rivers and water quality

arteries of the Australian environment

LandWater & Wool
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Are my waterways in good condition?

A checklist for assessing river, stream or creek health on farms

When you walk along your stream or creek bank it is often hard to know what to look at to assess whether your waterway is healthy. This quick and easy checklist will help you to work out the health of the streams or creeks running through your property by looking at six features we know affect whether a stream is healthy (in good condition).

1. Management of riparian areas
2. Bank erosion
3. Shade and shelter
4. Water quality
5. Wildlife
6. Weeds and pests

The woolgrower checklist on the following pages provides colour coded pictures that you can use to quickly assess the condition of your stream or creek against each of the six features.

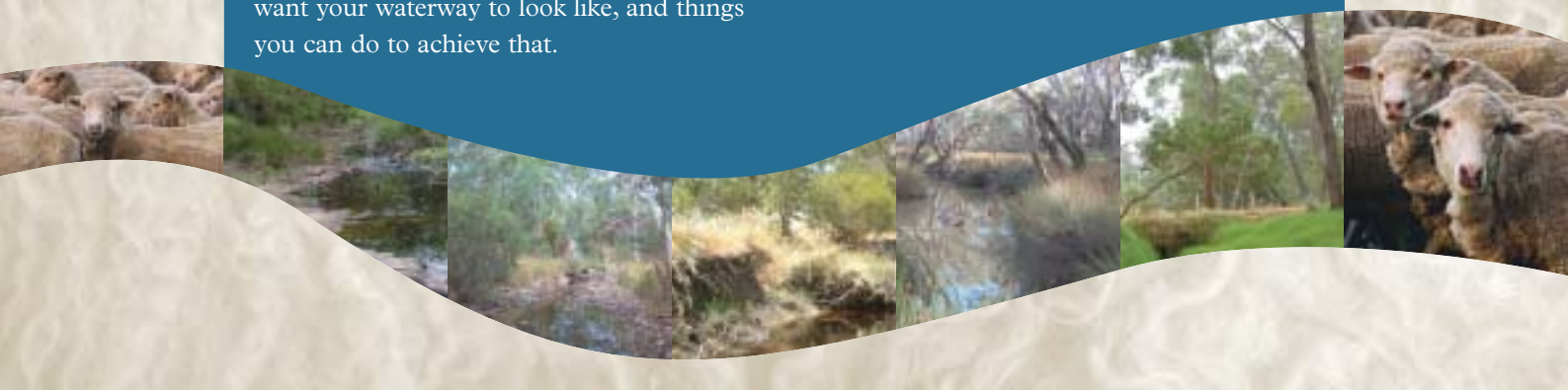
The three categories of green, yellow and red have been developed to reflect the full spectrum of conditions found along many waterways. Hence they are extremes, and it is likely that your waterway's condition will fall somewhere between these categories and will vary along its course. Doing the assessment should help prompt ideas about what you want your waterway to look like, and things you can do to achieve that.

Green	Stream is in good condition and management should aim to maintain it in this state.
Yellow	Stream remains in moderate condition, but some changes in management needed to maintain or enhance it.
Red	Stream is in poor condition and will require significant changes to current management to return it to a healthy state.

After using the checklist

Once you have made your assessment of all six features, it may be the case that your stream is in good condition for two or three of the features, but needs help to improve in other areas.

Take a look at what management options are available to maintain or improve that condition. If you need more information about how to better manage these parts of the farm, turn to the back page where there is a list of free publications, websites and people who can help.



To use the checklist …

… walk along your river, stream or creek bank and at different points assess the six different features of riparian areas. Tick the box underneath the picture and description that best matches your waterway. Once you have made your assessment, use the information provided to help think about some of the opportunities that exist to improve your stream or creek so that it can become 'healthier' and increase its value as a farm asset.

Photocopy this checklist and it can be used at different points of your river, stream or creek.

