

### 3: A step-by-step guide to establishing a dung beetle project

This section provides practical tips and general guidelines on how to set up a dung beetle project.

#### Why are community-based projects important?

If released beetles are to survive and thrive in a new area, it is important that local landholders know how to best care for fledgling beetle colonies. Dung beetles are oblivious to property boundaries and will follow the food supply. A community approach will assist in ensuring released beetles have the best possible chance of successful establishment.

Community based-projects are also more likely to receive funding and have a stronger capacity to disseminate information and monitor dung beetle activity.

#### Step-by-step guide to starting your own dung beetle project

The steps (and their order) can be modified to suit the requirements of specific projects. They represent a guide rather than a strict “how to” formula.

Overview of steps:

**Step 1:** Find out what beetles have been released in your area

**Step 2:** Determine what species you have

**Step 3:** Identify beetles suitable for introduction

**Step 4:** Generate interest in a dung beetle project

**Step 5:** Apply for funding

**Step 6:** Introduce dung beetle colonies to your area

**Step 7:** Care for introduced species

**Step 8:** Monitor released species

The section concludes with a list of “special interest” resources and a directory to Natural Resource Boards and Catchment Management Authorities across Australia.

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#### Using the Resource CD:

To locate an item from this section: **Double click** on the folder labeled “How to Guide”



This will open a further nine folders with the following headings:

 Step 1	 Step 2	 Step 3	 Step 4	 Step 5	 Step 6	 Step 7	 Step 8	 Extras
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**Double click** on the folder that relates to the item of interest.

A list of files relating to each step will appear

**Double click** on the item of interest



### 3. A step-by-step guide to establishing a dung beetle project



#### Step 1: Find out what beetles have been released in your area

- ◆ Use the CSIRO Report: “Australia’s Introduced Dung Beetles” to check which species of dung beetles have been released and/or recovered in your area.



#### Resource CD: Australia’s Introduced Dung Beetles: Original Releases and Redistributions



##### Original CSIRO releases (1969–1984) pages 4-120

- species name, quantity released, location and recoveries
- listed by town nearest to release site (in alphabetical order)

##### Redistributions (1989-1994) pages 122-133

- species name, quantity released, location and recoveries
- listed by state and town nearest to release site (in alphabetical order)

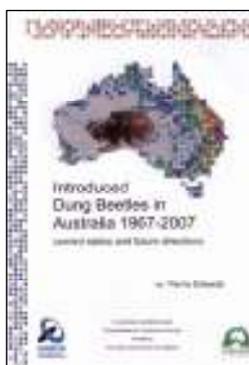
##### Recoveries – The Dung Beetle Crusade (1994-1996) pages 135-149

- species recovered
- listed by locality in alphabetical order

- ◆ Check the release, redistribution and recovery maps located in the report: “Introduced Dung Beetles in Australia 1967-2007”.



#### Resource CD: Introduced Dung Beetles in Australia 1967-2007 by Dr Penny Edwards



Pages 13-35

Australia-wide maps providing information on:

- releases
- redistributions\*
- recoveries

for 23 species of dung beetles.

\*Does not include redistributions by individuals and many local groups.

- ◆ Go to section 5 of the resource package: “**Projects 1965-2008**” and look for projects in your area (remembering that this is not a complete list).

- ◆ Phone or e-mail your local Landcare group, Catchment Management Authority or Natural Resource Management Board to obtain details of any dung beetle projects that have operated in your area.



How do I find my local Landcare group?

- ◆ At the end of this section there is a directory to Catchment Management Authorities and Natural Resource Boards across Australia. These organisations can supply contact details for your local Landcare groups. Your local council may also be able to assist.

- ◆ Talk to local beef and dairy farmers and farming groups.

- ◆ Place a notice in your local newspaper requesting information on local beetle releases.



## Step 2: Determine what species you have

To achieve maximum dung burial, a range of dung beetle species are needed. These species are active at different times of the year. It is important to know what species you may already have and their activity period.

◆ Monitor dung beetle activity over a twelve month period. Ideally monitoring would be conducted on a weekly or fortnightly basis. Monitoring results should be interpreted with caution as seasonal conditions such as drought can restrict the abundance of species, and there are limitations associated with trapping methods.

**Method 1: Casual inspection & flotation** (adapted from information developed by John Feehan and the Northern Tablelands Dung Beetle Express Project)

Look for evidence of dung beetle activity around and under dung pads

### SOIL CASTS

Soil casts around the edge of dung pads result from the tunneling activity of beetles. The amount of soil excavated is related to the depth of the tunnel. Tunnel depths can vary from less than 10cm to 100cm depending on the species and soil type.

### TUNNELS UNDER DUNG PAD

Carefully lift the dung pad and look for holes in the ground. Beetle species range in size (widths can range from 3mm to 15mm). The size of the hole provides an indication of the size of the beetle.

### THE FLOTATION TECHNIQUE

Dung pads which are approximately 24 to 48 hours old should be collected as these will have attracted both day and night fliers. As dung beetles can retreat into their tunnels rapidly it is advisable to approach the pad quickly and quietly.

Scoop up approximately five centimetres of soil with a long handled shovel. Place the dung, grass and soil in a bucket which is half-filled with water. Agitate the mix to break up the dung and soil. The beetles will float to the surface after a few minutes. Retrieve and identify beetle species.

