VICTORIAN
LANDCARE
& CATCHMENT MANAGEMENT
Autumn 08 Issue 42

SOIL HEALTH FEATURE

Reclaiming salt waste at Kamarooka

Saving soil in the big dry

Tunnel erosion uncovered

LANDCARE VICTORIA

Victorian Landcare and Catchment Management

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David Cummings perches on a magnificent old erosion gully control structure at Vaughan in central Victoria.

A healthy soil contains high organic matter and soil carbon.

Landholders in the North East who host soil trials have learnt to become mentors and help to extend the reach of the soil health program across the catchment.

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.

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

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

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

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The girls prepare to cut the cake during Landcare's 21st birthday party at the annual forum.

From the editor

***"The nation that destroys its soil destroys itself."* Franklin Delano Roosevelt, 1937.**

Welcome to our first ever soil health feature issue. We were inundated with stories on soil – in fact some of them have been held over for future issues.

In this issue you can read the very personal story of Bev and Ron Smith's commitment to improving the soil on their organic dairy farm at Fish Creek, a technical feature on tunnel erosion and some musings on the future of our soil by Victorian soil conservationist David Cummings and many other fascinating soil stories.

Victorian Landcare Forum

The biennial Victorian Landcare Forum is a significant event which aims to build on the success of Victoria's Landcare movement. Its focus is to bring together community Landcare members from across the State to network and discuss topical issues such as the forthcoming State Government green paper on land and biodiversity at a time of climate change.

The forum also aims to celebrate the diversity, dedication and achievements of community Landcarers. The Victorian Landcare Forum will be held on 29 and 30 May 2008 at the Novotel Forest Resort, Creswick.

To attend please register your interest early on 136 186 or by email at Landcare.forum2008@dse.vic.gov.au

Landcare Gateway upgrade

The Victorian Landcare Gateway website http://www.landcarevic.net.au/ is being upgraded with a new design, improved navigation and enhanced tools for groups to publish their own information. The public launch of the site will be in June 2008.

Landcare groups are invited to register on the current site for access to a special preview of the website in April 2008. During the preview period you will be able to add/update your group's details and publish information about your current projects and activities ready for the public launch.

Mountains of knowledge

Goulburn Broken Landcare Facilitator Karen Brisbane reports that 100 Landcare facilitators, co-ordinators, project officers and volunteers travelled to Mt Buller for a very successful annual forum last November.

Australian of the Year Shanaka Fernando gave an inspiring speech on social justice and achieving change through his chain of restaurants, Lentil as Anything.

"It was a great learning experience for Landcare professionals to hear new ideas and to talk about their own projects – both the good and bad," Karen said.

The forum took the Goulburn Broken organising committee over 12 months to organise and took a real commitment from local Landcare staff.

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 climate change. Contributions should be sent to the editor by Friday 9 May 2008.

Carrie Tiffany
carrie65@optusnet.com.au

Salinity first appeared on Kamarooka's agricultural land in the mid 1950s. By the mid 1970s more than 1000 hectares were salt affected. Much of this land lay dormant and unproductive for 50 years.

Before. The Kamarooka project site looking west in June 2005.

Reclaiming Kamarooka

By Mal Brown

The agricultural community of Kamarooka, north of Bendigo, is home to a small number of families who run large cropping and sheep enterprises. The area has historically been reliable for farming, with farmers remembering more good years than bad.

One of the significant threats to farming in the area comes from salinity. The 2500-hectare Kamarooka catchment stores enormous quantities of salt and exports 7000 tonnes annually to the River Murray system.

Salinity first appeared on Kamarooka's agricultural land in the mid 1950s. By the mid 1970s more than 1000 hectares were salt affected. Much of this land lay dormant and unproductive for 50 years until 2004 when the Northern United Forestry Group (NUFG) decided to work together to show how to return this land to productive use.

According to NUFG President Ian Rankin, the group was formed in 1998 to bring together local people who share an interest in growing native trees for sawlogs and firewood.

"Our members include a couple who run a nursery, a cropping and sheep farmer, an export hay producer, a chicken farmer, a saw miller and even a hydrogeologist," Ian said.

In 2004 NUFG received funding from the National Landcare Program to use its expertise and set up a demonstration project to reclaim 40 hectares of salt-affected land on the Hays farm at Kamarooka.

Site survey and soil preparation

The first step was to complete a geophysical survey of the site and produce a map of the degree of salting across the project site. The plan was to match the salt tolerance of the plantings to the salinity of the soil.

The group adopted the best possible soil preparation. In autumn a three-tyne ripper was used to shatter the dry soil. Gypsum and organic matter were added to the rip lines. After the winter the lines were rotary hoed ready for planting in spring.

In the first year the group planted 11,000 trees, 10,000 saltbush plugs, six hectares of direct-seeded saltbush and native grasses and five kilometres of direct-seeded trees across the 40 hectares. In 2005 an additional 10 hectares of farm forestry was planted.

It was fortunate that heavy rain fell within a week of finishing the planting and all of the plants established well.

Monitoring

The group has monitored the growth of the plantings every month. But they also monitor what is happening to the watertable underneath the trees, saltbush, native grasses and forestry plantation.

According to hydrogeologist Phil Dyson, monitoring of the project has been intense.

"There are ten bores underneath the various treatments each with an electronic data logger to tell us what's happening. The results have shown that watertables have been falling away. The watertable is now more than two metres below the surface under the saltbush and four metres under the tree plantations.

"What we need to determine is how much of that is because of the 10-year drought we've been experiencing and how much is due to the treatments," Phil said.

Monitoring has shown that many native trees and shrubs are thriving in areas with highly saline watertables that were within a metre of the surface – this contradicts much of the known research on the salt tolerance of native species.

Saltbush versus lucerne?

A grazing trial was also run to determine the productivity benefits of the revegetation work at Kamarooka. The trial compared the weight changes and general health of lambs grazing the project site with lambs grazing on lucerne.

The lambs on lucerne gained an average of 150 grams per day. The lambs on the revegetated saline land gained an average of 50 grams per day. None of the lambs suffered any ill-health during the trial.

After. The Kamarooka project site looking west in June 2007.

> *There wasn't a tree on this paddock when I had it. Now you can't see across it. It is a wonderful thing that you all have done.*

Interestingly, blood analysis from 20 lambs on each plot revealed that the lambs grazing the revegetated saline land had more blood components in the normal healthy range at the end of the trial than the lambs grazing lucerne.

The grazing trial also reaffirmed that sheep grazing on saltbush need constant access to fresh drinking water – consuming up to 10 litres per day per sheep.

Andy Hay, the current land manager, says that prior to 2004 the site would only carry about 10 sheep annually. Now he is getting multiple grazings of 200 lambs at a time.

The group has been monitoring changes in vegetation at 12 sites across the project area with photography and by measuring the plants every two months. By graphing the changes in plant volume over time the impacts of grazing, along with the ability of fodder plants to recover from grazing, can be followed.

The group has also monitored the biodiversity of the project site. A 2006 benchmarking bird survey detected 35 species on or near the site. The remnant vegetation supported the greatest diversity and number of birds, while few birds were observed on the grassland and adjacent farmland. Fauna diversity is expected to increase with time as the project site develops.

Ian Rankin believes the Kamarooka project is important because it demonstrates that salt-affected land can be reclaimed for productivity and biodiversity benefits.

