



newsletter, autumn, 2005

NORTHERN TABLELANDS DUNG BEETLE EXPRESS

AND NOW A WORD FROM OUR SPONSORS

It seems that the Dung Beetle Express has had more “farewell” tours than Johnny Farnham or even Cher. Our continuing survival is due to the generous support of a number of organisations that recognise the value of dung beetles and this project.

So here’s a thank you to these supporters. The Northern New England Rural Lands Protection Board for administrative and financial assistance - very generous and appreciated, The National Landcare Program - financial support over the coming year, Meat and Livestock Australia - PIRD to develop harvest and release techniques, Bundaberg Rum through their Bush Fund - helping the Malpas Catchment and the Armidale Rural Lands Protection Board for financial and other support. A big thanks to all our current supporters!

Other organisations have been past supporters and, although they either no longer exist, have “morphed” into other bodies or are simply not currently involved we still owe them thanks. So thank you to the Mid North Coast Catchment Management Board and the Australian Geographic.

Other thank yous go to the unsung heroes (and heroines) of the project - the Site Monitors. Many of these people signed up for 12 months about 3 years ago and are still with us.

We also acknowledge the assistance of the Landcare Groups (Staff and Committee Members) involved in the Project.. Project Partners Granite Borders Landcare Committee and Southern New England Landcare Limited and Project supporters Glen Innes Natural Resource Advisory Committee and Gwydir McIntyre Landcare Committee. Thanks for everything.

Individuals that deserve special thanks include Jane Boyd, Jennie Coldham, Dr. Penny Edwards, John Feehan (OAM), Dr. Angus Macqueen, Leanne Savage and Brenda Shepherd .

Thanks also to the Chairman and the Steering Committee who keep the project on track .

As you can see the list of “people to be thanked” is long and it would have been easier to use one line and say “thanks to everyone who helped”. However, people like to see their name in print hey do you think we forgot someone



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THE SEASONS' THEY ARE CHANGIN'

And it won't be a long time comin'. At least not on the top of the Tablelands! Bad news for beetles (and humans). Alright, some of you like the cold (right!) but I can assure you that beetles don't and nor does the Project Officer (who said people begin to resemble their pets?). Seriously, we can probably expect a down turn in beetle numbers around mid April in most areas. We are working on correcting this situation and will hopefully get more "cool climate" beetles established over the next few years.

In the meantime you can be of very real assistance. If you notice beetle activity from April to August please collect a few specimens and send to the Project Officer for identification. Many people phoned last autumn/winter to say they had beetle activity but didn't send in their beetles.

If we know what is working for you during autumn/winter it helps us make decisions on future redistributions and this helps all Landholders.

GOOD HOUSEKEEPING - A revised guide to beetle etiquette

Today's subject is an unpleasant one and is not often discussed in public. Indeed few people care to discuss it in the privacy of their own home. However, here in the dung beetle world we boldly tackle difficult subject matter.

As you know we are constantly asking people to send in their beetles for identification or, in the case of Site Monitors, counting. Unfortunately some Beetlers have become a little hasty and the result is revolting. Some recent offerings have been so bad that Australia Post has complained and the Project Officer has been relegated to the toxic chemical storage centre at the back of the Rural Lands Board Office. Yes, we are talking about Smelly beetles! Right up there with smelly feet!



The time has come to lift the lid on smelly beetles and come out from the plastic. Please, please, keep sending in your beetles but not in plastic and not until totally dry. The procedure is to place your beetles in the freezer overnight, dry for a week or so, place in a paper bag (or wrap in paper towel), place in a box and post.

I know the prospect of knowing what your beetles are is very exciting and you can't wait. I know that it seems quicker to forget the drying bit and just send them. I also understand that a family member's threat to "throw them out if they aren't posted tomorrow" needs to be taken seriously. However, I can assure you that neglecting to dry your beetles is bad, very bad. It amounts to a serious breach of beetle etiquette and it will not lead to quicker identification.

What it leads to is persecution of the Project Officer! This in turn leads to refusal by said Project Officer to look at the beetles until they are less pongy. Unfortunately, if the carefully collected beetles have been placed in plastic bags or bottles they turn into congealed brown gunge. Gunge is, by definition, not identifiable.

Over the years that this project has been operating we have developed a very good relationship with Australia Post - they don't mangle our packages (well, only a little) and we do not give them cause to report us to OPOO (the Office of Potentially Offensive Odors). Please help us maintain this mutually beneficial relationship.

Don't forget to send your beetles - really - your efforts are appreciated and, as mentioned above, a vital part of getting a complete picture of the dung beetle community in our area.



GOODNESS, GRACIOUS GREAT BALLS OF

Dung. Yes, big balls of dung. We have photos to prove it. See below. These dung balls are real and are produced by a beetle found in central Queensland known as *Copris elphenor*. Now while we mightn't be able to explain the *Copris* part of the name the *elphenor* obviously could have something to do with the size of these balls (or not).

Anyway, what many people don't know about dung beetles is that they produce two types of dung balls. In this case the big one is a food ball. This is made by the female and secreted in a tunnel so that other beetles can't use it. A good thought actually, we could adapt it to office situations. Once the female has consumed sufficient nutritious fluids from the food balls to be ready to reproduce she then sets about preparing the nursery or, in this case, a brood ball. This ball is taken down into the tunnel and she lays her egg in the ball.

Now as you know adult dung beetles have no chewing mouth parts, however, the developing young do. As they grow, they chew their way out of the ball and emerge as fully formed adult beetles. Their size is pre-determined by the quality of the brood ball. This makes some short gestation beetles excellent indicators of pasture health.

On emergence dung beetles are toothless and ready to begin adult life. Sort of like humans except our teeth re-grow and then fall out again. Beetles have managed to avoid that bit. The amazing thing about *Copris elphenor* is that the tunnel is roughly one foot below the dung pad and then turns and goes out another three feet. A dung pad is gone in a few hours and with that size tunnel water infiltration is amazing. No mineral or nutrient loss here! Just a huge amount of organic matter being returned to the soil where microbes can begin their work.

So, where can you get some? Sorry, they just won't work here.

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UP AND COMING EVENTS

**Landcare Adventure, Tenterfield, 9th & 10th
March - for details contact Granite Borders
Landcare Committee - 67363500**

**Dung Beetle Field Day - Gravesend Hall, 8th
April - Contract Brent Wellham 67242024 or
the Project Officer 67321200**

FLY ME TO THE MOON

Or perhaps that should be "walk me by the moon". While the discovery that many insects (ie honeybees) use polarised sunlight as a navigation tool is decades old a new study by Dacke, a Swedish Biologist, has found that a species of dung beetle uses polarised moonlight for this purpose.

The species is an African dung beetle, *Scarabaeus zambesianus*, and it is thought that this will not be only the species to use moonlight to navigate. The eyes of the beetles must be super sensitive as moonlight is one millionth the strength of sunlight according to Canadian Bruce Gill.

Competition for dung is intense on the African savanna and is fought over very aggressively. A beetle that can snatch a large quantity of dung and retreat to their burrow swiftly has a distinct advantage. Dacke's study found that on moonlit nights this species could navigate in a straight line to its tunnel, whereas on moonless or cloudy nights it could not.

To further test the polarised moonlight theory, Dacke used light filters to change the pattern of the polarised light by 90 degrees. The beetles adjusted to this change, proving that polarised light not the polarisation of the moon is the navigational tool this species is using.

Gripping stuff isn't it? Want to know more? Check out the National Geographic News, 2nd July, 2003.