

# Managing riparian land: benefits to dairy farmers

Over the past 20 years, catchment management authorities (CMAs) and government have worked with landholders to manage riparian land. Typical management activities have included fencing, revegetation, provision of off-stream stock watering infrastructure and weed and pest animal management.

Riparian land with native vegetation in good condition is important for waterway health. It provides habitat for plants and animals, improves water quality, stabilises stream banks, supplies food for fish and other in-stream organisms and provides a corridor for the movement of native plants and animals.

This fact sheet presents the direct benefits to dairy farmers from managing riparian land.

## What is riparian land?

Land that adjoins rivers, creeks, estuaries, lakes and wetlands is known as riparian land (often called 'frontage'). Riparian land is often the only remaining area of remnant vegetation in the landscape.

## What are the benefits of riparian works to dairy farmers?

On a personal and property scale, managing riparian land has a number of direct benefits to dairy farmers that are supported by sound evidence:

- production benefits e.g. reduced time mustering cattle, increased milk production, reduced risk to animal health and performance
- improved property prices e.g. adding market value from native vegetation
- landholder wellbeing e.g. personal pride and a 'feel good factor'.

### Reduced time mustering cattle

A number of independent Australian studies have shown that fencing riparian land can make it easier to muster stock, which in turn can reduce farm costs.



Fenced and revegetated tributary of the Latrobe River.  
Photo: West Gippsland CMA

A study of riparian restoration on the Mary River in Queensland concluded that the amount of time saved in mustering, while quite variable, is most likely to be more important on dairy farms because cows are mustered twice a day<sup>1</sup>. The time saved on dairy farms was estimated to be up to 20 minutes per day.

This finding is supported by a more recent Queensland case study, which found that the time taken to muster cattle from the river was reduced by about 60 minutes per day, saving the landholder around \$2,800 per year in labour costs<sup>2</sup>.

Further evidence comes from a Victorian study of Crown frontage licence holders, where 50% of survey respondents considered fencing their waterway to be an important to very important productivity benefit in managing livestock<sup>3</sup>.

### Reduced risks to animal health

If the major source of water for dairy cattle is a natural waterway, there can be a risk of contracting mastitis. However, this risk is dependent on a number of factors:

- are the cattle entering the water body?
- is the water deep enough to contaminate their teats?
- how contaminated is the waterway (during the hot months of summer the waterway may harbor several types of mastitis-causing microorganisms)?

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While there is a large body of research on the causes and recommended treatment of mastitis, there are few studies that clearly demonstrate that excluding dairy cows from waterways through fencing and providing off-stream watering reduce the incidence of mastitis.

However, a reduction in disease is supported by anecdotal farmer feedback. For example, interviews with cattle producers in the USA noted that “Many producers commented on general herd health improvements that resulted from implementing their stream exclusion systems. Most producers who provided an alternative source of water for their livestock saw a decrease in incidence of disease. Common diseases that declined after stream exclusion included foot rot, pink eye, scours and mastitis”<sup>4</sup>.

In conclusion, fencing off the waterway and providing a clean alternative water source will reduce the risk factors known to cause mastitis.



**Uncontrolled cattle access to the Tambo River. Photo: East Gippsland CMA**

## Increased milk production

When a waterway is fenced off, direct stock access to water is often lost. However, a number of off-stream stock watering options are typically employed that provide a safer, cleaner and more reliable source of drinking water.

For example, troughs provide easy stock access to water that is less likely to contain pathogens than water consumed directly from waterways.

Greater access to higher quality water means that livestock will drink more of it and there is strong evidence from the USA that the more water dairy cattle consume, the more they eat and hence the more milk they produce<sup>5,6,7,8,9,10</sup>.

## Shelter belts

The evidence of the benefits of shelter belts to stock wellbeing and production is well documented.

A report prepared for the Basalt to Bay Landcare Network in south west Victoria provides summaries of numerous studies demonstrating many different ways in which shelter belts provide landholders with economic benefit<sup>11</sup>. For example, Dairy Australia states that the use of trees can reduce heat load (in summer) in cows by 50% and is more cost-effective than using electricity-driven sprinklers and fans.

## Improved property prices

Evidence from several Australian studies based on farm sales suggests that well managed riparian frontages can improve the market value of a rural property.

