

Final Report

**Schedule 1.2 Supporting the adoption of Best Management Practice (BMP) in the Cotton Industry in the Namoi Catchment**

Prepared by: Kate Lightfoot

Executive Summary

In September 2006 the Namoi Catchment Management Authority (Namoi CMA) and the Cotton Catchment Communities Cooperative Research Centre (Cotton CRC) signed an umbrella agreement which would see them operate a partnership project within the Namoi Catchment. Cotton Australia and the Cotton Cooperative Research and Development (CRDC) were also brought in as partners of the project titled, Schedule 1.2 'Supporting the adoption of Best Management Practice (BMP) in the Cotton Industry in the Namoi Catchment'.

The purpose of the project was to support the delivery and implementation of the Australian Cotton Industry BMP program, in particular the Land and Water Management Module in the Namoi Catchment and to foster better natural resource management outcomes for the Namoi Catchment through the integration of the principles of the Cotton BMP program and Namoi CMA catchment and management targets defined in the Catchment Action Plan.

The project employed a Cotton BMP Officer through the Cotton CRC and project activities undertaken by the Officer during this project included property planning, extension of on-farm best practice, workshops aimed at up skilling land managers and increased communication between natural resource management bodies and industries within the Namoi Catchment.

These project activities have lead to a range of NRM outcomes in the Namoi including

- 120,000 ha of farming land now with property plans
- Increased adoption of best practice Natural Resource Management in the Namoi Catchment
- Collaborative relationship with Namoi CMA staff to achieve joint NRM targets within the Namoi Catchment over a various range of agricultural industries, including irrigated cotton and grains

- Increased community awareness of the relationship between the Cotton BMP program and Namoi CMA's Catchment and Management Targets;
- Increased level of incentives flowing from the Namoi CMA to targeted projects within the cotton industry.

This project was highly collaborative involving four organisations as well as many cotton growers in the Namoi catchment. Some key learnings and recommendations for similar future projects are outlined.

From the project we discovered that the following things work well for engaging growers in Natural Resource Management best practice.

- One on one planning meetings; personalises the service to the growers needs and minimises time required off farm
- Keep workshops short and messages concise; Saves time required to be off farm and increased the chances of repeat attendees at various workshops and increased positive word of mouth between growers encouraging additional growers to attend
- Work with other agencies running workshops and training courses, collaboration looks good and is a way to get a greater attendance to days with the utilisation of several networks

More than 100 on-farm extension visits have occurred and over 14 collaborative workshops and field days to ensure the best practice of production and natural resource management issues are promoted within the Namoi catchment. It is through events like these the BMP Officer has managed to develop 83 property plans with growers implementing best practice natural resource management using the Cotton Industry's BMP Land and Water Management Module as the framework to conduct their activities.



## Introduction

In September 2006 the Namoi Catchment Management Authority (Namoi CMA) and the Cotton Catchment Communities Cooperative Research Centre (Cotton CRC) signed an umbrella agreement which would see them operate a partnership project within the Namoi Catchment. Cotton Australia and the Cotton Cooperative Research and Development (CRDC) were also brought in as partners of the project titled, Schedule 1.2 'Supporting the adoption of Best Management Practice (BMP) in the Cotton Industry in the Namoi Catchment'.

The key objectives project were;

- To support the delivery and implementation of the Australian Cotton Industry BMP program, in particular the Land and Water Management Module in the Namoi Catchment,
- To foster better natural resource management outcomes for the Namoi Catchment through the integration of the principles of the Cotton BMP program and Namoi CMA catchment and management targets defined in the Catchment Action Plan;
- To develop strategies and tools to assist the Namoi CMA in implementing Best Management Practice programs similar to the cotton industry across the other rural industries in the catchment.

The project also aimed to achieve the following outcomes,

- Increased number of cotton growers willing to implement the Cotton Industry's BMP program including the Land and Water Management module;
- 36 Cotton growers completed pre certification audit for Land and Water Management module;
- 3 growers completed BMP certification audit for the Land and Water Management module;
- 81 property plans produced by cotton growers through BMP workshops (a cotton grower may own/mange multiple properties hence have a number of property plans);
- Increased community awareness of the relationship between the Cotton BMP program and Namoi CMA's Catchment and Management Targets;

- Identified strategies and tools that may assist the Namoi CMA implement similar farm management systems/EMS across other industries in the catchment;
- Improved assessment tools / decision support systems for evaluating environmental benefit of Namoi CMA's on-ground programs;
- Improved knowledge and understanding of the extent and level of BMP implementation and the rate of adoption in the cotton industry in the Namoi Catchment.
- Increased level of incentives flowing from the Namoi CMA to targeted projects within the cotton industry.

### **Key Activities**

A range of activities were undertaken to achieve the project objectives over the 2.5 years of the project and some of these activities are listed below. .

#### **a) Workshops**

When the project began the main means of delivery was to be via a series of 6 Best Management Practices (BMP) workshops. BMP workshops were initially written into the project schedule as a way to introduce large numbers of growers to the property planning process and natural resource management technical advice and staff in a group session environment. Outlined below is the process and content of these BMP workshops

The purpose of these BMP workshops was to:

- Introduce growers to the land and water management module
- Help them complete the mapping component of the module
- Help them develop their action plans for minimising environmental risk
- Put them in contact with technical staff who can assist with implementing their management/action plans, and
- Contribute towards the Cotton Australia, Cotton CRC and Namoi CMA have against BMP adoption in the Namoi Valley

The BMP workshops were intended to deliver the following outcomes:

- Growers have a hardcopy map of their land and water resources
- Growers have assessed their current practices and identified areas where management /action plans are required
- Growers capable of undertaking their Pre-Certification Audit

Workshops were to be facilitated by the Namoi BMP Officer along with the Cotton Australia Grower Services Manager (GSM). Specialist staff from local councils, NSW DPI and Namoi CMA were to be used to cover a variety of topics over six work stations.

These topics included:

- Pest and Weeds – Identify and map environmental weeds and pests on farm and identify strategies for management of these
- Vegetation/biodiversity – Map remnant vegetation and identify native vegetation types. Information provided on assessing condition so growers can do health assessments when returning to the property.
- Water – Water budgeting and looking at tools available to 'measure and manage' irrigation such as Hydrologic, Waterpak, EMI technology.
- Soils – Identify soils types on farm and align to a soil description, this was either done on-farm or using regional soil mapping. Identify soil monitoring techniques for the management of salinity, sodicity and structure.
- Infrastructure – Identify and map all infrastructure that is important for the future management.
- Riverine – Identify riparian zones, existing buffers and provide information and resources so they can assess condition and manage any risk to that resource.

The BMP workshops ran as 2 half day sessions running for approximately 4.5 hours each session.

Day 1 program:

- Introduction to the BMP workshop structure and outcomes
- Introduction to the Land and Water Management Module and it's planning process
- Rotate around 3 stations in groups (1 hour was allocated to each station)
- Wrap up, questions, review of day 1 and overview of day 2.

Day 2 program:

- Recap of day 1 and format for day 2
- Rotate remaining 3 stations (1 hour allocated to each station)
- Wrap up and where to from now discussion, Including identifying priority areas
- Benchmarking survey

It was suggested technical specialist take notes at their respective stations with each group to identify the priority issues which have come out of each session and what additional information, advice and resources the growers may require managing these issues better. This information was to be delivered during the discussion session and as a follow up in small groups or as a one- on-one basis.

This project saw 3 BMP workshops held prior to the commencement of the current Namoi BMP Officer Kate Lightfoot. These were held in Narrabri, Wee Waa and Walgett. These 3 BMP workshops saw a collective attendance of 24 growers, close to 80% of these have had further contact after the BMP workshop to complete the maps and develop action plans with current extension tools.

The use of the BMP workshops initially introduced some growers to the BMP program and to this project. However the majority of growers who have joined the program since the BMP workshops have done so individually and wish to be handled on an individual basis. Many of these growers have acknowledged that BMP workshops are possibly a fast way to get people into the program but feel they get more value out of the time spent one on one with the BMP Officer in developing their farm maps. The BMP Officer also expresses this feeling as the many of the growers who attended the BMP workshops still required some individual assistance from the BMP Officer to complete the maps and action plans stated within their Pre-certification audits.

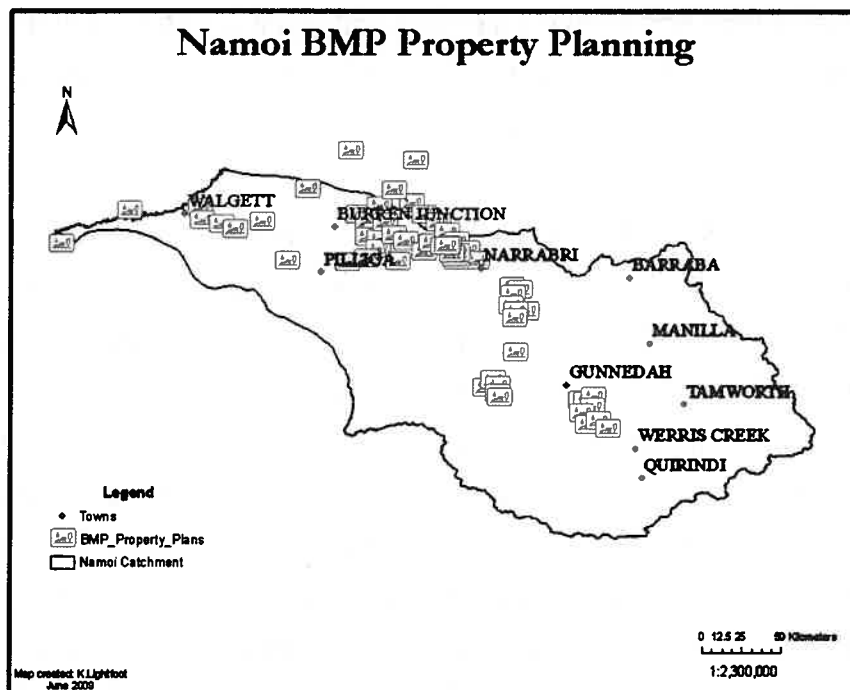
A major factor in increasing the numbers of growers within the project is also due to the close network of extension staff within the Namoi promoting the services of the BMP Officer to growers, the extension staff including industry personnel, catchment staff, Cotton Grower Associations & cotton extension staff.

## b) Property Plans

The most crucial issues to be addressed by growers implementing the Land and Water Management module is the ability to produce relevant, accurate farm maps and the ability of growers to interpret the information. Mapping is the foundation to the module and a fundamental building block for all BMP action plans.

Once farmers have the maps and resources at their disposal they need specialist technical advice in interpreting relevant maps in order to establish priorities for natural resource management investment.

The BMP Officer has developed 83 property plans with growers implementing best practice natural resource management using the Cotton Industry's BMP Land and Water Management Module as the framework to conduct their activities. Map 1.1 expresses the general locations of the property plans within the cotton growing region of the Namoi Valley.



**Map 1.1 : General location of property plans conducted throughout the Namoi Catchments cotton growing region.**

It has been through this property planning process that several growers have secured incentive funding for NRM improvements and significant resource savings by improving practices. By taking part in the BMP property planning process growers were up skilled in better management of on-farm resources and had action plans developed for identified NRM issues on their properties. This planning process allows growers to be in a more prepared position when incentive funding is available from a variety of sources for future on-farm improvements. *"My farm plan gives me a different perspective of my farm. It's a living document and a good management tool."* Lower Namoi Cotton Grower Phil Norrie of "Mollee", Narrabri.

**c) Extension visits and Workshops- research and best practice**

This project has seen more than 100 on-farm extension visits occur within the Namoi Catchment. The BMP Officer also remains in contact with growers on a range of topics via telephone and email and regularly sends event and technical updates to growers.

Field days and workshops to highlight best management practice's on-farm were run predominately in collaboration with the Namoi CMA operations and education staff. These field days and workshops covered topics relevant to growers in the Namoi Catchment also achieving Namoi CMA and Cotton CRC targets.

The Cotton Growers Associations (CGA's) in the Lower and Upper Namoi have been a platform for the BMP Officer to promote her services and also to provide direct extension advice to growers. The secretaries of these two CGA's have been very active in forwarding information to their respective grower email lists.

Field days run each year by the CGA's have been areas to encourage particular involvement of researchers and extension staff. Research being conducted through the Cotton CRC are promoted across these days and other workshops held in the Catchment. Namoi CMA staff and Namoi growers are upskilled on a range of technical information from Natural Resource Management to industry specific issues.



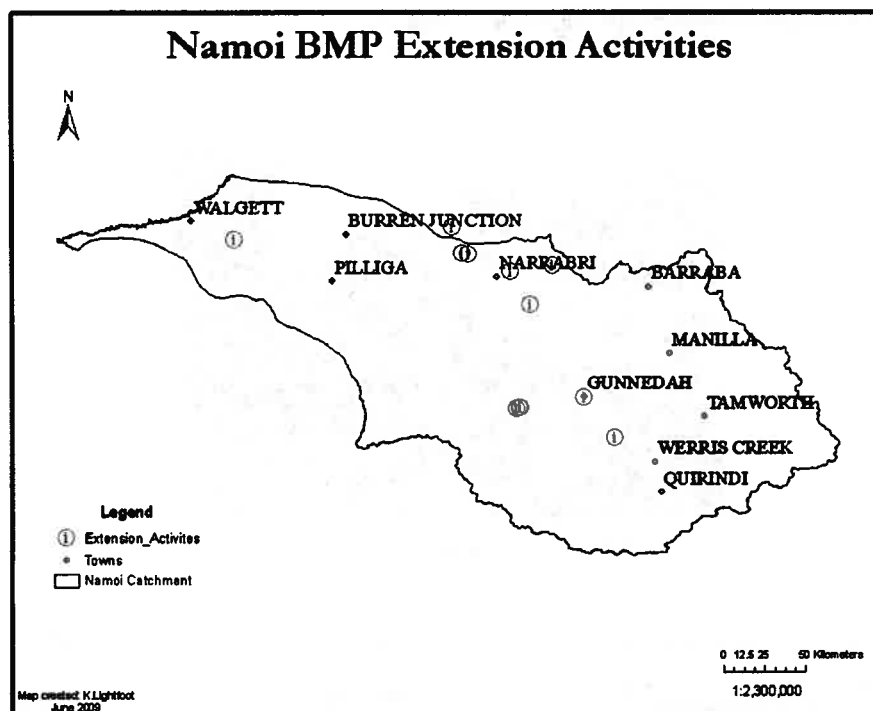
**Photo 1: LNCGA Cotton Field Day**



**Photo 2: UNGCA Cotton Field Day**

Other than the CGA's field day the BMP Officer has been actively involved in organising and gaining great grower attendance at more than 14 workshops covering topics such as water use efficiency and quality, NRM in an agricultural landscape, Soil health and sampling, Drought and pest management strategies.

