



focus on **NRM** research

Connecting farms and natural systems

Dr Nancy Schellhorn, CSIRO

What are you researching?

The control of insect pests by beneficial arthropods (ie. insects, spiders and mites). Many beneficial are highly mobile, live long time (often longer than the life of the crop), and require different habits and shelter to survive.

What have you found?

- We must think beyond the crop to capture pest control services from beneficial arthropods.
- Native remnant vegetation in good condition (eg. few weeds, and different plant types) provides habitat for beneficials, especially out-of-cropping season.
- Weeds harbour pests and in much higher numbers than beneficials.
- Perennial pasture and Lucerne play key role in landscapes for beneficials AND for pests if pasture is degraded and weedy.
- Beneficials move from remnant veg to crops and back again.

Why is it important?

Beneficial insects suppress pests and can keep pests below economic injury thresholds. To capture these pest control services we must conserve and support beneficial populations.

We can **conserve** them by:

- Eliminating broad-spectrum insecticides – choose chemistry soft on beneficials,
- Monitoring before and after spraying,
- Spraying if a threshold is reached – not before;
- Developing targeted measures that secure resources throughout the life cycle of service providing organisms is required.

We can **support** beneficial populations by:

- providing habitat for them to live, especially out-of-cropping season, and habitat nearby so that they can quickly colonize an emerging crop. Ongoing research is determining the link between on-farm habitat interventions (eg. wind breaks, diverse crops, managed remnant native veg) and getting beneficials into crops early to keep pest populations lower for longer.

How can I apply the research/what should I do about it?

1. Start by taking actions to conserve beneficials (above).
2. Control weeds and volunteer crop plants on-farm (ie. in crops, ditches, remnants).
3. Maintain and manage native remnant vegetation. Stay tuned for results from on-going research investigating the type of local interventions needed to support beneficials throughout the year, and how these interventions may link to additional production benefits.

Where do I go for more information?

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