be able to use verified on-farm carbon stores to tap into new markets offering premium prices for carbon neutral products.

Catchment positive

Natural resource management organisations should seek to collaborate with private carbon pooling projects and assist them to develop projects which are achieving the desired local catchment objectives – this may require an adjustment to the mode of operation compared to traditional revegetation programs.

There are many good reasons for having a farm which has more carbon – other than the prospect of financial gain through selling carbon. Farmers already appreciate that trees provide lots of other benefits on a farm, and soils with higher organic matter and carbon are considered healthier and more productive. The new carbon markets can provide some significant win-win situations for landholders and the environment.

For landholders thinking about participating in a carbon offset project, the new DPI information note, Considerations for treegrowers before selling their carbon, *can be found at www.dpi.vic.gov.au/privateforestry. Go to what's new and then click on carbon trading.*

Graeme Anderson is a Senior Farm Advisor with DPI in Geelong. He can be contacted on 5226 4821 or by email at graeme.anderson@dpi.vic.gov.au

Victorian carbon brokers

Whether you are buying or selling, the carbon market is growing. The following schemes provide some examples of businesses operating in this emerging industry at present – and the list is growing.

Australian Carbon Biosequestration Initiative Limited
www.biggreenumbrella.org.au

Australian Carbon Traders
www.australiancarbontraders.com

Carbon Neutral
www.carbonneutral.com.au

Carbon Planet
www.carbonplanet.com.au

CO2 Australia
co2australia.com.au

Climate Positive
www.climatepositive.com

Greenhouse Balanced
www.bendigobank.com.au/public/generationgreen

www.greenhousebalanced.com.au

www.ecologicalcredits.com

Green*fleet*
www.greenfleet.com.au

Landcare CarbonSMART
www.carbonsmart.com.au

Treesmart Australia Pty Ltd
www.treesmart.com.au

> *There are many good reasons for having a farm which has more carbon – other than the prospect of financial gain through selling carbon.*

If current predictions are correct we can expect increases in temperature, changes in precipitation (less snow, more rain), reduced snow depth and cover and less cloud cover leading to higher ultraviolet light levels.

Members of the Victorian National Parks Association take a break during rehabilitation work at Ribbon bog.

Changes to the amount of water coming from the mountains will have a significant impact for our catchments.

The Alps may hold the answers

By Margrit Beemster

Alpine bogs and fens play a key filtering role in the movement of water. They also provide habitat for wildlife like the Corroboree frog whose numbers have crashed over the past eight years.

According to alpine ecologist Roger Good, it is our fragile alpine wetland communities, which play a significant role in our catchments, that are likely to be the first to be adversely affected by climate change.

If current predictions are correct we can expect increases in temperature, changes in precipitation (less snow, more rain), reduced snow depth and cover and less cloud cover leading to higher ultraviolet light levels.

This will mean changes to the natural environment and for some plant and animal species endemic to the alpine environment, such as the mountain pygmy possum, possible extinction or greatly reduced numbers.

Roger Good has been involved in a research program looking at the impacts of climate change on the alpine environment for the past six years. Roger is a member of the NSW Murray Wetlands Working Group's executive and a member of the Alps National Parks Mire Rehabilitation Team (mire is another word for wetland, fen or bog). The rehabilitation team works under the Australian Alps National Parks Interstate Management Agreement which Roger helped establish in the 1980s.

"The program we are implementing in the Alps Parks is arguably the only field-based program actually doing something on the ground to mitigate the effects of predicted climate change on alpine bogs," Roger says.

Some plant communities thrive, others decline

Roger was one of the authors of a 2003 report for the Australian Greenhouse Office on the potential impact of global warming on the biota of the Australian Alps. The report predicted that several dominant plant communities, such as tall alpine herbfield, heathland and sod-tussock grassland would become even more widespread and dominant. In turn, sensitive plant communities such as short alpine herbfield and fens, bogs and peatlands that are of particular significance in catchment hydrology and water yield would decrease in area and decline in number of sites.

The report also predicted that the numbers of mountain pygmy possum and the broad-toothed rat, both of which are endemic to alpine environments, would fall and their habitat would be even further restricted.

Five years on from the original report, the signs are that some of these predictions are being experienced. But Roger is cautious.