Distribution of the workshops throughout the Namoi Catchment's cotton growing region can be seen in Map 1.2.



**Map 1.2 : Distribution of extension activities in the Namoi Catchment's cotton growing region**

The catchment officers in the Namoi have actively supported the BMP program during their daily contact with growers. This support expresses a positive attitude about the program and encourages growers to take part in this opportunity. The contractual agreement for growers to be active within the BMP Program in order to receive Cotton CRC / Namoi CMA on-ground funding was a forward moving step for the industry. This unique model of the Namoi CMA and Cotton CRC officers working so closely together allowed the promotion of the catchment targets and a combined approach to NRM best practice to be extended to the wider grower community proving industry and government partnerships can be successful in achieving targets. This increased the number of growers willing to be involved in the

BMP Program and encouraged current BMP growers to obtain incentive funding to rectify and improve on-farm environmental risks identified throughout the development of their property plan.

Growers who have attended courses with the Advanced Water Team have requested further training in order to assist in developing up property plans. The BMP Officer has also used the Advanced Water Team courses as a platform to promote the project and the services offered to growers. A substantial number of the new growers to the program have been sourced through these courses.



**Photo 3: Walgett Pumps Efficiency Workshop**

Growers readily accept extension materials via email however the majority of information tends to be better utilised if presented directly to the grower whilst on an extension visit. Contact by telephone is still an important form of contact as some growers do not have time to check or read emails sent to them including extension messages and methods of implementing on-ground land management change, these as often seen to be less economically important than other messages that may be received.

**d) Cross Industry Collaboration**

The BMP Officer has been involved in the Queensland Department of Primary Industries and Fisheries (QDPI&F) and AgForce's Grains BMP development as a member of the Southern Reference Panel. The BMP Officer was given the opportunity to attend several meetings to review and collate information modules for growers to utilise due to the relationship developed through the Namoi CMA's strategic planning manager Sheila Donaldson in investigating BMP opportunities within other industries.

It was felt the BMP Officer was well aligned through her cross collaboration objective to provide feedback on this program.

Grains BMP modules completed to date are:

- Farm Design and layout
- Managing Rainfall
- Crop Nutrition and Soil Fertility Management
- Integrated Pest Management on Grain Farms

All modules are available on [www.grainsbmp.com.au](http://www.grainsbmp.com.au) after registering as a user. Future plans for the Grains BMP Program involve the continuation of the release of the Grains BMP Program in the northern Qld cropping area and if funding is available then the release of the program into the southern Qld and northern NSW grain belt will commence. The BMP Officer continues communication with the QDPI&F staff of the Grains BMP Program.

The Sustainable Agricultural Partnerships project in Queensland ran an event investigating current and potential partnerships between agricultural and natural resource management groups. The BMP Officer along with Cotton Australia's Chaseley Ross and Dan Galligan were invited to speak about the partnerships involved in this Namoi BMP project. The participants were interested to see how the partners individually handled the position of the BMP Officer. An important factor brought up by participants was the fact that the BMP Officer is situated within industry and not with a government body. We also gained some insight into how some Queensland projects have utilised partnerships to obtain joint outcomes for industry and the environment.

The BMP Officer has been instrumental along with Jane Macfarlane (Namoi CMA), Ingrid Rencken, (QDPI & F) and Susan Maas (QDPI&F) in getting the revision of the Cotton Industry's BMP programme underway through assisting in the development of the natural resource management focussed modules including the biodiversity module, which will now be known as the 'Natural Assets' Module. The BMP Officer has also been involved in reviewing the template of the e-BMP tool and is also attending the BMP operational group meetings to assist the revised BMP to be grower friendly tool and applicable to the whole farm business. A trial with growers was organised across

all cotton growing valleys, the BMP Officer assisted with the organisation and attendance to the Narrabri grower trial and was impressed with the positive feedback from growers.

As part of this re-development of the Cotton Industries BMP Program the BMP Officer has been involved in the Industry's BMP Program Operations Group facilitated by BMP General Manager Louise Adcock. Other members of this group include James Houlahan (Cotton Australia), Letitia Cross (NSW DPI/Cotton CRC), Rohan Boehm (CRDC), Bruce Pyke (CRDC), Helen Dugdale (CRDC) and Kym Armytage (CSIRO). The role of this group was to assess where the BMP Program is at, how to take it into the future in an electronic form and to assist in trialling the new content with all necessary parties to ensure it is an expression of industry best practice and best available science and yet still a useful resource for growers.

The BMP Officers role was to provide feedback from an on-ground grower's perspective of the BMP Program, content and how it could move forward in the future. The BMP Officer provided this information and also assisted in getting the Narrabri grower trial of the electronic BMP Program conducted. Growers in general were positive about the new look BMP Program and the flexibility it allowed by being electronically available. They were also positive about the new features it will have in particular the Human Resources tools and templates. Although many who attended the trial days were keen to start using this electronic tool for there own businesses they did give warning to providing sufficient resources to assist growers in the uptake of the new system as many growers traditionally opposed to the industries BMP are only willing to give the BMP Program one more chance to prove its worth and if this next attempt fails they will look to other options to obtain best practice information for there enterprises.

As part of the CRDC Cotton EMS Pathways project the Namoi BMP Officer along with extension staff from the other cotton growing valleys attended a training day with Natural Solutions consultant, David Freebain. This training day was to inform the extension staff on how to interview growers using environmental benefit indices developed by the Natural Solutions. The extension staff then interviewed growers within their valley to check for content relevance and usefulness to growers.

As part of the National Priority Team, the BMP Officer attended the Healthy Soils Forum at Hillston, in the Lachlan Valley. The event saw many irrigators and consultants from the Lachlan and Murrumbidgee areas attend despite the small water allocations available in these valleys for cotton or grain production in an irrigated system. There was a great response from growers asking a lot of questions and making the most of the access they had to researchers and extension staff. While in the region, the BMP Officer was invited to attend a Rice Growers Association (RGA) event with the Southern Regional Extension Officer, James Hill. This event was held as part of an NRM pathways project the RGA are completing as part of their Environmental Champions Program. The purpose of the meeting was to collaborate and discuss NRM issues which may be present in varying crops grown in the Murrumbidgee Irrigation Area. The BMP Officer used this as an information session into how other industries are integrating environmental best practice into an agricultural landscape.

The BMP Officer also investigated the type of best practice programmes other industries have trialled previously, for example the Murrumbidgee Horticultural Council (MHC) developed the Green Book which was a manual to assist growers with achieving best practice and included the correct locations to go for further information. Members from MHC informed the group of the issues related to the implementation of the Green Book and found growers who had close contact with the council were more likely to use the book whereas growers given the folder without any extension assistance would more likely never use this tool. As with many growers in the Murrumbidgee region these farms can be mixed enterprise and the group identified themselves as a good resource to ensure more collaboration between industries occurs which will allow growers to follow best practice on farm without having to be involved in several different programs for each crop grown. By coming together on issues affecting the region the group also felt they would provide clarity between the industries to ensure the same message is being given by all extension staff in all industries.

## Outcomes

Many positive outcomes have been achieved from the Namoi BMP Officers project. The most positive outcome would be the Namoi BMP Officers ability to develop strong trustworthy relationships with growers from a variety of backgrounds and locations across the cotton growing area of the Namoi Valley. Below is a list of some of the key achievements:

- 120, 000 ha of Namoi Catchment farming land with up to date property plans
- 83 Property Plans Developed - These property plans were achieved in a variety of methods, group workshops and one on one extension visits. The BMP Officer found combining extension/research workshops with a simple property planning introduction was a practical way to increase growers initial interest in the property planning process and generally introduce the services provided to growers within the Namoi Valley. After March 2007 all property plans developed were done so on a one on one basis and
- Collaborative relationship with Namoi CMA staff to achieve joint NRM targets within the Namoi Catchment over a various range of agricultural industries, including irrigated cotton and grains.
- Increased community awareness of the relationship between the Cotton BMP program and Namoi CMA's Catchment and Management Targets. These outcomes were highlighted through the close working relationship the Namoi CMA's catchment officers, particularly the staff based in Narrabri, had with the Namoi BMP Officer. It was this collaborative approach to implementing natural resource management tools to growers along with on-ground incentive funding which increased the community awareness of the partnership and consolidated message of NRM from the two bodies in the Namoi Valley.
- Increased adoption of best practice Natural Resource Management in the Namoi Catchment
- Increased level of incentives flowing from the Namoi CMA to targeted projects within the cotton industry. The Namoi BMP Officer directly assisted in encouraging growers in applying for incentive funding for NRM issues highlighted in the action plans and risks identified in the property planning process. The Catchment Officers also sought the BMP Officers technical advice on the content of the BMP Program to ensure growers were striving to be implementing best management practice on farm according to cotton industry

standards and Namoi CMA standards. The funding assisted in increasing the adoption of the Cotton Industry's BMP Program as participation in the BMP Program was one of the contract conditions to receive incentive funding.

### **Key learning's and recommendations**

- One on one planning meetings; personalises the service to the growers needs and minimises time required off farm
- Keep workshops short and messages concise; Saves time required to be off farm and increased the chances of repeat attendees at various workshops and increased positive word of mouth between growers encouraging additional growers to attend
- Work with other agencies running workshops and training courses, collaboration looks good and is a way to get a greater attendance to days with the utilisation of several networks
- Contractor access required to Namoi CMA computer system to allow full access to mapping files and printers
- Recent mapping resources. Most growers enjoy having hard copy maps to display in there offices but also appreciated the electronic format being provided which allowed a more intense planning process for crop rotations, spray contractors, new farm staff and pesticide application management plan. The age of the imagery being provided was of concern to most as the aerial photographs, made available in electronic form were from 2001-2003. The Spot 5 satellite imagery used on some hard copy maps dates back to 2005. Many irrigation properties have had major improvements conducted in the last 10 years and this creates difficulty when developing up accurate and up to date property plans. More recent imagery would be preferred if possible in the future.
- Location of the BMP Officer within the cotton industry rather than with in the Namoi CMA, a government authority has been beneficial as the growers are more open about topical NRM issues which they may be hesitant to discuss with a government authority employee. The partnership arrangement allowed me to be an industry employee with all the resources available to government employees such as the incentive funding and mapping resources.

- NRM adopted through production; being able to attend production focused meetings, field days and workshops and deliver a non intrusive environmental message that will be listened to and in context with their farming system was the most beneficial way to increase adoption of NRM best practice.
- Communicated to the cotton industry the relationship between the cotton BMP program and the Namoi CAP and its objectives.
- Involving the Cotton Growers Association's increased the ability of the BMP Officer to deliver technical messages to a wider audience within the valley and also by involving the CGA committees the growers have taken ownership of the extension activities and endorse them to fellow grower's hence increasing adoption in NRM and production based best practice.
- Initiate and maintain local networks and partnerships within the cotton community. Liaise and negotiate with local cotton industry stakeholders and other experts to facilitate change, deliver solutions and increase acceptance of the cotton BMP program.
- Cross industries communication and collaboration. The main issue the BMP Officer discovered is the lack of willingness to share data and knowledge between industries from higher up in the management chain. Many extension officers discuss cross industry issues and look for way to overcome them from an on-ground level. Most growers do like having best practices guidelines to follow to check what they are doing is appropriate, however with most profitable land holdings being mixed farming growers are overwhelmed with choices of best practice and quality assurance programmes. One program which covers off on several commodities would be an advantage to growers or if different commodities could discuss cross over's in programs and openly share other sections specific to that commodity.

## **Publications / Extension Resources**

### **2008 Biodiversity Calendar**

The project aimed to extend emerging research, existing case studies and complement industry publications such as the 'Birds on cotton farms', 'Growing trees on cotton farms' and 'Managing riparian lands in the cotton industry' books to provide best practice management on managing and monitoring biodiversity on cotton farms.

This was achieved by the development of a calendar with appropriate natural resource management fact sheets corresponding to the topic on each month of the calendar.

The BMP Officer assisted in the content development of the fact sheets.

Calendar and fact sheets are available from [www.cottoncrc.org.au](http://www.cottoncrc.org.au).

### **2009 Cotton Industry / Partnerships calendar**

The Australian cotton industry currently did not have a dedicated industry calendar and in addition there is no one proposed way of extending the successful partnerships the cotton industry has had with natural resource management agencies such as the Namoi CMA, DAFF and the Condamine Alliance. Due to the success of the Cotton CRC's 2008 "Biodiversity in Cotton Landscapes" calendar it was proposed to use this format for a 2009 cotton industry calendar based on the Cotton CRC's Communities and Catchments program titled "Cotton Communities and Natural Landscapes - celebrating successful environmental partnerships between the cotton industry and natural resource management groups". The BMP Officer's project was featured on the month of August, information and photographs on the project were provided for inclusion.

Calendar is available from [www.cottoncrc.org.au](http://www.cottoncrc.org.au).

