

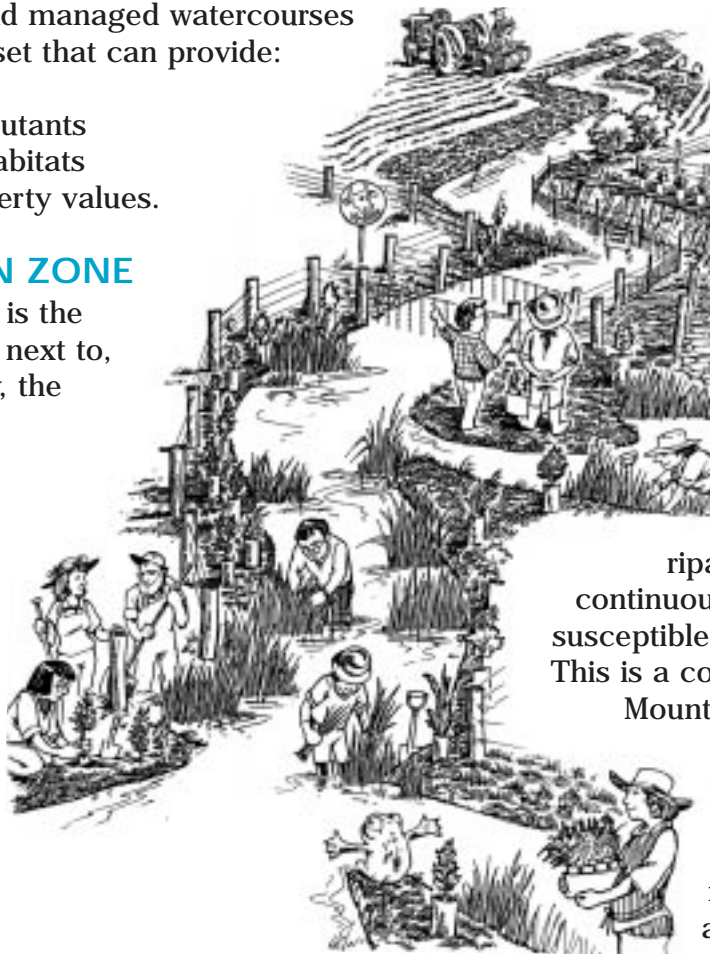
REVEGETATING WATERCOURSES

Well vegetated and managed watercourses are a valuable asset that can provide:

- stable banks
- filtration of pollutants
- good wildlife habitats
- increased property values.

THE RIPARIAN ZONE

The riparian zone is the area immediately next to, and influenced by, the watercourse. It includes aquatic and semi-aquatic plants as well as trees and understorey vegetation. It provides an important link between the aquatic environment and adjoining dryland areas.



along watercourses. Well vegetated stream banks also reduce the speed of water.

When riparian vegetation is removed or severely degraded, the bank and channel become unstable, often with catastrophic results. The most common reason for the clearance of vegetation was for the development of agriculture. After the riparian zone was cleared, continuous stock access has made it susceptible to continued degradation. This is a common problem in the Mount Lofty Ranges.

Filtering incoming pollutants

The buffer zone acts as a filter or trap for sediments and pollutants such as nutrients, pesticides and waste from adjacent land before it enters the watercourse. Ideally, a buffer zone should consist of native grasses, shrubs and trees. However, a buffer zone of pasture grasses can still be an effective filter.

WHY IS IT SO IMPORTANT?

Riparian vegetation plays a key role in protecting the watercourse from damage by activities carried out on adjacent land. Riparian zones are often referred to as 'buffer zones'.

BENEFITS OF HEALTHY RIPARIAN ZONES

There are sound reasons for establishing a vegetated buffer zone around your watercourse.

Controlling erosion

Riparian vegetation plays an important role in controlling erosion by stabilising banks

Providing healthy habitats

Riparian land provides a home for a wide variety of native plants and animals, and also provides a refuge for animals and birds during drought or other environmental stresses. Riparian plants provide food and shelter for both land and water-based creatures.