"We shouldn't attribute recent recognisable changes to climate change just yet. We have to wait until we have enough data to be able to say unequivocally that climate change is the culprit.

On the other hand, we can now predict what some of the impacts will be if and when they occur.

"We know that the temperature for the past five years at Charlotte's Pass has been about one degree higher on average than for the previous 25 years. Is that climate change or are we just going through a cyclic perturbation or warmer dry spell?"

Roger explains that researchers are using a number of 'indicator' species to measure the impact of climate change.

Increase in UV light hampers seed set and flowering

Over the last couple of years increasing levels of ultraviolet light have had a detrimental impact on the flowering and seed set of the Skye lily and the marsh marigold. The marsh marigold starts to flower when the snow cover is thin enough to let light through so as to extend its flowering period and seed set.

If the snow cover in the future is continually thin or non-existent the marsh marigold will start to flower and set seed even earlier. This may mean it might be too early for it to set viable seed, or it may not set seed at all.

Roger says the numbers of broad-toothed rats have declined over the past years of poor snow cover and shallow snow depth. Mountain pygmy possums which are already under threat of extinction are also declining. Corroboree frogs that live in the sphagnum moss in alpine bogs are under threat too.

Dry bogs bad news for frogs

"When the sphagnum moss starts to disappear as the bogs dry out, so do the frogs. Over the last five to eight years the population of frogs has crashed. Why? We are not prepared to say it is as a result of climate change because there have been fires and drought and occurrences of frog fungal infection…it might be because of a combination of all these factors," Roger says.

Another change over the past three decades has been in the migration patterns of regionally migrating birds. The birds are arriving in the mountains increasingly earlier each spring.

"Over the last five years they have arrived as much as six to eight weeks earlier than they did in the 1970s. Is this an indication of climate change on the coast, or in the Alps, or is it just a factor of prolonged drought? Again we don't know at this time."

A major concern is that climate change may mean less snow, which in turn will lead to less water coming from the alpine catchments.

"If climate change only leads to a change from snow to rain maybe nothing will change in terms of water yield. But what will change is how the water flows to streams. Instead of the snow melting and slowly draining through the bogs and fens as rain it is likely to be as storm events with the water just rushing through the bogs straight into the streams and rivers without the filtering effect."

Roger believes that if climate change leads to decreased total precipitation, either as snow or rain, this will have a detrimental effect on the bogs.

"The bogs will dry out and/or become much smaller and lose their functional hydrological and ecological role in the catchments. To prevent all the bogs from drying out would require an enormous amount of work and cost many millions of dollars."

Changes to the amount of water coming from the mountains will affect the mid-reaches and riverine wetlands of the Murrumbidgee and Murray Rivers.

"The NSW Murray Wetlands Working Group is putting in structures to control flows on riverine wetland entrant channels so that the maximum wetland benefit is gained from the very much reduced environmental flows, and ensuring the riverine wetlands are in as healthy a condition as possible so they can survive the impacts of any future climate changes," Roger says.

Dr Chris Grainger DPI Methane Research leader (left) talks research with Dr Richard Eckard.

A dairy cow fitted with a methane collar.

> *Any agricultural activity that inefficiently supplies nitrogen to the soil-plant system can lead to large losses of nitrogen through a number of loss processes, including nitrous oxide.*

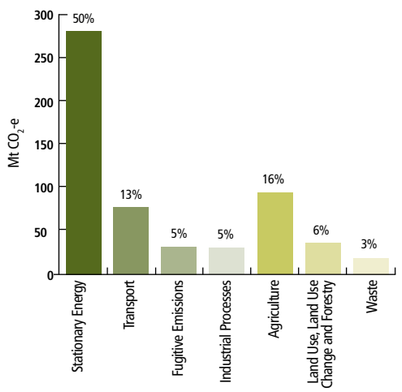
Reducing our greenhouse gas footprint on the farm

By Richard Eckard

Agriculture is reported to contribute around 16 percent of national greenhouse gas emissions in Australia. The main greenhouse gases emitted from farming systems are methane, lost from rumen digestion (the rumen is the first part of the stomach of a ruminant animal, in which most food collects immediately after being swallowed), and nitrous oxide, lost from nitrogen fertilisers, animal excreta and soils.