### **Lower Namoi Cotton Newsletter**

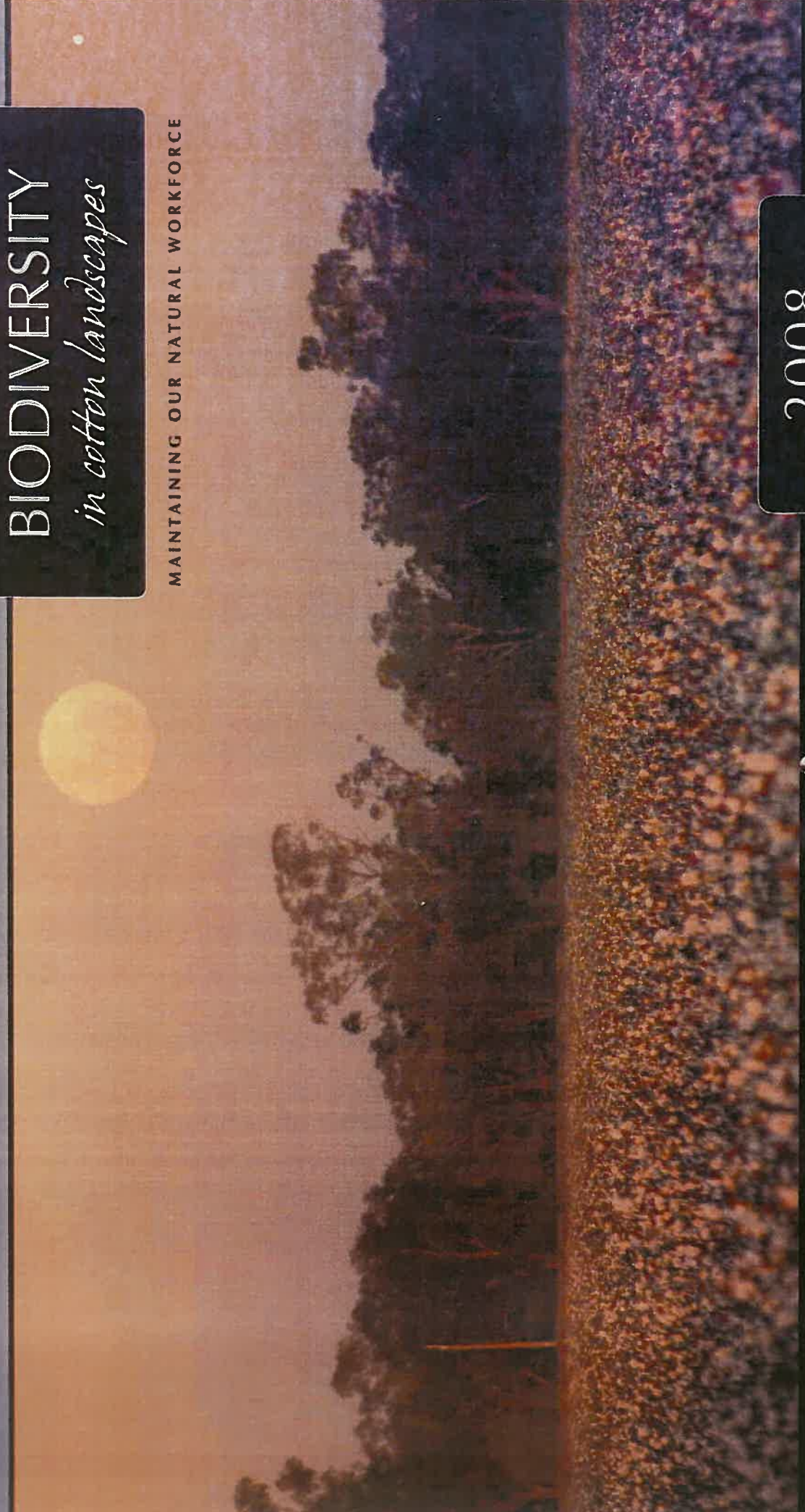
Produced by the Lower Namoi Cotton Growers Association members, growers, industry bodies and NSW DPI's District Agronomist in Narrabri. The purpose was to provide relevant local information to growers about up coming events and industry issues. The BMP Officer assisted in the collation of content across a wide range issues facing the Lower Namoi Cotton Growers and encouraged other extension staff to include event dates and technical information which may have been arising from their project work.

### Narrabri Matters Newsletter

Produced by Namoi CMA's communication division. This is distributed to landholders and managers within the Namoi Catchment area. Past editions are available from the Namoi CMA's website, [www.namoi.cma.nsw.gov.au](http://www.namoi.cma.nsw.gov.au). The BMP Officer provided articles on events and activities which have occurred in the Namoi Catchment. Articles also highlighting the extension material available to growers within the Namoi Catchment featured.

Information sheets for issues related to National Priority Team, Assistance was given in developing and researching the content for these fact sheets. These fact sheets were distributed to growers and displayed on the Cotton CRC website for ease of access to the wider industry public. The BMP Officer has used her location as a benefit contacting researchers for best available science to extend to growers.

The BMP Officer was requested to update the BMP section in the course notes from the University of New England's cotton course. This was done in early 2008 to ensure the documentation about the Cotton Industry's BMP Program was correct for the next intake of students.



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MAINTAINING OUR NATURAL WORKFORCE

2008

**COTTON CATCHMENT COMMUNITIES CRC ENVIRONMENT TEAM**

*if you would like further information on managing biodiversity on your farm please call a member of the Cotton CRC Environment team.*



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**Veronica Chapman**  
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**CATCHMENT MANAGEMENT AUTHORITY**



national vegetation knowledge service



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 Department of Agriculture, Fisheries and Forestry  
 National Landscape Programme

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**MAINTAINING OUR NATURAL WORKFORCE**

Cover photograph taken at Wentworth, Narrabri, Greg Kouby

**ACKNOWLEDGEMENTS:** This calendar would not have been possible without the valuable input from the tireless and passionate steering committee consisting of David Carr, Greening Australia; Leah Macdonald, Border Rivers Cwyler Catchment Management Authority; Tracey Farrell, NSW Department of Primary Industries; Glenn Bailey, Namoi Catchment Management Authority; Brett Leds, Namoi Catchment Management Authority; Ingrid Runcien, Cotton CRC, Rhinnsouth, University of New England; Susan Lutton, Griffith University; and all of the Cotton CRC environment team members.

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This calendar brings together research findings related to biodiversity in the cotton industry. This work has been undertaken over a number of years and by a range of research institutions with significant contributions from Cotton Research and Development Corporation and the Cotton CRC. Exchange is supported by the Australian Government.

**DISCLAIMER:** The information in this publication has been published by the Cotton Catchment Communities CRC to assist public knowledge and discussion, and to help improve the sustainable management of land, water and vegetation in the cotton industry. This calendar has been prepared from research and with specialist input from researchers, practitioners and land managers. The CRC accepts no responsibility or liability for any loss or damage caused by reliance on the information, management approaches or recommendations in the calendar. Users of the advice in the calendar must form their own judgement about the appropriateness to local conditions of a management approach or recommendation.

Users are warned that, by law, the implementation of some of the management approaches and recommendations require prior authorisation from government and environmental agencies. All appropriate government and environmental authorisations from the relevant state/territory agencies must be obtained before implementing a management approach or recommendation. If the user is uncertain about what authorisations are required, he/she should consult the relevant government department or legal adviser.

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Cotton Communities  
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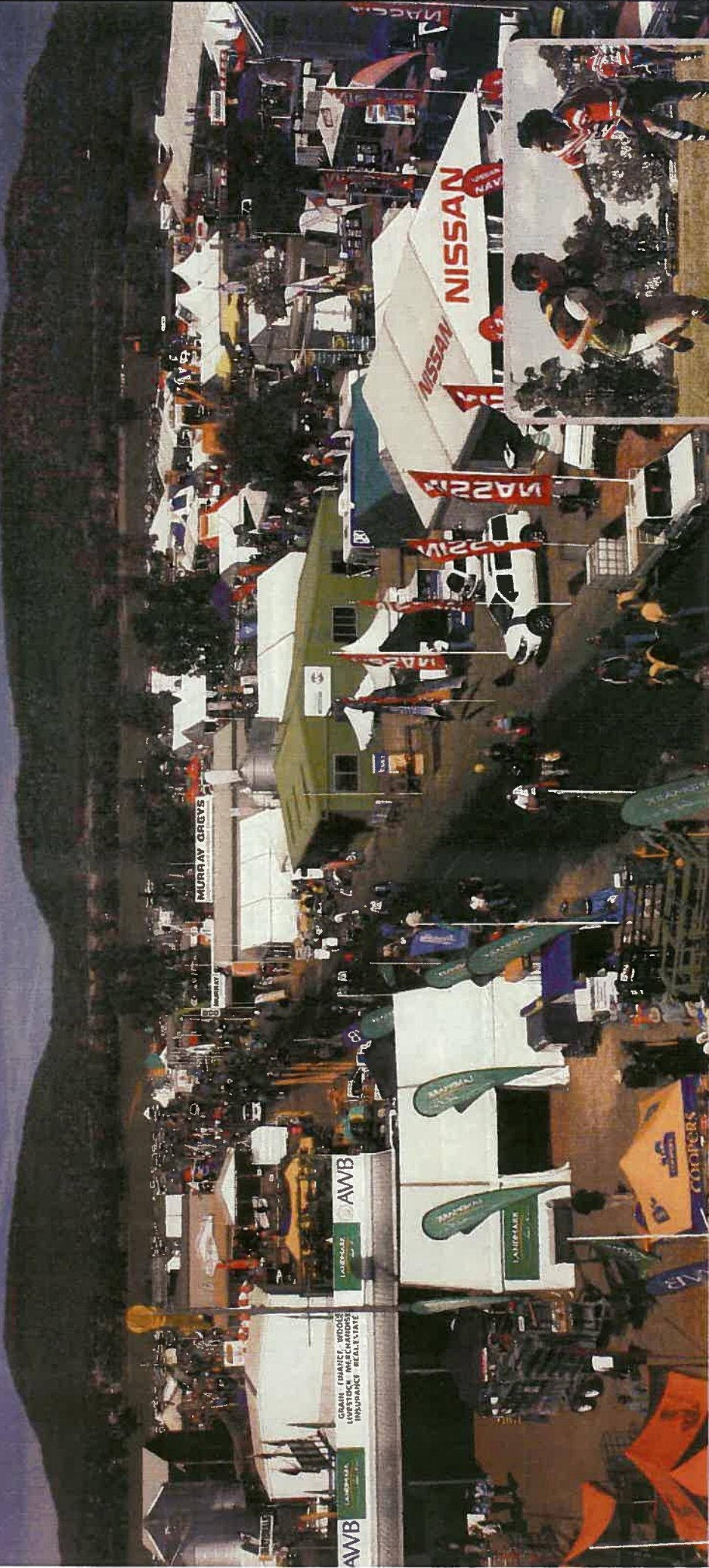


2009

CELEBRATING SUCCESSFUL PARTNERSHIPS WITH THE COTTON INDUSTRY

August

Gunnedah



(Above) Agricultural Supermarket, Agquip, Gunnedah micro-tourism destination (Right) Wee Wee Panthers vs Gunnedah Bulldogs in Rugby League photo: Marco Palmer



SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30	31			Bill Rippey from Murrumbidgee says, "My farm plan gives me a different perspective of my farm. It's a living document and a good management tool."	1	
2	3	4	5	6	7	8
9	10	11	12	13	14	15
			Royal Queensland show (Brisbane Area Only)			Murrumbidgee show
16	17	18	19	20	21	22
				AgQuip Gunnedah		
23	24	25	26	27	28	29
				AgQuip Gunnedah		

### COTTON BEST MANAGEMENT PRACTICE

A unique role has been created in the Narrabri Valley to help growers achieve best practice land and water management in the Narrabri and as a result, 110,000 ha of land in the Narrabri Valley is now covered by a BMP farm plan. The Narrabri Catchment Management Authority, Cotton Australia, Cotton CRC and Cotton Research and Development Corporation (CRDC) have pooled resources to share the *Narrabri Best Practice Management (BMP) Implementation Officer*.

#### The BMP Implementation Officer has assisted:

- 71 farms undertake the Cotton Industry BMP Land and Water Module.
- 47 BMP growers develop a whole farm plan.
- 13 growers obtain bore monitoring data and hydrographs water levels and quality of surrounding bore holes.
- 5 grower focused workshops on water use efficiency, groundwater and healthy soils.

#### The future for Cotton BMP

Over the past decade, the BMP Program has achieved significant change and reduced the environmental impact of the industry. Over the past year, the BMP Program has been revised to reflect the cotton industry's move into a new era. The next phase of the BMP Program will be more relevant to growers on a day-to-day basis aiming to assist growers to respond to change. The BMP Program will focus on the fundamental elements of a farming business such as water, soil, energy and inputs and key environmental topics such as greenhouse and biodiversity.



Cotton grower Jeremy Jones from "Carnarvon" testing soil properties at a "Healthy Soils Workshop" in Mullaley, NSW.  
PHOTO KATE LIGHTFOOT



# Cotton Communities *and natural landscapes* 2009 calendar

CELEBRATING SUCCESSFUL PARTNERSHIPS WITH THE COTTON INDUSTRY



## COTTON COMMUNITIES AND ENVIRONMENT PARTNERSHIPS

*Welcome to the 2009 Cotton Communities and natural landscapes calendar. This calendar celebrates community life in Australia's cotton growing regions and showcases community events from Emerald in the north to the Riverina in the south.*

*This calendar also highlights environmental partnerships with the cotton industry and illustrates how growers, consultants, researchers and extension staff are working together to achieve best management practice and manage natural resources.*

### COTTON COMMUNITIES

The cotton industry plays an important role in providing farming communities with a secure income. The wellbeing of cotton communities was recently measured for the 2005-2006 period across 7 Local Government Areas from Warren to the Darling Downs.