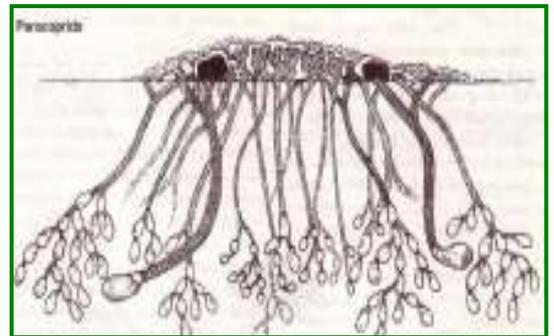
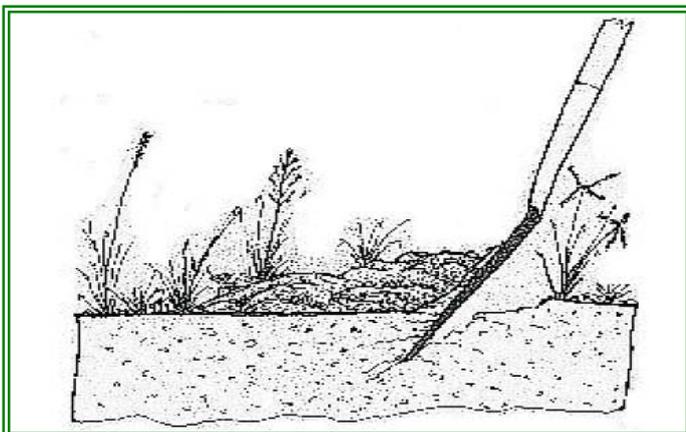


Diagram of beetle tunnel system Source: Bornemissza, 1976, AMRC Review No. 30



Soil cast around dung pad



Tunnels under dung pad - different tunnel sizes indicate the presence of more than one species



## Method 2: The pitfall trap

The pitfall trap is used to monitor beetle populations over a period of time, usually twenty-four hours. The design outlined can be modified to suit the availability of materials.

The trap consists of:

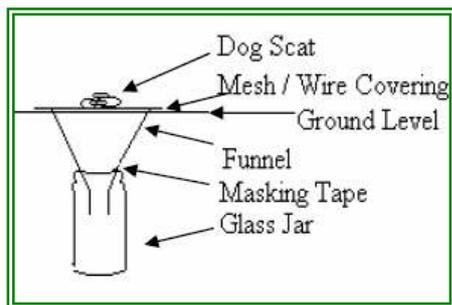
- a metal cylinder (or black flower pot) 250mm in diameter and 300 mm in length
- a PVC funnel, 210mm in diameter and 200mm in length
- metal sheeting approximately 350mm x 350mm with a 210mm hole in the centre to accommodate the funnel
- wire mesh approximately 250mm x 250mm to hold the dung bait
- nylon netting approximately 400mm x 400mm
- a length of string 400mm long
- a suitable container (eg coffee jar) with a hole cut in the lid to accommodate the funnel

Setting up your trap:

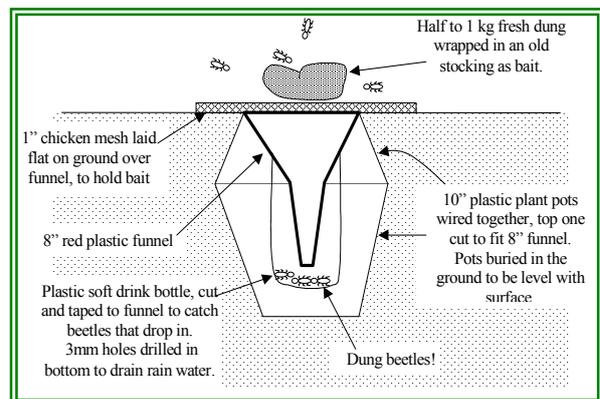
- select a location in an open cattle-grazing. The pitfall trap should not be placed close to bush, scrub or under the canopy of large trees as the introduced beetles were selected to work in open pasture areas.
- dig a hole and place the cylinder (or flower pot) in the hole (this will prevent the soil from collapsing and enable the trap to be reused).

Preparing your trap for monitoring:

- set your trap in the afternoon before dusk (eg between 2pm and 4pm)
- wrap approximately one litre of *fresh* dung tightly in a piece of nylon gauze, and secure with string. Place the bait on the wire grid which sits over the funnel. The end of the funnel fits into the hole of the lid of the collection beetle container. You may need to trim the funnel so that beetles fall freely into the trap, and to ensure that there is sufficient space between the end of the funnel and the collection container)
- 24 hours after the trap was first set, clear your trap. Remove the beetle container and place a plug in the hole in the lid to prevent beetles from escaping.
- Cover the trap with a fence post board or large rock to prevent stock from stumbling into the trap



**Variations in trap designs**



**In-ground and portable above-ground trap designs**

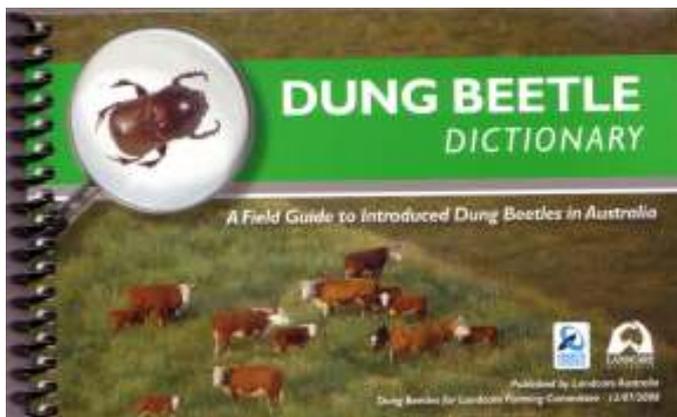
Further details on trap design and monitoring techniques can be found on the resource CD



