



information sheet

River Bank Rehabilitation a Case Study “Kilmarnock”

Stacey Spanswick & Guy Roth

Some Comments from Robyn:

‘Choose a section of the river at a time, do not try to do too much at once’

‘You don’t have to use expensive machinery to restore riverbanks- you can do a lot with plants’

‘Control weeds so they don’t compete with your plantings’

‘Plant trees when there is moisture in the bank, such as from a ‘fresh’ in the river’

‘Use riparian buffers between the riverbank and cotton paddocks as this protects the river from spray drift as well as trapping sediments and nutrients running off the paddocks’

Robyn & John Watson have been cotton growers on the Namoi River near Boggabri for over 20 years. In 1995, they started a program of improving the riparian areas as they were concerned about bank erosion and pesticide contamination of the river. In 2005 Robyn Watson won the NSW Rivercare award for her tireless work



Before rehabilitation



After rehabilitation

Since 1995, the Watson’s have rehabilitated more than 22km of the Namoi River and are still going! However they have not tried to do it all at once. They have done a little every year as conditions allowed concentrating on one section of the river at a time. As part of their river rehabilitation program they have undertaken riparian fencing, willow control, log re-alignment and re-establishing native trees, shrubs and grasses. It is the former of these activities that this information sheet explores in detail.

Fence the area to control stock impact

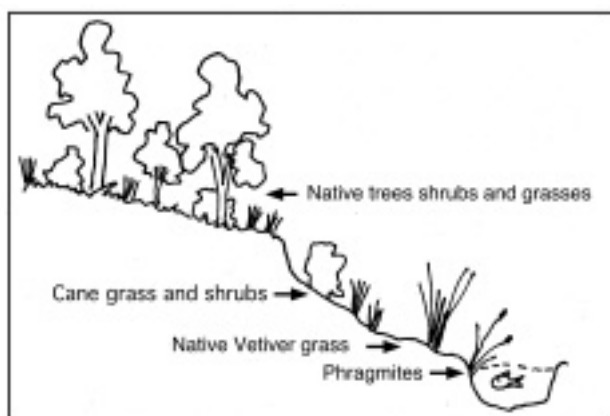
The first step in rehabilitating riverbanks is to control the impact of stock. It is not necessary to permanently exclude animals from riparian lands, but it is important to control their movement and to manage grazing pressure. In some areas, controlling the timing, duration and intensity of stock grazing may be all that is required to enable healthy riparian vegetation to establish.

The Watsons use electric fencing and generally fence 20m back from the bank to reduce damage from falling branches from the big old trees along the bank. In lower areas that flood in moderate flooding, they drive steel posts deep into the soil and use heavy duty single wire (hopefully retrieving wire after flooding). In area where it floods frequently and they deem it in-practical to fence, they conservatively stock where possible.

Where, when and what to plant!

In some cases fencing alone may not be enough, especially where extensive bank erosion already exists or where the area is fragmented from the rest of the landscape leaving very little natural seed sources.

When choosing what to plant use local native species. They are most likely to survive and will ensure continual local genetic viability. Local species can be sourced from local nurseries or like Robyn you can collect seeds from your property and propagate the seeds yourself. One of the keys to Robyn's success has been her observation of natural species in relation to seasonal conditions and water levels, this monitoring led to the discovery of a local species, Native Vetiver Grass, that can withstand constant flooding.



At 'Kilmarnock' Robyn plants Phragmites at water level as they can handle inundation and are great fish habitat, Native Vetiver Grass on the toe of the slope where water levels fluctuate, Cane grass and other natives on the steep bank and native trees and shrubs on the banks.

On the steeper banks longstem tube stock has been very successful. The plants have a stem about 1m long. Using a waterjet, a hole is bored into the bank into which the tree is planted leaving 20cm exposed. This protects the tree from flood and being 80cm in the ground reduces the need for watering, espe-

cially if you plant soon after a 'fresh' in the river. The species Robyn has had most success with are River Red Gum, Casurina & River Cooba.

When planting, plant into moisture. On the slope of the bank plant after a 'fresh' in the river. On the top of the bank if possible pre-rip the site. The trees and shrubs should be planted roughly 3m apart and if possible regularly slash between the rows as this encourages native grasses and reduces weeds.

Control weeds around the trees to reduce competition for light and water. Do not plough the native grasses between rows. Chip out bad weeds like Nagoora Burr and Sesbania, other weeds can provide ground cover while your native grasses get established. Depending on seasonal conditions and how much soil moisture the plants were planted into, they may need continued watering for a few years. The Watsons water their tree stands on the top of the bank using a small submersible pump attached to a watering system. The plants in the bank are generally not watered after planting as they are planted into moisture.

In-stream logs can provide roughage to water flow, fish habitat and help reduce the amount of erosion occurring on the banks. However, in some cases logs can obstruct water flow causing bank erosion. Seek technical advice from your local catchment management authority or the Cotton CRC.

References

Managing riparian lands in the cotton industry
www.cotton.crc.org.au

River Landscape Fact sheet series Land & Water Australia
www.rivers.gov.au

For more information contact the cotton environment extension team on (02) 6799 1500