Some economic facts:

- Cotton growing accounted for around \$400 million in regional product when aggregated across all the areas.
- The impact of the cotton industry on GRP (both direct and flow on impacts) contributed between 6% in Darling Downs and 29% in Moree Plains.

The study found that drought conditions and the energy and mining boom are two events having an impact on these communities in real ways, both economically and socially. The impact of the drought was assessed in Wee Waa, a small town in north west New South Wales. Here, the impact has been felt by many sectors

including local businesses, schools and health organisations. Cotton communities are highly engaged communities with generally a positive attitude to life and in Wee Waa, the community is already looking at positive and achievable options that can improve their wellbeing. For further information go to: [www.cottoncra.org.au/content/Communities/Cotton\\_Info/Wee\\_Waa\\_Drought\\_Study.aspx](http://www.cottoncra.org.au/content/Communities/Cotton_Info/Wee_Waa_Drought_Study.aspx)



### COTTON INDUSTRY MANAGING IT'S NATURAL RESOURCES

- Over 85% of the Emerald Irrigation Area is covered by property management planning.
- 25% of cotton consultants in the Condamine have improved confidence, skills and knowledge in water use efficiency.
- 71 farms in the Namoi Valley have undertaken the Cotton Industry Best Management Practice Land and Water Module.
- 110,000 hectares of land are now under best practice management in the Namoi Valley.
- 15 cotton farms in the Lower Namoi have improved their WUE by 15%, saving at least 5000 megalitres over 8000ha of irrigated cropping land.
- 5 cotton growers are planting over 3500 trees to establish 10.5km of native riparian vegetation in the Namoi Demonstration Reach.

### WANT TO KNOW MORE?

For further information on the Cotton CRC and Namoi Catchment Management Authority Partnership go to:

- [www.namoi.cma.org.au](http://www.namoi.cma.org.au) or
- [www.cottoncra.org.au/content/CatchmentEZ/Home.aspx](http://www.cottoncra.org.au/content/CatchmentEZ/Home.aspx)

To contact the relevant national cotton extension team member in your valley go to:

- [www.cottoncra.org.au/content/Catchments/AboutUs/People/Extensionstaff.aspx](http://www.cottoncra.org.au/content/Catchments/AboutUs/People/Extensionstaff.aspx)

For more information about natural resource management in cotton growing regions go to:

- Cotton Catchment Communities CRC - [www.cottoncra.org.au](http://www.cottoncra.org.au)
- Fitzroy Basin Association - [www.fba.org.au](http://www.fba.org.au)
- Queensland Murray Darling Committee - [www.qmde.org.au/index.html](http://www.qmde.org.au/index.html)
- Condamine Catchment Alliance - [www.condaminealliance.com.au/](http://www.condaminealliance.com.au/)
- Border Rivers-Gwydir Catchment Management Authority - [www.brg.cma.nsw.gov.au/](http://www.brg.cma.nsw.gov.au/)
- Namoi Catchment Management Authority - [www.namoi.cma.nsw.gov.au/](http://www.namoi.cma.nsw.gov.au/)
- Central West Catchment Management Authority - [www.cw.cma.nsw.gov.au/](http://www.cw.cma.nsw.gov.au/)
- Lichlan Catchment Management Authority - [www.lichlan.cma.nsw.gov.au/](http://www.lichlan.cma.nsw.gov.au/)
- Western Catchment Management Authority - [www.western.cma.nsw.gov.au/](http://www.western.cma.nsw.gov.au/)
- Murrumbidgee Catchment Management Authority - [www.murrumbidgee.cma.nsw.gov.au/](http://www.murrumbidgee.cma.nsw.gov.au/)



**COTTON CATCHMENT COMMUNITIES COOPERATIVE RESEARCH CENTRE (COTTON CRC) AND NAMOI CATCHMENT MANAGEMENT AUTHORITY (NAMOI CMA) PARTNERSHIP**

The Cotton CRC and Namoi CMA have a major partnership in place. The commitment of both parties amounts to \$2.4 million and aims to improve the health of the cotton growing areas in the Namoi catchment. The partnership also represents a significant investment of time and resources by the growers themselves, with industry contributions making up at least half the investment in on-ground changes.

Together the Cotton CRC, Namoi CMA and cotton growers have implemented water use efficiency measures on almost 4450ha, conserved nearly

60km of riparian vegetation, revegetated 14km of riparian vegetation, and constructed 8 in-stream structures to stabilise river banks and provide fish habitat on cotton farms in the Namoi catchment.

The Namoi CMA has also invested in Cotton CRC training, education and research in such areas as water use efficiency, groundwater, soils, biodiversity, riparian management and best management practices. For more information go to: [www.namoi.cma.org.au](http://www.namoi.cma.org.au) or [www.cottoncrc.org.au/content/Catchments/Home.aspx](http://www.cottoncrc.org.au/content/Catchments/Home.aspx)

**NAMOI CMA**

The Namoi CMA has worked with the community to manage more than 25,000 hectares of native vegetation for biodiversity outcomes, 47,000ha of perennial pastures for salinity and soil health improvement and 440km of riparian areas for water quality and diversity, among its many projects. The Namoi CMA is working closely with landholders, industry groups and local communities to help improve the health of the Namoi catchment and our long term sustainability.

**COTTON CRC**

The Cotton CRC brings together 12 core participants and over 40 affiliate organisations including commercial companies, industry bodies, research organisations, universities, state government agencies, catchment bodies and community groups. This mix of organisations enables the Cotton CRC to develop, fund and manage over 200 collaborative projects addressing a range of issues relevant to the industry, its catchments and communities.

What makes this Cotton CRC unique is its recognition that the cotton industry can make an important contribution to the sustainability of the catchments and communities it is located within. To achieve this, the Cotton CRC is working with a number of catchment bodies in both NSW and Queensland to undertake joint projects in the areas of water use efficiency, deep drainage, integrated pest management, riparian management, groundwater systems, on-farm water quality, improved biodiversity and the development of catchment tools and resources.

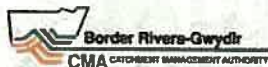
For further information on communities and events in cotton growing regions featured in this calendar go to:

- [www.cottoncra.org.au/cotton/catchments/Cotton\\_Info/Web\\_Water\\_Drought\\_Study.aspx](http://www.cottoncra.org.au/cotton/catchments/Cotton_Info/Web_Water_Drought_Study.aspx)
- Emerald and surrounds  
- [www.emerald.qld.gov.au/](http://www.emerald.qld.gov.au/)
- Dalby and surrounds  
- [www.dalby.qld.gov.au/](http://www.dalby.qld.gov.au/)
- Goondiwindi and surrounds  
- [www.goondiwindi.qld.gov.au/](http://www.goondiwindi.qld.gov.au/)
- Moree and surrounds  
- [www.moreetourism.com.au/](http://www.moreetourism.com.au/)
- Narrabri and surrounds  
- [www.narrabri.nsw.gov.au/tourism.html](http://www.narrabri.nsw.gov.au/tourism.html)
- Gunnedah and surrounds  
- [www.infogunnedah.com.au/tourism/](http://www.infogunnedah.com.au/tourism/)
- Narromine and surrounds  
- [www.narromine.nsw.gov.au/tourism](http://www.narromine.nsw.gov.au/tourism)
- Hay and surrounds  
- [www.visit-hay.com.au/htd.html](http://www.visit-hay.com.au/htd.html)

**THE NATIONAL COTTON EXTENSION TEAM 2008**



FRONT ROW (L-R) Louise Adcock, Susan Maas, Janelle Montgomery, Ingrid Rencken 2ND ROW Rohan Boehm, Rob Welsh, Lance Perdegast, Tracey Farrell, Chelsey Ross, Lauryn Härmä, Helen Dugdale. 3RD ROW Letitia Cross, Kale Lightfoot, James Hill, Sally Ceoney, Bec Smith, David Larsen. BACK ROW Bailias King, Rod Jackson, Mark Hickman, Geoff McIntyre, Bruce Pyke



**CALENDAR PRODUCED BY** Yvette Cunningham, *Communications Manager, Cotton CRC* and Jane Macfarlane, *Sub-Programme Leader - Integrated catchment and farm planning tools, Catchment Programme, Cotton CRC.*

**DESIGN BY** Kristy Fielder, *Black Canvas*

**ACKNOWLEDGEMENTS** This calendar has been jointly funded by the Namoi Catchment Management Authority, the Cotton CRC and the Department of Agriculture, Fisheries and Forestry. This calendar would not have been possible without the contributions of photos and text from the local newspapers in the towns featured, the organizing committees of Nash on the Namoi, Moree on a Plate and Gourmet on Gundy, the Cotton CRC National Cotton Extension Team, staff from Namoi Catchment Management Authority, Border Rivers Gwydir Catchment Management Authority and CHRRUP as well as cotton growers and consultants featured in the monthly case studies.

**DISCLAIMER** The Cotton CRC accepts no responsibility or liability for any loss or damage caused by reliance on the information in the calendar.

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**2009**



# Lower Namoi Cotton News

"news to feed the biggest bolls"

Newsletter inquiries..... contact Judy English, LNCGA Public Officer, phone 6795 3777.

November  
2007

## From the Chairman's Desk

From Rob Eveleigh, LNCGA Chairman, 0427 915 921

At last month's CGA meeting we discussed the functions and activities that the association proposes to run this year and each committee presented their budget. Major functions will include the field day and the crop competition and awards night.

The CGA has direct contact with Cotton Australia (CA) each month. We are lucky to have a regional office in Narrabri. Gus Macrae attends most meetings and we have a teleconference with Adam Kay regularly. CA recently established a grower advisory committee and Brendon Warnock represents our association on that committee. CGA executive member Mike Carberry continues on the Cotton Australia board. Both Mike and Brendon welcome any comments or issues that they can convey to CA.

Our next executive meeting will be held at CSD Wee Waa on the 21st of November. All growers and cotton industry personnel are welcome to attend. Bye for now and lets hope the rain continues - in the catchment this time!

## CCA Activities

From Amber Diamond, CCA Executive Officer, 6752 5459

In recent weeks the main focus of the CCA Executive has been tying up the 2006/07 Survey Series. Draft reports have been received this week. We have also been compiling the new CCA directory - look out for it in early December. The latest (summer) edition of our magazine, *In Field Yarns*, is available now. Contact the office for a copy.

Regional Meetings are in planning at the moment for most valleys including the Namoi. Keep an eye on the our website ([www.cottonconsultants.com.au](http://www.cottonconsultants.com.au)), for finalised dates. The Regional Coordinator position for the Lower Namoi is still unfilled. I would love to hear from anyone who may be interested in taking on this role.

## Ginning Sector Participating in BMP

From Gus Macrae, Cotton Australia, 0407 956 586

Between April and June this year, members of The Australian Cotton Ginners Association had 28 gins audited by the Cotton Textile Research Unit, CSIRO Textile and Fibre Technology against the draft Best Management Practices ginning guidelines. All of the Lower Namoi gins participated.

These initial audits assessed the draft BMP guidelines and individual gin performance so that industry can ultimately achieve consistent and better classing grades, with the view to running a certification program next year.

## Strong Local interest in Healthy Soils

From Tracey Farrell, NSW DPI, 6799 1548 or 0427 260 344

Over 50 people attended the recent Healthy Soils Forum in Narrabri. There were a number of practical 'take home messages' from the day that can be used to shape management decisions. They are summarised below.

Aim to increase soil organic carbon - it enhances soil structure and leads to improved water infiltration and water holding capacity. As a rule of thumb, aim to retain 15-16 t DM/ha (stubble) per cropping cycle.

N fertiliser use efficiency by cotton can be 15-20% higher when; it is applied shortly before planting; when less is applied in the pre-plant application and subsequent in-crop applications are made; when urea rather than NH<sub>3</sub> is used for water-run applications and; when green manures are used to supply at least some of the required N.

Vetch green manures can fix ~200 kg N/ha, suppress Black Root Rot and improve soil structure which leads to greater water infiltration. However seedling diseases and Fusarium wilt may be more prevalent.

ESP is highly correlated with the output from EM38 surveys, making them a useful tool for identifying production constraints due to soil sodium.

## Noticeboard

### LNCGA Meeting - All welcome

At CSD on 21 Nov, 12 noon. Contact Judy English 6795 3777.

### Namoi Water AGM

At Gunnedah Services Club on 28 Nov.  
Contact John Clements 0428 896 554.

### Irrigation Workshops on Request

½ day format. Specific topics. Contact Rod Jackson 6799 1537.

Disclaimer: Authors represent the position of their organisation, however this may not be the shared position of all organisations contributing to this newsletter. Every effort is made to ensure the information presented is correct at the time of publication.

Newsletter  
Contributors



Lower Namoi Cotton Grower's  
Association Inc.



NSW DEPARTMENT OF PRIMARY INDUSTRIES



Namoi Water





# Lower Namoi Cotton News

"news to feed the biggest bolls"

November  
2007

Newsletter inquiries..... contact Judy English, LNCGA Public Officer, phone 6795 3777.

There are a number of simple visual measures that are good indicators of a healthy cotton soil – Groundcover %, dispersion tests, nodulation scores for legumes and the white paint technique for identifying compaction.

The Forum was co-ordinated by the Cotton CRC and NSW DPI, funded through an initiative of the National Heritage Trust. There are a few additional copies of the proceedings. Contact the ACRI if you would like to read more.

## Namoi CMA Drought Assistance Grants

From Jane Macfarlane, Namoi CMA, 6799 2417 or 0447 261 014.

Landholders in the Narrabri and Walgett RLPB areas can access up to \$10,000 per farming entity to implement on-ground works that enhance drought preparedness. To be eligible, growers must; complete an 'Expression of Interest', agree to attend 2 drought management workshops (several to choose from) and enter into a funding agreement with the Namoi CMA.

