



## Stream bank planting guidelines and hints

Vegetation along streams has many important functions. It **BINDS** and **HOLDS THE BANKS TOGETHER** and **REDUCES THE VELOCITY** of water which would otherwise eat away unprotected banks.

Stream bank vegetation has other values too.

Vegetation:

- helps to improve water quality
- provides habitat and food for birds, fish and other wildlife
- provides shade and shelter
- is a source of recreational and scenic amenity.

Different types of vegetation naturally establish and thrive on different parts of the stream bank.

For instance, the plants that naturally grow on the water's edge (e.g. weeping lilly pillys, tea trees, weeping bottle brushes and water gums) are adapted to cope with fluctuating water levels and in periods of high flow will in most cases bend over without damaging banks. In fact, by providing resistance against flowing water the vegetation on the lower bank absorbs energy and protects the bank from scour.

Other plants naturally belong further up the bank profile (e.g. gum trees) and act to bind the soil deeply while others grow all over the banks (e.g. mat rushes) and protect the bank soils with their fibrous root systems.

These factors are important to consider when deciding 'which plant where?' in your revegetation efforts.

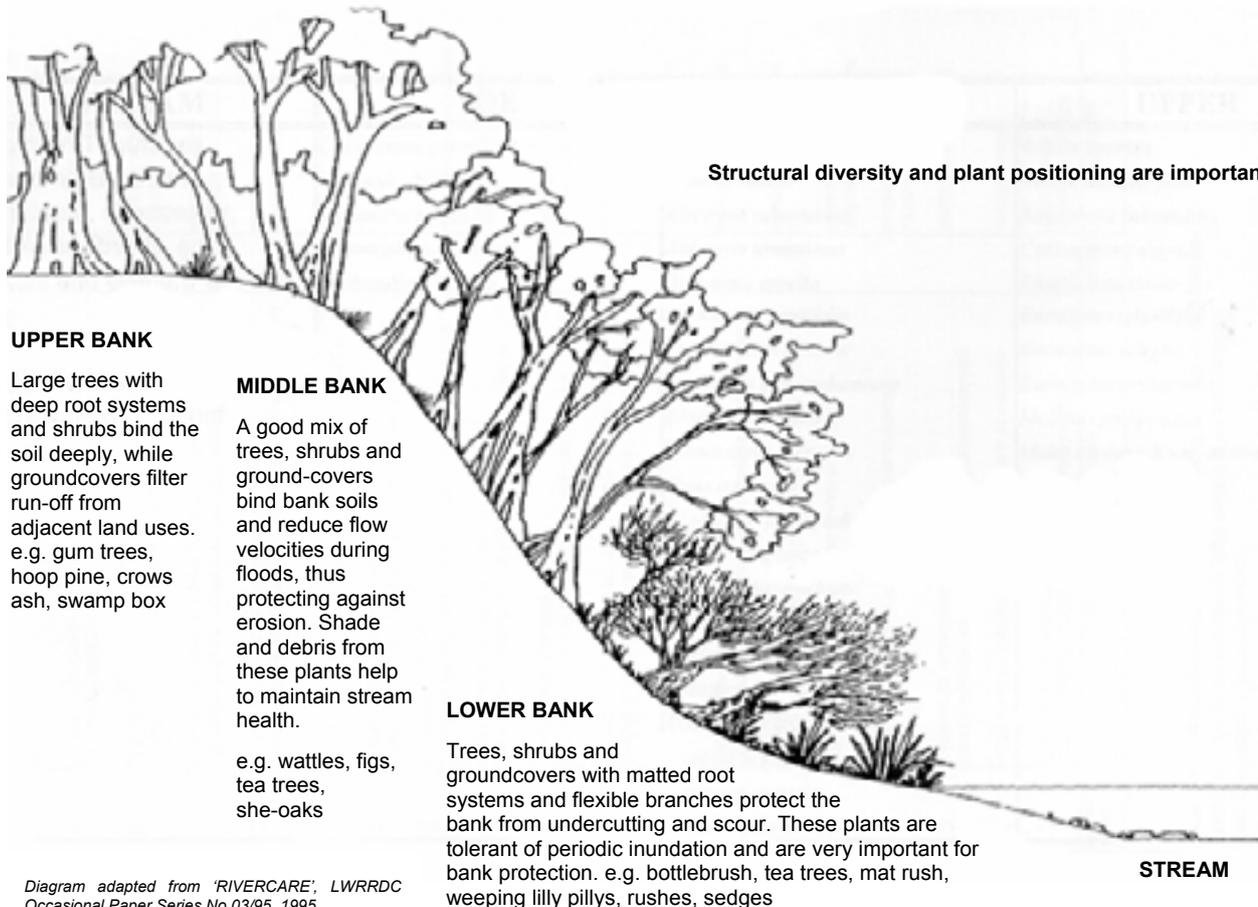


Diagram adapted from 'RIVERCARE', LWRDRC Occasional Paper Series No 03/95, 1995



## A guide to planting on stream banks

Good planning increases your chances of achieving your goals. The following information will help you make your project a success and avoid some of the pitfalls associated with ad hoc planting.