"We think it's also a great example of how public funds can be invested confidently in a well-organised community group to produce meaningful research outcomes," Ian said.

NUFG has made a DVD of the Kamarooka project. Filmed largely during the summer and drought of 2006/07 the DVD runs for 18 minutes and would be interesting viewing for Landcare group meetings and secondary and tertiary students. It can be viewed on-line at the NUFG website, or copies can be obtained by sending an email to info@nufg.org.au.

NUFG is holding a field day on the project site on Wednesday 23 April 2008. For more information visit the website www.nufg.org.au.

Mal Brown is a farmer, agricultural consultant and a member of NUFG.

Uncle Mac returns

Mac Hay farmed at Kamarooka from 1952 to 1963. He left Kamarooka for Queensland in 1963 and returned for the first time in December 2007, aged 90 years. Despite his frail appearance his mind was sharp and his memory of the paddock history was crystal clear.

"In 1955 this 100-acre paddock produced a 12-bag-to-the-acre barley crop. In 1956 I bought two bags of a new breed of Olympic seed wheat and sowed it into the red soil like a market garden. But three weeks later there wasn't a shoot to be seen. I got out and scratched around and tasted the seed. All I could taste was salt. One year was all it took – that's how quick the salt came.

Andy Hay, the current land manager, with 90-year-old Uncle Mac Hay and his two daughters Annette (left) and Fiona who came back from Queensland recently and were staggered at the change in the landscape.

"There wasn't a tree on this paddock when I had it. Now you can't see across it. It is a wonderful thing that you all have done."

What future for our soil?

By David Cummings

"Essentially, all life depends upon the soil. There can be no life without the soil and no soil without life; they have evolved together." **Charles E. Kellogg, USDA Yearbook of Agriculture, 1938.**

Soil is both dynamic and delicate, but we tend to treat it as if it is fixed and robust. We strip off its vegetative cover; scratch and pummel it, cut down its diversity, erode it and cover it with roads, car parks and buildings.

Do we take our soil for granted? I would argue strongly that we do. And what happens when we take something for granted? We misunderstand its sensitivities, and its value; we waste it and we cause it damage. We begin to lose the benefits that it can provide.

Soil is both dynamic and delicate, but we tend to treat it as if it is fixed and robust. We strip off its vegetative cover; scratch and pummel it, cut down its diversity, erode it and cover it with roads, car parks and buildings. No wonder it tires. No wonder its health suffers. Perhaps we need to be much more considered, and considerate?

Soil has enormous value to us. It has enormous value to the planet. We need to respect it for what it is.

But what exactly is soil?

In poetic terms soil is the stuff that makes our planet liveable. It acts as the lungs, the storehouse, and the life-platform. It may appear analogous to skin, but it is a false analogy. Skin contains and protects – it is a barrier. Skin keeps things out as much as it contains things within. Soil is not like that at all. Soil isn't a barrier – it is more like a sponge; a sponge which acts as an ecological factory.

How does soil do this? Soil:

- receives, stores and releases water,
- stores and recycles nutrients,
- provides habitat for a vast array of soil biota,
- enables growth of plants and animals,
- provides catchment stability,
- provides environmental buffering,
- acts as a platform for the physical support of plants, animals, buildings, roads, etc., and
- absorbs dead and discarded materials (wastes).

These are invaluable functions for environmental, social and economic sustainability. If a soil is performing all of these functions it can be regarded as healthy. Healthy means the ability to function without stress, without damage, with relative ease and with resilience both now and into the future. It is a composite assessment. All the components need to be working effectively for something to be healthy. A study of history indicates that healthy soil is an essential component for the sustainability of civilisations.

We have used our soils to produce food. This has been at some cost to the soil and has compromised soil health. Loss of biological

diversity, loss of organic material, loss of physical condition and erosion has occurred. To be truly sustainable, we must ensure that our food is produced while maintaining full soil health.

The list of soil functions gives a useful starting point for considering soil health. They are, in effect, indicators of health. A healthy soil will be able to do them all.

Identifying a healthy soil

A healthy and fully functioning soil will have a surface that is open and pliable, lots of pores, fissures and channels for storing, for organisms to live in, and as pathways for all the seething in-soil activities. A healthy and full functioning soil will also have a wide diversity of micro-organisms and organic materials, stability and firmness.

Perhaps the best indicator of soil health is an assessment of the very surface of the soil. If the soil surface is open, permeable, stable and pliable then it will be able to meet its functions. If it is crusted, closed and smooth then most soil capacities are obviously reduced.

Soil is delicate; it is certainly very sensitive. Even our most robust soils can be damaged by poorly considered use. I remember looking at a carrot growing paddock on those magnificent red friable ferrosols in the Yarra Valley some years ago. A whole face of topsoil had been stripped off by a short sharp summer thunderstorm. Too much cultivation – perhaps using inappropriate equipment at inappropriate moisture contents – had reduced the openness of the soil surface, producing a dense plough-pan at the bottom of the cultivated layer and damaging the natural friability of the plough layer. When the rain came down the surface could no longer absorb it fast enough. Surface flows of water built up. The water that did pass through the soil surface moved through the plough layer and got to the plough pan where it could go no further. So the whole plough layer rolled off down the hill. What a waste!

But these ferrosols are a much better soil than most soils in our State. Most of our soils need consideration and care. A couple of years ago the Victorian Soil Science Society ran a poll to determine a representative 'State soil'. The winner was the Mottled Brown Sodosol. This soil is widely represented in Victoria, has a strong texture contrast with depth, contains dispersive clays and is prone to degradation. Soil scientist David Rees said at the time that it was a good soil to be the State representative.

"We have to look after it, otherwise it won't look after us," he said.