Expression of Interest forms can be accessed by downloading from [www.namoi.cma.nsw.gov.au](http://www.namoi.cma.nsw.gov.au) or by contacting Jane Macfarlane or Stacey Spanswick. Expressions of Interest close on the 23rd November.

## LNCGA – Your Link to Cotton Research

From Phil Firth, LNCGA, 0427 657 532

The executive of the grower's association has formed a new committee to identify the issues that growers want research information about. The committee will communicate with researchers, the Australian Cotton Growers Research Association and industry extension. If growers have ideas or issues for research or extension that they think is being overlooked, then they can feed it to the members of this new committee and they will ensure that those issues are brought before the appropriate industry people or bodies. The committee will also discuss and flesh out any developing research issues from a grower's point of view. We will then ensure that point of view is heard. Growers on the committee are Phil Firth (chair) Andrew Greste (Lower Namoi ACGRA rep.), Geoff Phelps, Ben Stephens (Chair of the ACGRA) and Brendon Warnock. Rod Jackson from NSW DPI and Kate Lightfoot from the Cotton CRC are also members.

Please contact any of these people with ideas for research or extension.

## Day Degree Update

Despite the unusually cool and wet weather of the past week, day degree accumulation since the 1st October is still ~20% above the long term average and subtly ahead of last year.

1/10–7/11	Acc. Day Degrees			Acc. Cold Shocks		Acc. Hot Days	
	2007	2006	LTAv.	2007	LTAv.	2007	LTAv.
Boggabri	377	357	308	13	17	1	0
Narrabri	392	376	330	9	15	2	1
Wee Waa	405	394	339	9	14	3	2
B. Junction	407	403	345	9	14	3	2

## Tech Talk

From Rod Jackson, Irrigation Officer, NSW DPI, 0429 901 908.

### Do c-probes need calibration?

Calibration of a c-probe in the field is necessary if the device is to be used for determining the magnitude of plant water use, or a soil moisture deficit or to calculate a full soil water balance. Uncalibrated c-probes will show changes in soil water content over time so scheduling irrigation based on the slope of the line in the graphical output is acceptable. However to use uncalibrated probes in this way they still need to be "normalised".

Probes are normalised by matching the raw readings from each sensor at both 0% (held in air) and 100% water levels (submerged in water). Equipment suppliers should provide you with procedures for this. Without normalising, these devices would only provides irrelevant raw data that varies slightly with each sensor. By matching the raw reading from each sensor to both 0% and 100% water levels, a comparison of readings taken by different sensors can be made on a common scale.

Once normalised, readings can then be displayed graphically using a default calibration equation (from the product's software). In many cases the graph will use "millimetres" as the units for the vertical axis. **Beware – this is only an estimation** of soil moisture and should not be interpreted as the literal value. Field capacity and the refill point can be determined through relating known soil moisture conditions to probe values, and analysis of soil moisture trends.

Probes should be installed before the first in-crop irrigation. This allows them to "Bed-in" so as to be giving a reasonable reflection of soil moisture status thereafter i.e. they can be used to schedule the second irrigation.

Disclaimer: Authors represent the position of their organisation, however this may not be the shared position of all organisations contributing to this newsletter. Every effort is made to ensure the information presented is correct at the time of publication.

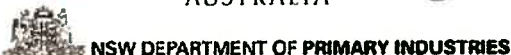
### Newsletter Contributors



Lower Namoi Cotton Grower's Association Inc.



Namoi Water



# Nature's workforce



Biodiversity Series: How To | May 2008 Issue 5 | Produced by Cotton Catchment Communities CRC

## “Keep it messy mate!” Diversity in the workplace

For the natural workforce to thrive it needs a diverse and complex work environment composed of different layers of living vegetation as well as rock piles, leaf litter and fallen logs.



Natural River Red Gum bushland on a cotton farm near Pilliga. Photo: Rhiannon Smith

### In Summary

#### The science

A recent study on cotton farms has shown native vegetation with a number of vegetation layers, a large variety of plant species and abundant logs and litter on the ground supports a higher number of species.

#### Helpful hints

- Resist the temptation to ‘clean up’ standing and fallen dead timber, rocks and shrubby understorey within your vegetation. If you need to clean up fallen or dead standing timber consider putting it into piles and not burning it.
- If possible, keep standing dead trees as hollows provide habitat for many birds, insects, mammals and reptiles.

- Allow regeneration of shrubby species as well as trees and grasses.

#### Benefits to the farmer

Increased habitat for beneficial insects outside the cropping cycle, helps to keep the natural workers on your farm.

#### Are I making a difference?

Establish permanent photo points and take a landscape photo each year of the vegetation structure, what condition is your vegetation in?

#### What does the science say?

Healthy trees provide the seed banks for the next generation of trees. Trees tend to be healthier with an understorey comprising of native shrubs,



Cotton Catchment Communities CRC

mosses and lichens opposed to where there is no understorey or an understorey of exotic pastures and weeds. Soils too are important for tree health, soils low in nitrogen with high organic carbon support healthy trees. Fallen logs and debris assist by providing anchorage sites for mosses and lichens as well as contributing to the organic carbon content of the soil. As the logs slowly decay they release the nutrients back into the soil. Logs provide habitats for many creatures and in some cases animals even use them as "highways" to get across the landscape.

Within riparian zones fallen logs in streams are equally important. The logs help to improve stream bank stability as well as provide habitat and shelter from predators. Murray cod attach their eggs to hard surfaces such as logs or rocks and fish species such as Australian smelt need logs and woody debris to hide from predators. Bacteria and fungi attach to logs and process carbon, nitrogen and phosphorous promoting the recycling of nutrients. Wetland bird species such as Cormorants use logs and dead trees to roost and breed in as it provides protection against land predators such as foxes and cats.



Fallen logs and debris in our rivers form important habitat and food for a variety of fish species including Murray Cod. Günther Schmida

### What can you do?

There are some simple management strategies to encourage more species to live in your native vegetation.

- Resist the temptation to 'clean up' standing and fallen timber, rocks and shrubby understorey within your vegetation.
- Spell pastures during the growing season

for at least as long as they are grazed, to allow productive palatable forages to recover and soil organisms to multiply.

- Keep trees with hollows (dead or alive) and allow tree seedlings to establish.
- Allow shrubs and the ground layer to regrow by restricting stock and vehicle access and controlling weeds.
- If you do 'clean up' fallen logs keep them in piles rather than burning them so they can be used by animals.



A cautionary note: there are potential hazards in the work place if fallen timber is not removed. To manage this risk you could exclude access to areas with fencing and/or alert staff to the potential hazards.

### Are you making a difference?

To monitor whether your actions are improving the condition of your biodiversity establish permanent photo points and take a landscape photo each year of the structure of your vegetation. To ensure you accurately document change, take the photos at the same time of the year, it is also important to take the photo at the same point and use the same distance from the camera to the photo point each time. Setting up permanent markers such as two steel posts will help keep your photo points and distance consistent each time.

To assess what condition your vegetation is in, use the photos on the next page as a guide or Contact your local CMA or NRM body to organise a professional evaluation of your native vegetation using a method like habitat Hectares, Biodiversity Benefits Index or the Bush Tool Kit.

### Good Condition



Rhiannon Smith

- Healthy existing vegetation
- Good regeneration of trees and shrubby species
- Good presence of dead standing and fallen timber
- Good groundcover
- Good mix of trees, shrubs and grasses

### Moderate Condition



Stacey Spanswick

- Healthy existing vegetation
- Good groundcover
- Limited regeneration of trees and shrubby species
- Limited dead standing and fallen timber

### Poor Condition



Rhiannon Smith

- Unhealthy existing vegetation with presence of Tree dieback
- No regeneration of trees and shrubby species
- Limited dead standing and fallen timber
- Dominance of weeds in groundcover

## Benefits to the cotton grower

Vegetation diversity and the presence of leaf litter and fallen logs can encourage other insects which can contribute significantly to natural mortality in weed and seed banks and are recognised predators of *Helicoverpa* spp.

Healthy diverse vegetation helps maintain healthy soils as decaying vegetation provides nutrients for soil organisms as well as organic matter for good soil structure.

Healthy diverse vegetation provides protection for stock, crops and pasture from heat, cold and wind.

Diverse vegetation consisting of trees and perennial deep rooting plants helps minimise the occurrence of dryland salinity by minimising the amount of water entering the water table.

## Benefits for biodiversity

- More habitats for more species
- Greater genetic diversity for seed stores
- Improved nutrient recycling
- Diversity allows greater flexibility and adaptation to changing environments

## For more Information:

### Web pages

[http://www.communitysolutions.com.au/gwbw\\_project/infokit.html](http://www.communitysolutions.com.au/gwbw_project/infokit.html)

<http://live.greeningaustralia.org.au/GA/NAT/TipsAndTools/exchange/>

<http://members.pcug.org.au/~gianni/farmers.html>

[http://www.forest.nsw.gov.au/env\\_services/ess/files/dlwc/bio\\_users\\_guide.pdf](http://www.forest.nsw.gov.au/env_services/ess/files/dlwc/bio_users_guide.pdf)

[http://www.forest.nsw.gov.au/env\\_services/ess/default.asp](http://www.forest.nsw.gov.au/env_services/ess/default.asp)

<http://www.fs.fed.us/pnw/pubs/gtr526/gtr526A1.pdf>

[www.dse.vic.gov.au](http://www.dse.vic.gov.au)

[www.nre.vic.gov.au](http://www.nre.vic.gov.au)

## Scientific Publications

Lovett, S & Price, P. (2007) Principles for riparian lands management. Land and Water Australia, Canberra

[www.cottoncrc.org.au](http://www.cottoncrc.org.au)

Lovett, S., Price, P. & Lovett, J. (2003) Managing riparian lands in the cotton industry. Cotton Research and Development Corporation

Rencken, I. (2006) An investigation of the importance of native and non-crop vegetation to beneficial generalist predators in Australian cotton agro-ecosystems PhD Thesis. University of New England.

Department of Sustainability and Environment (2004b) Vegetation Quality Assessment Manual-Guidelines for applying the habitat hectares scoring method. Version 1.3 Melbourne Vic.

"Key aspects of photopoint monitoring" Fact Sheet, QLD NR&W, [www.nrw.qld.gov.au/monitoring\\_guide/indicators/photopoints/key\\_aspects.html](http://www.nrw.qld.gov.au/monitoring_guide/indicators/photopoints/key_aspects.html)

## Guides

Platt, S.J., (2002) How to Plan wildlife Landscapes: a guide for community organisations. Department of Natural Resources and Environment, Melbourne

Ford, G & Thompson, N. (2006) Birds on Cotton Farms. Cotton Catchment Communities CRC

Pyke, B.A and Brown, E.H (1996) The cotton pest and beneficial guide. CRDC and CTPM



Australian Government

Department of Agriculture, Fisheries and Forestry  
National Landcare Programme

## Success at the Lippia Management Field Day

The Murray Darling Basin Lippia Working Group held a Lippia Management Field Day at the Australian Cotton Research Institute near Wee Waa during October 2006.

The forum was organised to allow land managers, researchers, private industry, government agencies and anyone with an interest in Lippia to share their knowledge and experience in controlling this problem.

Topics included an overview of Lippia research and what we currently know, the possibility of future biological control, management options, the impact of current legislation including the NSW Native Vegetation Act on the management of Lippia and many case study examples of how landholders are managing Lippia on their farms.

Speakers at the Field Day came from a wide variety of organisations, including the CSIRO, the University of New England, Government departments, Catchment Management Authorities and landholders with on-ground experience. The Field Day was supported by the Cotton Catchment Communities CRC, Namoi Catchment Management Authority and the Department of Natural Resources.

It was followed by dinner at the Narrabri RSL Club. A research day was held the following day for researchers working on Lippia.

Attendees to the Field Day attended the complimentary dinner and drinks to be held at the Narrabri RSL Club, making the most of this opportunity to speak with other farmers and researchers to discuss their experiences in dealing with Lippia.

### Background information on Lippia

The emergence of Lippia (*Phyla canescens*) – an introduced and highly invasive plant species – poses a serious environmental threat to New South Wales' inland wetlands and floodplains. Lippia is a fast growing and hardy perennial broadleaf weed with tiny grey green leaves (10-20cm long) that forms a dense mat over large areas. It produces small round white flowers and has a tap root which is reported to be over 2m long. Lippia causes not only loss of valuable productive land but also severe river and creek bank erosion leading to degradation of soil and water and the displacement of native plant species.

Lippia was originally used as a soil stabilisation plant and also as a 'low maintenance' no-mow turf and is found in many household lawn situations. It has been around for more than fifty years and has been spread over large areas by flood waters. It can out-compete all native vegetation including tree seedlings, turning the entire landscape into a carpet of Lippia. It has virtually no value as stock feed and can reduce a paddock's carrying capacity by 40-60%.

The plant is difficult to eradicate with the best control methods currently being: cultivation, improved perennial pastures, herbicide control and grazing management. There was plenty of opportunity for open discussion and attendees were welcome to add their experiences of Lippia management to the day's proceedings.



Lippia invasion on riverbank



Volume 1, Issue 1  
Summer Edition

## Narrabri and Wee Waa Matters

### Introducing the Namoi CMA staff for Narrabri & Wee Waa

Stacey Spanswick is our Catchment Officer based at the Australian Cotton Research Institute at Narrabri.



Lester Thearle is our Catchment Officer for Narrabri & Wee Waa and is based in Gunnedah.



Stacey and Lester can provide assistance in the development of natural resource incentive projects and provide advice and information on natural resource management (NRM) such as grazing management, improving river health through fencing or soil conservation earthworks.