By providing a well developed understorey and a range of shrub and tree species, the diversity and numbers of species is greatly increased on both the banks, and in the water. Many of the animals and birds living in these zones control pests on farms.

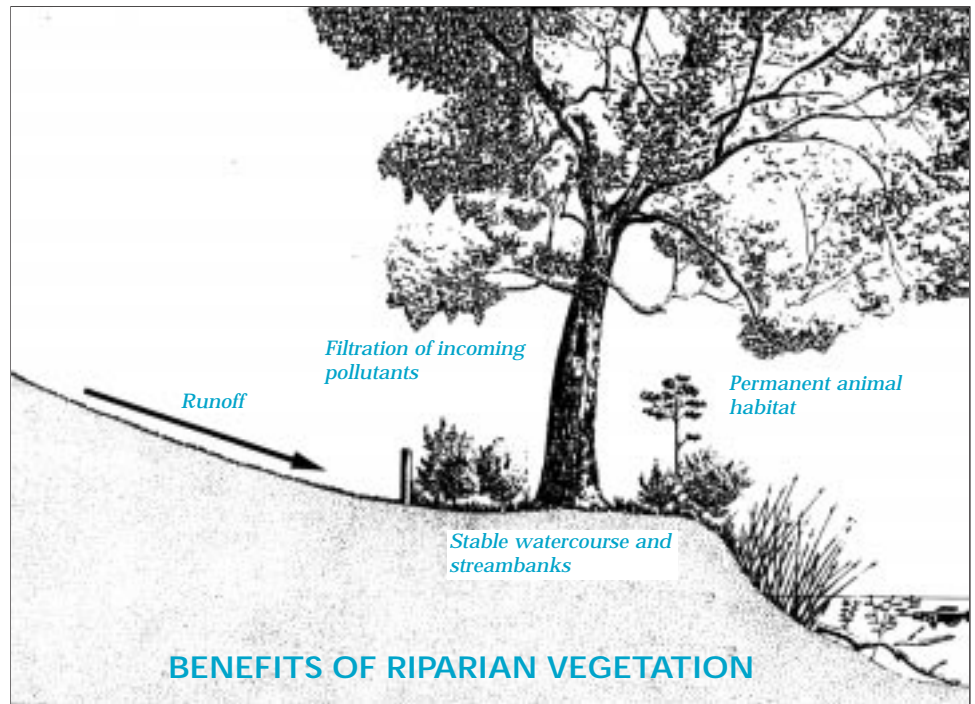
LIFE IN THE RIPARIAN ZONE

Many of the animals that live in streams depend on food from the banks, such as vegetation and insects. Riparian vegetation is very important to the ecology of freshwater animals by providing leaf litter. This leaf litter and the organisms that feed on it are a major food source for many aquatic macroinvertebrates (animals without backbones) such as dragonflies, beetles and daphnia.

Macroinvertebrates, in turn, become important and food source for larger animals such as frogs, fish and birds. Riparian vegetation also attracts insects, which in turn fall into the water and are another important source of food.

Large woody debris from trees (ie bark, twigs and branches) provide habitats for invertebrates. Fish also use woody debris to spawn and to shelter from high water velocity, predators and sunlight.

Another important function of native riparian vegetation is to provide shade which maintains lower water temperatures. Without shade, water temperatures can increase markedly. Different fish species require different water temperatures; high temperatures can kill aquatic animals. Water temperature also plays a role in controlling the lifecycle of invertebrates which live in the stream for all, or part, of their life cycle.



BENEFITS OF RIPARIAN VEGETATION

Riparian vegetation is also an important source of food and shelter for birds and animals. Food is supplied directly from flowering trees and shrubs providing nectar, and indirectly through insect populations which are abundant in well-vegetated riparian areas. Riparian plants form corridors vital for the movement of birds and animals, as they are often the only remnant vegetation in cleared agricultural areas.

For all these reasons, riparian land is a very special area. The condition of this land directly affects the health of watercourses and their value as a water resource. It is essential to keep riparian land as healthy as possible.