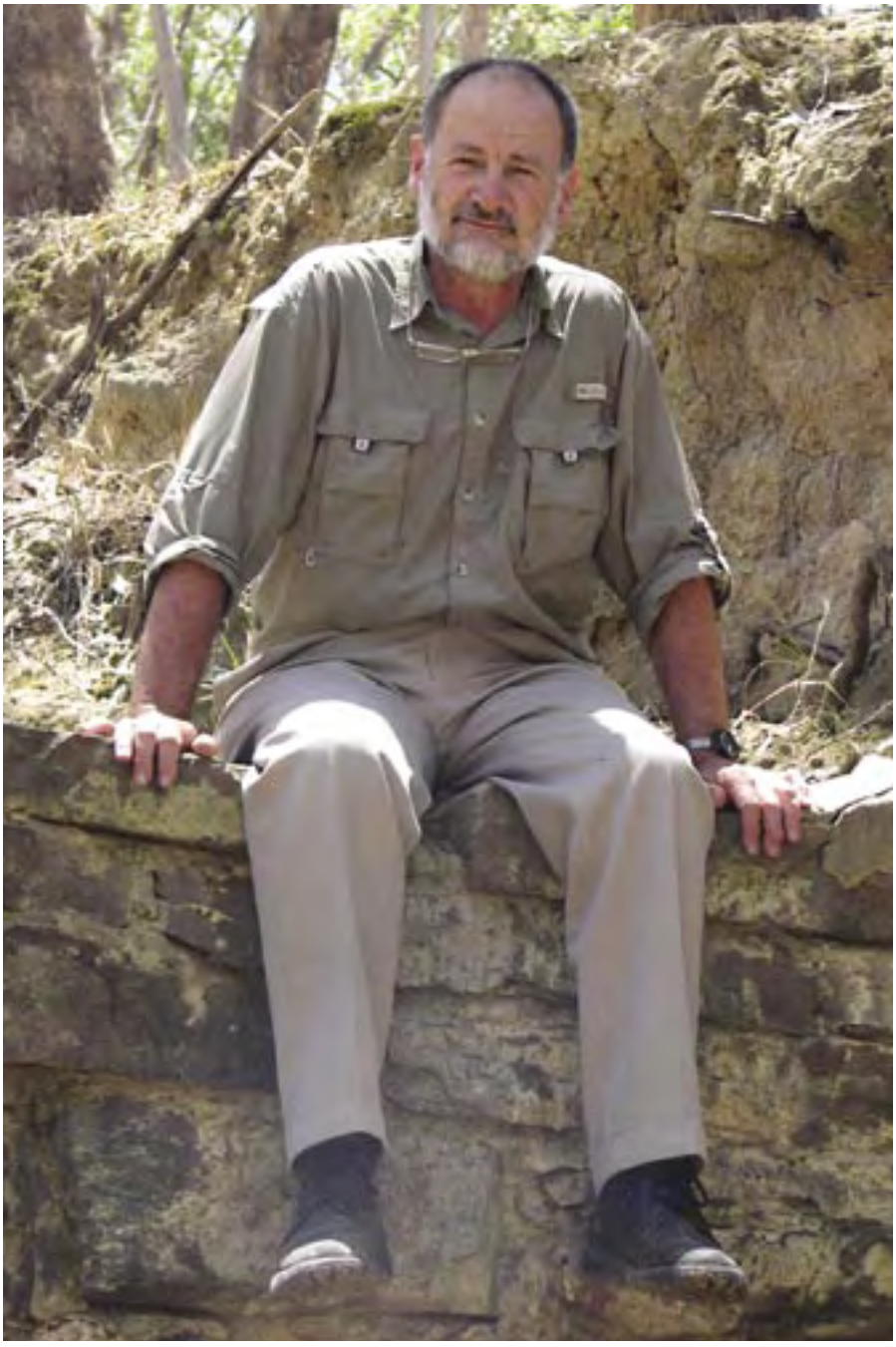
Reclaiming and retaining

There are some things in our favour for managing soil health. Soil is a diverse, ever-changing (albeit slowly) highly dynamic environment and change is routine. Provided we know just what functions we want soil to perform, and provided we do not take them for granted, we can both reclaim and retain healthy soils.

Rules for healthy soil:

- Treat the soil surface as an interface – not as a boundary.
- Maximise biological and chemical activity.
- Minimise any physical aggression.
- Determine the appropriate benchmark for health of your soil and work to it (maintain and protect the ecosystem services).
- Maintain nutrient balance.
- Don't waste water.
- Keep future options open (flexibility not over-commitment).
- Watch with the eyes of a fox. Learn!

David Cummings is a Victorian soil conservationist of long standing. He started working in water supply catchments in 1971 and soon became aware of the importance of catchment health on soil health. David is still actively involved with the Victorian Catchment Management Council and DPI projects to understand and promote good soil management practice.



David Cummings perches on a magnificent old erosion gully control structure at Vaughan in central Victoria.

The Smith family farming adventure

By Bev Smith

Ron and I got married in 1970. We share-farmed for the first eight years on two different properties near Warragul. In 1978 we moved to our property here at Fish Creek. We leased it at first, but in 1980 we put down the deposit on our 226-acre dairy farm.

Ron suffers from asthma and because of this we decided to farm without chemicals. Initially we decided to do without superphosphate, then herbicides and weedicide and later drugs and vaccinations. In 1983 Ron put on an application of superphosphate and afterwards had bad asthma for four months, day and night. We have not used any superphosphate since and Ron no longer suffers from asthma.

We run an organic dairy farm milking 90 autumn calving cows and 60 other young stock replacements for supply to the Organic Dairy Farmers Co-op. We were certified by NASAA in 1989 and were proudly the first dairy farm to be certified in Australia.

Soils

On arriving at Fish Creek in 1980 we found an acid mat on 2.5 centimetres of clay soil. The acid mat would roll up in front of the plough tynes. The pasture roots were all above the topsoil. The soil smelt lifeless and had a pH of around 3.9.

By 2005 we found huge changes. The soil is now a rich garden style soil of 15 to 30cm deep. Grass and herb roots have now penetrated deeper into the unchanged clay below. There is abundant soil life, bacteria and fungi. Cow manure is promptly buried by worms and dung beetles. The soil smells rich and sweet and the pH is between 5.8 and 6.3.

Water

The water storage on the farm includes a key line irrigation dam of 130 megalitres, a 22-megalitre irrigation stock water dam and a smaller stock water dam. All of our dairy and water troughs are reticulated.

Blue green algae growth is prevented by the use of barley straw at the rate of one small square bale per megalitre, twice a year. We use a large bale which floats for many months before settling in the shallow end of the dam; we drag it there, with our boat.

Plants

In 1980 the farm had some rye grass and clover, lots of fog grass, flat weeds (lying flat to cover the soil), onion weed, bent grass, thistles,

> *We were certified by NASAA in 1989 and were proudly the first dairy farm to be certified in Australia.*

Ron Smith demonstrates paramagnetic rock dust to permaculture students.

Joe, a student from Aceh, Indonesia, observes dairy cows on the Smiths property. The cows self medicate on herbs which reduces flatulence and greenhouse gas emissions.

tussocks, blackberries and ragwort. The grass was thin and growth was sparse.

We now have a wide diversity of plants including different rye grasses, clovers, cocksfoot, plantain, chicory and a variety of native plants, Flat weeds grow upright, in dense, thick populations. Most of the plants have solid stems and high mineral sugars.

With our extended family and friends we have planted 15,000 trees for shade and shelter, mostly on the contour following the key line principle.

Weeds

Weeds are there for the reason of balancing the soil. Each weed brings different minerals up via their deep roots. These minerals are to balance the soil. For example, cape weed brings up calcium.

Where there is an infestation of weeds the soil will be hungry for different minerals. Thistles bring up potassium, stinging nettles bring up iron. When the rock minerals are supplied directly to the soil the weed is no longer needed and the weeds cease to grow. Different plants can also be grown to supply minerals to the soils. Soil pH and fertility are shown by what plants grow in the soil.

We don't have problems with insects. Insects only eat low mineral sugar plants – plants that are unfit for consumption by any higher life form. Insects are nature's garbage collectors. Insects cannot eat mineral-rich plants.

Stock

All of our milking cows have names. They have sleek shiny coats, almost with a waxed look. Their colours are clear and their eyes are distinct, bright and alert. The oldest cows (some 16 years old or more) still have straight backs.

None of our cows have been drenched or vaccinated or had any antibiotics. Calves are reared on the farm. After a colostrum start on the mother they get fresh milk twice daily with access to pasture and hay for the first three months. Vitamins A, D, E and selenium are given prior to weaning.

Our cow feeding is grass based with silage and hay made on the farm. We buy in some biodynamic hay and barley which is crushed fresh and used sparingly. We are interested in using sprouted grain as an alternative, but it is very labour intensive.

In 2003 we started a project to allow our cows to self medicate from a choice of herbs and trees. We fenced the sides of laneways around one or two metres in width and planted them with herbs including comfrey, lemon balm and flax. We also have fruit trees for browsing and leaf drop including feijoa, olive, citrus and stone fruits. The cows graze these on their way to and from the dairy.