**If you are interested in a project or would like to know more about our funding programs please phone Stacey on 6799 2417 or Lester on 6742 9207.**

Narrabri Office  
Locked bag 1001  
Narrabri NSW 2390

Stacey Spanswick  
Catchment Officer  
Namoi CMA & Cotton CRC  
Phone (02) 6799 2417  
Mobile 0428 266 712  
Fax 6793 1171

Lester Thearle  
Catchment Officer  
Namoi CMA  
Phone (02) 6742 9207  
Mobile 0428 211 759  
Fax 6742 4022

## Cotton BMP workshops a success

Twenty three Namoi valley cotton growers are now well on their way to attaining certification for the Land and Water Management Module. The Land and Water Module is the latest addition to the industry's voluntary Better Management Practice program. It encourages growers to document the natural resources on their farm and show that those resources are being used within their capacity. Three workshops have recently been held by the Namoi CMA in conjunction with Cotton Australia and the Cotton CRC to help growers start the documentation process. The Namoi CMA and Cotton CRC supplied growers with aerial photographs and other mapping

tools enabling them to complete Objective 1 of the module *Develop a Farm Map*. The workshop was also an opportunity for growers to talk through the topics covered in the other objectives – irrigation efficiency and the management of soils, riparian areas and native vegetation – with each other and local technical staff. Similar workshops will be held across the valley next year. Funding will also be available to assist growers with the cost of their audits. To express your interest in participating in a workshop or to find out more information; contact Gus Macrae at Cotton Australia on 6792 6041 or Stacey Spanswick at the Namoi CMA & Cotton CRC on 6799 2417.



Cotton Australia Grower Service Manager Gus Macrae helping local growers map the infrastructure at the Narrabri Land and Water Management BMP workshop

## Property Planning workshops

Namoi CMA will be holding a series of property planning workshops in February-March next year. The four day workshop includes:

- Pasture and groundcover assessment
- Water Quality
- Soil and salinity
- Identifying soil types and land capability and linking to landuse and infrastructure
- Native vegetation management
- Cultural heritage
- Water resource management
- Pasture and crop management
- Risk management and planning

**If you are interested in participating in these free workshops contact the Narrabri office on 6799 2417**

### Inside this issue:

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We're on the web!  
[www.namoi.cma.nsw.gov.au](http://www.namoi.cma.nsw.gov.au)

The Namoi CMA is calling for expressions of interest in a variety of training courses for eligible farmers and graziers in the Namoi Catchment

Course dates and locations will be announced when sufficient registration numbers are reached.



### Soil Analysis & Fertiliser Management

This one-day course covers the biological, physical and chemical features that make a healthy soil. Includes soil testing, nutrient budgets, selection of fertilisers, comparing cost effectiveness and environmental effects of fertilisers.

With the Namoi CMA discount, each participant pays only \$50 at registration  
Normally Costs: \$299

### Farmer's Guide to Managing Climate Risk

This one-day workshop will assist farmers, graziers and other land managers to reduce risk by allowing them to monitor and effectively incorporate weather and climate information into farm decision making. Fee includes provision of the publication "The Farmers Guide to Managing Climate Risk."

With Namoi CMA discount, each participant pays only \$50 at registration.  
Normally costs: \$200

### Landscan

Farmers and land managers will develop skills and knowledge to assess natural resources, match land use to land capability, make informed choices about managing landscapes and allocate resources to balance production, profit and sustainability.

With Namoi CMA discount, each participant pays only \$200 at registration.  
Normally costs: \$350



### Prograze

Designed to improve the profitability and sustainability of beef and sheep farms. It covers pasture and livestock assessment and plant species recognition skills for managers. It demonstrates how these skills are used, with enhanced knowledge and understanding of the grazing system, to improve grazing management decisions.

With Namoi CMA discount, each participant pays only \$200 at registration.

For Course Information Contact  
Project Officer – Education  
Col Easton  
Phone: 02 6764 6819  
Email: col.easton@cma.nsw.gov.au

For General Enquiries Contact  
Stacey Spanswick, WeeWaa/Narrabri  
Phone: 02 6799 2417  
Email: Stacey.spanswick@cotton.crc.org.au

## Rehabilitating Spring Creek

**A Cooperative approach to Riparian Management – Spring Creek Narrabri gets a \$200,000 face lift.**

Our waterways provide a wide range of benefits relating to both property management and environmental services. However when these riparian areas become degraded through erosion, reduced vegetative condition and poor water quality, these waterways become a cost and liability not just to the individual landholder but to the broader community.

Driven by a common interest to halt the degradation within their stream, a group of landholders along Spring Creek, north of Narrabri, have successfully received grants from the Namoi Catchment Management Authority (CMA) to undertake a range of works. With an overall project cost of up to \$300,000, the Namoi CMA have invested \$216,000 towards securing landscape change and improved management. The works have been focused along a 15km reach of the creek and includes numerous engineered erosion control structures, 6000 trees, 17km fencing,

30ha of pasture establishment, and improvements to a reticulated stock watering system. With fencing already begun on some properties, the earthworks began at the end of June and revegetation in August/September this year. These works aim to stabilise the stream bed and banks from further soil erosion, improve flood mitigation at the Newell Highway Bridge, enhance or where necessary reinstate native vegetation, and promote best management practices for riparian areas.

Landscape degradation often extends beyond property boundaries and as such, planning needs to be undertaken on a greater scale if we are to reverse these problems. The Spring Creek project is a good example of the level of planning needed and has focused on a sub-catchment approach to achieve greatest results. The planning process has included extensive site mapping, property planning, field days on pasture establishment, and resulted in some landholders continuing on to participate in a Prograze course. With an over all interest in reducing overland run-off which has been considered one of the contributing factors to the degradation, the use of



Spring Creek landholders

minimum tillage technologies and machinery conversion has also been discussed. This project which currently involves 11 different stakeholders is Stage One of the overall Spring Creek Rehabilitation Project, with Namoi CMA interested to continue works downstream of the Newell Highway Bridge in Stage Two with an aim to establish a link with the Namoi River.

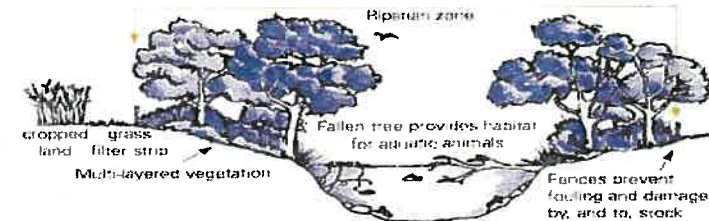
Any landholders interested in being involved in the Spring Creek project, wanting assistance with their own projects, or for further information on enhancing your riparian areas are encouraged to contact:

**Namoi CMA's Riparian Officer  
Ryan Breen — Phone 6742 9210.**

## How does landuse and management impact Riparian areas?

### What is a Riparian Area?

Any land that adjoins or directly influences a body of water. This includes: wetlands, floodplains, creeks, and gullies. It is important not to think of riparian areas just a narrow strip along each river bank, but an area that changes in size depending on the nature of the landscape, adjoining land use, and vegetation.



The Riparian Zone (Land Water Australia Fact Sheet 1)

## How does landuse and management impact Riparian areas?

Blue-green algae, erosion, sediments, salinity, pesticides, increased water run-off.

### What impact is management having on other communities within the Namoi Catchment?

Riparian vegetation acts as a filter to trap sediment, nutrients and other contaminants, reducing their movement into streams. Heavy constant grazing pressure reduces this vegetation and allows more runoff and sediments to enter the waterways. Pesticides entering the waterways provide an optimal breeding ground for bacteria and algae. These factors all contribute to poor water quality issues further down the catchment where it has become a health hazard to swim in the river.

Namoi CMA can help by providing funding for fences and gates, pumps, tanks and troughs, revegetation, willow removal and erosion control works, plus staff can help negotiate management strategies for your on-ground works to improve productivity and the environment.

Because riparian areas are so varied in their characteristics, there are a range of different management options that can be used in riparian areas depending on the type of stream, adjacent land use, and the identified problems/issues that you want to address.

NCMA advocates an active management approach that aims to promote maximum ground cover, the regeneration of native plants, improvements to aquatic and terrestrial habitat, and soil stabilisation.



Site along the Namoi River near Boggabri before stock exclusion



Same site along the Namoi River after the river bank had been fenced and strategically grazed for over ten years

## Funds roll out across the whole Namoi

The Namoi Catchment Management Authority has opened up the whole of the Namoi catchment to incentive funding for vegetation management. The Namoi CMA has reviewed its procedures and has taken into consideration the prolonged drought and has decided that incentive funding will be available to all landholders in all parts of the Catchment for biodiversity and riparian vegetation management. Previously, incentive funding was targeted to specific priority sub-catchments.

Glenn Bailey, Catchment Coordinator, Namoi CMA said "this change is a significant benefit to a lot of landholders around Manilla and Barraba and landholders west of Narrabri towards Walgett".

"Landholders in these areas will now be able to apply for funding to make improvements to the management of vegetation on the farm while providing benefits to the Catchment."

"Funds from the Namoi CMA are available for projects that result in changes to vegetation management. The on farm changes can be in program areas of nature conservation, creek management and salinity management," Mr Bailey said.

Namoi CMA prefers projects that have components in a number of program areas, but realises, that in these dry times, that landholders may only be able to make minor changes in one program area alone.

"Namoi CMA is quite happy to accept any all types of applications at any time and we try and cut down on the 'red tape' so it is easy for landholders to apply.

Funds from the Namoi CMA are available as an incentive for landholders to make land management changes on the farm.

In most situations the landholders must make a contribution to their projects, be it labour, management or cash, while the Namoi CMA provides the funds.

**If you would like to partner Namoi CMA with a project on your farm, contact the Narrabri office on 6799 2417**



## Narrabri Matters

### Winners of Namoi Regional Landcare Awards



Farmers, Landcare groups, educators and individuals who have shown excellence or innovation in environmental work have been recognised in the Namoi Regional Landcare Awards.

Jim McDonald, Chairman of the Namoi Catchment Management Authority said "the Landcare Awards are an important way of recognising the valuable contributions of individuals and groups in caring for the land and helping to protect fragile resources, waterways and native plants and animals.

"The Awards are a chance to showcase achievements by landholders, community groups and organisations in sustainable land management practices in the Namoi Catchment.

"The Award winners in each category will now be eligible to go on to the State Awards to be presented at the Namoi Landscape Management Forum in Tamworth in October this year," he said.

Although entries were down from the last Regional Landcare Awards, mainly due to the drought, nine entries from across the Namoi Valley were received.

The winners are:

- Individual: Fred Colwell, Walgett
- Nature Conservation: Liverpool Plains Land Management Committee
- Community Group: Narrabri Community Bushcare
- Education: Judy Lee and Don Tunningley, Gunnedah TAFE

Lindsay Doyle & Tina McTavish from Bective received an Encouragement Award for the Primary Producer category.

Winners and other nominees celebrated their achievements at a presentation night at the Civic Theatre in Gunnedah on Thursday, 21 June.

### Upcoming event

Property Planning Workshop to be held on Wednesday November 7.  
For further information please contact Stacey Avard - 02 6742 9211

### What's in store

- 2 - Narrabri Community Bushcare & Salinity Stream Sampling Project
- 3 - Engineered Woodlands Project & Funds for Cotton Farmers
- 4 - Improving Water Use, Property Planning Workshops & Profiles



## Community Group Award - Narrabri Community Bushcare

### Narrabri Lake treeplantings

Over 300 native trees and shrubs were planted around the foreshore of Narrabri Lake on the western side of town. The lake is a recreational area for many Narrabri Residents and visitors who use it and its foreshores for walking, bird watching, canoeing and fishing.

The lake contains an island which is a safe breeding ground for many local and migratory native bird species. Endemic trees and shrubs have been planted in strategic locations around the lake providing

habitat for biodiversity, shade, shelter and aesthetic enjoyment to local residents and also to stabilise areas of erosion. Through planting endemic tree species the group hopes to raise awareness of the enormous biodiversity within local areas.

Through this project Narrabri Community Bushcare Group has been approached by many members of the Narrabri Community about collaboration in future projects and as a result the group has been involved in planting over 2000 trees in the past year alone.



## Namoi Salinity Stream Sampling Project

A project between the Namoi Catchment Management Authority (Namoi CMA) and the Bureau of Rural Sciences (BRS) has been established with the signing of a contract worth almost \$140,000.

George Truman, Catchment Officer for Salinity, said "the project, funded through the Australian Government's National Action Plan for Salinity and Water Quality, aims to build on existing salinity data with the acquisition of new stream sampling in the Namoi Catchment which will be used to target investments for intervention and salinity management.

Namoi CMA has contracted Penny Haire to undertake the project. Penny has a long history with water activities in the Namoi Catchment. Ms Haire said that "landholders within identified areas have been contacted and briefed and are involved in the data collection process." Sampling at 30 identified sites across the catchment commenced in November 2006 and will take place monthly until June 2008. There have been a number of extension and awareness sessions held with a session in the lower catchment in April 2007. 'Although a number of creeks were dry for some time recent rain has meant that the program has really been able to get under way with some useful measurements being obtained', Ms Haire said.



Landholders at identified sites are measuring salinity, pH, turbidity and stream flow monthly with data being uploaded into a web based system. Sites within the Narrabri area include; Bundock Creek, Tallaba Creek, Coghill Creek, Etoo Creek, and Baradine Creek. There has been considerable interest with many landholders undertaking additional readings on nearby creeks.

For further information contact Penny Haire on 0428 827 479 or George Truman - Namoi CMA 02 67429203.

**ABOVE: David Broderick with Penny Haire (CSS Coordinator) undertaking measurements on Bundock Creek at Narrabri.**

# Trees, pastures, crops, carbon credits and timber all from the same paddock, can it be done?

The Engineered Woodlands Project is about trialling an innovative new land use in the upper Namoi catchment. The project aims to demonstrate a profitable land use with good natural resource management outcomes that integrates the growing of native trees for carbon and timber within agricultural production systems.

