Edition 40 Spring 2009

NESSI Newsletter

Providing land management information to the community

Inside this edition

Welcome to Spring. The recent rain has been of great benefit to the catchment, especially the crops, pastures, tree planting and direct seeding projects.

If you are interested in information relating to the seasonal outlook, take a look at 'The Fast Break' newsletter at www.dpi.vic.gov.au/climaterisk. This newsletter has been developed to help landholders in cropping areas although is well worth a look if you are interested in this topic.

Landholders have been reporting an increase in the numbers of rabbits in the catchment. The 'DPI Information Note - Rabbits and their impact', explains that a single pair of rabbits can increase in 18 months to 184 individuals. So it is important to undertake rabbit control activities on your property even if you only have what appears to be a small number of rabbits. There are a number of DPI Information Notes that provide advice on how to control rabbits, visit www.dpi.vic.gov/notes or contact local staff for a copy.

Staff will be busy through spring assessing applications from landholders for incentives to undertake projects (such as tree planting) in 2010. If you have missed applying for an environmental incentive contact the staff listed on the back page to see any assistance is still available. Kylie Macreadie—Editor

Soil Testing Tips for Spring.

If you are soil testing over spring here are some handy things to remember:

- Undertake soil testing the same time each year, usually in spring or autumn
- Avoid soil testing after heavy rain or after applying fertiliser, gypsum or lime
- Zig zag sampling to get a representative sample, avoiding gateways, troughs and stock camps
- Sample paddocks using the same land class such as river flats, lower slopes, hills.
- Use the same lab for soil testing each year as it is easier to compare soil tests, that is apples with apples
- Ensure you use an accredited lab for soil testing
- Depth of soil testing is dependent on enterprise, for example lucerne would require subsoil testing for acidity
- Ensure samples are collected using proper sampling bags, kept cool and posted early in the week not on a Friday.

Remember your results will only be as good as your sampling. For more information contact your local agronomist or for access to soil corers contact your local DPI office. Kristy Youman, DPI, Wodonga, Ph: 0260437968.

Around the Catchment: information and key messages from events you may have missed.

Landcare looks outside the box - Phil Horner
The Ovens Landcare Network (OLN) has been running a NE soil health program with the aim to provide knowledge for more sustainable farming to their members. This has involved inviting presenters that encourage thinking outside the box – experimenting beyond the bounds of established wisdom.

Their latest event at Whorouly attracted over 90 participants to hear from Dr Bernard Doube, Belinda Pearce, Gwyn Jones, Hugh Lovel and Trevor Dawson. This was backed up the following day with a Rural Sustainability event in Beechworth including Dr Rick Thwaites, David Lamb, Barry Warwick, Ali Garnett, Dr Tim Clune and Dr Bernard Doube. Associated farm walks were also held at Boorhaman, Meadow Creek, Springhurst, Lucyvale and Milawa, capitalising on the availability of several presenters.

Feedback suggests farmers continue to want more innovative input to their thinking and actively seek holistic approaches to their enterprise.

Pasture Production - Bernadette Thomas
Matching livestock to pasture production was an interesting day with Dr Rod Manning at the Towong Shire Office in Corryong. Rod Manning manages about 1100 cows and 280 heifers on free- and lease-hold properties near Mansfield. With Tim Paramore facilitating, Rod explored some of the practices he has used to manage risks while still doubling the size of his enterprise roughly every seven years. The main factors behind Rod's success were: Increase production efficiencies (more kg beef/ha) and drop the cost of production (including dropping production losses). Another layer of factors also included strong family support and striving to increase farm management and risk management skills. The day was supported by the Grasslands Society with approximately 30 people attending.

