

# Reconnecting Fragmented Agricultural Landscapes Project

Fenner School of Environment and Society, Australian National University & the Central Tablelands Local Land Services

## FAUNA IN THE FIELDS, THE STORY SO FAR...

BY NICOLE HANSEN AND KAT NG

This is a brief update for landholders, research partners and interested parties on the progress of the *"Movement of fauna through fragmented agricultural landscapes"* project. This summaries the last three months of vertebrate and invertebrate surveys, and outlines plans for the months ahead.

After an intensive site set up, from late September 2014 onwards our focus has been on collecting baseline pre-harvest information on what fauna occurs, and how fauna is moving in remnant native vegetation, the cropping and pasture paddocks, and the re-vegetated areas (plantings).

Eleven properties have been engaged for this project, extending from Binya, Ardlethan and Barellan, to Grenfell, Caragabal and the Young area, NSW.



To establish what animals are out and about prior to harvesting, vertebrate surveys have involved checking traps daily over two separate survey rounds (6 days, and 5 nights) per property. Invertebrate surveys are on a slightly longer rotation, with a proportion of sites being open for two week periods, and checked weekly. Ten weeks after the experiment began, we have been able to trap all sites.

It's only in the last week or so that things have slowed down enough to check what we've found so far before the post harvesting trapping begins! So this newsletter is just a very preliminary account of what's been happening so far...

## REPTILES RULE IN THE CROP!



Blue tongue lizard

We caught a massive 790 animals across all sites including 27 reptile species (23 lizard species and 4 snake species; all native), and while the vertebrate studies were mainly reptile focused we also caught seven frog species (all native) and three mammal species (two native, one invasive).



Thick-tailed gecko

Overall preliminary results have shown that most activity was observed within the remnant native vegetation, however a large number of animals were captured in the crop fields including native frogs, reptiles and the occasional pest house mouse. While the

number of animals caught declined the further into the crop we trapped, a number were caught as far as 200 meters into the crop!

This is very exciting, given most of these little creatures have home ranges of only 10's of metres, and very specific habitat requirements (namely, woody debris and native vegetation).

The large frog numbers in the cropping paddocks was also an unexpected find, given their sensitivity to environmental disturbance. It will be interesting to see if frog abundance can be tied to land management practices.

Whether animals caught in the crop are living there on a permanent basis (e.g. hiding in large cracks in the clay), or visiting temporarily, and how does cropping impact these movements, will be questions this project will hope to tease



Giant Banjo Frog in the crop



Yellow-faced Whipsnake

out in the upcoming post-harvest surveys, and the follow-up round at the end of 2015.

Overall, the largest number of animals caught outside the remnant native vegetation, was in the planting, or re-vegetated areas which is great news! Our goal will now be to see how harvesting activities impact the

observed number of animals, whether these numbers/species change and how their movements are affected.

## INSECTS, PLANTS, PITFALLS AND FESTIVE WISHES!

Like Nicole, I have been intensely trapping insects and surveying plants between October and November before harvest. This is so that I can see if certain plants (including native plantings) affect insect

movement. There are lots of data to collect, but I have been fortunate to have enough helpful volunteers, who come from different backgrounds. They include first year students, exchange students to very experienced plant experts.

Earlier in spring, we had plant ID walks with Mikla Lewis from Young District Landcare with a few staff from other LLS

offices, and with Mal Carnegie from the Lake Cowal Conservation Centre. It was very helpful as it sped up my learning of the plant species in the area. Despite the dry weather we were very

lucky to be able to find some flowering leek orchids and greenhood orchids in our western sites! My pitfall traps are small 250ml containers sunk in the surface with some non-toxic trapping liquid, divided by a small white drift fence which tracks which direction insects come from. The drift fence seems to have worked really well!

On first glance, the wheat crop appears to have more predatory beetles (e.g. carabids) and spiders foraging from the wheat direction although I will need to analyse more traps in the lab to understand the trends. It will be interesting to see whether this trend changes when we resume post-harvest surveys in January next year.

As the weather got warmer however, I came across an obstacle. I found that (thirsty?) kangaroos are attracted to my trapping liquid and in some places, have taken a liking to pulling out my traps and their valuable contents! So, I am finding out a way to deter them and am trialing wire mesh and possibly other methods for my summer fieldwork (many thanks to landholders who have provided me fencing mesh!).



Close-up of invertebrate pitfall traps with drift fence



Trap contents plundered by roos!



Margaret and Kat meticulously surveying plants occurring in a 1x1m square (photo by Mal Carnegie)

A massive  
thank you all  
for  
supporting  
the project!

Have a  
wonderful  
Christmas &  
a safe New  
Year!



## THE NEXT THREE MONTHS...

- ❖ Trapping is closed for the December break and will resume in the first week of January 2015 through to early March 2015, to investigate and compare the responses of fauna to the post cropping activities.
- ❖ The application of woody mulch has been delayed due to severe weather, which has made it difficult for the truck to access and deliver the mulch safely. Delivery is now looking to be from next week, and potentially onto the following week, with the remainder being completed at the beginning of surveys in the first/second week of January. As discussed previously, we'll get in touch beforehand to arrange preferred access.

## SPECIAL THANKS TO OUR RESEARCH

### PARTNERS:



Local Land  
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