The aim is for the resulting engineered woodlands to mimic the original native vegetation in form and structure, and be sufficiently cost effective to foster large scale adoption to reverse the past trend of rural tree decline in affected landscapes. The woodlands are likely to have improved biodiversity, nutrient cycling, water-use efficiency, landscape aesthetics and shade and shelter values over current pasture or crop - only land use. But be designed to allow the continued efficient operation of the agricultural enterprises at the same time.

Key features of this new approach include:

- The use of entire paddocks for tree establishment to minimise fencing costs, hence substantially reduce establishment costs;
- Use wide-spaced belts of trees to allow agricultural activity to continue between the belts once trees have become sufficiently established (within 1-2 years). Tree rows are established at spacings to suit farmers' machinery and pasture and stock management and aligned to maximise microclimate benefits. They can be established in straight rows to simplify the erection of temporary fences if needed for grazing mgt, or they can be established in curved contour plantings to suit the landscape. Indeed landholder partners to the project are likely to invent their own designs to suit their operations and innovations are expected;
- Use native species which have been identified with good straight form and fast growth rates in the upper Namoi region and use best practice establishment techniques to optimise growth rates;



- Have the participating landholders established in the carbon market and receiving (or are set up to receive) carbon credit payments;

Six landholders from the Namoi have agreed to become part of the project with trial sites ranging from 10ha to 50ha in size. They are located at Kentucky and Woolbrook in the upper catchment and at Duri, Loomberah and Gunnedah on the slopes and plains. Field days are planned for autumn 08 to inform landholders of the progress of the project, showcase the participating landholders various designs and, in particular, to report on the development of the carbon market for farmers.

Engineered Woodlands Project – Initiative of the Northern Inland Forestry Investment Group (NIFIG) a sub-committee of the Northern Inland Regional Development Board – Co funded by the Board, Namoi CMA and Border Rivers Gwydir CMA.

Contact the NIFIG – Shane Andrews, Project Co-ordinator 0427 753808, David Thompson, Project Manager 0419 681 818

See more information on the Boards website: [www.nio.com.au](http://www.nio.com.au) and use the forestry links.

## Funds for Namoi Cotton Farmers

The Cotton Catchments Community CRC (Cotton CRC) in conjunction with the Namoi Catchment Management Authority have incentive funds available for Namoi Valley cotton growers. Funding is available for a range of on-ground activities within the Namoi Catchment.

Funding is available for activities in the following areas:

### Riparian Management

Many activities can be undertaken in riparian areas including erosion control structures, fencing, re-vegetation, weed and pest control, alternative stock water supply and on-going site management.

### Native Vegetation

Native vegetation plantings which can provide biodiversity outcomes as well as production in terms of shelter for stock, wind breaks, and spray drift buffers. Funding is also available for the maintenance of existing native vegetation.

### Water Management

It is important to continually improve water use efficiencies, but to do this, growers often need to understand current efficiencies. Funding is available to assist growers determine current efficiencies and implement activities to improve these efficiencies.

### Salinity Management

A number of activities depending on your type of farming enterprise could assist in managing a salinity problem on farm such as water quality monitoring, erosion control, tree interception lines, grazing management or introduction of perennial pastures.

Namoi CMA and Cotton CRC Catchment Officer Jan Macfarlane said "I encourage all the Namoi Cotton farmers to contact the Cotton CRC and see how this funding may be able to assist them. This funding has the potential to vastly improve Catchment health as well as cotton production in the Namoi."

"As each cotton farm differs I advise growers to get in contact so the consultation process can get started".

If you are interested in a project or would like to know more about the funding programs please phone Jane Macfarlane on 02 67992417 or 0447 261014.



## Improving Water Use Efficiency on Namoi Valley Cotton Farms

The Cotton Catchments Community CRC (Cotton CRC) in conjunction with the Namoi Catchment Management Authority (Namoi CMA) is working with cotton growers in the Namoi Valley to assist landholders improve their water use efficiency.

The Cotton CRC and Namoi CMA is providing financial assistance to help with benchmarking current water use and irrigation efficiency, making irrigation management changes and assessing the efficiency gains at the end of the program.

The benefits of this program are growers can make management changes that result in improved productivity and profitability, improved sustainability of irrigated farming enterprises, industry best practice is implemented on farm and the risk of salinity is reduced by reducing the potential for deep drainage.

Some of the financial assistance from the Cotton CRC and Namoi CMA has already been used to:

- install moisture probes and storage seepage equipment
- purchase software to measure and evaluate water storage and delivery systems
- monitor field efficiencies and potential deep drainage.

To find out more about this program and how to get involved or to see what else the Cotton CRC and Namoi CMA has to offer, call Jane Macfarlane on 02 67992417 or 0447 261 014.

## Property Planning comes to town

Namoi CMA will be holding a series of Property Planning Workshops in September this year for all interested landholders and land managers in the Narrabri area. All workshop and field days include morning tea, lunch and materials at no charge.

Expressions of interest are currently being taken for the four day workshop which covers

- Mapping farm resources and infrastructure on an aerial photograph
- Identifying soil types, land capability and salinity
- Water resource management
- Pasture and crop management
- Pasture assessment and ground cover
- Native vegetation management
- Riparian area management
- Indigenous and European Cultural Heritage
- Risk management planning

If you are interested in these workshops or would like further information please contact Stace Avard on 6742 9211 or Angela Baker on 6742 9209.

### IN PROFILE



While Stacey Spanswick is on maternity leave, Jane Macfarlane is the Namoi CMA and Cotton CRC Catchment Officer situated at the Cotton Catchment and Communities CRC located at the Australian Cotton Research Institute.

Jane has most recently been living in Brisbane working for the Queensland Environmental Protection Authority on national and state biodiversity planning and policy issues. Both Jane and her husband are originally from Narrabri and are enjoying living and working in this beautiful area with the local community.

Jane has nearly 10 years government experience in managing natural areas and conserving biodiversity, our native plants and animals as well as sustainable landscapes and has been employed by local and state government in NSW and QLD.

Jane is passionate about working with the local community to employ practical measures to restore the natural environment within the Namoi valley and balance production and sustainability to implement the Namoi Catchment Action Plan.

Through the partnership between the Namoi CMA and Cotton CRC, Jane is an active member of the National Cotton Extension Team as well as the National Priority Team for Pests and Weeds and the regional cotton BMP extension team. "I am enjoying the exposure to the cotton industry and am acquiring new knowledge and skills as part of the Cotton CRC's National Cotton Extension Team," Jane says.

Jane can provide assistance in the development of CMA incentive funding and provide advice and information on natural resource management (NRM).

The Namoi Catchment can expect an increase in support relating to the implementation of the Australian Cotton Industries best management practices (BMP) programme, with the appointment of Kate Lightfoot as the Namoi BMP Officer.

Kate's role is to encourage the responsible management of on-farm environmental activities, through the implementation of the BMP programme.

As the Namoi BMP officer, Kate will be working closely with Cotton Australia's Grower Service Managers and Namoi growers to identify and manage environmental issues through the BMP programme, particularly the land and water module.

Focussing on practical aspects such as efficient irrigation, good soil management and on-farm vegetation which not only lead to a more sustainable and viable cotton industry, but also contribute to enhanced environmental outcomes.

Previously working in the Murrumbidgee Irrigation Area (MIA) as an Implementation Officer for the Land and Water Management Plan known as 'MIA

EnviroWise', Kate has had the opportunity to work with a wide range of farming systems including rice through to horticultural crops. Kate's involvement on the committee of the Murrumbidgee branch of Young Irrigation Network and being a graduate from the 2006 Rice Growers Association's Environmental Champions Leadership and Development Program has developed the skills and confidence to complement her position in the Namoi.

A former local in the Namoi area Kate looks forward to being back in northern NSW and is looking forward to helping the local farmers. This position was made possible by a joint initiative of the Cotton Catchment Communities Cooperative Research Centre, Namoi Catchment Management Authority, Cotton Australia and Cotton Research and Development Corporation.

"It's all about farming smarter, not harder" concluded Kate.

She can be found in the Cotton Australia office, Narrabri or contact Kate on 0408 972 516, email Kate.Lightfoot@csiro.au.



[www.namoi.cma.gov.au](http://www.namoi.cma.gov.au)

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Namoi BMP Officer  
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BRUCE PYKE

# COTTON COTTON COTTON RESEARCH ROUNDUP



BRUCE FINNEY

## New energy calculator for cotton producers

CRDC is finalising the development of Energycalc — a tool to assess on-farm energy uses on cotton farms.

The final report and online-tool is expected to be publicly available in early 2008.

Energycalc has been developed in association with the National Centre for Engineering in Agriculture (NCEA) based at the University of Southern Queensland.

Spearheading the research is the recognition that machinery use may contribute 40–50 per cent of the cotton farm energy input costs. The response from NCEA has been to establish a readily-accessible online tool which can point to savings and containment of energy costs.

By using a farm's own records, the energy inputs of the six major energy-intensive processes are aggregated and analysed. These are fallow, planting, in-crop operations, irrigation, harvest and post-harvest.

Using data supplied by seven cotton producers, early trials of the system showed that Energycalc is useful not only to identify total energy inputs for the overall pro-



Energycalc is designed to capture and calculate energy inputs across all aspects of cotton production, and point to possible savings.

duction system, but that growers were able to effectively compare and determine the energy effects of alternative farming practices on their farms.

## New report to industry

CRDC has produced and tabled its Annual Report 2006–07 and copies are being sent by mail to government, libraries and industry contacts.

In 2007, for the first time, CRDC has produced a companion publication of the main Annual Report which is focused on reporting R&D investment outcomes to industry.

The CRDC 2006–07 Annual Report was tabled in November. Prior to tabling, the document was reviewed by the Department of Agriculture, Fisheries and Forestry and the office of the Parliamentary Secretary for Agriculture.

CRDC, like all other Research and Development Corporations, is required by its stakeholders to produce a comprehensive annual report.

Both the 2006–07 Annual Report, and the Report to Industry, are available in printed form from CRDC, or downloaded from the CRDC website: [www.crdc.com.au](http://www.crdc.com.au)

## Ben Stephens graduates ALRP leadership

On November 16, the Australian Rural Leadership Program Course 13 Graduation was held at the Telstra Theatre at the Australian War Memorial, ACT.

At the presentation, 33 rural leaders presented their course vision and creeds. These captured the essence of their 18 month leadership journey and their commitment to 'Connected People — Vital Country'.

The Cotton Leadership participant was Ben Stephens, a farm manager at Auscott, and chair of ACGRA, a position he took in September 2007. CRDC provided part funding for Ben's participation.

Each ARLP Course brings a group of diverse individuals together from throughout rural and regional Australia for an 18 month journey in leadership.

Once participants graduate in the ARLP program they join over 400 rural leaders who are a part of the graduate network that continues to work for the betterment of rural Australia.

## Premium markets tested

The Australia's cotton industry is devel-

...6 ▷



Ben Stephens with CRDC executive director, Bruce Finney after the ARLP award ceremony.

#### ◀4...RESEARCH ROUNDUP

oping new premium markets for Australian-bred varieties.

In a venture known as the Premium Cotton Pilot Project, Cotton Research and Development Corporation (CRDC), Australian Cotton Growers Research Association (ACGRA), Cotton Australia (CA), Australian Cotton Shippers Association (ACSA), Cotton Seed Distributors (CSD) and CSIRO have combined market knowledge, research findings and new technologies to test and forge markets to deliver premium prices.

CRDC Program Leader Dallas Gibb suggests that recently-completed market research indicated that an opportunity may exist to establish high-value niche markets for a new premium type of Australian upland cotton. "These types of high-value fibres may have greater appeal when produced on farms accredited as Best Management Practice (BMP)," he said.

"CRDC market research recently found that cotton mills using high quality cotton have greater appreciation of the benefits offered from environmental management programs such as the industry's BMP program, and were often better linked to consumers demanding environmental values in their fabric and clothing purchase decisions.

"Coupled with this, new CSIRO textile research has uniquely demonstrated that the crucial cotton fibre measurements of fineness and maturity can be now separated out and this opens the way to prove a new class of premium class cotton blends based on Australian-originated fibre of known milling performance for participating cotton spinning mills.

"We aim to have these blends based on our own top-of-the-line varieties such as Sicala 350B. Together with BMP-certification, that combination verifies the product is sourced from world's best environmental practice cotton production.

"The Premium Cotton Pilot Project will begin with a small number of producers growing varieties such as Sicala 350B. This pilot production will then be delivered to a selected group of vertically-integrated spinners. The commercial value of cotton produced from the pilot will be evaluated by the industry, the spinners and the market," he said.

ACGRA Executive Officer Greg Kauter sought response from growers ready to participate in the pilot and was pleased with the response.

Sweetening the deal for participating



ACGRA's Greg Kauter, CRDC's Dallas Gibb and CSD's Steve Ainsworth working to test the existence of a premium for blends using Australia's highly-regarded cotton fibre.

growers, CSD agreed to provide Sicala 350B variety seed free of charge for the project. General Manager Steve Ainsworth said CSIRO testing of the premium qualities of Sicala 350B variety proved the opportunity for a premium upland market for premium Australian cotton blends (see story page 34).

"Sicala 350B has an unfortunate yield drag of 10-15 per cent compared with mainstream varieties, but in the very near future, we're going to see new varieties with similar fibre quality and these varieties will be coupled with much better yield," he said.

#### Extension team for nature's workforce

The cotton industry Environmental Extension Team has produced "Biodiversity in cotton landscapes — maintaining our natural workforce" calendar.

The calendar celebrates the diversity of life found on cotton farms and the steps the industry has taken to protect our natural environment.