Managing Spring Surplus Workshop - Janice Horsfield
The Wises Creek Talgarno Landcare group hosted a Managing Spring Surplus workshop at Jim & Julie de Hennins property on 1st September. The key speaker John Mulvany, spoke to 20 people regarding the importance of managing spring surplus through grazing management and overall principles of property management. Calculations were carried out on stock feed requirements and feed availability. Some of the key messages from the day included looking at increasing demand through adjusting stock numbers or reduce paddock size to manage spring surplus. Cutting natural surplus can be cheaper then purchasing feed in. Efficient pasture use and sustainability through rotational grazing and resting pastures relative to plant growth was also highlighted at the successful day.

For more information about these events contact Kristy Youman, DPI, Wodonga, Ph: 0260437968.

Property Planning in North East Victoria

Have you ever thought about developing a plan for your property? Collaboration between North East CMA and DPI across Victoria means we can provide the best services to you. Here is some information you might like to consider.

Whole Farm Planning aims to give landholders an overview of the core concepts needed to understand how to manage a property and how the property fits with the bigger picture for resource management within a catchment. Core concepts or components covered include soils – physical, chemical and biological components and management; pasture management and weeds; understanding and managing for biodiversity; and water planning and management. Landholders also complete SWOT (strengths, weaknesses, opportunities and threats) analysis for planned activities on their property. The course also includes a farm walk to discuss what landholders have learnt.

The course delivery is flexible and can be tailored to suit particular types of landholders and or agriculture, including extra specific topics. Farm Plans can be developed on large format aerial photographs with acetate layers and/or digitally, using the web based tool eFarmer.

eFarmer is a FREE web based mapping program that allows Landholders & Landcare groups, extension officers and catchment planners, to access an easy to use Geographical Information System (GIS) with aerial photography, lat /long coordinates, property boundaries, public land areas, declared waterways, native vegetation location and its conservation status and much more.

Users can easily conduct Whole Farm Planning mapping, record and manipulate data to illustrate property and catchment attributes with an ability to model, evaluate and conduct reports on current or proposed activities, against a high level of Natural Resource Management spatial data.

Environmental Management Systems (EMS) is a management system that is focused on identifying and managing the impacts of an enterprise or business on the environment. It is a structured process to assess and to improve environmental performance using a continuous improvement cycle (plan –do – check – review) and consists of both on-farm actions and the documentation of these actions. It is compatible with the international standard ISO 14001.

For information on Whole Farm Planning contact Mary Anderson, DPI, Wangaratta Ph: 0357238655.

For information on eFarmer and EMS contact Suzanne Johnstone at the North East CMA Ph: 0260249104.

Dung Beetles – Nature's Recyclers

Turning a waste product into an asset.
On average one cow produces 18kgs of dung each day. For a herd of 100 cows that's a massive 12.6 tonnes in just one week! Pasture fouling substantially reduces effective grazing area and often the rank grass surrounding pads is not grazed.

Unburied dung provides a breeding ground for flies and harbours internal parasites. Dung washing into the waterways lowers water quality and can contribute to blue-green algae outbreaks. With dung beetles, this abundant pollutant can be transformed into a valuable product.

By burying dung, nitrogen and phosphorus contained in the dung are incorporated into the plant root zone providing valuable plant nutrients. The tunnel systems created by the beetles assists in reducing soil compaction and increases water infiltration into the soil. The additional organic matter in the soil results in increases in earthworm and microbial activity.

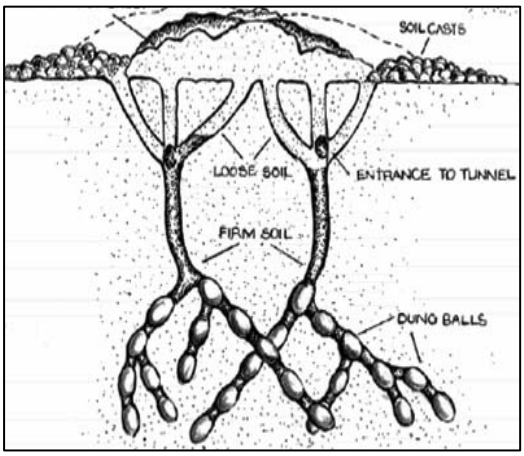


Diagram of dung beetle tunnel system. The beetles construct dung balls in which they lay their eggs. Tunnel systems can range in depth from 10 cm to 1 meter, depending on the species of beetle present.

