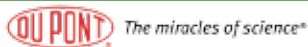


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Farming for nature: Cotton leads the way

By Paula Jones

The Australian cotton industry has invested in natural resource management research and development (R&D) for many years now, and it has also been one of the Australian Government's national rural R&D priorities since 1994. It sometimes takes a few years to appreciate the benefits from biodiversity investments and now, with this ongoing research investment, it is becoming easier to demonstrate.

This could perhaps explain why, in a recent survey, many growers are adopting sustainable farming practices and improving biodiversity. Practices like:

- Fencing off native vegetation and selectively grazing it or just leaving it altogether;

- Controlling pests and weeds; and,
- Monitoring feral animals and insects have become part of the day-to-day management of their properties.

Under the previous Australian Cotton CRC, the projects created an awareness of biodiversity through looking at the behaviour and management of beneficial insects on cotton farms, the impact of defoliants on native vegetation, the relationship between native vegetation and beneficial insects and whether insectivorous bats were predators of cotton pests.

R&D projects

The Cotton Catchment Communities CRC now has a number of R&D projects that focus on quantifying the value of greater biodiversity for cotton farming areas. This is to help understand the importance of enhancing biodiversity and the value that it can add to their farm, ensuring the sustainable production of cotton.

Native vegetation provides a range of ecosystem services. The Cotton Catchment Communities CRC has funded several projects in this area. These were highlighted at the Cotton Catchment Communities CRC ecosystem services sub program review held in Sydney earlier this year. Some of the ecosystem services discussed included the condition of and spatial context of vegetation in providing habitats for invertebrates and birds. This work will also investigate the ecosystem services provided by birds in cotton landscapes which is being done by Dr Alan House (CSIRO) and his research team.

Quantifying the provision of other ecosystem ...84▷



The "Biodiversity in cotton landscapes" calendar has been very popular.



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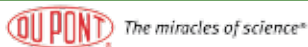


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services like carbon sequestration forms part of the research conducted by Rhiannon Smith, a current PhD candidate at UNE. Her work also investigates other ecosystem services provided by vegetation such as biodiversity conservation, erosion mitigation and forage production. Another UNE PhD student, Francis Karanja has developed a model which uses changes in land and water management to identify which practices will have the greatest ecological and economic impact on a catchment.

Dr Felix Bianchi and Dr Nancy Schellhorn (CSIRO) are undertaking work on the ecosystem service of natural pest control provided by predatory insects. Preliminary results suggest that native vegetation in the cotton landscapes is important and provides habitats for predatory insects. This work is on going and more trials are being planned in the next cotton growing season.

These findings are supported by the research of the CSU PhD student David Perovic. His work highlights the importance of shelter belts and even stands of single trees in assisting the movement of

beneficial insects across the landscape. His research also clearly demonstrates that beneficial insects move from shelter belts into cotton fields.

Describing and more importantly quantifying the services provided by ecosystems is a useful way to reiterate the importance of biodiversity and the Cotton CRC continues to support research in this area. Other topics include investigating the native vegetation habitat preferences of the egg parasitoid *Trichogramma* in northern New South Wales (the UNE PhD topic of Christopher Carr) and the topic of diversity and abundance of animals in on-farm storages being investigated by Susan Lutton at Griffith University.

The “Biodiversity in Cotton Landscapes — maintaining our natural workforce” calendar has proved to be a very popular method of extending some of the key biodiversity messages from research to the cotton industry. The calendar beautifully illustrates some of the benefits of enhancing biodiversity, offers helpful hints and provides supporting information in themed fact sheets.

Based on this calendar a “Write a reader” competition has been organised by Trudy Staines, the Cotton CRC’s Education Officer. The aim is to encourage Year 3 to 6/7 students across all cotton catchments to research and write a short story related to biodiversity. This worthwhile project encourages the involvement of children in learning and promoting the natural world around them. The winning books will be published and presented to the school.

Two biodiversity fields days have also recently been held to promote biodiversity on cotton farms and discuss research results. The first was a well supported “Birds in Cotton” field day which was held near Wee Waa. It was found that in this region 138 different bird species including some rare species have been spotted.

The field day focussed on those management practises which support birds — such as maintaining large and diverse areas of remnant vegetation, establishing corridors between patches and maintaining vegetated riparian zones and diverse natural wetlands. There clearly is a great interest in birds which has prompted another reprint of the recently released book “Birds on Cotton Farms”.

A second biodiversity field day was held near Dalby. This was to a much smaller audience and focussed on the production benefits to be gained from biodiversity. Four key topics — soil, insects, bats and the riparian zone — were discussed. It was interesting to note the synergy between the different aspects of biodiversity and their benefits to cotton production.

Finally the results and principles from the current research on biodiversity are being used in structuring the revised BMP program. This reinforces many of the good farming practices already promoted in the research reviews, field days, and the biodiversity calendar and fact sheets. It continues to raise the profile of biodiversity and why it is important to promote and maintain it in cotton landscapes.



Many cotton growers are showing a keen interest in biodiversity principles.



The “Birds in Cotton” field day was well supported.