Increasing production by managing streams and riparian areas as special parts of the farm

MANAGING RIPARIAN AREAS

		
Green (good condition)	**Yellow (moderate condition)**	**Red (poor condition)**
• Off-stream watering system provides clean, uncontaminated water on demand, water points sited to optimise feed utilisation • Grazing of riparian areas managed for optimum pasture composition, feed production and feed utilisation, and to minimise parasite loads • Riparian areas fenced to control stock access, prevent losses and make mustering easier	• Stream used to water stock, but at constructed watering points only, sheep cannot wander along the banks and channel • Rotational grazing used in riparian areas, based on assessment of feed available • Riparian areas partly fenced or other means used to control timing and duration of stock access	• No fencing or other means of controlling stock access to riparian areas and the stream, sheep can use all parts of the stream • Riparian areas set-stocked, or stock have full access year round, riparian areas grazed heavily • Potential for stock losses from bogging or during flood, mustering difficult from deep channels or when stock have wandered onto neighbouring properties

Bank erosion

BANK EROSION

		
Green (good condition)	**Yellow (moderate condition)**	**Red (poor condition)**
• No obvious areas of active erosion along the channel banks, no stock tracks adjacent to or within the channel	• Majority of bank top and sides are well-vegetated, but some signs of bare and actively eroding areas (e.g. stock tracks)	• Much of the banks are bare with obvious active erosion, stock tracks prominent

SHADE AND SHELTER

Shade and shelter

Green (good condition)	Yellow (moderate condition)	Red (poor condition)
• Native riparian vegetation including tall trees retained, sufficiently wide (25–50 metres) for natural regeneration, and replanted where required • Paddock layout and fencing enable riparian areas to be used to provide shelter and shade for newly shorn sheep and at lambing	• Some native riparian vegetation present as a narrow strip, but tree canopy and ground cover reduced (compared with an ungrazed site), little regeneration, and replanting required to fill gaps • Native riparian vegetation of limited use for shade and shelter (narrow and contains gaps)	• Most native riparian vegetation cleared, lost from old age, or by damage. No tall vegetation (above 5 metres) present • Lack of regeneration of native plants due to continuous grazing pressure, no replanting, grass and weeds dominate • Sheep have no ready access to shelter or shade during extreme weather

WATER QUALITY

Water quality

Green (good condition)	Yellow (moderate condition)	Red (poor condition)
• Vigorous riparian pasture acts as a filter to prevent contaminants (e.g. soil, nutrients, animal waste) from upslope reaching the stream • Good vegetation cover along the top and sides of stream banks • Stream water appears clear, no evidence of excessive in-stream algal growth • Stock cannot enter stream channel	• Some bare areas in riparian pastures and risk of soil erosion • Vegetative cover along the stream bank is at least 70%, but some bare soil noticeable • Stream water may appear cloudy after rain but clears in a few days • Some in-stream algal growth and plants present • Stock can access only limited parts of the channel	• Significant areas of bare soil visible within riparian pastures and along top and sides of bank • Stream water is often muddy and remains so even without rain • Obvious algal growth along stream edge as a result of excessive light and/or blocking of the channel by excessive growth of reeds • Stock can access the entire channel length putting it at risk of contamination from urine and dung

WILDLIFE

Wildlife



Green (good condition)	Yellow (moderate condition)	Red (poor condition)
• Riparian areas vegetated with a mix of native species including trees, shrubs and herbs/grasses, and including old trees (nesting hollows) • Native vegetation wide enough to enable natural regeneration (at least 25–50 metres) • Riparian areas connect to other blocks of native vegetation (without gaps)	• Some native vegetation along stream, but with gaps and/or a limited mix of species and vegetation ages — few old trees • Native vegetation in riparian area less than 25 metres wide in places • Riparian vegetation not directly connected to other blocks of native plants, but gaps less than 100 metres	• Little or no native vegetation remaining, riparian areas dominated by grasses, weeds and introduced plants • Riparian areas heavily grazed and not connected to adjacent native vegetation

WEEDS AND PEST ANIMALS

Weeds and pest animals



Green (good condition)	Yellow (moderate condition)	Red (poor condition)
• Vigorous native vegetation in riparian areas at least 25 metres wide • Stock excluded and areas not disturbed by vehicles, fire, etc • Area inspected regularly and weeds removed by hand or spot spraying • Active management applied to prevent pest animals establishing, and to reduce fire risk	• Some gaps present in native vegetation, but replanting used to reduce risk of weed invasion • Access by stock carefully managed to ensure minimal damage from grazing • Some weeds present but numbers controlled by grazing and/or targeted spraying • Active management applied to prevent pest animals establishing, and to reduce fire risk	• Little native vegetation remains and weeds have invaded riparian areas • No control of stock access, heavy grazing and nutrients from urine and dung promote weed growth • Little or no control of weeds or of pest animals. Fire a low risk given lack of flammable vegetation