How do I know if I have dung beetles?
To find out if you have dung beetles, you need to look for soil casts around the edge of dung pads. When dung beetles are in high numbers they can bury a complete dung pad in under 36 hours!

Caring for Dung Beetles
Dung beetles have a number of natural predators. These include foxes, ibis, crows and some other birds. These can cause the most harm when trying to establish new species of beetles. When beetles are established, the impact of these predators is generally minimal.

Some drenches used to treat internal parasites have been identified as being toxic to dung beetles. The National Heritage Trust and Agforce Queensland have produced a useful guide entitled: *"Consider your Dung Beetles when using Parasiticides"*.

This guide can be downloaded from:
http://www.dungbeetle.com.au/parasiticides.html

The "Do it with Dung – from the Mountains to the Murray" Project
This project is currently operating across North East Victoria and Corowa Shire and involves the monitoring and release of dung beetles. To date 211,000 beetles have been released across the region. Over 110 farmers are involved in the monitoring program, which involves setting dung beetle traps on a fortnightly basis. The trapping results provide detailed information on the geographical and seasonal activity of dung beetle species in the region. The results will assist in identifying geographical and seasonal gaps in dung beetle activity.

Where can I get more information?
To subscribe to the *"Do it with Dung"* newsletter or for more information contact Belinda Pearce – Project Manager Ph: 0260275294 or abanas@bigpond.com

Wetland Management and Incentives Program

An interesting wetland tour occurred in the area between Rutherglen and Boorhaman on Saturday 12th September 2009. Presenters on the tour were Sarah Daniel (North East CMA), Matt Looby (DSE), Geoff Barrow (Parks Victoria), Jim Blackney (Trust for Nature) and Rick James (Riparian Management Services).

The focus of the tour was on the extensive wetland systems within the Lower Ovens & Boorhaman Plains area (see photo on page 1). The wetlands visited included Lake Moodemere, Black Swamp, White Swamp and a few on a private property in the Boorhaman Plains area. Approximately 35 people attended including landholders from Rutherglen, Boorhaman North and Wooragee.

The tour highlighted a number of facts and important characteristics about wetlands. First of these was that the North East Region has nearly 2000 wetlands that cover almost 40,000 hectares. Also wetlands are classified into 6 naturally occurring types including shallow freshwater marshes, freshwater meadows and deep freshwater marshes. Cultural heritage values and a range of threats to wetlands were described and the importance that these areas have in a hydrological context.

Wetlands are important natural features within the Lower Ovens & Boorhaman Plains area. As such, the current government environmental incentives program within the North East CMA region has funding to support on-ground works in this area.

Further information on this funding can be sourced from Ian Gamble, DPI, Wangaratta. Ph: 0357238671.

North East Firewood Plantations

Firewood for heating is one of the most renewable sources of heating available to regional communities. Growing your own firewood is very rewarding for landholders. The continual harvest of a 2 ha firewood plantation should generally be sufficient to provide a household with all their heating requirements for the year on a sustainable basis.

During 2002 to 2004 the DPI assisted many north east landholders established their own firewood lots. These are growing well despite the drought, and although they are still a few years away from being able to begin gradually harvesting, these plantations are already providing a number of environmental benefits.

Birds are using them as a feed source, stock and wildlife are using them for shade and shelter, soils are being protected from erosion, organic matter is being built up, they are locking up carbon dioxide and the landscape is looking more pleasing to the eye of the traveler and local community.

Another benefit for the landholder in growing firewood plantations is their minimum maintenance requirements once established. These plantations require weed control in the first year or two for good tree survival, and only require further weed control if noxious weeds are present. Annual fire protection is advisable around the edges of any plantation, as with other assets. Pruning is not required as tree shape and branching is only important where the timber is to be used for sawing or poles.

