September 2013 Project Update

Dung Beetles: The ultimate farm workers!

According to John Feehan, from SoilCam, dung beetles can

- Aerate the soil
- Dig through compacted soil
- Help store soil carbon
- Deepen the topsoil by slowly cultivating and turning it over to a depth of 300 mm
- Increase rainwater penetration and improve groundwater retention
- Bury dung nutrients, including nitrogen and phosphorous, in the plant root zone
- Reduce bush fly and parasite breeding colonies.

Throughout July and early August Murrumbidgee Landcare Inc., through the Cross Property Planning Project, funded four dung beetle workshops at Humula, Ladysmith, Illabo and Junee, with internationally renowned dung beetle expert John Feehan. John said that each head of cattle expels around 18 kg dung/day with sheep around 2.5 kg dung/day demonstrating just how much dung can be dropped in a paddock in one day. He explained that whilst on top of the ground dung can become a breeding ground for bush flies and buffalo flies (up north) and parasites or get washed into waterways but with the assistance of dung beetles this valuable, nutrient rich resource can be buried and distributed through the top 300 mm of soil to the root zone where it can provide valuable nutrients to our crops and pastures and interrupt the breeding cycle of flies and parasites.

He also told the enthusiastic landholders that in order to maximise the benefits of dung beetles, you need to make sure you have enough beetles on your farm, that you have the right species, and that the sprays and pesticides you are using are not stopping them from doing their job.

John's organisation, SOILCAM, is based in Canberra where he coordinates the largest collection and redistribution of dung beetles in the world. As a result of his research and field work over many years, John is now able to supply the species suitable for particular locations to ensure maximum beetle activity through different seasons.

He reported that there are around 14 species of dung beetles that are suited to the area, some of which have already established. At the workshop at Humula he released a colony of winter-active *Bubas bison* dung beetles which were currently not found in the area.

John offers a free dung beetle identification service for landholders, and can also sell beetles suitable for your property. For more information, check out John's helpful website at www.dungbeetleexpert.com.au, or contact John on (02) 62 480 376.

(l) Trevor Parker, Jerry Garner and John Feehan about to release some dung beetles on Peter & Bundle Lawson's property at Ladysmith; (r) Above: The dung beetles quickly begin burrowing into the dung to begin their valuable work

(l) the large crowd at Humula enjoyed John's presentation; (r) John Feehan and Lawrie Sykes releasing the winter-active dung beetle Bubas bison on Lawrie's property.

(l) Cheryl Baldry and John Feehan holding some dung beetles found at Cheryl's property near Illabo; (r) John Feehan holding a brood ball showing the dung beetle egg.

Biological Weed Management

In conjunction with our workshops on Dung Beetles, Barry Sampson from WeedBiocontrol spoke at length about the biological weed control agents that are now available for weed species such as Paterson's curse, thistles, St John's wort, Horehound and Blackberries.

In particularly he discussed the success of the biological control of Paterson's curse which has six biological control agents working together to reduce its impact on the environment: leaf mining moth; crown weevil; root weevil; flea beetle; flower beetle and a stem borer.


(l) Crown weevil attacking Paterson's curse and (r) Paterson's curse flea beetle

He discussed the introduction into Australia of the different biological control agents, their identification in the field and the types of damage they cause. He explained that they are not a cure but part of an overall management strategy and take time to be effective.

Barry has biocontrol agents available for sale subject to their seasonal availability and can be contacted through his website www.weedbiocontrol.com.au.


(l) Barry speaking to landholders at the Illabo workshop and (r) Barry demonstrating the use of the sweep net to capture insects for identification

What we know now about conservation and biodiversity on our properties?

The cross property project aims to enhance the condition and connectivity of native vegetation across the Humula, Kyeamba and Illabo/Bethungra/Junee areas. To achieve this goal the project is working with landholders to develop their skills, knowledge and understanding of conservation and biodiversity on their own properties and across their landscape through workshops, meetings and the provision of funding for on-ground work for tree planting, protection of existing remnant vegetation and managing threats to biodiversity through weed and feral animal management.

To assist with this goal, a survey of landholders has commenced across the three cross-property planning groups at Humula, Kyeamba and Bethungra/Illabo/Junee. The survey is designed to provide a greater understanding of landholders' current expectations, goals, practices and knowledge in relation to the management of their native vegetation. To date thirty-one surveys have been completed. Survey work will continue through September and October, will results available by the end of November 2013.

Family Night Stalks

On the 11, 12 and 13 September 2013, enthusiastic landholders and their families attended free Family Night Stalks which were held in Eurongilly, Humula and Book Book.