**Resource CD: Monitoring Guides**

- *The Dung Beetle Monitor: Dung Beetle Express*
- *Dungbusters: Department of Natural Resources, Mines and Energy*
- *BIOSCAN: Department of Agriculture Western Australia*
- *Great Australian Dung Beetle Challenge: Junior Landcare*
- *Transform a pollutant into an environmental and agricultural benefit: Fleurieu Beef Group*
- *Monitoring dung beetle abundance on the Fleurieu Peninsula 2002-03: Fleurieu Beef Group*
- *Monitoring of Fleurieu Beef Group 2002 -03 Dung Beetle Releases: Fleurieu Beef Group*
- *Final report of the 2001-02 Queensland Dung Beetle Project: Agforce Queensland*
- *An evaluation of the Lake Macquarie Dung Beetle Release Program: Lake Macquarie Council*
- *Report on Trentham Landcare Dung Beetle Program (pitfall trap design): Trentham Landcare*

◆ Use the “Dung Beetle Dictionary” to identify trapped dung beetles



**Dung Beetle Dictionary**

A Field Guide to Introduced Dung Beetles In Australia.

Published by Landcare Australia

Dung Beetles for Landcare Farming

12/07/2008

There are also numerous identification guides developed by projects that provide useful tips on identification. Many of these guides also include information on native beetles.



**Resource CD: Dung beetle identification guides:**

- *Identifying dung beetles on the Fleurieu Peninsula: Fleurieu Beef Group*
- *Dung beetle identification guide & general information: Goulburn Broken Dung Beetle Project*
- *Dung beetles for Tasmanian conditions: Tasmanian Dung Beetle Project*
- *10 common dung beetle species of the Northern Tablelands of NSW: Dung Beetle Express*
- *Final report of the 2001-02 Queensland Dung Beetle Project: Agforce Queensland*



**Web page: Key to Dung Beetles of New South Wales**

The key contains both native and some introduced species. It also includes a comprehensive glossary and has extensive diagrams, illustrations and photographs. It can be accessed by going to: [http://faunanet.gov.au/faunakeys/dung\\_intro.htm](http://faunanet.gov.au/faunakeys/dung_intro.htm)



Tyndale-Biscoe, M. 1990, *Common Dung Beetles in Pastures of south-eastern Australia*, CSIRO Publishing Australia. 72 pages. Available from CSIRO Publishing



Not all beetles found in dung are beneficial species. Be on the look out for:

- Redheaded pasture cockchafer: *Adoryphorus coulonii*
- African black beetle: *Heteronhychus arator*

Images of pest species can be found at:

[www.padil.gov.au](http://www.padil.gov.au)



*I have a beetle that I am unable to identify – What do I do?*

There are several voluntary beetle identification services that can provide assistance.

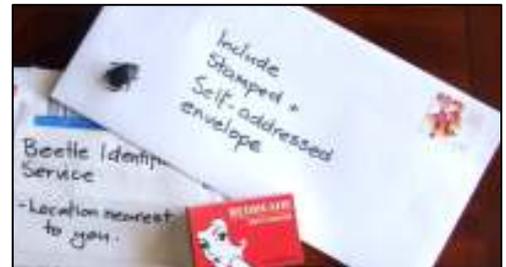
If available, it is helpful to include several specimens of the same species as this will increase the likelihood of including a male, which is often easier to identify.

The first step is to prepare your beetle.

- rinse all traces of dung from the beetle
- place the beetle in a container and freeze overnight
- remove the beetle from the freezer and place on a paper towel or newspaper to dry in a well-ventilated area for one week.
- loosely wrap the dried beetle(s) in paper towelling and place in a matchbox or cardboard packaging that will not crush during postage. It is important to avoid plastic packaging as beetles may sweat and decompose making identification extremely difficult. It will also ensure that unpleasant odours are kept to a minimum.

You will also need to include:

- property location and description (GPS if available)
- details on how the beetle was acquired and the date (eg pitfall trap using horse dung)
- stamped self-addressed envelope for return of beetle identification



Post your beetle to your nearest location\*:

#### QUEENSLAND

Penny Edwards

PO Box 865 Maleny Qld 4552

#### NEW SOUTH WALES

Pam Wilson

email: [karaglen@optusnet.com.au](mailto:karaglen@optusnet.com.au) for address details

#### VICTORIA

Belinda Pearce

C/- Kergunyah Post Office Kergunyah Vic 3691

#### TASMANIA

Graeme Stevenson

13 Guy Crescent Somerset, Tas. 7322

#### SOUTH AUSTRALIA & WESTERN AUSTRALIA

Bernard Doube

37 Cave Ave. Bridgewater SA 5155

\*Details correct at time of publication.



### Step 3: Identify beetles suitable for introduction

◆ Use the potential distribution maps (south-eastern Australia) located in Section 4 to determine which species are suited to your area. Australia-wide maps are located on pages 13-35 of the report “*Introduced dung beetles in Australia 1967-2007*” on the resource CD.



