

Landcare UpHunter

Summer 2017

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Biosecurity—Beyond the Backyard

Protecting plants and animals from new and invasive pests, insects, diseases and weeds isn't just a responsibility of government. It relies on all of us working together to achieve good environmental outcomes at home, at school, at work and our local area and region.

Biosecurity refers to practices we put in place to stop the introduction and spread of pests, keeping Australia's animals, plants, land and waterways free from new threats.

Quarantine measures at Australian and State borders prevent pests entering the country and its regions. Pest problems in a State may exist in certain regions or at a local level with rules concerning their handling and control e.g. specific environments or properties.

Encouraging good, ongoing biosecurity practices in our communities now can minimise the impacts of pests, diseases and weeds or even prevent them arriving in the first place.

There are some simple things you can do to help protect your home, your school, public spaces and other land and waterways from biosecurity threats. Some of these are:

- Early identification of any pests, diseases and weeds in your home garden or school veggie patch will assist with easier eradication or control. Learn what is normal for your area and how to identify new or unusual pests. Read up on some potential [exotic pests](#)
- Ensure plants or animals you move or handle are healthy so diseases or pests aren't spread accidentally and you have correct health certificates when you purchase them.
- Minimise the risk of carrying and spreading pests, disease particles or weed seeds when you move from place to place. Clean your shoes, disinfect equipment, change clothes or even wash your vehicle before leaving one property or area for another one.
- When you visit other areas such as farms or managed parks, ask the landholder or manager if they have any biosecurity measures in place that they'd like you to follow. If you don't have a [biosecurity action plan](#) in place for your property, then implement one!

If you spot anything unusual or suspicious, make an effort to try and get it identified. If you're really concerned, [report it](#) to the Exotic Plant Pest Hotline on 1800 084 881 or the Emergency Animal Disease Watch Hotline on 1800 675 888.

There are a variety of invasive weeds having a negative impact in NSW, including the Upper Hunter Shire e.g. Scotch Broom. Introduced in the 1800's, it thrives in the Australian climate, outcompeting native trees, bushes and other plants. It covers around 230,000 hectares of land in NSW with the Barrington Tops having the largest infestation in Australia. Pasture and native bush land have also been lost to Scotch Broom in its lower reaches. Growing quickly and densely, its seed can survive in-ground for many decades. When this weed was first recognised as a 'threat' good biosecurity practices could have minimised its spread. Without proper practices in place, Scotch Broom was quickly spread by people, vehicles and machinery, not just by natural dispersal.

A good example of a high risk pest is [brown marmorated stink bug](#) (BMSB). It's an important pest to look out for. So far BMSB (see photo below) has been intercepted at the Australian border on multiple occasions after hitch-hiking in shipping containers and prevented from entering Australia. Recently one shipping container made it to western Sydney with a group of brown marmorated stink bugs inside. The bugs were killed and searches carried out in nearby areas to make sure none had escaped. Overseas, this insect feeds on a wide variety of plants, causing significant damage to crops and natural environments. It is a nuisance pest in homes. These bugs gather in large numbers looking for sheltered places to hibernate in Winter and true to their name they stink!

To keep updated on plant biosecurity happenings in NSW you can sign up to the [Plant Biosecurity Newsletter](#) (released every 2 months). For more information on biosecurity planning visit www.farmbiosecurity.com.au.

Rebekah Pierce



Sustainability at Scone Public School

In 2013 Scone Public School received a Junior Landcare grant as part of our Watch Us Grow project focussing on student learning about sustainable food through seed collecting, growing and distributing vegetables and simple ways to prepare nutritious food.

A greenhouse, tools/other equipment and vegetable seeds were purchased. Students learnt simple food production techniques of benefit to their environment e.g. they made tube stock containers out of recycled paper for the plants they grew in the greenhouse.

Classroom resources were also enhanced at this time e.g. the Lunch Munchers Education Kit which provides whole of school curriculum (Primary) on school-based worm composting and recycling learning activities. Scone Landcare provided these Kits.

After a review and refocussing of activities in the 2017 school year, Scone Public School recommenced sustainable food learning experiences for students with a Garden Club for Years K-6. Each class has two representatives and they work in small groups one lunchtime per week on small projects around our school. Some weeks students have been lucky to have our school's Aboriginal Education Officer assist them. As the children work in the garden they have gained knowledge on the traditional uses of different indigenous plants, for example Lemon Scented Myrtle (*Backhousia citriodora*) and the Native Finger Lime (*Citrus australasica*).

