AG15 Update
- a natural resource management newsletter for irrigated cotton and grains growers

Susan Maas DPI&F Emerald – Phone: 4983 7401; susan.maas@dpi.qld.gov.au
Veronica Chapman DPI&F St George – Phone: 4620 8103 veronica.chapman@dpi.qld.gov.au
Environmental extension officers (Cotton) with DPI&F and the Cotton Catchment Communities CRC
Issue 9 March 2007

What's been happening in AG15?
With the AG15 project due to finish at the end of May 2007, we are also busy evaluating and writing our final reports. However while the project is ending, we hope to be around for some time yet.

Veronica is exploring the options for working on a Cotton CRC project funded through Department of Agriculture Forestry and Fisheries (DAFF). This project has a national focus on delivering natural resource management in Cotton Farming Systems and will continue to build upon the work that has been done as a part of the Ag15 project.

Susan is currently negotiating for the remaining Ag15 project funds to be used to fund her current position for a further 6 months on a part-time basis.

Envirofund Round 9 – Now open
Envirofund helps communities undertake local projects aimed at conserving biodiversity and promoting sustainable resource use. Community groups and individuals can apply for grants of up to $50,000 (GST inclusive) to carry out on-ground and other actions to target local problems.

Applications for this round of Envirofund close on 27 April 2007. For more information on eligible activities and to obtain an application form visit the Envirofund website on http://www.nht.gov.au/envirofund/. For further assistance contact your local Landcare Officer.

Riparian/Wetlands Case Studies

Have you conserved a wetland area?

Have you managed or reduced production near riparian areas or wetlands?

Have you constructed a storage that has 'wetland values'?

Would you be willing to be a case study?
(This would require an interview with an ecologist and economist plus a farm visit including photos)

For more details please contact Susan or Veronica

The new 'Soil Health' project
Helen Squires (NSW DPI and Cotton CRC)
Helen Squires has been appointed as the Soils Extension Specialist with the Cotton CRC. Helen's project will help growers implement practices to maintain healthy, sustainable and productive soils on irrigated grain and cotton farms.

Helen is based at the Australian Cotton Research Institute (ACRI) near Narrabri and is employed by NSW DPI. She will investigate the interaction between plant growth, soil physical and biological health, and soil productivity. This will lead to the development of more profitable and sustainable farming systems that benefit individual farms and the catchments in which they are located.

The adoption of healthy soil practices will be achieved through collating existing research and experience and extending this knowledge to the cotton and grains community via case studies and demonstration sites. Practical workshops are also planned and will be held in centres ranging from Emerald through to Hillston.

The Cotton Catchment Communities CRC Soil Management program is funded through the Natural Heritage Trust Healthy Soils for Sustainable Farms program administered by Land & Water Australia, with major contributions from the CRDC, GRDC, the Namoi, Border Rivers - Gwydir CMAs, Condamine Alliance and Queensland Murray Darling Committee.

Helen previously worked on mine rehabilitation in the Hunter and property planning involving resource sustainability and degradation issues in Western Australia. She comes from a rural background and has a Bachelor of Science majoring in Soil Science, and is currently studying a Masters of Environmental Management.

If there is a particular soil health issue in your region the healthy soils program is the perfect avenue to help understand the problem and possible management options to address it.

For further information contact Helen Squires on (02) 67991588; 0428686362 or helen.squires@dpi.nsw.gov.au

Cotton Catchment Communities CRC
AGSIP action Salinity & Water Australia
Queensland Government Department of Primary Industries and Fisheries

AG15 Update
- a natural resource management newsletter for irrigated cotton and grains growers

Susan Maas DPI&F Emerald – Phone: 4983 7401; susan.maas@dpi.qld.gov.au
Veronica Chapman DPI&F St George – Phone: 4620 8103 veronica.chapman@dpi.qld.gov.au
Environmental extension officers (Cotton) with DPI&F and the Cotton Catchment Communities CRC
Issue 9 March 2007

Biodiversity of water storages on irrigation farms in the Border Rivers catchment

Susan Lutton (Griffith University and Cotton CRC)

On-farm water storages may represent a significant aquatic habitat within cotton growing areas. Despite this there has been little research into the ecological value of on-farm water storages in Australia.

This project aims to investigate the ecological value of on-farm storages with a focus on the Border Rivers catchment. The objectives are to

- Describe the diversity and abundance of animal communities within on-farm storages;
- Compare the aquatic diversity between on-farm storages and adjacent natural water bodies;
- Identify key environmental variables, such as flow history and physical features of storages, that explain any differences in biodiversity and
- Determine the relative influence of different management practices and habitat availability on storage communities.

A number of sampling activities have been conducted to achieve these aims. Sampling for fish and macroinvertebrates (e.g. water bugs and larvae) has been conducted in natural wetlands and adjacent on-farm storages. Fish samples have also been collected during water harvesting to determine which species are coming through the irrigation pumps from the river.

Some preliminary findings include:

- On-farm storages support a range of fish and macroinvertebrate species
- There was a distinct difference in the relative abundance of species found in the natural water bodies compared to on-farm storages. Bony bream dominated the storages while European carp was the most common species in the natural water bodies.
- A number of fish varying in size from 15 to 205 mm were collected during water harvesting with low numbers of exotic fish coming through the pumping process.

In the coming year sampling will continue and if there is sufficient rainfall in the catchment additional sites will be sampled. For more information contact Susan Lutton on susan.lutton@student.griffith.edu.au

Water quality calculators

There are a number of resources available to help you understand water quality test results.

The Cotton CRC website has a calculator that will determine if water quality is suitable for irrigation based on pH, EC and Sodium Adsorption ratio (SAR). It is also able to calculate these parameters for situations where two sources of water will be combined (eg. groundwater mixed with surface water for irrigation).
www.cotton.pi.csiro.au/CottonLOGIC/WQC/index.aspx

Another useful tool is the SAR calculator. This excel spreadsheet helps to calculate SAR using calcium, magnesium and sodium concentrations that have been determined through laboratory analysis. For a copy of this spreadsheet, or for more information on water quality please contact Susan or Veronica.

Good nutrition management – good for production and the environment (*Doug Sands - DPI&F and Cotton CRC)*

Before you defoliate, it may be a good time to assess your crop health and review your nutrition program. For example patches of your crop that senesced prematurely might be good areas to soil test after harvest.

One of the best tools for assessing nutrient status and checking fertiliser recommendations is the updated version of **NutriLOGIC** now available on the CRC website: (www.cotton.crc.org.au/CottonLOGIC/NutriLOGIC).

NutriLLOGIC allows you to enter test values for all nutrients from soil, petiole or leaf tests and gives recommendations for fertiliser applications.

If you prefer to do your own interpretations, NutriLOGIC contains critical levels of all elements based on the latest research. Using NutirLOGIC can help indicate where soil sodicity and salinity may affect crop performance.

Nitrogen fertiliser recommendations from NutriLOGIC have been fine-tuned to allow for cropping history, soil compaction and crop response to N inputs.

The NutriLOGIC tool has links to information on typical nutrient removal levels for specific yields. This information can help build a fertiliser recommendation when you have no test data. The site also has some concise information on sampling protocols for soil, leaf and petiole testing.

Cotton Catchment Communities CRC

AGSIP action Salinity & Water AUSTRALIA

Queensland Government Department of Primary Industries and Fisheries