Biodynamics

We are now a NASAA certified biodynamic farm. In autumn and spring we apply the biodynamic preparations and silica. Irrigation is done on the biodynamic principle, just after the full moon and new moon, as this is the time of low microbial activity between above-ground growth and below-ground root growth.

People

We believe that people are what they eat and do. We use no chemicals to keep our family healthy and strong. We have a clear conscience that our milk is of the best quality and gives health to those who consume it.

We passionately believe the future health of all people, our children and our grandchildren, lies in fully mineralised soil. Healthy living soil grows healthy plants, which grow healthy animals and healthy people.

Further information on Ron and Bev's techniques is available from the Victorian Organic Dairy Farmers Association on 5683 2340.

We passionately believe the future health of all people, our children and our grandchildren, lies in fully mineralised soil. Healthy living soil grows healthy plants, which grow healthy animals and healthy people.

Soil health is not a static issue – soil is the foundation for our agricultural systems.

A soil health discussion underway at the Birchip main field day soil pit.

Birchip group combines soil demonstration and discussion

By Fiona Best and Ingrid Taylor

There has been a lot of research and knowledge generated on soil health over the years – much of it lost on shelves. The Healthy Soils – Leaving a Legacy for South Eastern Australia project is an exciting collaboration of agencies, farmer groups and the private sector, across south eastern Australia, led by DPI Victoria.

The project aims to obtain the most relevant and useful information and extend this to farmers and advisers through a series of workshops and field days and to establish demonstration sites across the region highlighting management practices and strategies.

Learning through demonstration

The Birchip Cropping Group (BCG) has established four sites to demonstrate and evaluate soil health management practices on a local scale, both spatially through paired paddocks and, temporally, through long-term trials. These sites are located at Sea Lake, Birchip and Minyip.

The Sea Lake site is a paired paddock demonstration focusing on precision agriculture and the impact it has on soil health.

There are two demonstration sites located in the Birchip area. The farming systems site was established in 1999 to help determine the medium to long-term impacts of four different farming systems on the financial viability and physical and environmental sustainability of the farming operation. This site focuses on demonstrating, across time, the impact of compaction on the health of a soil.

The Birchip main field day site, which is moved each season, has been selected as an extension site – to provide farmers with an opportunity to improve their knowledge and understanding of soil health at the same place where they can learn the latest about BCG's trial work. The theme for the site will be measuring and managing soil health with the aim of clarifying what soil health actually means and how soils can be managed to improve the productivity and profitability of a farm business.

The Minyip site is part of a collaborative project with the Victorian No-Till Farmers Association. The paired paddocks are comparing the impact on soil health of a strict no-till farming system with a system that includes some degree of cultivation.

Workshops for farmers, consultants and extension staff

A series of workshops is being conducted by BCG, Southern Farming Systems, Mallee Sustainable Farming and Rural Solutions, building on the knowledge, networks and experience of these organisations. The workshop content is tailored to meet the needs of local farmers, based on the market needs analysis and they make use of relevant local demonstration sites.

A major source of information and advice for farmers comes from the private sector through advisers and consultants. Workshops to increase the level of soil health management knowledge for consultants and advisers are also being delivered. These workshops are also important for staff working in high-turnover extension and advisory roles for public sector agencies.

Soil health is not a static issue – soil is the foundation for our agricultural systems. Running alongside the demonstration sites and workshops is a tailored communication program with a website, fact sheets, and a great deal of discussion at farmer field days and agribusiness advisory days.

The project supports farmers to make more informed decisions which in turn will give them a greater capacity to manage their soils and run healthier farms.

The Birchip Cropping Group is a farmer-driven research and extension organisation based in the Mallee and Wimmera. For more information visit our website at www.bcg.org.au.

Saving soil in the big dry

By Greg Paynter

The drought conditions of recent years that have swept Australia have meant farmers are now very interested in understanding more about soil health. In particular, producers are interested in maximising soil moisture infiltration and are looking at alternative cropping and nutrition options.

The Biological Farmers of Australia (BFA) have been running a series of workshops around Australia to help educate farmers and graziers on improving soil health. BFA is the voice of Australian organics representing over 3000 certified organic businesses and members.

These are some of the lessons that have come out of the workshops that we think can be of value to farmers around the country.

Our soils under drought

Many soils have restricted root growth as soil peds are commonly rock hard (roots grow around them). This limits capacity for roots and soil biota to access nutrients, water and oxygen and limits productivity.

Complete soil nutrition is critical to help plants cope with moisture stress, soil diseases and insect attack. Building stable humus is the key to optimising productive capacity. Humus holds 20 times its weight in water and reduces water use and soil temperature fluctuations.

Benefits can be obtained from using local resources like manures, composts, mined minerals (gypsum, lime and crusher dust-fines), and green manures.

Pasture maximises root diversity for nutrient extraction through creating more diverse food sources and environments for soil organisms (root sloughing, carbon dumping) to increase soil organic matter and humus to realise their related ecosystem services of: nutrient recycling, soil regeneration, water retention and use efficiencies, ground water recharge, contaminant amelioration and carbon sequestration.

Grazing management, pasture cropping and advanced sowing, organic zero-till and polyculture-integrated enterprise management can be used to obtain soil health outcomes and increased profitability.

Farm design is critical for maximising production and reducing costs. Wind breaks can decrease wind speed over grazing land, increasing production up to 15%. Landscapes can be designed for the creation of micro-climates, water catchment and utilisation and biodiversity enhancement above and below ground.

The participants at all of the workshops agreed that there are no disadvantages to improving soil health, only multiple benefits.

Big issues facing growers

Many growers identified issues that they are now facing. They included declining soil moisture levels and poor yields, dropping soil carbon levels, declining feed on the farm, the environmental issues of the drought and the declining income.

The costs of production can be reduced by adopting soil health principles. Some of the major costs currently faced by producers include:

A soil health workshop on a lucerne farm at Gooubyjan in Queensland.

- Feed/fodder – grow your own quality feed with healthy soils.
- Chemicals – disease and insects are increased by plant stress (soil health mitigates plant stress).
- Fertilisers (use cheap local fertilisers like manures, compost and other nutrient resources).
- Fuel – increasing humus softens soil, reducing machinery draft and the expense required to pull machinery.

For further information contact Greg Paynter on 0424 092 064, or by email at greg.paynter@bfa.com.au, or visit www.bfa.com.au.

> *There are no disadvantages to improving soil health, only multiple benefits.*

A healthy soil containing high organic matter and soil carbon.

Soil degradation can occur within days, but it takes centuries to repair.

Landholders who host soil trials have learnt to become mentors and help to extend the reach of the soil health program across the catchment.

The annual soil forums are proving to be very popular local events.

Ovens network puts energy

The Ovens Landcare Network is made up of 22 different Landcare groups who are united under the one purpose – better soil management.

Over the past six years the network has used science, field trials, demonstration sites, farm talks and annual workshop events to share and build knowledge, evaluate its impact and attract the ongoing resources needed to build a long-term soil health program.

Soil erosion, soil structure decline, organic matter loss and salinity are all significant local issues. The region also has some of the most acidic soils in Victoria.

In 2002 network members identified soil health as an area of interest to many groups and landholders. A series of Healthy Farming training workshops funded by FarmBis were run throughout 2003 and 2004.