**Choose appropriate species** for the site and plan where on the bank they are to be planted.

Plants can be obtained by:

- collecting local seed and propagating on-farm, which may save on establishment costs, and/or,
- obtaining local native plants from an accredited nursery.

**Plan when to plant.** Aim to plant a few months before the wet season starts and irrigate OR plant towards the end of the wet season. If planting in the dry season then irrigation will be essential.

**Control all competitive factors** at the site by:

- spot spraying grasses with a knockdown herbicide (e.g. Roundup biactive ®).
- stem-injecting woody weeds.
- fencing the site and managing stock access.

**Choose planting method.** See diagrams (below) for some options.

**Follow-up maintenance** will be required to ensure long-term success. Keep seedlings above the height of weeds. Fertilize and irrigate as necessary. Fence repair and replacement planting may be required after flooding.

**Keep good planting records** including photographs, plant survival rates, techniques used, and the effectiveness of these techniques in meeting the desired outcomes. This information will be invaluable for assisting other landholders involved in similar projects.

## Hand planting of potted plants

Source: adapted from Trees and Shrubs, Queensland Department of Primary Industries, 1995

Keep a grass and weed free zone about 1.5 metres in diameter around plants

Fence to allow managed stock access or to exclude

Water well at planting (5-10 litres per plant) and only if necessary after planting

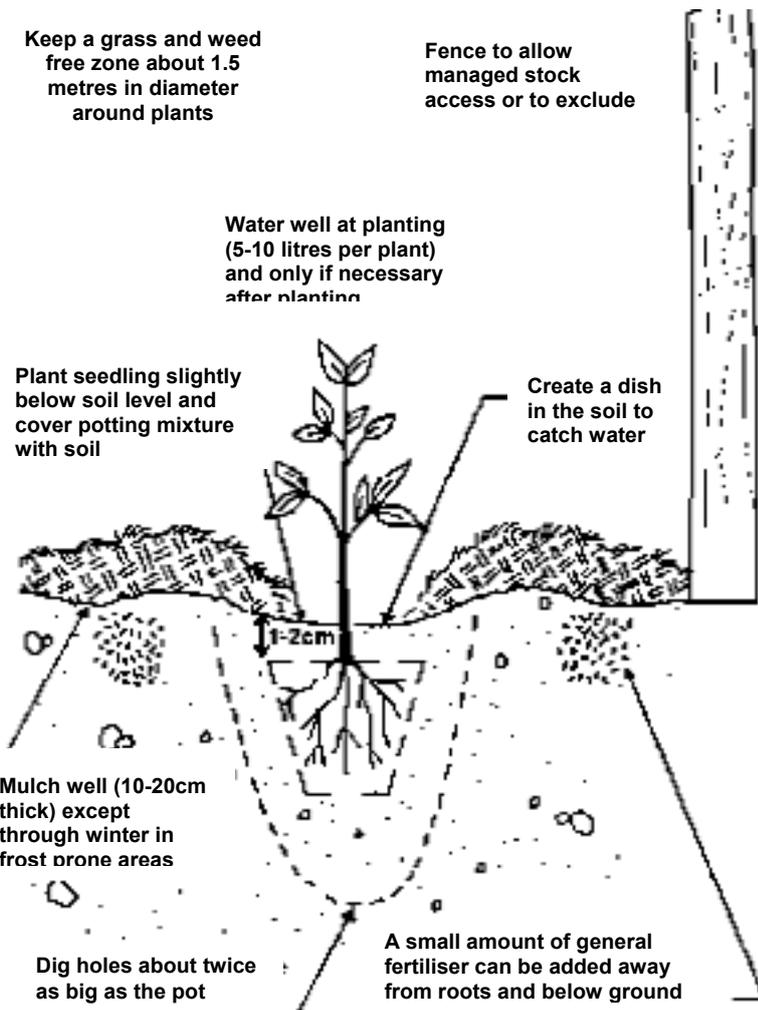
Plant seedling slightly below soil level and cover potting mixture with soil

Create a dish in the soil to catch water

Mulch well (10-20cm thick) except through winter in frost prone areas

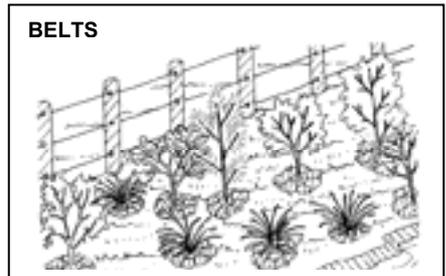
Dig holes about twice as big as the pot

A small amount of general fertiliser can be added away from roots and below ground