Predicted distributions are modeled using climate data from localities where the species has been recorded in its native range. The model does not take into account habitat, microclimates, soil type, presence of cattle or any other factors. The predicted distributions should therefore be used as a first approximation.

Two techniques have been developed to “trial” the suitability of a species to an area prior to large scale redistributions. The soil core method has been developed by Dr Bernard Doube of Dung Beetle Solutions Australia (see section 5.37 and resource CD reports for a description of the soil core technique). The Lucyvale Better Beef Group is trialling species in shade-cloth tents. This method enables an assessment of the activity period of species. The capacity of beetles to reproduce using this method is currently being evaluated.



#### Resource CD: Soil core trials and species evaluations

- *A comparison of two methods to identify optimal release sites for Bubas bison in South Australian water catchments:* Onkaparinga Catchment Water Management Board
- *Suitability of Onitis aygulus for the Fleurieu Peninsula:* Fleurieu Beef Group
- *Identifying optimal release sites for Geotrupes spiniger on Kangaroo Island using dung burial, juvenile mortality and adult-to-adult survival:* K. I. Natural Resource Board
- *Evaluation of dung beetle species for introduction and dispersal over the Fleurieu Peninsula:* Fleurieu Beef Group
- *Draft: Tree species as indicators of the suitability of dung beetle release sites:* Greg Dalton: Creation Care.



### Step 4: Generate interest in a dung beetle project

This could also be completed after step 1 and prior to monitoring

There are a number of advantages associated with community-based projects:

- ability to monitor large areas and to gain a broader picture of dung beetle activity
- potential cost-sharing when purchasing dung beetle colonies
- increased likelihood of attracting funding
- increased capacity to ensure the successful establishment of beetle colonies through dissemination of important dung beetle establishment information

Over the past 40 years, numerous groups, government departments and industry organisations have operated dung beetle projects. These include (but are not limited to):

- Landcare groups
- Beef and Dairy Industry and Farmer Groups
- Water Authorities
- Service Clubs (eg Rotary)
- Local Council and State Government bodies

◆ Organise a dung beetle information session

◆ Use the CSIRO “Dung Down Under” documentary and ABC Landline segment “Dirty Work” (located on the DVD) as a promotional tool





## Step 5: Apply for funding

Funding from a diverse range has been used to support dung beetle projects. These include (but are not limited to):

- Advancing Agriculture Fund
- Australian Geographic Society
- Australia Post
- Bundaberg Rum Bush Fund
- Dairy Australia
- Envirofund
- Meat and Livestock Australia
- National Landcare Program (now Caring for Country)
- Orica Community Foundation

Several water authorities have sponsored a range of dung beetle research. These include WA Water corporation, Central Highlands Water and Barwon Water.

The funding landscape is subject to continual change. Potential funding bodies could be found through internet searches, or by contacting your local Landcare facilitator, industry group, local council, water authority or state government departments. When seeking funding it can be valuable to highlight that dung beetle benefits extend beyond the agricultural sector. Cleaner waterways and reduced fly populations are welcomed by both the hospitality and tourism industry and the entire community. Information from the “Beetle benefits” section can be included in your submission.

Funding applications could include field and training days associated with:

- sustainable farming systems
- soil health and carbon sequestration
- water quality
- parasite control and grazing management strategies
- beetle monitoring and identification

It is also worthwhile to consider a follow-up monitoring program three to five years after initial releases to ascertain the success of released species. Soil cores and trial tents can also provide an indication of how well suited a particular species is to your area. Species assessment trials could be conducted prior to large scale releases.



## Step 6: Introduce dung beetle colonies to your area

◆ Discuss requirements with suppliers. Purchase dung beetle colonies or harvest dung beetle species from areas where they are in abundance.

*Purchasing dung beetle colonies:*

Starter colonies generally consist of 1000 to 1500 dung beetles. They are only available at specific times of the year and their availability is dependent on seasonal conditions. Beetle supply can be adversely affected by drought conditions. In 2008, the cost of a colony ranged between \$350.00 and \$700.00. Pricing of beetle colonies is related to seasonal abundance and ease of harvesting. It is advisable for Projects planning to release large quantities of beetles consult with suppliers to discuss price and potential availability.

*Dung Beetle Suppliers*



John Feehan  
 SOILCAM  
 3 Prell Place,  
 Hackett, ACT  
 2602  
 Ph: 02 6248 0376  
 (preferably evenings)



**Dung Beetle  
 Solutions**  
 Australia

Dr Bernard Doube  
 Dung Beetle Solutions Australia  
 37 Cave Avenue  
 Bridgewater, SA 5155  
 Ph: 08 8339 4158  
 Fax: 08 8339 5778  
 bernardo@internode.on.net  
 www.dungbeetlesolutions.com.au



### Resource CD: Purchasing and establishing dung beetle colonies

- *Purchasing and establishing Bubas bison and Geotrupes spiniger beetles in southern Australia:* Dr Bernard Doube, Dung Beetle Solutions Australia
- *Introducing and managing the dung beetle Bubas bison:* Dr Bernard Doube, Dung Beetle Solutions Australia
- *Introducing and managing deep-tunnelling dung beetles in southern Australia:* Dr Bernard Doube, Dung Beetle Solutions Australia

#### Harvesting dung beetle colonies

Beetle colonies can be harvested from areas when they are in their peak season. Several projects have used this method to redistribute large numbers of beetles.