The workshops covered soil structure and chemistry, as well as the relationship between the elements of agriculture (soil, plant, animal and human) and agricultural systems. Importantly, they included interactive, group and practical learning processes.

Soil knowledge sought

In all, 122 property managers completed the workshop series. At its conclusion, a survey showed the Ovens Landcare Network approach was striking a chord, but people wanted more.

Encouraged by this the network applied for funding from the National Landcare Program to run a further two-year program for its members.

The Soil Restoration to Improve Productivity NLP program comprised landholder mentors and demonstration sites, field days and events which were designed to consolidate, challenge and raise difficult practical soil health issues.

According to a former Ovens Landcare Co-ordinator, Jenny Hermiston, the program was aimed at helping farmers to make better-informed decisions about everyday soil management issues.

in to soil

By Mary-Anne Scully

The Ovens Landcare Network is within the Ovens catchment, covering approximately 780,000 hectares of North East Victoria. It extends from the Great Dividing Range in the south to the Murray River in the north.

The south is typically steep, forested and mountainous, while the north is cleared hills and slopes ranging through to low riverine plains.

The upper and middle catchment includes parks, forests, pine plantations and private land for horticulture (wine grapes, nuts, hops and berries), dryland and irrigated pasture. The lower catchment is largely cleared riverine plains, where broad acre cropping, productive pasture and livestock (beef, cattle and sheep) dominate.

"It was a great way for landholders to get practical information, such as how to reduce costs associated with spreading lime to correct soil acidification and how to increase water penetration, perennial ground cover, soil biodiversity and soil structure," Jenny said.

In 2006 a soil forum at Whorouly attracted more than 150 landholders, plus agency staff from across the region, East Gippsland, the Goulburn Broken and southern NSW. The event featured practical sessions and guest lecturers from CSIRO and the University of Western Sydney.

In 2007 a second forum called Water, Fertility, Carbon and Me: The Carbon Conquest attracted around 130 landholders. Topics ranged from permaculture to the projected impacts of climate change on the North East.

Soil health mentors

A dozen soil health trial sites were also set up across the Ovens Landcare Network area to assess different types of limes and biology supplements. Prolonged drought conditions have delayed analysis of some trials and affected results, however, landholders hosting the trials have learnt to become mentors – helping to extend the reach of the soil health program across the catchment.

The Ovens Landcare Network will continue its focus on soil health this year, with National Landcare Program funding secured for a next step soil health program.

North East CMA Landcare Team Leader Tom Croft said soil degradation can occur within days, but it takes centuries to repair.

"One of the key aims of our soil health program in the North East is to prevent degradation occurring in the first place," Tom said.

Evaluation of the network's approach in late 2006 shows it is consistently achieving changes in landholder attitude and practice. Survey results showed that more than 70% of network members were implementing knowledge or skills gained through ongoing workshops and field days; and 64% were asking more informed questions of agronomists.

For further information contact Klaus Boelke at the North East CMA on (02) 6043 7600.

> *One of the key aims of our soil health program in the North East is to prevent degradation occurring in the first place.*

Uncovering tunnel erosion

By Julianne Sargant

In East Gippsland tunnel erosion poses a severe threat to livestock and people. It inhibits use of the land and has considerable off-site impacts through suspended sediments and nutrients discharged to waterways.

Tunnel erosion often occurs on duplex soils that have a sodic, or sodium dominated, subsoil which disperses easily when wet.

I have been involved in a tunnel erosion rehabilitation project in East Gippsland with the objective of determining the extent of tunnel erosion in the region and increasing awareness of tunnel erosion and how it can be detected in the early stages of development. We have also established trials to investigate cost-effective rehabilitation methods.

The first part of the project involved mapping tunnel erosion hotspots on farmland across a wide area in the Mitchell, Nicholson and Tambo River catchments. In the foothills region – Glenaladale, Bruthen, Flaggy Creek, Clifton Creek and Mount Taylor – the tunnel erosion is relatively shallow (within one metre of the soil surface) and is generally found in multiple numbers. This erosion is known locally as paddock tunnelling.

The erosion identified on the escarpments of the Gippsland Lakes and major rivers is characterised by deep erosion (up to eight metres) and occurs in lesser numbers than paddock tunnelling. This type of tunnel erosion is known locally as escarpment tunnelling.

Overall some 4500 hectares of tunnel erosion prone land was identified, mostly around the foothills near Bairnsdale and along the foreshore of the Gippsland Lakes and local rivers.

This study is the first ever comprehensive attempt to estimate the number of hectares both affected by, and prone to, tunnel erosion as well as the amount of sediment lost and the nutrient input to lakes.

Cost-effective rehabilitation discovered

A trial was conducted on a Glenaladale property to investigate cost-effective methods of tunnel erosion remediation.

Sediment trail from the paddock to the East Gippsland Lakes

Holes in the paddocks of the catchment caused by tunnel erosion.

The transport of sediment and nutrients via gullies, creeks and rivers.

Algal bloom at Paynesville which is contributed to by the nutrients washed from the catchments due to erosion.

Tunnel erosion development process

Tunnel erosion can appear innocuously as a small hole that water and suspended sediments flow through.

As the tunnel develops under the ground, the top profile collapses and holes form in the paddock. The lack of vegetation shows the location of the erosion between the holes.

The highly dispersive sediments are transported with the water from the paddock during rainfall events to the gullies, creeks and rivers.

The trial had three steps. The first was to influence the soil chemistry through the use of gypsum and lime to reduce the dispersive nature of the soil. These were spread over the paddocks before works commenced. The second step was the mechanical disturbance of the soil profile by deep ripping with a bulldozer. The third step was the establishment of perennial pasture to use the local water in the soil profile before it has the ability to infiltrate in large quantities.

Overall the trial and the regional soil analysis provided sufficient data to develop an economic method for tunnel erosion rehabilitation for the foothills region in the East Gippsland area. The final recommendations are:

- The application of gypsum at four tonnes per hectare.
- Single pass deep ripping with a minimum size dozer of 305 horsepower (rip lines one metre apart) on contour across the whole local paddock catchment area from top to bottom.
- The establishment of perennial pasture. In some cases this would be in combination with a crop in the first year depending on the degree of slope of the site.

The successful project has now been running for three years. Twenty-four landholders have been involved in rehabilitating 300 hectares of land, constructing 30 kilometres of protective fencing and planting 9500 trees.

The project has been supported by DSE, Gippsland Lakes Future Directions and Action Plan, the National Landcare Program and Natural Heritage Trust in partnership with the East Gippsland Landcare Network and the East Gippsland CMA.

The project has prevented 1387 cubic metres of soil from entering the Bairnsdale region's major rivers and the Gippsland Lakes.

A tunnel erosion brochure has also been developed as an education tool for the region. Early detection of tunnel erosion is paramount as the remediation costs are much less if it is treated early.

Radio interviews, media articles and talks to lots of Landcare groups, schools and advisory groups have also been conducted to help raise awareness of this important environmental and agricultural issue. The project has encouraged property owners to discuss tunnel erosion, not just on the farm but its impact on the whole region.

For further information contact Julianne Sargant on 5152 0603 or Julianne.Sargant@dpi.vic.gov.au

> *The project has prevented 1387 cubic metres of soil from entering the Bairnsdale region's major rivers and the Gippsland Lakes.*

Every farmer I spoke to disliked using chemicals.