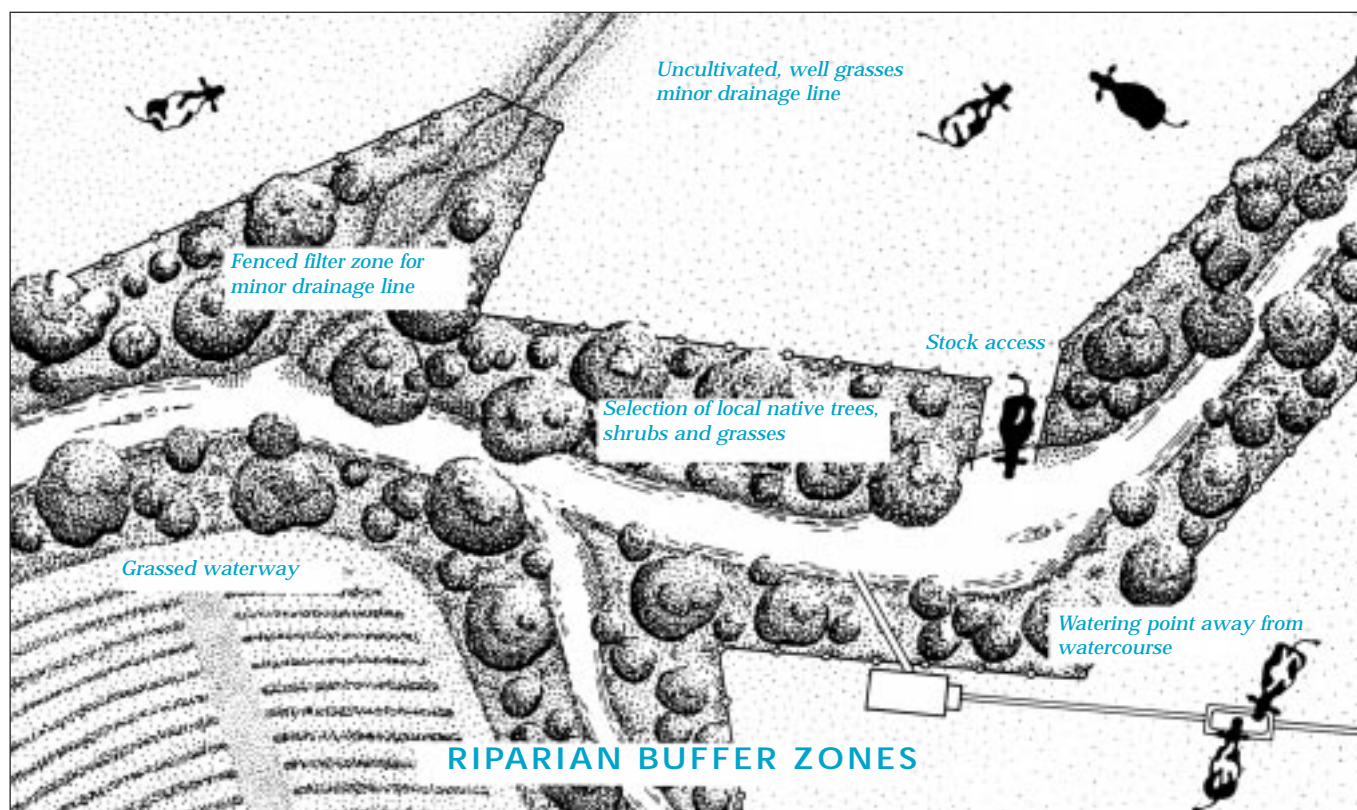
HOW WIDE SHOULD A BUFFER ZONE BE?

Ideally, buffer zones in the Mount Lofty Ranges should be at least 10 metres. However this is not always possible, but even a narrow buffer is better than no buffer at all.

REVEGETATION

To maximise the benefits of a buffer zone, your revegetation program should aim at establishing a full range of local native plants





species including ground covers, grasses, shrubs and trees.