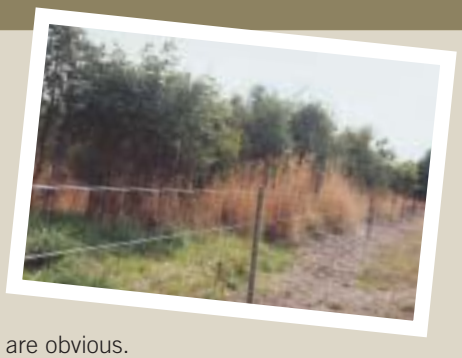
What other landholders say about managing waterways on their farm

The following case studies are of woolgrowers who have protected and restored their streams or creeks. Read about how they have gained environmental, social and economic benefits by managing these parts of the farm as different, but integrated, parts of their overall farming enterprise.

Photo Currie Communications.

Our experience

Mark and Anna Gubbins, 'Coolana', Victoria



"We no longer see these fenced off areas as wasted country. They are a real asset. Some people question the value of the trees and revegetation, but I can't remember the last time we had any problems with stock during cold snaps and high winds. The benefits of shelter are obvious. It cuts wind velocity and provides a haven for lambing and for shorn sheep. In fact all our shorn sheep are moved off shears into sheltered paddocks as part of standard practice."

Photo Kylie Nichols.

Our experience

John and Sue Holt, 'Burn Brae', South Australia

"Fencing off the creek areas has provided a huge range of benefits including reduced erosion, increased water quality, improved creek bank stability, weed management and increased biodiversity. Revegetation of these areas has also provided effective shelter for livestock, particularly lambing ewes, as fencing following the creek line has produced what we call 'rooms', that provide protection from the elements no matter which way the wind is blowing. We believe the riparian land acts as an environmental corridor for wildlife and are encouraged by the number of bird species returning to our farm to live in these areas."

Photo Currie Communications.

Our experience

Richard and Jenny Weatherley, 'Connewarran', Victoria

"River and waterway management should be a part of the whole farm ecosystem and not a separate issue. For example, we had noted a rise in the salinity of the river water, so to water the stock efficiently and provide clean water, the best thing we could do was to shut them away from the river altogether and provide water from another source. There is a strong correlation between water quality and livestock productivity. But while the river is not used for stock watering any more, it's a vital ingredient to the property's increase in overall biodiversity."

Turn over for where you can get more information on managing rivers, streams and creeks on your farm. ——>

Want to know more?

Having used this checklist on your farm's waterways and read what other woolgrowers have to say, maybe you want to know more. The good news is that Land, Water & Wool, a joint initiative between Australian Wool Innovation and Land & Water Australia is here to help. It integrates natural resources management with sustainable wool production. The Program has invested in research, guidelines and people to help woolgrowers gain economic, environmental and social benefits on their farm.

Take a look at some of the products shown here to see if they meet your needs, and call CanPrint Communications to order your free copies. If you would like to know more about the research that these products are based on take a look at the landwaterwool.gov.au website, or you can download the products advertised here.

The *Wool Industry River Management Guide* brings together the latest science and recommended management practices for riparian areas within the context of a commercial wool growing property. The Guides are available for the high rainfall regions (above 600 mm) and sheep/wheat regions (300–600 mm) of Australia. Each book has over 200 full-colour pages.

High rainfall zone: product code PX050951
Sheep/wheat zone: product code PX050952

Managing rivers, streams and creeks: A woolgrowers guide — a summary of the key recommendations from the Guides and provides a friendly introduction to the river and riparian management issues on farm.
Product code PX051003

River Insights — a publication featuring the stories of ten woolgrowers and what has motivated them to manage their rivers, creeks and streams in ways that make both economic and environmental sense.
Product code PK050950

These products are available from CanPrint Communications on 1800 776 616 in hard copy or can be downloaded from

www.landwaterwool.gov.au
or **www.rivers.gov.au**

Land, Water & Wool comprises seven areas of research and development based around the major issues facing sustainable wool production:

- Soil Salinity
- Climate Risk Management
- Rivers and Water Quality
- Biodiversity
- Native Pastures
- Grazing the Rangelands
- Future Woolscapes

For more information about the projects being funded in these areas, as well as the three regional projects being funded through Land, Water & Wool — Rivers and Water Quality go to the website

www.landwaterwool.gov.au

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