In Tasmania, farmers were invited to board the “Beetle Bus”. Equipped with buckets and trowels, they would travel to a farm during peak seasonal activity and harvest beetles from traps that had been previously set. During the bus trip, guest speakers would provide presentations to the farmers on a variety of topics.

The Dung Beetle Express Project in the Northern Tablelands NSW has also embarked on extensive harvesting and release programs. In conjunction with the Queensland Dung Beetle Project they have developed guidelines on harvesting and releases for a range of species.

The guidelines aim to reduce the possibility of transferring weed seeds and soil-borne diseases, increase the number of dung beetles harvested and ensure the establishment of redistributed colonies. Beetles should be harvested at the beginning of their activity period to maximise the time available for egg-laying at the release site. Care should be taken when transporting beetles to ensure that environmental stresses are kept to a minimum.



### Resource CD: “Procedures for Dung Beetle Harvests and Releases”

Designed by the Northern Tablelands Dung Beetle Express in conjunction with the Queensland Dung Beetle Project (in particular Dr. Angus Macqueen and Dr. Penny Edwards).

The assistance of John Feehan is acknowledged with thanks.

14 pages © Granite Borders Landcare Committee Inc. 2005

#### ◆ Release dung beetle colonies

As a general guide, when choosing release sites it is important to:

- avoid sites that are subject to frequent water-logging or have a high water table
- avoid very sandy or rocky areas
- ensure that colonies are released in the one location (over about one acre) and not split over numerous wide-spread locations. This will increase the likelihood of the next generation of beetles successfully finding a mate, and assist with beetle establishment.
- ensure that transported beetles are released as quickly as possible
- choose an open location (avoid bushland or scrub areas as beetles prefer open pastures)
- ensure adequate non toxic-food supply
- ensure adequate non-toxic food supply is available to the next generation of emerging beetles





## Step 7: Care for released species

This step could occur concurrently or prior to step 6

- ◆ Ensure best practices are in place to assist dung beetle establishment

### *Predators (adapted from the Goulburn Broken Dung Beetle Identification Guide)*

Many predators will eat dung beetles, given the chance (eg ibis, ravens, magpies and foxes). Generally predation is only a concern immediately after the release of starter colonies, so you may want to discourage flocks of insectivorous birds from feeding in your paddocks in the first day or two following the release of colonies. Once dung beetles are established and present in their thousands and millions, predation is unlikely to have a major impact on beetle numbers.

### *Fertilisers and mineral additives*

Mineral fertilisers are not known to be toxic to dung beetles. Dung beetles are plentiful on many farms that regularly spread superphosphate and lime. Furthermore, dung beetles spend most of their time in dung, or underground and are unlikely to come into direct contact with such inputs. Over time, increased tunnelling and dung burial will improve soil health and quality, reducing the need for off-farm inputs.

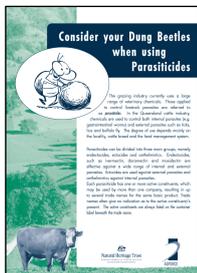
### *Chemical products*

Some drenches used to treat internal parasites have been identified as being harmful to dung beetles. It is important when establishing dung beetle populations to take care when choosing chemical products.

The Natural Heritage Trust and Agforce Queensland have produced two useful guides. These are located on the resource CD or can also be accessed via the internet.



### Resource CD: **Dung Beetles and Parasiticides**



### Consider your Dung Beetles when using Parasiticides

6 page A4 brochure - 2003

Each parasiticide has one or more **active constituents**, which may be used by more than one company, resulting in up to several trade names for the same basic product. Trade names often give no indication as to the active constituent/s present. The active constituents are always listed on the container label beneath the trade name.

### Tri-fold brochure: **Strategic use of Parasiticides can help your Dung Beetles**



1. Choose lower risk chemicals based on available research information
2. Timing is critical
3. Reduce frequency of treatment
4. Selective use of chemicals to target specific groups of animals and specific parasites
5. Application methods can make a difference
6. Use the recommended dose rates
7. Other considerations eg drug resistance.

### Selected published research in relation to dung beetles and parasiticides:

Steel, J.W. and Wardhaugh, K.G. 2002, Ecological impact of Macrocyclic Lactones on dung fauna. In J. Vecrussse J., Rew, R.S. eds, *Macrocyclic Lactones in Antiparasitic Therapy*. CABI Publishing, Wallingford, UK, pp 141-162.

Floate, K.D., Wardhaugh, K. G., Boxall, A. and Sheratt, T.N. 2005, Faecal residues of veterinary parasiticides: Non-target effects in the pasture environment. *Annual Review of Entomology*, 50: 153-180.

Wardhaugh, K.G., 2005, Insecticidal activity of synthetic pyrethroids, organophosphates, insect growth regulators and other livestock parasiticides: An Australian Perspective, *Environmental Toxicology and Chemistry*, 24, 789-796. Abstract: <http://www.setacjournals.org/perlserv/?request=get-abstract&doi=10.1897%2F03-588.1>



## Resource CD: Dung Beetles and Parasiticides “Beetle Power”



# KONDININ GROUP

Kondinin Group is an Australian independent farm improvement group. A unique farmer-owned organisation, the Group is driven by a diverse, national farmer membership and aims to improve agriculture by sharing reliable and practical information.

The Group’s core activity is undertaking research on a wide range of topics and publishing the results in its monthly publication *Farming Ahead*, which is also available on-line. Through this process the Group has developed a strong reputation for its research capability, its understanding of agricultural industries and ability to disseminate technical information along with member experiences in a clear and easily-understood format.