The nights included presentations from Alison Elvin, from Natural Capital who explained how the current Flora and Fauna surveys will be conducted; Dr Fiona Christie, from the University of Melbourne who discussed the equipment that is used to monitor fauna, including the use of remote sensor cameras; and Mason Crane from the Australian National University who discussed what he has been found in past surveys in the area.

After dark, Mason led the group in an hour of spot lighting in which ring tailed possums featured prominently, particularly at Book Book.

(l) Dr Fiona Christie installs a remote sensor camera at Humula; (r) Mason Crane (centre) discussing the habitat requirements of sugar gliders to landholders at Humula.


(l) Rain doesn't deter Kyeamba landholders from participating at the Book Book Night Stalk on 13 September 2013; (r) Dr Fiona Christie explaining how to set up and use the remote sensor camera at Book Book.


(l) Mason Crane speaking to landholders at Book Book; (r) Mason Crane and Trevor Parker spot a ring tailed possum at the Book Book Night Stalk.

Spy (Remote Wildlife) Cameras Available

Remote wildlife cameras, or spy camera as one child at the recent Family Night Stalks like to call them, will soon to ready to borrow from Murrumbidgee Landcare Inc. The cross property project has purchased three cameras which are used to remotely monitor the presence and behaviour of mammals in our environment.

The infra-red cameras are simply set-up in a location of interest and focused on bait and left undisturbed for a number of days. The camera takes photographs of any animal which comes to investigate the bait. Two types of bait are generally used (at different times), one to attract herbivorous or omnivorous species (e.g. rodents, marsupial mice, bandicoots, potoroos) and one to attract carnivores (e.g. Tasmanian Devils, quolls, cats, foxes). The camera can then be collected, all photos downloaded to a computer and species identified.

It is hoped that each of the three cross property groups will circulate a camera between properties over a number of months as each SD card inside the camera can hold between 50,000 and 70,000 images. Please contact Jacinta Christie on 0431 953 778 if you are interested in using a camera on your property.

(l) Dr Fiona Christie from the University of Melbourne setting up a remote wildlife camera and bait station at the Humula Night Stalk; (r) Wallaby playing a flute - Black Wallaby or Swamp Wallaby (Wallabia bicolour) nibbling one of our dropped pencils! Information on the photograph includes date, time and temperature, data which can be used to investigate behaviour.

What native plants and animals are on my property?

Have you ever wondered what species of birds and mammals are hiding on your property? What about all the strange plants that you cannot identify? With thirty sites currently being surveyed across the Humula/Tarcutta, Kyeamba and Junee cross property groups you will soon be able to find out. The Murrumbidgee Landcare Cross Property planning Project is funding flora and fauna survey to be conducted by Alison Elvin from Natural Capital and Dr Fiona Christie from the University of Melbourne. The results from these surveys will be available at information evenings to be held late November/December across the three cross property group areas.

Using Native Species to Manage Invasive Weeds

Two trials to examine the ability of native species to suppress invasive weeds are to be established in Humula and Illabo. The trials aim to compare the competitive ability of (a) grasses, (b) Acacias, (c) shrub legumes, and (d) miscellaneous ground covers and forbs against introduced species.

Treatments will include varying plant densities; the effect of sugar to provide a competitive advantage to natives over introduced species; the use of transplanted seedlings compared to seed; and the use of micorrhiza to see if there is any improvement in establishment and growth of the native species.

The Humula trial planned for Lawrie & Nicole Syke's property 'Miowere' hopes to compare the competitiveness of native species against St John's wort in an existing fenced remnant on the property. Work will commence on this trial throughout late Spring.

(l) Peter Orchard from the Graham Centre and Lawrie Sykes discuss the proposed trial and (r) the proposed trial location

Integrated Pest Management Trial

In addition to examining the competitiveness of native species to manage introduced species, the Illabo trial will also have an integrated pest management (IPM) component. In this replicated trial at Bill & Maria Muller's property 'Nunlong' mixed populations of native species will be planted, within an existing mature remnant, so the area will flower year round and can therefore provide resources for a range of beneficial insects that can help with regulating pest numbers. Pest and beneficial Insect diversity and abundance will be measured within the remnant, across the neighbouring cropping paddocks and also in a control remnant about 1 km away, where no additional vegetation is planted, to determine the effects of native understory on insect populations.

On the 24 July 2013, planting of native understorey species into the existing remnant was completed and 24 pit fall traps were installed in a grid pattern in the adjacent cropping paddock. Put fall trap monitoring will occur once every three months to determine the baseline species abundance and diversity within the site.


Before (l) and after planting (r) of understorey species at Bill & Maria Muller's property 'Nunlong'



(l to r) Planting understorey species on 24 July 2013; Bill Muller and grandson Charlie inspect the plantings; and Phil Bowden from NSW DPI installing pit fall traps for insect trapping.