Agriculture accounts for 60 percent of Australia's total methane emissions and 86 percent of nitrous oxide emissions. Both methane and nitrous oxide are potent greenhouse gases with global warming potentials many times that of carbon dioxide.

Figure 1. Australian national greenhouse gas emissions by sector.

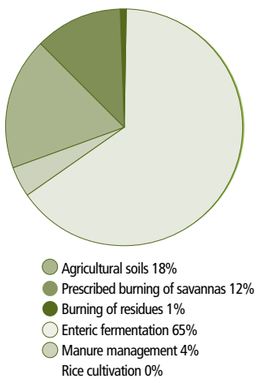


Most of the methane lost from agricultural systems comes from rumen fermentation. Nitrogen fertiliser is responsible for 25 percent of nitrous oxide emissions from agriculture with 31 percent coming from nitrogen in animal excreta.

Emissions trading

The Federal Government will introduce a national emissions trading scheme by 2010. Initially the scheme will focus only on the 700 largest companies, representing 70 percent of national emissions. While agriculture is not included initially, it is highly likely that it will be included in the near future.

Figure 2. Greenhouse gas emissions within the agricultural sector. These figures are taken from the 2004 National Greenhouse Gas Inventory.



In the meantime, farmers can trade in offsets, defined as new projects or actions that abate greenhouse gas emissions. For the farm sector this can include planting trees on farms or increasing soil carbon, plus reductions in methane and nitrous oxide.

Gas abatement research

Over the past six years the Victorian Government has invested in the Greenhouse in Agriculture project. A key focus of the initial research was to investigate practical ways to reduce methane emissions from ruminants, while improving productivity. We are also working to reduce the uncertainty in estimates of nitrous oxide emissions from dairy pastures and grain cropping systems as these are the largest sources of nitrous oxide in Victoria.

In the rumen a group of microbes called methanogens are responsible for producing methane. The methanogens utilise surplus hydrogen in the rumen to reduce carbon dioxide and produce methane. The methane produced is then largely belched and breathed out by the animal.

However, as methane gas is a high-energy source, this represents a significant loss of energy from the production system that can and should be redirected back into production. The key is to provide another mechanism for reducing hydrogen levels in the rumen, otherwise normal digestion will be adversely affected and the energy savings will not be realised in improved production.

Table 1. Typical methane produced by ewes, steers and dairy cattle and examples of the energy lost as a result.

Animal Class	Methane (kg/year)	Equivalent grazing days of energy lost per animal	Potential km driven in 6-cylinder LPG car
Mature ewe	10 to 13	41 to 53	90 to 116
Beef steer	50 to 90	32 to 57	450 to 800
Dairy cow	90 to 146	24 to 38	800 to 1350

The Greenhouse in Agriculture methane project is evaluating cost-effective dietary supplements that can both reduce methane and improve milk production. These supplements include monensin, tannin and whole cottonseed.

Early data suggests that tannin, from the black wattle, reduces methane significantly, while also reducing nitrogen excretion in the urine, further reducing nitrogen losses to the environment. The research has also shown that for every one percent extra oil (of any source) added to the ruminant diet, we can reduce methane by six percent. This is profitable in the case of whole cottonseed fed to dairy cattle in summer.

Other research nationally and in New Zealand is looking into diet manipulation, rumen modification, vaccination, breeding and animal management as options for reducing methane.

Nitrous oxide is primarily lost from agricultural soils through cultivation, legumes, nitrogen fertilisers and animal excreta. Nitrous oxide is formed through denitrification; a process maximised in warm, anaerobic (wet) soil conditions with large amounts of nitrate and available carbon present.

Any agricultural activity that inefficiently supplies nitrogen to the soil-plant system can lead to large losses of nitrogen through a number of loss processes, including nitrous oxide.

The research by the Greenhouse in Agriculture project has now provided a solid scientific basis to justify lower nitrous oxide emission factors for nitrogen fertiliser use in some industries. Nitrous oxide losses from nitrogen fertiliser can be minimised by applying a range of best practices on farm. These best management practices can be found at www.nitrogen.unimelb.edu.au.

Summary

The research indicates that through improved feeding, breeding and management we can both reduce methane emissions and improve the profitability of our livestock production systems.