As an independent not-for-profit non-political organisation, Kondinin Group is reliant on its membership base. Members benefit not only from the research undertaken by the Group, but also through an exclusive range of benefits.

Further details about membership benefits can be obtained by calling 1800 677 761 or by visiting their web site.



Web page: [www.farmingahead.com.au](http://www.farmingahead.com.au)

An article in the August 2008 edition of *Farming Ahead* includes a detailed section on drenches and dung beetles.

*Who is the Kondinin Group?*



## Step 8: Monitor released species and maintain project momentum

It can take a number of years for species to become clearly evident in an area. Some species only have one generation per year and others have varying egg-to-adult development time (up to two years). The rate of development can also be influenced by climatic conditions.

Soil cores and trial tents can be used to monitor activity periods, species suitability and egg-to-adult development rates. The trial tents can be used at field days to demonstrate changes to soil structure such as soil aeration, bio-turbation (soil mixing) and increased water infiltration.

- ◆ Continue monitoring to identify species activity periods and establishment rates
- ◆ Identify gaps in seasonal activity and source suitable species to fill the gap.
- ◆ Maintain interest in dung beetles through dissemination of monitoring results and species trial findings.
- ◆ Promote Project highlights and successes at Field Days
- ◆ Continue to promote dung beetle best management practices
- ◆ Maintain community interest in the project through media releases and updates



## RESOURCES FOR SPECIAL INTEREST GROUPS



Resource CD: Extras

### SCHOOLS

A range of dung beetle educational resources have been developed specifically for schools:

- *The Dung Beetle Monitor: Northern Tablelands Dung Beetle Express*
- *Dungbusters: Department of Natural Resources, Mines and Energy*
- *BIOSCAN: Department of Agriculture Western Australia*
- *Great Australian Dung Beetle Challenge: Junior Landcare*

The DVD also includes the presentation “Dr Splutter Grunt and Sally the sick soil” which was developed specifically for primary school children.

### HORSE OWNERS

- *Integrated Pest Management for the horse farm: Rural Industries Research and Development Corporation.*
- *Dung Beetles in urban situations - Fact sheet: Northern Tablelands Dung Beetle Express*

### DOG OWNERS & LOCAL COUNCILS

- *An evaluation of the Lake Macquarie City Council Dung Beetle Release Program: Lake Macquarie City Council*
- *Dung Beetles in urban situations - Fact sheet: Northern Tablelands Dung Beetle Express*

### WATER AUTHORITIES

- *Evaluation of pasture growth due to the late summer/autumn active dung beetle *Geotrupes spiniger* at Flaxley SA: Dung Beetle Solutions Australia*
- *Cryptosporidium research: Review and a pilot study on the recovery of *C. Parvum* oocysts from dung buried by the dung beetle *Bubas bison*, Dung Beetle Solutions Australia*

# DIRECTORY TO AUSTRALIAN NATURAL RESOURCE AUTHORITIES\*

## Queensland



Border Rivers Maranoa-Balonne

Burdekin

Burnett Mary

Condamine

Desert Channels

Fitzroy

Mackay Whitsunday

Northern Gulf

South East Queensland

Southern Gulf

Queensland Regions	Phone	Web page
Border Rivers Maranoa-Balonne - Toowoomba - Border Rivers - Maranoa-Balonne	07 4736 6201 07 4671 7900 07 4622 8446	<a href="http://www.qmdc.org.au">www.qmdc.org.au</a>
Burdekin	07 4724 3577	<a href="http://www.burdekindrytropics.org.au">www.burdekindrytropics.org.au</a>
Burnett Mary - Bundaberg (Head Office) - Wondai	07 4181 2999 07 4169 0720	<a href="http://www.bmrg.org.au">www.bmrg.org.au</a>
Condamine	1800 181 101	<a href="http://www.condaminealliance.com.au">www.condaminealliance.com.au</a>
Desert Channels	07 4658 0600	<a href="http://www.dcq.org.au">www.dcq.org.au</a>
Fitzroy	07 4999 2800	<a href="http://www.fba.org.au">www.fba.org.au</a>
Mackay Whitsunday	07 4968 4200	<a href="http://www.mwnrm.org.au">www.mwnrm.org.au</a>
Northern Gulf	07 4062 1330	<a href="http://www.northerngulf.com.au">www.northerngulf.com.au</a>
South East Queensland - Brisbane - Ipswich	07 3211 4404 07 3816 9700	<a href="http://www.seqcatchments.com.au">www.seqcatchments.com.au</a>
Southern Gulf	1800 676 242	<a href="http://www.southerngulf.com.au">www.southerngulf.com.au</a>
South West Queensland - Charleville (Head Office) - Cunnamulla - Quilpe	07 4654 1600 07 4655 2999 07 4656 8545	<a href="http://www.southwestnrm.org.au">www.southwestnrm.org.au</a>

\* Details correct at time of publication



## New South Wales



- Border Rivers-Gwydir      Murrumbidgee
- Central West                Namoi
- Hawkesbury Nepean      Northern Rivers
- Hunter-Central River      Southern Rivers
- Lachlan                      Sydney metro
- Lower Murray Darling    Western
- Murray