Brendan Kelly's research shows that farmers are looking for more information on the biological aspects of soils.

Farmers talk about soil

Farmers view soil health differently to scientists. They only use a few of the soil health indicators available to them and are increasingly making soil management decisions based on the advice of private agronomists.

Older farmers who are generally in a better position financially than their younger counterparts are also more likely to consider alternative ways of managing their soil.

These are some of the key findings that have come out of a recent social research study which looked at farmers' choice of soil indicators for farm/soil management with the aim of understanding how farmers make soil management decisions.

Brendan Kelly, a former Charles Sturt University student who completed the study under the supervision of scientists from the Institute for Land, Water and Society, is quick to qualify the findings as only representing the views of the farmers he surveyed. However, he believes that many of these findings may be reflected in other farming communities.

Brendan conducted one-to-one interviews with 15 farmers in the Upper Billabong Creek catchment, north of Albury, NSW. The majority of the farmers were livestock farmers, with some cropping, mostly for pasture renovation programs. The median property size was 1200 hectares.

"Soil health is being promoted by Governments and scientists, but we wanted to know whether what is being promoted is in line with what farmers are thinking and doing,"

Soil science vs soil farming

As a former dairy farmer with 22 years experience Brendan understands many of the constraints that farmers operate under. One of the significant findings to come out of his research was the discrepancy in the way that farmers view soil health to that of scientists.

"Scientists view soil health as the ability of the soil to perform various functions such as sustaining plant and animal productivity, water filtration, decomposition, and enhancing air quality, " Brendan says.

"Farmers view a healthy soil as one that was productive and could maintain productivity in the long term to be passed on to the next generation. For many farmers that equates to sustainability. However, sustainability is far more complex as the physical, social and economic factors all have to be taken into account."

Ex-dairy farmer Brendan Kelly has surveyed farmers to find out how they make soil management decisions.

> *Farmers view a healthy soil as one that was productive and could maintain productivity in the long term to be passed on to the next generation.*

By Margrit Beemster

Brendan also found that farmers used very few of the indicators of soil health available to them and were dropping the use of observational indicators in favour of quantitative indicators such as soil tests.

"Observational soil indicators may include the presence of certain weeds as an indication of soil acidity; or poor stock health might suggest a deficiency in the soil," Brendan says.

"Farmers told me they had paddocks with sorrel that indicated the soil was acidic and needed lime. But rather than trust their own judgment they would still have a soil test done."

Brendan says he was surprised at the extent of influence agronomists were having on soil management decisions, with some farmers employing up to four different agronomists to help them make decisions.

Brendan believes that a continuation of this trend, of farmers delegating the decision-making responsibilities for their soil management, has the potential to cause farmers to lose their connection to the land in a bid for a more scientific approach.

"While most of the farmers I spoke to believe they have a scientific approach to farming, the technical information they are receiving is focused mostly on agronomic outputs, whereas the voices of scientific people promoting a more biological or alternative approach weren't being heard to any great extent.

The major barriers for farmers in getting hold of information on soils:

- A lack of time to attend meetings and field days.
- Information overload.
- Competing against other information sources.
- Burnout from attending meetings and field days.
- Information has to be appropriate to a whole farming system.
- Information needs to be applicable to local conditions.
- Farmers have a preference to see things first hand.
- Delivery of information not always understood.
- Information needs to be scientifically proven.
- Farmers need to trust the information source.

Unease over high inputs

"I also found there was a lot of uneasiness about the way things are going for those farmers using a conventional high input farming approach. This unease varied according to the demographics of the people I interviewed," says Brendan.

He found the more mature farmers (mid 40s plus), while more sceptical of how things were going, had fewer financial commitments than their younger counterparts and were more prepared to look for alternatives to the traditional farming approaches.

"Most of the younger farmers I spoke to had only recently returned to the family farm. Many had had to buy extra land to support themselves and their parents and were under so much financial pressure they weren't prepared to even consider alternatives. If you are looking for a change in direction to come from a new generation, it's not actually working that way.

"For example every farmer I spoke to disliked using chemicals. Many were concerned about pest species and their increasing resistance to chemicals, and the effect on their farm in the future, but it was the older guys who were prepared to consider alternatives."

Brendan says farmers were looking for more information on the biological aspects of soils as they were not getting it from traditional sources.

"Every farmer I spoke to wanted all sorts of soil information because in the past the whole subject of soil has been neglected."

Several cuts have taken place and some very interesting results are occurring.

Participants at the soil health fertiliser field day at Vervale last September.

Do fertilisers affect soil health?

By Peter Ronalds

A number of farmers have approached the Westernport Catchment Landcare Network (WPCLN) concerned about the increasing levels of metabolic disorders in their beef and dairy cattle. They were wondering if the continual use of chemical based fertilisers was locking up minerals in the soil and making the minerals less available to the pasture. The cattle would then be potentially lacking in minerals and more susceptible to metabolic disorders.

Local farmers helped to apply lime to the trial plots.

The WPCLN applied for funds through the National Landcare Program to measure the effects that different fertiliser treatments have on soil health and pasture nutrition and growth.

A beef farm at Vervale was chosen to trial the different fertilisers. The fertilisers are all readily available to landholders in bulk and were matched to the soil test taken in the paddock.

The fertilisers include Chemical Prescription blend, Fresh Broiler Chook Manure, Bulk Compost/Charlie Carp, TNN Prescription blend, Organic custom mix with soil aeration, Reactive Rock Phosphate/Fulvic Acid plus a control. Every plot also received lime. Each treatment has three replicate plots to increase the reliability and accuracy of the results. All treatments have been costed on a $ per hectare basis with most being around $300 per hectare.

The plots are being mown on a similar rotation to a grazing regime. At each cut, the pasture is weighed on a wet matter basis. A sample is then taken for drying to determine the amount of dry matter grown (D/M). The pasture is also tested for nutrients and sugar levels. Soil samples are taken from each plot for a microbiology count. This count measures the levels of fungi, bacteria and micro-organisms in the soil. The water holding capacity, carbon levels, conductivity, temperature and compaction of the soil are also recorded.

Over 20 farmers attended the field day last September when the different fertilisers were spread on the plots. Several cuts have now taken place and some very interesting results are occurring.

The fresh chook manure is consistently growing 100% more pasture on a wet matter basis than the control. The organic custom mix with soil aeration is growing around 20% less pasture on a wet matter basis than the chook poo. On a dry matter per kilogram basis, both plots are currently growing identical quantities of grass. The soil temperature is currently lower in the plots that are growing the longest grass (due to the pasture shading the soil from the sun). The highest soil microbiology count is currently in the Compost/Charlie Carp blend. The Compost/Charlie Carp blend also has the highest soil water holding capacity.

The network hopes to continue this trial over a number of years. For further information contact Peter Ronalds on 5941 8446.

In brief

Come to the meeting

The VFF Farm Tree & Landcare Association is inviting all member groups to attend the Annual General Meeting on Tuesday 24 June 2008.

Last year's meeting included speakers on new water-saving techniques, pest animals and the EMS program. A range of interesting topics is planned for this year's meeting.

For further information contact Susi Johnson on 9207 5527 or by email at sjohnson@vff.org.au.

Hunters support Landcare at Clydebank Morass

The Australian Deer Association of Victoria have had great success with their Landcare work at Clydebank Morass, a State Game Reserve beside the Avon River near Sale.