Likewise, by paying attention to the rate, source and timing of nitrogen fertiliser and only applying the nitrogen tactically, we can both improve the efficiency of fertiliser use and reduce unnecessary nitrous oxide emissions.

A dairy cow in the methane chamber at Ellinbank.

Further information is available on the project website at www.greenhouse.unimelb.edu.au.

Dr Richard Eckard is a joint appointment between the University of Melbourne and DPI leading the primary industries component of the Victorian Climate Change Adaptation Program, a team of 25 scientists working on the biophysical, social and policy aspects of climate change adaptation. He also leads the Greenhouse in Agriculture project, researching win-win options for reducing methane and nitrous oxide emissions from agricultural systems.

Around the State – News from the Regional Landcare Co-ordinators

Corangamite

A Landcare and Community Governance Training Program has seen many local Landcare members and co-ordinators develop their skills and knowledge on how to run effective community groups, leadership, project development and information technology skills. At the completion of the six-week program participants will graduate with a Certificate IV in Business/Governance.

Landcare celebrations continue across the region with the Leigh Catchment Group celebrating 10 years of action. Over 150 people attended a celebratory field trip and dinner.

The Community Involvement Program, in partnership with the CMA and Conservation Volunteers Australia, has been a great success this year with over 25 projects completed along coastal areas, wetlands, riparian zones, and local nurseries.

Over 840 community volunteers have participated including international volunteers, local school groups and the Landcare groups.

For further information contact Tracey McRae on 5232 9100.

Mallee

The Mallee Regional Landcare Network has been busy with the implementation of the New Generation Landcare Grant – Implementing Landcare Group Based EMAP.

A combination of fencing remnant vegetation and revegetation for biodiversity enhancement and planting saltbush to increase profitability of marginal cropping lands is in full swing. This project has been ably assisted by the Mallee Environmental Employment Program which employs drought affected farmers to conduct environmental works.

Landcare co-ordinators conducted a workshop at the Environmental Schools festival in April, which attracted participation from over 500 students from across the northern Mallee. A host of Envirofund and Community Water Grants projects are underway, with a particular emphasis on wetland creation and restoration at several sites across the Mallee.

For further information contact Brendon Thomas on 5051 4576.

East Gippsland

The region has been busy with the networks working on policies and procedures, planning for the next regional awards, field days, training days and lots more.

The East Gippsland Landcare Network is running training for community groups including the Certificate IV in Business/Governance and biodiversity law.

We welcome a new group – The Friends of Picnic Point Landcare Group.

The Far East Victorian Landcare Network is working on their structures, governance and policies, and organising their annual dinner. Geoff Williams from the Australian Platypus Conservancy will be the guest speaker.

The Snowy River Interstate Liaison Committee have been working on group action plans and group projects while preparing for the next round of Second Generation Landcare Grants.

We are all gearing up for the financial year reporting. Don't forget that all groups need to fill in their performance story templates.

For further information contact Becky Hemming on 5150 3577.

Port Phillip and Westernport

Can I be paid for farming nature? This is the title of three free seminars to be held in June aimed at introducing landholders to emerging market-based programs such as auction/tenders, native vegetation and carbon offsets. The seminars will outline some of the obligations and potential returns for landowners, and include perspectives of landholders already taking part in existing schemes.

In February the PPWCMA held a regional forum at the Melbourne Museum on exploring community collaboration. The event was designed to catalyse greater collaboration amongst community NRM groups and attracted over 90 people.

Congratulations to John Robinson for being awarded the latest Victoria-Virginia Landcare Fellowship.

For further information contact Doug Evans on 9296 4662.

North East

Drought issues are still significant for landholders and groups with the continued low rainfall resulting in no useful autumn break for most of the region. In spite of this, Landcare continues to deliver a range of projects and information sessions to assist the community to manage their land.

The final session of training in the use of GIS mapping and GPS software for Landcare co-ordinators and community members was held by the CMA in the Upper Murray. This will assist groups to use digital spatial mapping to plan and report on works undertaken.

The Omeo and Benambra Landcare Groups held a successful soil health forum in March, with many landholders from across the region attending.

Landcare Group members have been participating in a series of Indigenous Weaving workshops, supported by the CMA and Arts Victoria. These women-only workshops included training by local Indigenous women in traditional weaving techniques using native plants.