Local horticulturist Linda Posa has also lent a hand in teaching them about propagating succulents and transplanting seedlings.

In Spring our enthusiastic gardeners planted herbs and vegetables such as thyme, basil, lettuce, silverbeet and beans. Maintaining our newly established Bush Tucker Garden is another integral part of students learning activity. Along with selecting and planting seeds or tube stock comes weeding and mulching when required. Prolonged hot and dry weather periods and the school term breaks (particularly the Summer break) can sometimes make it difficult to keep our food plants growing well through the season.

At the end of each school year most plants will be given back to the Garden Club members to take home, encouraging them to pass on to family members and friends their learnt skills and knowledge on growing and eating sustainable, healthy food.

Scone Public School was delighted to receive a Bee Hotel from Weleda this year, a joint initiative with the Stephanie Alexander Kitchen Garden Project. This will help students understand information learnt from the Native Bee workshops held earlier in the year which were facilitated by Scone Landcare. Two students assembled and painted the Bee Hotel Kit while others gathered suitable nesting materials like bamboo wooden bundles and loose sticks. We also have some hardwood with holes drilled in them.

The Bee Hotel will be located near the vegetable garden beds to allow native bees to cross pollinate and collect pollen and nectar.

The Scone Garden Club has also kindly donated an annual award to acknowledge a child's commitment to gardening and their contribution to our school garden club. This perpetual trophy, along with our school's plans for a community kitchen on site will raise the profile of the garden club within the school to ensure its continuation in future years, with ongoing community support too!

These activities are all part of Scone Public School's focus on building environmental learning opportunities for our students.

Scone Public School recently received an Eco Schools Grant from the NSW Environmental Trust, for our "Bee Wise for our Future" project. This will see construction of a bee friendly native garden at school, raised garden beds, bee-attracting plants going in the ground and 'story-board' signage for students within school grounds and visible to community members passing by. Accessibility to the garden for students with disabilities and their participation in Garden Club activities is a fundamental part of this project.

"Bee Wise for our Future" will enhance beneficial insect pollination for our vegetable garden and other plants, provide food for Native Bees, support our Kitchen Garden program, increasing student learning on food sustainability and environmental outcomes.

Vanessa Miller

The Bee Hotel B&B Kit has been painted, the bamboo & sticks collected & we're ready to assemble & place it in the school gardens (photo right)



A Bee Hotel for Your School

Bee Hotel B&B Kits have already been provided to over 400 Primary schools across the country. Why are they called B&B Kits? Well, once a Bee Hotel Kit has been set up it gives the bees a place to nest and sleep (bed) and they can find food (breakfast) from plants that are grown in the schools garden. While living and buzzing around school the bees contribute to plant growth.

They are a great way to involve children in hands-on learning that has practical applications at school and at home; connect them to activities that build a sense of caring for their local environment; for the biodiversity of our native wildlife and native plants; increase their understanding of the importance of native bees as pollinators in our landscape and in food production.

As sponsor of the Bee Hotel B&B Kits, Weleda continue to provide them to Primary Schools. For more information on this project and to apply for a Kit for your school by filling out a registration form go to beehotel.weleda.com.au/registration-form/

Ruth Hardy

Living in the Soil

Living in the earth beneath our feet and in the earth around us are many varieties of beneficial soil organisms like bacteria, fungi, microarthropods, nematodes, earthworms and insects. Some, like nematodes, have around 25,000 described species in Australia whilst native earthworms have an estimated 1,000 species emanating from only 3 families (with lots more from introduced species). They live on organic soil matter and other soil organisms, performing vital roles in keeping the land across Australia as healthy as they can. Some soil organisms are involved in inorganic molecule transformation, with temperature playing a part in this process.

The majority of soil bacteria are around only one micron in length or diameter (1,000 microns in 1 millimetre) though some do grow up to several microns. Their size can vary according to the particular environment. High nutrient levels in one environment may have bacteria which is larger than those in nutrient poor conditions. Across Australia there are thousands of bacteria species.

Plants provide sugars to microbes and microbes make nutrients available for the plants in the garden, public spaces, on farms and other land. A very beneficial relationship all round! Soil mites like the scavenging Oribatid mite (photo below) help to create humus and form soil by breaking down organic material to a bacteria level which is then consumable. They live primarily in forest leaf litter and the top layer of soil. Like insects and spiders they don't have internal bones but have a hard, outer shell called an exoskeleton.