Once firewood plantation trees are large enough, harvest will be in stages, with approximately 10% of trees available for harvesting each year to ensure an ongoing firewood supply every year. Firewood logs will take at least a year to dry out after harvest before they can be burnt. Burning dry wood is important to ensure maximum efficiency and heat out from clean burning to keep smoke particulate pollution to negligible levels. Harvested trees of most of our native species suitable for firewood will readily regrow from coppice after harvest, resulting in another crop in the future. Coppice regrowth often grows faster than the original tree due to the root system already being well established.

Firewood can provide electricity as well as heating. A proposal to establish a woody biomass electricity generation plant at Marysville is currently being developed. A feasibility study has shown that using initially wood from the fire clearing efforts, and plantation waste, and in the longer term using specially grown plantation biomass, will have the capacity to make Marysville an independent electricity town.

Burning firewood may produce smoke, but efficient burning of well-stored, dry wood will produce minimal smoke. Burning plantation grown firewood is also carbon neutral when trees are regrown and even carbon positive where it replaces fossil fuels.

Anyone needing further advice on investing and growing their own firewood plantation contact Philippa Noble, DPI, Wangaratta Ph: 0357238686.

Peron's Tree Frog- *Litoria peroni*

This beautiful frog is easily distinguished from other species by its eyes. They have a cross-shaped pupil (see picture), and small emerald green flecks on their back. They are very adept at climbing, having large toe pads which act like suction cups. At our place, this climbs up our windows, and catches moths and other insects.

It is sometimes known as the Maniacal Cackle Frog due to its distinctive call. It frequents wet and dry forest, woodlands, shrublands, and open areas; often long distances from the water where they spawn during breeding season. **Eggs** and **tadpoles** are found in still water in swamps, dams, streamside ponds, and lagoons. Males call from near water either on the ground or in vegetation (including trees, hence the name). The call is very long and drawn out, slowly pulsed and increasing in loudness - "cra-ah-ah-ah-ah-ah-ah-ah-ahhk". The calling period is generally between September and January.

Want to hear the call? Go to the Amphibian Research Centre website (www.frogs.org.au) and click on the Frogs of Australia section. There are descriptions, distributions, images, breeding calls, and more for every frog in Australia. This website is a great tool to help you identify the frogs you might be hearing.

Mary Titcumb, DSE, Wodonga Ph: 0260437956.

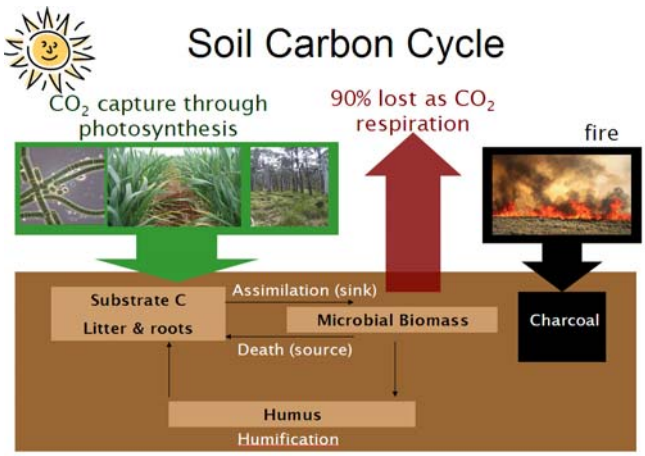
References:

Frogs of Australia www.frogs.org.au
Victorian Fauna Database (2005) Viridans

Carbon Sequestration & Soil Organic Matter

Soil Organic Matter (SOM) is "everything in or on the soil that is of biological origin, whether it's alive or dead" this includes plant shoots & roots, soil bugs and humus.

SOM is made up of approx 60% carbon with the remainder a mixture of calcium, hydrogen, oxygen & nitrogen. SOM is vital for soil structure, moisture retention, nutrient cycling, reducing erosion and food source for soil microbes. Soil organic matter is broken down over time into different forms of carbon as illustrated in the soil carbon cycle diagram below.