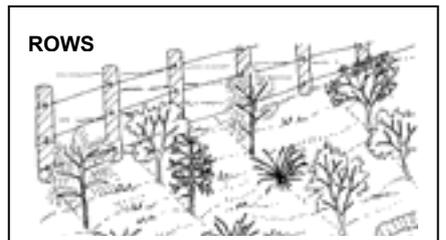
## Planting layouts

### BELTS



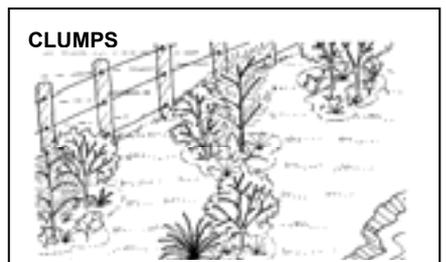
Space plants 1-2m apart. High initial maintenance effort.

### ROWS



Rows should be perpendicular to the direction of flow. Space rows to allow maintenance.

### CLUMPS



Most natural outcome. Relies on some natural regeneration. Plants 1m apart in dense clumps. Easiest maintenance.



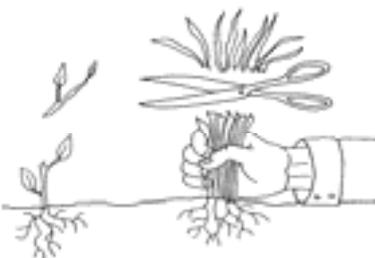
## More options for establishing vegetation on stream banks

### Direct transplant

Seedlings of many species can be directly transplanted from the stream bed to the banks. Alternatively they can be grown on in pots for planting during optimal conditions when the plants are more advanced.



1. Dig plants out carefully



2. Chop tips off to reduce transplant shock



3. If possible, grow on in pots for increased vigour



4. Plant out and water well

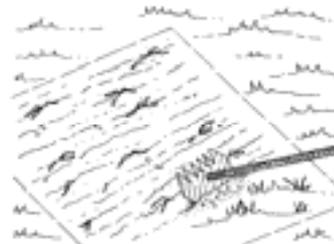
HINT: take a good chunk of soil with the root ball and keep from drying out.

### Direct seeding

Some plants (e.g. wattles, bottlebrush, tea trees, rushes, lilly pillies, gums and sheoaks) can be sown directly onto the site where you want them to grow. This requires viable seed, a well prepared seed bed, and 3-5 days of moist, warm conditions.



1. Eliminate weeds including grasses



2. Prepare the seed bed



3. Mix the seed with moist sand and sow at 2-3 g/m<sup>2</sup>



4. Cover the seed

5. Maintain the site by controlling weeds and thinning germinants if necessary after a year or so.
6. Be prepared to reseed if germination is poor

HINT: collect native seed from your local area.



## Division

Mature clumps of many tufted plants (e.g. mat rushes, sedges) can be dug up, divided and directly transplanted into moist soil or gravel. Alternatively they can be grown on in pots for planting during optimal conditions when the plants are more advanced.



1. Divide clumps with a saw or a mattock



2. If possible, grow on in pots for increased



3. Plant out and water well

HINT: take care not to let the roots dry out and replant as quickly as possible.

## Broadacre planting

Broadacre planting methods utilize machinery for site preparation and planting. These planting methods are most suitable for planting on the floodplain.

Cultivation will usually be beneficial if the soil has been compacted by stock or vehicles. Deep ripping to a depth of at least 30 cm can improve water infiltration and root penetration.

Rip lines should run across the flow path during periods of flood. Alternatively spot cultivation is an option. Be careful not to over-cultivate.

Where bank erosion is present do not cultivate within a distance of twice the height of the eroding bank. This will avoid compounding existing stability problems and reduce the risk of personal injury.

## Natural regeneration

The area to be regenerated needs to be protected from grazing and trampling by stock. Weeds and exotic grasses also need to be controlled to allow seedlings and young plants to develop.

Regeneration can be encouraged through the judicious use of fire and/or through root disturbance which may trigger dormant seed or root materials.

## Further information

For further information on stream bank planting contact your local office of the Department of Natural Resources and Water or the nearest Greening Australia extension officer or Landcare group.

## See also in this series

- R30 Stream bank vegetation is valuable
- R33 Managing stock in and around waterways
- R34 How healthy is your watercourse? Assessing stream bank vegetation.

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R31

For further information phone 13 13 04