However, depending on the width of available land and the adjoining land uses, a less comprehensive revegetation program may be necessary. At the very least, a good continuous grass cover is necessary.

FENCING

Watercourses that have unrestricted stock access should be fenced. Sheep, horses and particularly cattle, cause extensive damage along streambanks by removing the protective vegetation cover, and trampling and destabilising the soil.

STOCK ACCESS

To successfully revegetate and maintain a watercourse, stock access must be closely controlled, if not excluded. Ideally, stock watering points should be constructed away from the watercourse, particularly steep stream banks. Stock should only be allowed access to streams on the inside of gently sloping bends or at places where erosion controls have been installed.

If grass needs to be reduced to minimise fire risk, it can be either slashed or ‘crash’ grazed for very short periods in late spring.

MINOR DRAINAGE LINES

On many properties, it may not be practical to fence minor drainage lines. However, erosion will be minimised and silt will be encouraged to deposit if drainage lines are not cultivated. The area will be further stabilised if planted to deep rooted grasses.

The filtering effect of drainage lines will be enhanced by fencing the last 20 — 30 metres of these minor drainage lines before they leave your property, or join a larger watercourse. Establishing perennial sedges and rushes is also important.

DUTY OF CARE

Under Section 17 of the *Water Resources Act 1997* landholders have duty of care to take reasonable steps to prevent damage to a watercourse. This includes damage to the bed and banks plus habitats that are dependant upon the watercourse.



SOME COMMON SPECIES FOR WATERCOURSE REVEGETATION IN THE MOUNT LOFTY RANGES

Botanic name	Common name
<i>Acacia myrtifolia</i>	myrtle wattle
<i>Acacia melanoxydon</i>	black wood
<i>Acacia retinoides</i>	wirilda
<i>Acacia verticillata</i>	prickly moses
<i>Callistemon rugulosus</i>	scarlet bottlebrush
<i>Callistemon sieberi</i>	river bottlebrush
<i>Eucalyptus camaldulensis</i>	river red gum
<i>Eucalyptus leucoxydon</i> <i>ssp leucoxydon</i>	SA blue gum
<i>Eucalyptus obliqua</i>	messmate stringybark
<i>Eucalyptus ovata</i>	swamp gum
<i>Eucalyptus viminalis</i> <i>ssp cygnetensis</i>	rough barked manna gum
<i>Grevillea lavandulacea</i>	lavender grevillea
<i>Leptospermum continentale</i>	prickly tea-tree
<i>Leptospermum lanigerum</i>	wooly tea-tree
<i>Leptospermum myrsinoides</i>	heath tea-tree
<i>Melaleuca decussata</i>	cross-leaved myrtle
<i>Viminaria juncea</i>	golden spray

Please check with your Watercourse Management Officer or Revegetation Officer as to the appropriate species for your watercourse.

FURTHER INFORMATION

Information is available on the use of weeping rice grass (*Microlaena stipoides*), windmill grasses (*Chloris spp.*) and spear grasses (*Stipa spp.*) separate from or in addition to kangaroo grass (*Themeda triandra*). More information on woody weed control and other aspects of watercourse management is available in the publication *WATERCOURSE MANAGEMENT: A field guide*, prepared by the Upper River Torrens Landcare Group.

General information on watercourse management is found in the following publications:

WATERCOURSE MANAGEMENT: A field guide, prepared by the Upper River Torrens Landcare Group

Native Plants of Watercourses, Bob Myers

A guide to erosion control measures for small watercourses in the Mount Lofty Ranges, Jason Carter and Ed Collingham

Watercourse processes: A guide for watercourse managers in the Mount Lofty Ranges, Jason Carter.

Electric fencing for sheep and cattle in the Hills, Tungkillo and Harrogate Landcare Groups

Hand direct seeding of native plants, Primary Industries (SA) Factsheet 7/95

Direct seeding of trees and shrubs: a manual for Australian conditions, Greg Dalton, Primary Industries (SA).

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