In 2005 40 hunters and their families from as far away as Benalla and Melbourne planted 5000 salt-tolerant local provenance species on the higher ground and swamp paperbarks on the wetland margins. The trees struggled with drought and straying cattle but most survived. In 2006 another 2000 trees were planted and the challenge that year was frost. In 2007 some 1500 seedlings were planted and the devastating Gippsland floods followed.

Despite some losses the trees have responded well and the group has gained a lot from its involvement in the project.

For further information visit the association website at www.austdeer.com.au.

Pest control from sporting shooters

The Sporting Shooters' Association of Australia is offering a conservation and wildlife management service to landholders to help control pest species such as foxes, rabbits, wild cats, dogs, pigs and goats.

Conservation and wildlife management team members all carry public liability insurance, abide by the Association's rigorous code of ethics, are trained and accredited under humaneness, firearms accuracy and safety provisions, work under the supervision of rangers and other land managers and are experienced in getting the best possible outcome for land managers.

For more information or to book a team contact Colin Wood at the State office on 8892 2777.

Maurie Smith honoured by Kiewa

Local farmer and long-time Landcarer Maurie Smith was recently made the first member in perpetuity of the Kiewa Catchment Landcare Groups.

The award was presented in recognition of Maurie's 24 years of continuous service to Kiewa Landcare and the Kiewa Farm Trees Group. His long-term dedication and persistence has been an inspiration to many Landcare members.

Maurie Smith (centre) is congratulated by Kiewa Landcare Group President Bob Gough (left) and secretary Tony McAlister.

Victorian Resources Online

The Victorian Resources Online (VRO) website was initiated in 1987 to provide access to information about Victoria's soil, landforms, water, marine environments, biodiversity and land and water management issues.

The website is the key means for accessing Victorian soil and landscape information including: overview soil maps; soil/landscape mapping; sites of geological and geomorphological significance; geomorphological mapping, land degradation and soil pit site information. This is presented at varying levels of detail and includes links to appropriate explanatory material.

A soil health section has recently been established that provides access to previous reports that are no longer available in hardcopy format.

Go to www.dpi.vic.gov.au/vro and www.dpi.vic.gov.au/vro/soilhealth.

A group of deerhunters plant trees at Clydebank Morass.

A VERI good idea

By Andrew Scanlon

Andrew Scanlon with Liz Dormontt, a local Macedon Ranges real estate agent, trialling the VERI initiative in the Macedon Ranges.

Landowners often report that they are not rewarded for good land management. Councils and Government funding programs provide rate rebates or funding incentives to address land degradation issues such as salinity, land clearing, pest plants and pest animals. Effectively these programs are financial rewards for inappropriate land management in the past. So how do we reward good quality land management?

One way is to ensure that when a property comes up for sale, part of the valuation of the land is attributed to the quality of its natural resources.

Vendors need a tool to highlight the qualities of their properties, and purchasers need a tool to compare the qualities between properties. This was the reasoning behind the Macedon Ranges Shire creation of the Voluntary Environmental Resource Inventory, or VERI.

The VERI is a toolkit for prospective land vendors to describe the environmental condition of their land before sale. Vendors can use the VERI as a platform to showcase property assets and relevant management issues, such as weeds, improved pasture and waterway fencing.

Prospective purchasers can use the VERI to appraise the condition of land and water resources before purchase. The VERI provides vendors and purchasers a means to factor sustainability principles into land sale negotiations, rewarding quality land management.

The VERI can be voluntarily submitted with the Vendor's Statement provided under Section 32 of the Sale of Land Act or it can be simply provided as general information for potential purchasers.

In this way landowners can be rewarded for investment in good quality land management. In many cases the vendor will have worked hard to keep on top of weeds, rabbits and erosion. They may have created better grazing pastures and planted and protected native vegetation. The VERI helps to recognise this effort.

Facts for the prudent purchaser

For many people, land purchase is one of the most significant lifestyle or financial investments they will ever make. In many cases the purchaser will have a picture of the property they want. They will also have aspirations and dreams for the land and its use. They certainly don't want to purchase land that does not meet their aspirations or that becomes a liability in the long term.

In many cases the potential purchaser will be new to the region, and many will have little or no land management experience or knowledge. They may be unaware of the environmental issues that face land managers on a daily basis.

A property with a VERI will provide important planning information to potential purchasers and help to link them with local knowledge and resources.

No red tape

The completion of the VERI is voluntary and is not a requirement under the Sale of Land Act. Once completed the VERI is a confidential document between the vendor and potential purchaser.

The VERI can be voluntarily submitted with the Sale of Land documents when completed or a vendor can provide the VERI to potential purchasers or provide it to the agent.

The VERI takes approximately 30 minutes to complete. The vendor should include as much information as possible to give the purchaser a good picture of the property in question. The VERI is not difficult to complete. Beside each question there is a column that describes the type of information that is required. There are references and websites for further information.

The VERI has received mixed reviews from real estate agents across the region.

Chess Real Estate agent Liz Dormontt and Gisborne agent Jan Paul are currently trialling the VERI with interested clients across the region.

Liz Dormontt is positive. "The VERI has allowed me to adequately describe the environmental condition of a rural property, even in drought times when land doesn't look its best. The VERI gives the buyer more information than I otherwise could have provided," Liz said.

The VERI is still in the development phase and Macedon Ranges Shire is keen to hear your views on the toolkit.

For further information contact Andrew Scanlon on 5422 0333.

> *The VERI has allowed me to adequately describe the environmental condition of a rural property, even in drought times when land doesn't look its best.*

The VERI in action

- The VERI rewards the vendor for good environmental management by highlighting excellent environmental endeavour.
- The VERI gives the potential purchaser some background knowledge about land management and ideas for questions to ask the vendor, to ensure the land meets their needs.
- The VERI provides a checklist for real estate agents to use when describing the property's attributes.
- The VERI enhances land values.
- The VERI provides a means to factor environmental and sustainability considerations into land purchase negotiations.

Tom Croft (left) presents a chainsaw donated by the North East CMA to Landmates Co-ordinator Steve Herbert, from Dhurringile Prison.

> *The focus of this fire recovery work is to assist the wider community to bounce back from the fires*

Landmates repair fire-ravaged farms

By Mary-Anne Scully

The summer of 2006/2007 saw fires devastate fences, pastures and hay reserves in the King Valley.

Throughout 2007 Landmate teams from the Beechworth Correctional Centre and Dhurringile Prison near Shepparton have worked side by side with local farmers to remove burnt and fallen trees on fence-lines, cut and coil up wire for disposal and pull up steel posts to recycle and reuse – often in steep and remote country.

In their place, they have constructed more than 100 kilometres of new fencing. They have also built enduring links with almost 30 farming families and community members who have appreciated their dedication to get the job done.

Beechworth teams have previously worked with local Landcare groups on revegetation, erosion control, rabbit control, storm damage recovery and construction of nest boxes for native wildlife.

But the fire recovery effort called for new skills and required changes to normal practice as Dhurringile prisoners needed to stay out overnight due to the long travelling distances involved.

Free accommodation at Camp Mahika, near Tolmie was found and help with equipment came from many places. Fencing tools were purchased by the Ovens Landcare Network and the North East CMA donated a chainsaw.