Soil organisms role in soil fertility is wide ranging

- helping soil to form from original parent rock material
- Contributing to soil particle aggregation
- Transforming nutrients from one form to another
- Assisting or hindering water penetration into soil
- Degrading toxic substances in soil
- Improving nutrient cycling
- Assisting plants to obtain nutrients from soil
- Minimizing disease in plants.



When you are next in your garden, in a park or school garden, working on-farm or out for a walk, enjoy the view and remember there are lots of 'tiny critters' working in the soil for the benefit of our land, for food and other plant production, animals and for you!

Ruth Hardy

Resources & Funding

Plants absorbing more carbon without more water—paper on how land plants are absorbing 17% more carbon dioxide from the atmosphere than 30 years ago and using less water, which suggests a global change is causing plants to grow more water-efficiently. Go to <https://theconversation.com/rising-carbon-dioxide-is-making-the-worlds-plants-more-water-wise-79427>

Insects hitch a ride on convection currents—Rothamsted/US research on ways insects use air currents to move around, helping scientists predict when, where pests strikes will be. Go to <https://rothamsted.ac.uk/news/lazy-hitcher%E258099s-guide-insect-flight>

Grains Farm Biodiversity Program—Is your Field Day a Biosecurity Risk? For information on minimising the spread of unwanted plant pests at Field Day/on-site trials including weeds, diseases and invertebrates go to www.planthealthaustralia.com.au/

Worksafe Queensland—Safety on Farms resources, simple safety management systems for farm, assisting teachers incorporating WH&S into Food & Fibre production learning in schools www.worksafe.qld.gov.au/agriculture/health-and-wellbeing-at-work/

Climate Ready Revegetation—a guide for natural resource managers to consider regional climate protections, suitable plant species and seed provenance when revegetating areas. View this at http://anpc.asn.au/resources/climate_ready_revegetation

Managing Stock in Dry Times—Dept. of Primary Industries handbook providing information on stock management to landholders, from large scale farms to small properties with a few stock. Go to www.dpi.nsw.gov.au/climate-and-emergencies/droughthub

Feed Cost Calculator—Dept. of Primary Industries resource to assist managers in calculating feed requirements for stock. Just go to <https://www.dpi.nsw.gov.au/animals-and-livestock/nutrition/costs-and-nutritive-value/feed-cost-calculator>

Carbon Dioxide in 3-D—NASA animation showing carbon dioxide emissions moving around earth between September 2014 and September 2015. Go to <https://www.nasa.gov/feature/goddard/2016/eye-popping-view-of-co2-critical-step-for-carbon-cycle-science> or alternatively you may want to view the YouTube clip. You can go in via google. Type in NASA/A Year in the Life of Earth's co2

Five Reasons not to Spray the Bugs in Your Garden—as the title says, this article looks at the use of bug sprays and their effects. Just go to <https://theconversation.com/five-reasons-not-to-spray-the-bugs-in-your-garden-this-summer-85673>

Digital Survey for Farmers on Needs & Issues to Decision Agriculture—Australian Government's Dept. of Agriculture & Water Resources (Rural R&D for Profit Program) survey around digital technology & agricultural data from farmers. To find out more and to participate in this P2D (Accelerating Precision Agriculture to decision Agriculture) survey go to www.farminstitute.org.au

Agriutures Australia is the new name for Rural Industries Research & Development Corporation (RIRDC) www.agriutures.com.au

Funding

Future Farmers Scholarships—the Future Farmers Network (FFN) is offering 3 x \$1,000 scholarships to study a RuralBiz Training course of your choice. Applicants must be a members of FFN and aged between 18 to 35 years of age in February 2018. For more details, to download an application for this scholarship, or to find out about membership of FFN go to www.futurefarmers.com.au

Events for your Diary

Landcare UpHunter stall—farming, environment, Landcare, education resources, plants/herbs. Visit us at: Gundy Market Day & Car Boot Sale—Sunday 4th March 9.00am to 1.00pm at the Gundy Recreation Grounds, Camp Street, Gundy.

Other Events:

Upper Hunter Producer Update Field Day—Hunter LLS on 22nd February 9.00am to 1.30pm.

To register call 6540 2400 or online via Hunter LLS website.

