Issue 13

Monitoring mice in Australia – July 2017

Summary

- **Moderate populations of mice for this time of year were detected in NW Victoria, Northern Adelaide Plains & Yorke Peninsula** (Figure 1) - potential risk of damage to crops leading into spring. Crops will compensate for minor damage, but can't compensate for heavy damage.
- Mouse abundance remains low in all other regions (Figure 1).
- Mouse numbers will continue to decline through winter, they will not breed again until early spring.
- Growers should actively monitor mouse activity and look for signs of mouse damage (chewed tillers and nodes).
  → If mouse population high: Consider application of bait now (before flowering). Flowering crops are highly vulnerable to damage from mice.
  → If mouse population low-moderate: Continue to be vigilant until start of spring (watching brief).
- Communicate with your local bait supplier to understand supply time-frames and help decide if you need to pre-purchase bait. Crops can't be treated with bait within 14 days of harvesting beginning (withholding period).
- GRDC are pro-actively investing in R&D so that growers have new management tools and strategies for mouse management in the future.
- Please continue to use *MouseAlert***.** Please report and map mouse activity using *MouseAlert* (www.mousealert.org.au) so other growers can see what mouse activity is being observed in their neighbourhood. Follow on twitter using *@MouseAlert*.

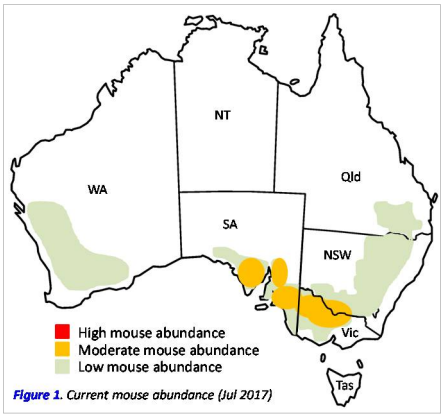


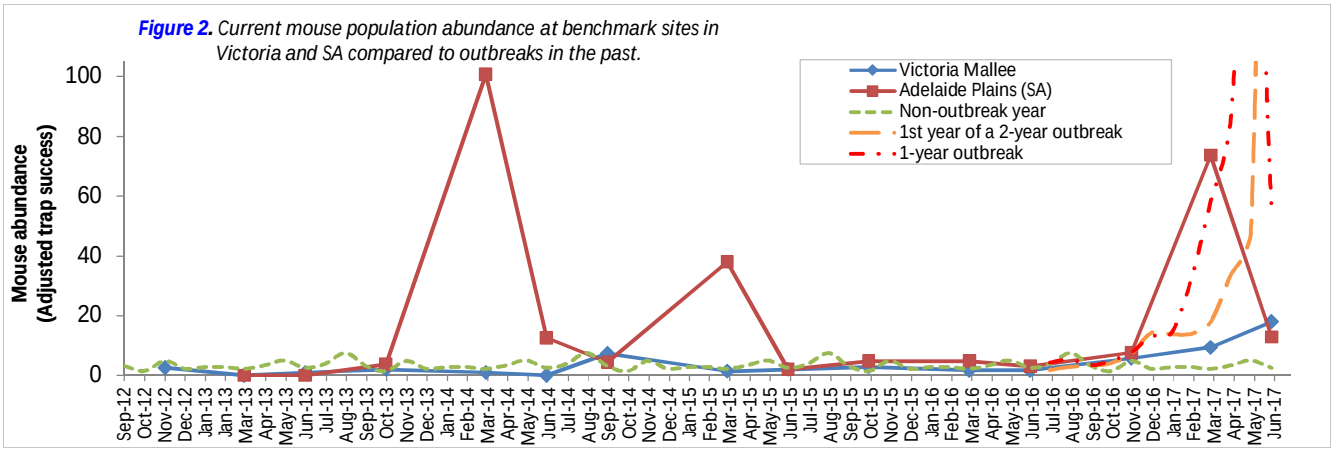
Figure 1. Current mouse abundance (Jul 2017)

Current situation

Mouse abundance has remained moderate across the southern and eastern sites (South Australia, Victoria & southern NSW). Mouse abundance remains relatively low across all other monitoring sites (Figure 1). Mice caused damage to crops at sowing and growers have had variable success with zinc phosphide baits. Mouse numbers will continue to decline through until spring when breeding starts. Growers should check for mouse activity in their own paddocks using active burrows or mouse chew cards. Mouse damage to growing plants (ie damage to tillers) will become evident. Once crops have emerged, mice will chew tillers. Most cereal crops can compensate for some damage providing it is not extremely high. Please continue to report activity on *MouseAlert*.

- **South Australia: Mouse numbers have declined in North Adelaide Plains, Yorke and Eyre Peninsulas but remains moderate for this time of year** (Figure 2). Trap success at Mallala (north of Adelaide) was 13% in June (moderate) despite widespread baiting. **Density estimates were 30-50 mice/ha** (anything over 200 mice/ha will cause economic damage). Widespread damage occurred at sowing and mouse signs and activity were highly variable between paddocks. Growers should remain vigilant and act accordingly if damage is likely during crop growth. Because of this unexplained variability, growers are advised to monitor across multiple paddocks to gauge mouse numbers and inform their management decisions.