NSW Regions	Phone	webpage
<b>Border Rivers-Gwydir</b> - Inverell (Head Office) - Moree - Armidale	02 6728 8020 02 6757 2550 02 6773 5270	<a href="http://www.brg.cma.nsw.gov.au">www.brg.cma.nsw.gov.au</a>
<b>Central West</b> - Wellington - Dubbo - Nyngan - Orange - Gilgandra - Mudgee - Bathurst	02 6840 7801 02 6881 3400 02 6832 1303 02 6363 8600 02 6847 2923 02 6372 4044 02 6339 4915	<a href="http://www.cw.cma.nsw.gov.au">www.cw.cma.nsw.gov.au</a>
<b>Hawkesbury Nepean</b> - Goulburn (Head Office) - Lithgow - Moss Vale - Windsor	02 4828 6747 02 6350 3110 02 4861 9010 02 4587 0075	<a href="http://www.hn.cma.nsw.gov.au">www.hn.cma.nsw.gov.au</a>
<b>Hunter-Central River</b> - Paterson (Head Office) - Central Coast - Upper Hunter - Lower North Coast	02 4930 1030 02 4324 3844 02 6542 4444 02 6551 8994	<a href="http://www.hcr.cma.nsw.gov.au">www.hcr.cma.nsw.gov.au</a>
<b>Lachlan</b> - Forbes (Head Office) - Boorowa - Cowra - Grenfell - Parkes - West Wyalong - Condobolin - Young - Hillston - Temora	02 6851 9500 02 6385 1018 02 6341 1600 02 6349 1200 02 6816 3200 02 6972 2831 02 6895 2033 02 6382 5833 02 6967 2897 02 6977 4790	<a href="http://www.lachlan.cma.nsw.gov.au">www.lachlan.cma.nsw.gov.au</a>

NSW Regions	Phone	Web page
Lower Murray Darling - <i>Buronga (Head Office)</i> - <i>Broken Hill</i>	03 5021 9460 08 8080 3200	<a href="http://www.lmd.cma.nsw.gov.au">www.lmd.cma.nsw.gov.au</a>
Murray - <i>Deniliquin (Head Office)</i> - <i>Albury</i> - <i>Berrigan</i> - <i>Wakool</i>	03 5880 1400 02 6051 2200 03 5885 2804 03 5453 1320	<a href="http://www.murray.cma.nsw.gov.au">www.murray.cma.nsw.gov.au</a>
Murrumbidgee - <i>Wagga Wagga (Head Office)</i> - <i>Colleambally</i> - <i>Cooma</i> - <i>Cootamundra</i> - <i>Harden</i> - <i>Hay</i> - <i>Henty</i> - <i>Junee</i> - <i>Leeton</i> - <i>Queanbeyan</i> - <i>Tumut</i> - <i>Yass</i>	02 6932 3232 02 6954 4650 02 6452 4150 02 6940 2944 02 6386 3954 02 6993 2070 02 6929 3555 02 6924 2450 02 6953 0700 02 6128 3370 02 6947 0213 02 6118 6012	<a href="http://www.murrumbidgee.cma.nsw.gov.au">www.murrumbidgee.cma.nsw.gov.au</a>
Namoi - <i>Gunnedah (Head Office)</i> - <i>Narrabri</i> - <i>Quirindi</i> - <i>Tamworth</i> - <i>Walgett</i>	02 6742 9220 02 6799 2417 02 6746 1344 02 6764 5907 02 6828 0110	<a href="http://www.namoi.cma.nsw.gov.au">www.namoi.cma.nsw.gov.au</a>
Northern Rivers - <i>Grafton</i> - <i>Alstonville</i> - <i>Armidale</i> - <i>Coffs Harbour</i> - <i>Kempsey</i> - <i>Murwillumbah</i>	02 6642 0622 02 6627 0170 02 6771 3450 02 6653 0150 02 6561 4960 02 6676 7390	<a href="http://www.northern.cma.nsw.gov.au">www.northern.cma.nsw.gov.au</a>
Southern Rivers - <i>Wollongong</i> - <i>Batemans Bay</i> - <i>Bega</i> - <i>Bombala</i> - <i>Braidwood</i> - <i>Cooma</i> - <i>Nowra</i>	02 4224 9700 02 4475 1000 02 6491 8200 02 6458 4003 02 4842 2594 02 6452 1455 02 4429 4444	<a href="http://www.southern.cma.nsw.gov.au">www.southern.cma.nsw.gov.au</a>
Sydney metro	02 9895 7898	<a href="http://www.sydney.cma.nsw.gov.au">www.sydney.cma.nsw.gov.au</a>
Western Cobar (Head Office) Bourke Walgett Broken Hill Dubbo	02 6836 1575 02 6872 2144 02 6828 0110 08 8082 5200 02 6883 3000	<a href="http://www.western.cma.nsw.gov.au">www.western.cma.nsw.gov.au</a>



## Victoria



Corangamite	North East
East Gippsland	North Central
Glenelg Hopkins Port	Port Phillip and Western Port
Goulburn Broken	West Gippsland
Mallee	Wimmera