For further information contact Tom Croft on (02) 6043 7600.

Trainer Sharon Edwards shows women how to use local materials for weaving at the Indigo Hall.

Dry times – the Wimmera River between Dimboola and Jeparit.

West Gippsland

A dedicated group of Landcarers from Bass Coast, Yarram and districts and the Wimmera recently met in Yarram as part of our region's annual Landcare Support Strategy to re-visit and review processes. A group survey for 2007-08 was also completed and the final report will be tabled at our September Regional Landcare Forum.

The new Australian Government program, *Caring for Our Country*, looks like impacting on the way we do some aspects of Landcare in West Gippsland and we are currently working out how to operate effectively with this new program.

For further information contact Phillip McGarry on 1300 094 262.

Glenelg Hopkins

Dave Burgess is the new Watershed 2000 project co-ordinator. Dave works out of the Watershed 2000 office in Mortlake on Mondays and Fridays and can be contacted by email at W2000@hotkey.net.au or on 5599 2963. The new Basalt to the Bay Landcare network will also be employing a co-ordinator. These positions have been supported by Second Generation Landcare Grants.

North Melbourne Institute of TAFE students participated in their annual study tour of the region and visited Eve Kantor and Mark Wootton's Jigsaw Farms. Mark presented a brief history on the Potter Farmland Plan and described the Jigsaw focus of farming for profit while caring for the environment prior to showing the students around the property.

Preparations are underway for the Victorian Landcare Network forum to be held in Port Fairy on 28-31 October. Day one of the forum will be dedicated to celebrating Landcare with community volunteers.

For further information contact Shelley Lipscombe on 5551 3353.

Wimmera

Tim Flannery is booked to speak at a Wimmera Landcare forum on climate change in Horsham on 17 October 2008. The forum is open to anyone interested in how we adapt, change and respond to the challenge of climate change.

Plans are underway for three landscape scale revegetation projects: Project Platypus on 19 & 20 July; Yarrilinks on 2 & 3 August; and Hindmarsh on 16 & 17 August. Landcare and community volunteers are welcome with registration and contact details available at http://wcma.vic.gov.au.

The iconic Grampians to Little Desert Biolink project also kicks off this year and has received strong support from landholders within the project area.

Barengi Gadjin Land Council held a Wimmera Indigenous Caring for Country Forum on June 19-20.

For further information contact Max Skeen on 5382 1544.

Goulburn Broken

Caring for our Country has been on everyone's agenda. We have been working with all of the Landcare networks to attempt to secure employment for facilitators. Where this has not been possible we have attempted to have a critical look at the networks and minimum requirements. This will be important going into the 09/10 competitive rounds.

On other fronts, facilitators have been undertaking GIS mapping training. This will help with group and network forward planning. We are in the middle of the review of the Community Landcare Support Strategy and working with all concerned to come up with a strategic plan that documents CMA support for Landcare over the coming five years.

For further information contact Tony Kubeil on 5761 1619.

North Central

Landcare groups in the region are busy delivering New Generation, Second Generation, Drought Recovery and Envirofund projects with fencing and planting well underway.

The launch of the region's Landcare DVD at Sutton Grange Winery was a huge success with over 250 people attending. Libby Price from the ABC Country Hour was master of ceremonies and the night was a wonderful showcase of Landcare achievements and the different environmental issues our communities tackle.

Boundary mapping has been completed for the region and can be viewed at www.nccma.vic.gov.au.

Most Significant Change Stories are currently being collected and will feature in a booklet of Landcare Stories. Governance Training workshops are being rolled out through July for community Landcare members to brush up on executive positions, running meetings, grant writing and managing funds.

For further information contact Allison Long on 5440 1814.

Sure Gro's™ Winter 2008 Sale

Freecall 1800 643 384

REVEGETATION 350 TREE GUARD SETS

Set Includes

1 x Tree Guard

450mm height x 350mm lay flat width x 100µm thick. Carton Qty 500. Life expectancy minimum 18 months.

3 x Bamboo Stakes

750mm long x 10-12mm diameter Bales of 500.