Figure 2. Current mouse population abundance at benchmark sites in Victoria and SA compared to outbreaks in the past.



- **Victoria: Mouse abundance remains moderate in all locations**. Mouse numbers are moderate across Mallee and Wimmera regions (Figure 2). Trap success was 18% in June (density estimates of 30-60 mice/ha). Some damage occurred at sowing. Growers should remain vigilant and act accordingly if damage is likely. Mouse sign and activity was moderate in some paddocks, but low in others (from active burrow counts). Because of this unexplained variability, growers are advised to monitor across multiple paddocks to gauge mouse numbers and inform their management decisions.
- **Queensland: Mouse activity remains low:** Live trapping, chew cards and active burrows were all nil in monitoring conducted in June/July (Goondiwindi and Darling Downs regions). Mice are not likely to be a problem, but if growers observe any activity, they should report it on *MouseAlert*.
- **Northern, Central & Southern NSW: Mouse numbers are moderate in Southern NSW and low in Central & Northern locations.** There is activity on freshly sown wheat and activity in rice stubbles around Coleambally. Mouse damage was reported from almond orchards in southern NSW. Because of this unexplained variability, growers are advised to monitor across multiple paddocks to gauge mouse numbers and inform their management decisions. Low activity in Central West (a few cards chewed and a few active holes) and very low around Moree. Data for Central NSW were collected as part of the CWFS "Rain Grain and Stubble" GRDC project.
- **Western Australia: Mouse activity is low in all locations.** Ravensthorpe and Geraldton: Nil or low activity reported (a few cards with chews and evidence of a few holes). No baiting.

The 'Mouse Forecast'

Northwest Victoria: There was a high likelihood of an outbreak in autumn 2017 (probability of 0.58). The model will be re-run in September 2017 to estimate the likelihood of an outbreak in autumn 2018.

Central Darling Downs (QLD): The density index for the mouse population is currently very low (<1%). The probabilities for May 2018 are High (0.01), Moderate (0.04)**,** Low (0.33) and **Very Low (0.62)**. The Darling Downs model has achieved a 78% success rate from these long-term predictions over the period of 1989 to 2003.

Future activities

The next scheduled monitoring is set for September 2017. Please continue to report mouse abundance on your farm (presence and absence!) using ***MouseAlert*** (*www.mousealert.org.au*) on your smart phone, tablet or computer and to check what other mouse activity is being reported locally and regionally. There are now 530 records. We welcome any information at any time. You can also follow progress on **Twitter** (*@MouseAlert*). You can now download the App for ***MouseAlert*** from iTunes app store or Google play (click on hyperlink to download).

MouseAlert Smartphone app
www.mousealert.org.au

Background

This is an update on surveillance of mice across the grain-belt of Australia for June/July 2017. Mouse populations were monitored in typical grains farming systems in WA, SA, Vic, NSW and Qld during early winter 2017 (June/July). The monitoring provides data on the size (abundance) of mouse populations, their breeding status and overall activity. This information is used in models that have been developed progressively over the last 20-30 years to predict mouse outbreaks. Monitoring was conducted on (Figure 3):

- **Benchmark sites**: live trapping data collected for use in models in Adelaide Plains (SA), Walpeup (Vic) & Darling Downs (Qld).
- **Quantitative rapid-assessment sites**: mouse chew cards & active mouse burrows assessments on 110 transects across 11 sites.
- **Qualitative monitoring networks**: from farmers and agronomists in 11 local areas.

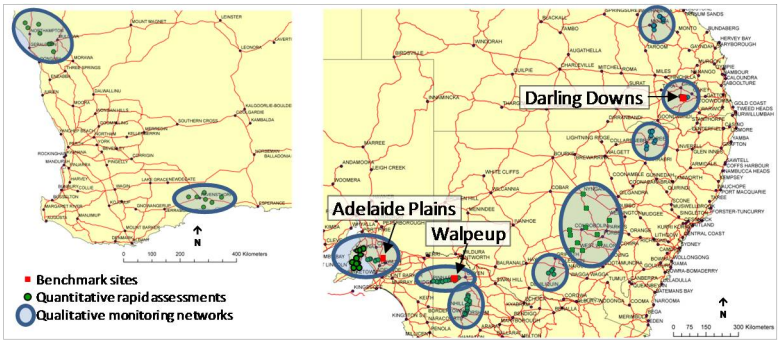


Figure 3*. Approximate locations of mouse monitoring occurring in WA, SA, Vic, NSW and Qld.*

This is part of a study funded by the GRDC to monitor mouse populations and forecast the likelihood of mouse outbreaks. The project is a collaboration between Landcare Research (New Zealand), CSIRO and the Centre for Invasive Species Solutions. The project will finish in December 2017. The next monitoring is set for September.

Further information

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