"The focus of this fire recovery work is to assist the wider community to bounce back from the fires and to support landholders who have suffered significant losses," said Sue Leavold, a Landcare Co-ordinator working in the Ovens.

Julie Walsh, a certified organic farmer at Myrrhee, is a dedicated Landmates fan.

Early in 2007, Julie was battling the combined emotional and financial stress of bushfires and drought coupled with the recent death of her husband, Tom.

"Selling up was looking a great way out when the phone rang with the news that the Dhurringile crew was on the way," recalls Julie.

When Julie's fencing project finished, the members of the crew each planted a tree in memory of Tom.

"What they have done for fire recovery is rehabilitation in the true sense. Rehabilitation for farmers and community, rehabilitation for prisoner participants and rehabilitation for the environment," Julie said.

"Being able to go out on the fire recovery program allowed me to meet some great people who not only did not judge us, but allowed us into their homes and lives. It gave me the chance to try to help people who took us for who we are, not what we are. It has changed the way that I feel about helping others, allowing me do things for other people without expecting anything in return. This is something that I have not done in the past."

Jason, a Landmates team member.

The Landmate crews have worked in the Myrrhee Valley, along the Rose River, and around Harrietville and Tolmie in North East Victoria.

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

Glenelg Hopkins

As part of the State Government's $10 million drought package the Glenelg Hopkins CMA will employ drought-affected landholders and community members to undertake environmental works and help the region recover from drought.

The CMA has been developing the three year Regional Catchment Investment Plan in consultation with representatives from the Australian and State Governments, agencies, industry and community.

The Landcare Readiness Project is beginning to roll out in the region. The project involves co-ordinators, facilitators and board members working together to improve effectiveness of Landcare and influence landscape change. Participants from several Landcare networks meet regularly to review the project's progress, develop tools to pinpoint network strengths and weaknesses, and identify links to policy makers, natural resource managers, researchers and other Landcare networks doing similar work.

For further information contact Shelley Lipscombe on 5571 2526.

Port Phillip and Westernport

The 2006/07 Port Phillip and Westernport CMA Catchment Condition Report was released as the Melbourne Environmental Report Card and included a component on the strength of community groups in the region using data provided by groups on active membership and group health.

The CMA is developing a pilot GIS-based project that aims to provide explicit interpretations of the Native Vegetation Plan and Regional River Health Strategy at landscape scale to inform local area integrated planning for groups and networks.

A series of 52 group development information notes have been drafted and are now being style edited so they are reader-friendly. The notes should be launched before the end of the financial year.

For further information contact Doug Evans on 9296 4662.

Mallee

The Mallee Regional Landcare Network was successful in their application for funding through the New Generation Landcare Grants program. A total of $330,000 has been received to implement works identified in the Landcare Group Action Plans.

The 21-year celebrations continue with the South East Mallee Landcare Network in partnership with the Sea Lake Primary School's 'drown the drought.' The event was a great success with over 300 people attending. Yelta Landcare Group held a promotional day in Merbein which attracted new members and showcased their work over the past 21 years.

The Merbein Common Link walking trail was opened last November, thanks to a collaborative project between Yelta Landcare Group, DSE, the Mallee CMA and the Merbein community. The 10-kilometre trail links the township of Merbein with the Merbein Common State Forest and the Murray River.

Kulkyne Way and Yelta Landcare Groups hosted a team from Conservation Volunteers Australia last December. The international volunteers got their hands dirty conducting erosion control at Cowanna Bend, chipping weeds at Iraak and removing rubbish and installing signage in Merbein Common.

For further information contact Brendon Thomas on 5051 4385.

Goulburn Broken

After substantial work by the Goulburn Broken Landcare Facilitators and the community we have produced our 2006/07 annual achievements report. It showed that Landcare is not breaking any substantial records, but is alive and well in the region.

We are in the planning phase of a trial to deliver services to Landcare in a new format where a case management approach will be trialled. The aim of the trial will be to improve the ease and efficiency of access to government grants and services to Landcare.

The recent Victorian Landcare Network forum was a great success, which again was a tribute to the tireless work of the Facilitators of the Goulburn Broken.

For further information contact Tony Kubeil on 5820 1123.

North Central

The findings from North Central's first Landcare group survey have been compiled and it looks fantastic. Some 68 groups participated in telling their 2006/07 achievement stories.

Landcare groups have been undertaking training in Efarmer and are currently mapping their group boundaries with varying success.

Congratulations to the Wychitella Landcare Group who won the State Weed Buster Excellence Award for Weed Control – well-deserved recognition for this hard-working group.

The region's two New Generation Landcare Network projects have been launched and the planning and fencing components have commenced. Filming for the North Central Landcare DVD has been completed and it will be launched in February with a red carpet premiere.

For further information contact Allison Long on 5440 1814.

West Gippsland

In a tough year of drought, fire and flood, Landcare remains an important driver of natural resource management across the region. It continues to grow and now involves 74 Landcare groups and 2196 families who own or manage approximately 330,000 hectares of private land across the region.

Landcare operates strategically under the guidance of the Bass Coast Landcare Network, Lake Wellington Landcare Network, South Gippsland Landcare Network and the Yarram Yarram Landcare Network. These four networks have formed a consortium called GippsLandcare – a region-wide project that delivers on ground works. Landcare continues to develop partnerships with landholders, agencies, schools, corporations, local business and government at every level.

For further information contact Phillip McGarry on 5662 4555.

The Wimmera River was dry at Dimboola Weir for the Walk Back in Time trek last October.

North East

The Upper Murray Landcare Network has been delivering major works for their New Generation Landcare Project. This has been strongly supported this spring by a Landmates team from Beechworth Prison staying in the area for four weeks to assist landholders with their fencing activities.

A partnership supporting fire recovery work including Dhurringile and Beechworth Landmates, Landcare groups and the Ovens Landcare Network, North East CMA, DSE and Local Government won an RACV State Fire Awareness Award, as well as Corrections Victoria Awards.

Our congratulations to Lyn Coulston and Lindsay and Ian Humphry for their well-deserved success in last year's Victorian Landcare Awards.

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

Wimmera

The Mountains to Mallee DVD, celebrating a 350-kilometre walk along the Wimmera River, premiered last October at the Wesley Performing Arts Centre. The event and DVD highlight community interest and personal experiences of life on the river and provides an insight to the plight of a river system under stress from drought and reduced flows. Copies of the DVD will be available this year.

A follow-up indigenous and cultural event, A Walk Back in Time, was also held last October. The walk included stories and site visits to significant locations along the 18-kilometre Wimmera River trek. The 55 walkers were provided with a glimpse of the past through the eyes of the traditional owners.

The regional Plant-out Program has again been a huge success with over 60,000 native trees and shrubs planted by 650 volunteers during July and August 2007. So far the results look promising despite the influence of drought.

Project Hindmarsh, Yarrilinks and Project Platypus continue to attract community and volunteer interest after more than 10 years so anyone interested in taking part in this year's program should keep July and August weekends free.

For more information contact Max Skeen on 5382 1544.

We welcome two new Regional Landcare Co-orditators.

For further information about Landcare in the Corangamite region contact Tracey McRae on 5232 9100.

For further information about Landcare in the East Gippsland region contact Becky Hemming on 5152 0600.

Stuart Harradine, Indigenous Landcare Facilitator, records a scar tree during the Walk Back in Time trek.

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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 30/04/2008 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!**

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 30/04/08