Did you know? 90 % of carbon is lost back to the atmosphere via respiration by soil microbes. Soil microbial biomass (soil bugs) and humus account for the remaining 10% of carbon stored in the soil.

So where does carbon sequestration fit in and how does it occur? Carbon sequestration is defined as carbon that is removed from atmosphere and retained in a carbon sink e.g. growing tree or in soil.

When carbon is considered sequestered in the soil it means that it has been broken down from active carbon form to inactive carbon form such as humus. While carbon is in the active form it is not sequestered.

Charcoal is also a form of sequestered carbon but note this occurs from activities such as fires. Charcoal only accounts for 1% of total carbon in soils. Biochar is a human induced process of sequestrating carbon using organic waste products.

Hence building soil organic matter is a slow process! A hectare of 10cm deep soil weighs about **1200 tonne**, so increasing organic matter by **1%** is a **12 tonne change!**

But, you cannot simply add 12 tonnes of manure or residue - only **10 – 20 %** of the original material becomes part of the SOM. The rest **(80 - 90%)** is converted over several years into **carbon dioxide (CO2)**

Soil testing labs measure total organic carbon. To convert total organic carbon into soil organic matter TOC x 1.72 = SOM. Note that this test does not break down the levels of inactive and active carbon in the soil it is a measure of both pools.

Don't forget that its not all about carbon, other nutrients are equally as important. Soil microbes also need nutrients such as nitrogen to break down SOM to convert it to humus and sequester carbon in the soil.

Information sourced from: Jeff Baldock - CSIRO Soil carbon the basics factsheet at http://www.csiro.au/resources/soil-carbon.html, Healthy Soils for Sustainable Farms programme: www.healthysoils.gov.au, and Victorian Resources Online: www.dpi.vic.gov.au/vro/soilhealth.

Kristy Youman, DPI, Wodonga. Ph: 0260437968

Wildflowers and Woodlands Guided Walk & Talk around Rutherglen Racecourse

Join us for a guided wildflower walk through one of the north-east best Grassy Woodland sites at the Rutherglen Racecourse to help celebrate the launch of the new flora brochures developed by Mary Titcumb (and receive your free copy!). See the display of lilies, herbs and native grasses.

When: Sat 24th October 2009, 11am– 1pm

Where: At the Rutherglen Racecourse, opposite Jones Winery on Jones Road, Rutherglen.

BYO: Hat, water, sturdy footwear.

NB: A free BBQ with sausages, salads and a cuppa will be provided by DSE & the Rutherglen Gun Club.

RSVP: to Kate Hill, DSE, Wodonga, Ph: 0260437926 or kate.hill@dse.vic.gov.au by the 22nd October.

Can some one smell Chocolate?

The **Chocolate Lily** (*Arthropodium strictum*) is a small purple flower that appears in spring in grassy woodland vegetation communities across south-eastern Australia. An easy flower to identify, due to its distinct chocolate scent that would have any chocolate lover licking their lips. This lily can grow to 1 metre tall. Deferred grazing over mid spring to early autumn can help encourage this species to flower and set seed, while recharging its tuber reserves. The bulbs/tubers were eaten raw or roasted by Aboriginals.

Kate Hill, DSE, Wodonga, Ph: 0260437926

For information on land and biodiversity management contact any of the following DPI or DSE staff:

Peter Ockenden, Team Leader - land.	**Ph:**(03) 57238674	**Kristy Youman,** CMO.....	**Ph:**(02) 60437968
Ian Gamble, CMO.....	**Ph:**(03) 57238671	**Craig Turton**, CMO.....	**Ph:**(03) 57238682
Kylie Macreadie, CMO.....	**Ph:**(02) 60437922	**Mary Anderson,** CMO.....	**Ph:**(03) 57238655
Philippa Noble, Private Forestry.....	**Ph:**(03) 57238686	**Martin Revrenna,** CMO.....	**Ph:**(03) 57311233
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To The Landholder

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