Clean Up Australia Day—Business Day 27th February, Schools/Youth Day Friday 2nd March, Community Clean Up Day Sunday 4th March. Register an event at cleanup.org.au

World Wildlife Day—3rd March for event details go to www.un.org/en/events/wildlifeday/index.shtml

International Day of Forests—21st March. For information link in to www.un.org/en/events/forestsday

Earth Hour—24th March switch off your lights 8.30pm to 9.30pm. 180 countries take part earthhour.org.au

Glenbawn Catchment Landcare Group. Contact Gavin MacCallum glenbawncatchment@outlook.com

Merriwa Landcare Group. Contact Jenny Lee on 0429 337 557

Murrurundi Landcare Group just Email Sandy@boydscreek.com.au

Pages River Warriors Working Bee Wilson Memorial Oval, Murrurundi 1st & 3rd Sunday monthly (morning) Email Sandy@boydscreek.com.au

Landcare UpHunter & Scone Landcare—refer details below

Biodynamics on Farm

Biodynamics views our soil as an organism in its own right, using specially prepared compost and supporting product to enhance the soil and plant vitality. As a holistic farming method, biodynamics works in tune with the land and environment we live in.

Growing food and plants with natural enhancement processes, retaining the flavour and diversity of food is a main focus for Hunter Biodynamic Group (HBG) members. As a group of landholders, we meet regularly to talk about care for our land, natural building of soil, plan activities, have working bees and distribute and use soil enhancer preparations.

Biodynamic preparations are made with the purpose of inoculating the soil with the types of beneficial bacteria and associated biota to enhance the uptake of nutrients and build humus and water carrying capacity in the soil. This enables greater cation exchange i.e. the capacity of soil to hold exchangeable cations (ions) and thus the retention of nutrients without altering the plants natural ability to select for itself what it needs from the soil.

The concept of the farm as an organism is often part of discussion on good practices, reminding us that each part of the farm operation is important to the proper operation of its other parts. Animals are important in providing for the bulk of fertilization in pasture in association with plants, dung beetles, earthworms and of course soil bacteria.

If we take care of biodiversity on the farm the need for using chemicals can be avoided.

HBG's 'preparations' are made at Purple Pear Farm, west of Maitland. Thursdays are always Biodynamic day at the farm with working bees to grow the herbs and to look after the stored preparations ready for dispatch to our members for use on their properties.

Making the 'preps' happens mostly in Spring and Autumn. At other times we weed the herb gardens and plan for the next soil conditioner Cow Pat Pit—a year long process bringing a type of homeopathic compost for broad acre application for gardens and farms where compost is not made. Constructed in-ground, a Cow Pat Pit has cow dung mixed with ground egg shells, blue metal 'basalt' dust and a valerian and water concentrate.

Cow Pat Pit product is often added to the main soil enhancer, Horn Manure Prep or BD500 in the last 20 minutes of preparation, stirring to bring to the soil humus-building capabilities and better breakdown of organic matter especially in Autumn when pasture and cover crops break down and lay on the ground. It is also applied after grazing has left trampled grass and dung in the paddock—to assist in rapid breakdown to living soil.

It provides simple preps ready for compost heap, garden or paddock. The compost heap has lots of green and dry materials sourced on-site, sorted then layered before making a 'compost cake' with water. A prep-ball is made with valerian and water. Valerian assists with dampening down the top of the heap and encourages earthworms in the process.

Biodynamic preps used in making the compost produce high quality humus with a good balance between protein and carbon. The compost heap requires minimal maintenance.

Biodynamic Certification for a farm includes having a diverse farm management plan and an annual audit by Australian Certified Organic (ACO). Keeping cows on-farm ensures a ready supply of cow manure, the main ingredient in Biodynamic preparations (BD500).

Hunter Biodynamic Group run weekend introductory and other courses when demand is present. Field days and get-togethers occur throughout the year—food at shared meal events is spectacular! We are pleased to be associated with Landcare in the Hunter.

Ensuring healthy outcomes for our land, our plants and food production benefits all of us.

To find out more you can contact us by email at hunterbiodynamicgroup@gmail.com or you can like us on our facebook page <https://www.facebook.com/HunterBiodynamics/>

Mark Brown



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Landcare UpHunter

PO Box 276, Scone NSW 2337

Contact: Ruth Hardy

Tel: 0407 232 539

Email: landcareuphunter@gmail.com



Visit us at www.landcare.nsw.gov.au/groups/scone-landcare-group