	Ex GST	Inc GST
Option 1: 500 + sets	**39¢**	42.9¢
Including 1 Recycled Fibre Weed Mat	**67¢**	73.7¢
Option 2: 3000 + sets	**36¢**	39.6¢
Including 1 Recycled Fibre Weed Mat	**62¢**	68.2¢

NOTE: 750mm long x 11-13 diam. bamboo stakes available at 6¢ ex gst extra per set

CORFLUTE SETS

NO ASSEMBLY REQUIRED

(welded join)

Set Includes

1 x Tree Guard

450mm height x 200mm triangle(quick fold)

1 x Hardwood Stake

75cm x 18mm x 25mm

1 x Suregro Recycled Fibre Mat

370mm x 370mm

Option 3

Ex GST	Inc GST
$1.48 per set	$1.628

	Ex GST	Inc GST
Option 4 1,500 + sets	**$1.40**	$1.54

2 LITRE MILK CARTON TREE GUARD SETS

Set Includes

1 x 2 Litre Milk Carton Tree Guard

300mm height, 95mm x 95mm square, with stake perforations.Pack of 500 Milk Carton tree Guards

2 x Bamboo Stakes

600mm long x 8-10mm diameter.

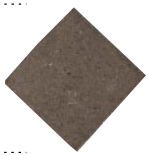
Bales of 1000 stakes	Ex GST	Inc GST
Option 5: 500 + sets	**33¢**	36.3¢
Option 6: 3000 + sets	**30¢**	33¢

Please note SureGro Milk Carton Tree Guards are purpose made with stake perforations.

WEED MATS

Recycled Paper Weed Mats 380mm diameter — Packs of 100 Mats **33¢** each ex GST, 36.3¢ inc GST

Surejute Weed Mats Approx 370mm x 370mm — Packs of 100 Mats **38¢** each ex GST, 41.8¢ inc GST



Recycled Fibre Weed Mats Approx 370mm x 370mm — Packs of 100 Mats **35¢** each ex GST, 38.5¢ inc GST

FERTILIZERS AND WATER CRYSTALS

Typhoon Tablets

10gm Box of 1000.

20gm Box of 500.

Ex GST	Inc GST
$75.00	$82.50

Slow Release min 12 months

Granular AquaBoost AG100 Water Crystals

	Ex GST	Inc GST
25 Kilo	**$320**	$352
10 Kilo	**$160**	$176
1 Kilo	**$20**	$22

NEW SEN-TREE™ BROWSING DETERRENT 15 LITRE KIT NEW

PROVEN DETERRENT AGAINST RABBITS AND WALLABIES

Sen-Tree™ Browsing Deterrent (formerly WR1) is an egg-based adhesive compound, sprinkled with grit onto the foliage. The combination of odour and grit have a recurring deterrent affect, through learned association.

Ex GST	Inc GST
$265	$291.50

APVMA approved Reg No 51933

Protected under Australian patent no: 703522

Exclusive Licensee:Sure Gro™

See website or contact Sure Gro™ direct for more information

EROSION CONTROL MATTING

SureJute Thick Mat Roll (Covers 45m²)

1.83m wide x 25m long - 800gm/m²

	Ex GST	Inc GST
1-10 rolls	**$80.00**	$88.00
10+	**$75.00**	$82.50

SureGro Recycled Fibre Roll (350gm/m²)

1.8m w x 50m long-350gm/m2 covers (90m2)

Ex GST	Inc GST
$170	$187

2.4m w x 50m long-350gm/m2 covers (120m2)

Ex GST	Inc GST
$220	$242

Note: Suregro recycled fibre matting is needle punched only to allow easy water penetration

All orders must be paid for in full prior to dispatch or where agreed in writing. All prices quoted are Ex. Factory and include GST. Sure Gro has negotiated favourable rates with interstate carriers. Orders must be received on or before 31/08/2008 and will be processed in order of receipt. Normal Trading Terms And Conditions Apply. **NOTE: Freight is an additional charge which will include GST.**

500ml seasol complete garden treatment with every order Free!

LC1100122

Unit 1/42-44 Garden Blvd DINGLEY VIC 3172 **Phone:** (03) 9558 1060
Fax: (03) 9558 0505 **Email:** sales@ suregro.com **Web:** www.suregro.com

OFFER ENDS 31/08/08