As the name suggests, it also details the benefits of having a healthy, functional ecosystem working for you on your farm. It is filled with practical tips on how you can enhance this wonderful resource and each monthly theme is supported by a fact sheet which can be found on the Cotton CRC website ([www.cotton.crc.org.au](http://www.cotton.crc.org.au)).

The calendar is specifically for the cotton industry and all the photos have been taken in cotton growing regions within NSW and Queensland with most supplied by people involved in the industry. The Cotton CRC Environment Team would like to thank all those who helped prepare the calendar and fact sheets and provided photographs.

Extension team members are: Veronica Chapman, Paula Jones, Helen Squires, Rob Welsh, Kate Lightfoot, Sue Maas, Jane Macfarlane, Helen Dugdale and Mark Hickman.

The project is supported by CRDC, Border-Rivers Gwydir CMA and the Fitzroy Basin Association.

#### CRDC staff news

David Coleman has been appointed to the position of General Manager — Business and Finance. He replaces Robin Logan who resigned in September 2007.

David has a Bachelor of Business and is a Certified Practising Accountant. He has extensive business and administration experience from working in IT, outsource, agrichem, superannuation, industrial and rural property sectors.

Lee-Anne Melbourne will be the project administration manager for the period of Kara Taylor's maternity leave which commenced in December.

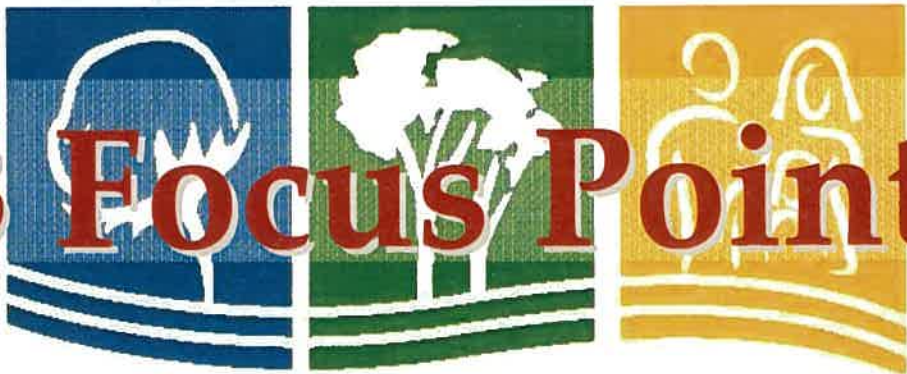


**Cotton Catchment Communities CRC**

**Kate Lightfoot**  
**Namoi BMP Officer**  
**2007-2009**



*"Prosperity through Innovation"*



# 3 Focus Points

Cotton Catchment Communities CRC

- 1: **WHAT** the project was
- 2: **HOW** it was implemented
- 3: **OUTCOMES** achieved  
and where to from here

*"Prosperity through Innovation"*



Cotton Catchment Communities CRC

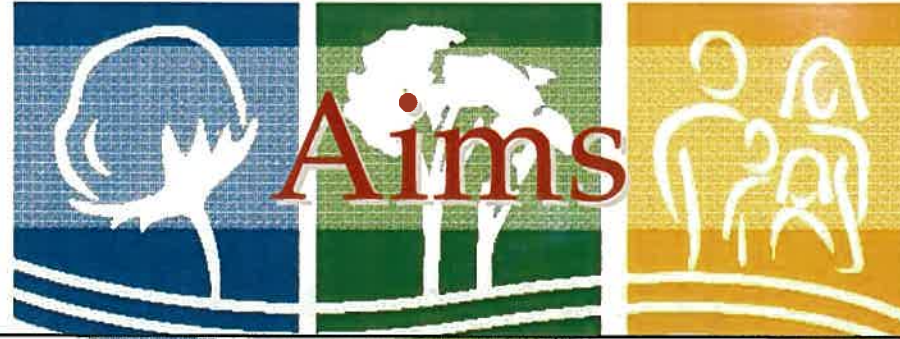
# 1: **WHAT** the project was

*"Prosperity through Innovation"*

# The Project

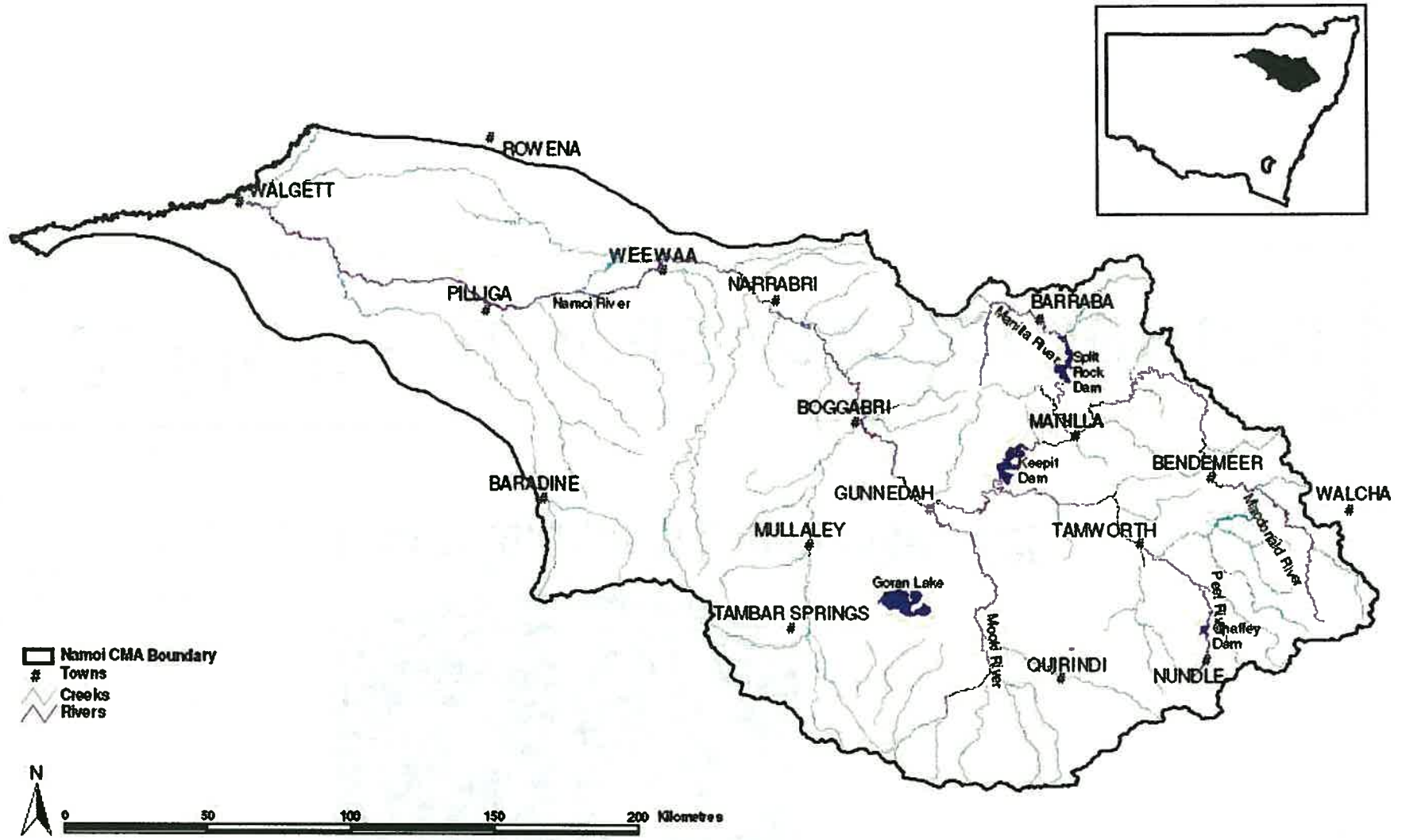
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*Supporting the adoption of  
Best Management Practice  
(BMP) in the Cotton  
Industry in the Namoi  
Catchment'*



- Support the delivery of the BMP Program, particularly the Land and Water Management Module
- Foster better NRM outcomes for the Namoi Catchment through the principles of the BMP Program and the targets of the Namoi CMA
- Assist the Namoi CMA in implementing similar best practice programs within other rural industries in the Namoi Catchment

# Namoi CMA Catchment Map





Cotton Catchment Communities CRC

## 2: **HOW** it was implemented

*"Prosperity through Innovation"*

# Land and Water Management Module (L&WMM)

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## Aim of L&WMM

**Adopt best practice to sustainably manage all resources on farm**

### Module addresses:

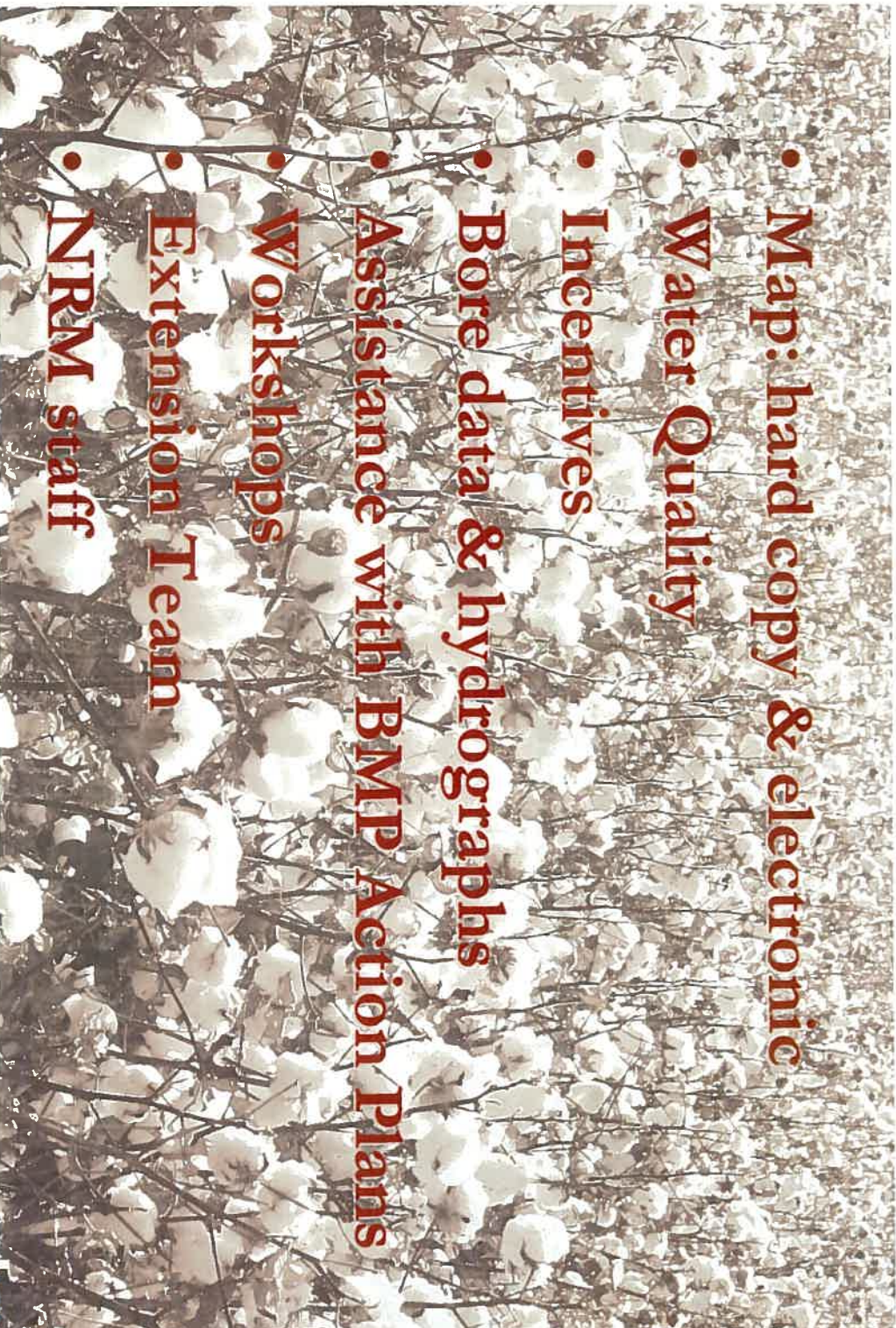
- Water budgeting
- Efficient irrigation development and management
- Soil type identification and management
- Salinity and sodicity risks
- Water quality management
- Vegetation identification and management
- Riparian zone management



# For the growers.....

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- Map: hard copy & electronic
- Water Quality
- Incentives
- Bore data & hydrographs
- Assistance with BMP Action Plans
- Workshops
- Extension Team
- NRM staff



# Map: hard copy & electronic

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- Aerial or spot 5 imagery
  - Digitized resources
- Useful for:
- Farm planning
  - Aerial contractors
  - Farm workers
  - Crop rotation planning

# Workshops

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- **Weed management**
- **Irrigation management and measurement**
- **Soil Health**
- **Property Planning**
- **Research updates**

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# 3: OUTCOMES

achieved and where to from  
here

# Major Outcomes

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- 120, 000 ha of farming land now with property plans
- Increased awareness and adoption of NRM in the Namoi Catchment
- Collaborative relationships with Namoi CMA staff to achieve joint NRM targets in various agricultural industries
- Increased community awareness of the relationship between the Cotton BMP Program and the Namoi CMA catchment targets
- Increased level of incentives flowing from the Namoi CMA to targeted projects in the cotton industry

**Where to from here.....**

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**‘Integrating NRM into  
irrigated cotton farming  
systems in the Namoi  
Catchment’**

## Details:

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- **Namoi CMA and Cotton CRC**
- **3 years funding, 1/07/2009 til 30/06/2012**
- **Continuation of services to the valley**
- **Maintaining relationships between organisations**
- **Achieving more collaborative targets**

# Thank you:

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- **NCET members**
- **Local growers and service industries**
- **Researchers**
- **Namoi CMA**
- **Cotton CRC**
- **Cotton Australia**
- **CRDC**

## Questions?