Victorian Regions	Phone	Web page
Corangamite	03 5232 9100	<a href="http://www.ccma.vic.gov.au">www.ccma.vic.gov.au</a>
East Gippsland	03 5152 0600	<a href="http://www.egcma.gov.au">www.egcma.gov.au</a>
Glenelg Hopkins	03 5571 2526	<a href="http://www.glenelg-hopkins.vic.gov.au">www.glenelg-hopkins.vic.gov.au</a>
Goulburn Broken - Shepparton - Yea - Tatura	03 5820 1100 03 5736 0100 03 5833 5360	<a href="http://www.gbcma.vic.gov.au">www.gbcma.vic.gov.au</a>
Mallee	03 5051 4377	<a href="http://www.malleecma.vic.gov.au">www.malleecma.vic.gov.au</a>
North East	02 6043 7600	<a href="http://www.necma.vic.gov.au">www.necma.vic.gov.au</a>
North Central - Huntly (Head Office) - Bendigo	03 5448 7124 03 5440 1896	<a href="http://www.nccma.vic.gov.au">www.nccma.vic.gov.au</a>
Port Phillip and Western Port	03 8781 7900	<a href="http://www.ppwcm.vic.gov.au">www.ppwcm.vic.gov.au</a>
West Gippsland - Traralgon - Leongatha	03 5175 7800 03 5662 4555	<a href="http://www.wgcma.vic.gov.au">www.wgcma.vic.gov.au</a>
Wimmera	03 5382 6076	<a href="http://www.wcma.vic.gov.au">www.wcma.vic.gov.au</a>

## Northern Territory

Northern Territory	Phone	Web page
NT Natural Resource Management Board	08 8999 4501	<a href="http://www.nrmbnt.org.au">www.nrmbnt.org.au</a>

## Tasmania



North

North West

South

Tasmanian Regions	Phone	Web page
North	03 6208 6111	<a href="http://www.nrmtas.org/regions/north/vision.shtml">www.nrmtas.org/regions/north/vision.shtml</a>
North West – Cradle Coast	03 6431 7014	<a href="http://www.nrmtas.org/regions/cradle/vision.shtml">www.nrmtas.org/regions/cradle/vision.shtml</a>
South	03 6208 6111	<a href="http://www.nrmtas.org/regions/south/vision.shtml">www.nrmtas.org/regions/south/vision.shtml</a>

## Western Australia



Avon

Northern Agricultural

Rangelands

South Coast

South West

Swan

Western Australian Regions	Phone	Web page
Avon	08 9690 2250	<a href="http://www.avonnrm.org.au">www.avonnrm.org.au</a>
Northern Agricultural - Geraldton - Perenjori	08 9964 9776 08 9973 1464	<a href="http://www.nacc.com.au">www.nacc.com.au</a>
Rangelands	08 9956 3328	<a href="http://www.rangelandswa.info">www.rangelandswa.info</a>
South Coast	08 9845 8537	<a href="http://www.southcoastnrm.com">www.southcoastnrm.com</a>
South West	08 9780 6172	<a href="http://www.swcatchmentscouncil.com">www.swcatchmentscouncil.com</a>
Swan	08 9374 3333	<a href="http://www.swancatchmentcouncil.org">www.swancatchmentcouncil.org</a>



## South Australia



Adelaide and Mount Lofty Ranges

Alinytjara Wilurana

Eyre Peninsula

Kangaroo Island

Northern and Yorke

South Australian Arid Lands

South East

South Australian Regions	Phone	Web page
Adelaide and Mount Lofty Ranges <ul style="list-style-type: none"> <li>- Eastwood</li> <li>- Gawler</li> <li>- Lobethal</li> <li>- Willunga</li> </ul>	08 8273 9100 08 8523 7700 08 8389 6166 08 8550 3400	<a href="http://www.amlrnm.sa.gov.au">www.amlrnm.sa.gov.au</a>
Alinytjara Wilurana <ul style="list-style-type: none"> <li>- Adelaide</li> <li>- Ceduna</li> </ul>	08 8357 3889 08 8625 3706	<a href="http://www.awnrm.sa.gov.au">www.awnrm.sa.gov.au</a>
Eyre Peninsula <ul style="list-style-type: none"> <li>- Port Lincoln</li> <li>- Elliston</li> <li>- Streaky Bay</li> <li>- Wudinna</li> <li>- Cleve</li> <li>- Whyalla</li> <li>- Ceduna</li> </ul>	08 8682 7555 08 8687 9275 08 8626 1108 08 8680 2653 08 8628 2077 08 8640 3480 08 8625 3060	<a href="http://www.epnrm.sa.gov.au">www.epnrm.sa.gov.au</a>
Kangaroo Island	08 8553 4300	<a href="http://www.kinrm.sa.gov.au">www.kinrm.sa.gov.au</a>
Northern and Yorke	08 8636 2361	<a href="http://www.nynrm.sa.gov.au">www.nynrm.sa.gov.au</a>
South Australian Arid Lands	08 8648 5977	<a href="http://www.saalnm.sa.gov.au">www.saalnm.sa.gov.au</a>
South Australian Murray Darling Basin <ul style="list-style-type: none"> <li>- Murray Bridge (Head Office)</li> <li>- Burra</li> <li>- Berri</li> <li>- Cambrai</li> <li>- Lameroo</li> <li>- Mt Barker</li> <li>- Strathalbyn</li> <li>- Tailem Bend</li> </ul>	08 8532 1432 08 8892 3022 08 8582 4477 08 8564 5154 08 8576 3400 08 8391 7500 08 8536 8125 08 8572 3611	<a href="http://www.samdbnrm.sa.gov.au">www.samdbnrm.sa.gov.au</a>
South East	08 8724 6000	<a href="http://www.senrm.sa.gov.au">www.senrm.sa.gov.au</a>