

Nature's workforce



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Restore your river country The lifeblood of your workforce

Rivers provide essential ecosystem services by carrying water, nutrients and even seeds to regenerate our landscapes. Leave riparian land uncultivated to trap sediments and nutrients and keep the rivers clean.



Ephemeral Creek near Mungindi with healthy and diverse riparian vegetation.
Adam Henderson

In summary...

The science

Water and nutrients naturally collect in riparian lands and consequently, these areas often support a greater diversity of plants and animals than other areas. Rivers and riparian land can be essential to the lifecycle of these species and provide a wide range of habitats, food, water, microclimates and refuge in times of drought and fire and corridors for wildlife through highly cleared landscapes.

Helpful hints

- Leave natural snags in the stream.
- Control stock access to the river, provide alternative stock water and fence off the river.

- Leave a grassy buffer filter strip between your fields and riverbanks, maintain existing native vegetation and allow natural regeneration to occur.

Benefits to the farmer

- Provide a buffer between agricultural activities and the waterways.
- Control erosion and maintain bank stability.

Are you making a difference?

- Am I adding sediments and nutrients to the river? Map all waterways on your farm and periodically measure the water quality leaving your farm.



Cotton Catchment Communities CRC

What does the science say?

This fact sheet focuses on riparian lands immediately alongside small creeks and rivers, including the riverbank itself.

Research on Australian cotton farms has found stands of river red gums within riparian lands support large numbers of predatory insects and spiders, which have the potential to reduce numbers of pest insects in the cotton crop. Communities of between 14 and 17 microbat species have also been recorded in wooded areas of cotton properties. These bats feed on insects, often consuming their own body weight in insects during one feeding night. The presence of bats also disrupts the normal behaviour of moths, and it is quite likely that the bats reduce pest populations of the *Helicoverpa* spp. Over 300 native birds have been identified on cotton properties, with wooded areas supporting the highest diversity of birds.

Riparian vegetation regulates in-stream life by moderating temperature changes, supplying energy and nutrients (leaves, twigs, fruit and insects) essential to instream food webs and logs and branches that fall into streams and provide habitats for fish and other organisms. Much of the local research on cotton properties in Australia echoes the findings of overseas research.

What can you do about it?

Case studies suggest that with careful management the riparian zone can support a wide variety of native shrubs, trees and fauna.

- Plan your farm layout to keep riparian vegetation intact.
- Leave a grassy buffer filter strip between your fields and riverbanks and allow natural regeneration to occur.
- Leave natural snags in the stream.
- Restrict stock access to the river, provide alternate water source and fence off the river.
- Replant the northern bank first in east-west streams to shade water.

Am I making a difference?

- Map waterways on your farm and identify potential source areas for sediment and nutrient that could be transported into waterways.
- Participate in community based water monitoring program (Waterwatch-Queensland, Streamwatch-NSW).
- Monitor the water quality of your farm run-off using simple water quality testing kits available from the Department of Primary Industries or local NRM body or CMA. You can also use the Water Quality Calculator on the Cotton CRC website <http://tools.cottoncrc.org.au/CottonLOGIC/WQC/index.aspx>.
- Monitor the health of your riparian vegetation using the tools in the publication "Principles for riparian lands management".
- Use the self assessment tools in the publication "Managing Riparian Lands in the Cotton Industry".



The Olive perchlet inhabits vegetated edges of slow flowing waterways around in-stream woody debris like large logs.

Benefits for the cotton grower

- Provide a buffer between agricultural activities and the waterways.
- Control erosion and maintain bank stability.
- Cleaner water through decreased erosion.
- Increased aquatic organisms and therefore numbers of native fish.
- Provides habitats for invertebrate predators/microbats which feed on insect pests.
- Increased property value.

CASE STUDY: Cotton growers working to restore fish habitat in the Namoi River

Cotton growers are working with the Namoi Catchment Management Authority, NSW DPI and Cotton CRC to establish the 'Namoi River Demonstration Reach' from Boggabri to Narrabri in northwest NSW. The project aims to restore fish habitat and bring fish back to the Namoi River.

Collectively, the growers are working towards:

- Managing 26kms of riparian vegetation along the Namoi River and Maules Creek by supplying off-stream watering and fencing along the river to restrict stock access;
- Planting over 3500 trees to establish 10.5km of native riparian vegetation and;
- Realigning large woody debris (snags), bank battering and revegetating 8 river bends to remediate riverbank erosion and restore fish habitat.

Benefits for biodiversity

- Carry nutrients, water and in some instances aid seed dispersal through the landscape.
- Support diverse plant and animal communities often not found anywhere else on the farm.
- Provide a refuge for plants and animals during periods of drought.
- Provides shade and shelter for in-stream life.
- Provides wildlife corridors through a simplified landscape.



A floodway allowed to regenerate on a cotton farm west of Wee Waa. *Yvette Cunningham*

For more information:

Web pages

www.cotton.crc.org.au/

www.greeningaustralia.org.au/resources/resources

www.florabank.org.au

www.namoicma.nsw.gov.au

<http://www.qld.waterwatch.org.au/>

www.streamwatch.org.au

<http://rivers.gov.au/>

<http://tools.cottoncrc.org.au/CottonLOGIC/WQC/index.aspx>

Scientific Publications

Lovett, S. Price, P. & Lovett, J. (2003) Managing Riparian Lands in the Cotton Industry Cotton Research and Development Corporation.

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

Tyson-Donley, T., Hinchliffe, J. & Williams, J. (2005) Native Vegetation and Property Management: A guide to research and resources. Greening Australia Ltd, Yarralumla ACT.

Guides

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

Lintermans, M. 2007, Fishes of the Murray-Darling Basin: An Introductory Guide. MDBC Publication No. 10/07