In one report, evidence from real estate agents suggests that well managed riparian frontages can add up to 10% of the market value of a rural property<sup>12</sup>.

In Victoria, a number of recent studies have found that:

- there is an optimal proportion of native vegetation influencing positive property values - about 40%
- private benefits of native vegetation are greater per unit area on small and medium-sized farms (both commercial and lifestyle) and lesser on large production-oriented farms (leading to property value increases from 5 to 16% with the optimum amount of native vegetation)
- location characteristics are important determinants of property values e.g. proximity to lakes, rivers and parks for recreational opportunities<sup>13,14,15,16</sup>.

## Improved aesthetics and landholder wellbeing

Many landholders are motivated to carry out riparian works for aesthetic and environmental reasons, including the peace and beauty of having native vegetation and wildlife on the farm with some recreational benefits, such as fishing, boating and relaxing.

A Victorian riparian works evaluation report included survey results which showed that improving the aesthetic value of the riparian land was one of the top three responses given by landholders in response to why they undertook riparian works<sup>18</sup>. Other top reasons were to improve the health of the waterway and to improve overall environmental outcomes across the property.

This finding is supported by a more recent Victorian survey of landholders with Crown water frontage licences which found that the most important benefits from managing riparian land were non-commercial, e.g. creation of habitat for native birds, attractive and aesthetic frontages<sup>3</sup>.

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These studies also showed that regardless of a landholder's initial motivation for managing riparian land, a key outcome is often a more aesthetically pleasing farm which is highly valued by the landholder.

Further evidence can be found from the USA, where a study of 268 farmers of the mid-western watershed of Michigan, revealed that landholders were more likely to manage riparian land based on their attachment to land and their desire to conserve land for future generations rather than a motivator of receiving economic compensation<sup>17</sup>.



Wannon River, SW Victoria. Pre-riparian works (above) and fifteen years after riparian works (below). Photos: Glenelg Hopkins CMA

## Want to manage your riparian land?

More information about riparian management programs in your region can be obtained from your CMA.

East Gippsland CMA	5152 0600
West Gippsland CMA	1300 094 262
Corangamite CMA	5232 9100
Glenelg Hopkins CMA	5571 2526
Wimmera CMA	5382 1544
Mallee CMA	5051 4377
North Central CMA	5448 7124
Goulburn Broken CMA	5822 7700
North East CMA	1300 216 513
Melbourne Water*	131 722

\* Melbourne Water is the waterway manager for the Port Phillip region

## Further information

### Fact sheet series

This is one in a series of fact sheets on the benefits for landholders in managing riparian land. Other fact sheets include a summary as well as fact sheets covering specific benefits to:

- sheep graziers
- beef cattle farmers
- croppers.

The fact sheet series has been developed from a longer report investigating the benefits to landholders of undertaking riparian work<sup>19</sup>. The fact sheets and full report can be found in the [riparian land](#) section on the DELWP website.

### Riparian land

More information about managing riparian land can be found on the DELWP website at: [Riparian land](#) and [Crown land leases, licences and permits](#).

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## References

1. Sillar Associates, 1998. Cost Benefit Study of Riparian Restoration on the Mary River. The Mary River Catchment Coordinating Committee.
2. Queensland Government, 2013. Managing wetlands in intensive agricultural systems.
3. Aither, 2014. DEPI Crown Frontages Landholder Survey, A report prepared for the Victorian Department of Environment and Primary Industries.
4. Zeckoski, R.W., Benham, B.L., Lunsford, C., 2007. Water quality and economic benefits of livestock exclusion from streams: experiences from Virginia, in: *Watershed Management to Meet Water Quality Standards and TMDLS (Total Maximum Daily Load) Proceedings of the 10-14 March 2007, San Antonio, Texas. American Society of Agricultural and Biological Engineers*, p. 592.
5. Beede, D.K., 2005. The most essential nutrient: Water, in: *Proceedings of the 7th Western Dairy Management Conference*.
6. Ensley, S.M., 2000. Relationships of drinking water quality to production and reproduction in dairy herds.
7. Landefeld, M., Bettinger, J., 2002. Water effects on livestock performance. Ohio State University Agriculture and Natural Resources. Report ANR-13-02. Columbus, Ohio.
8. Little, W., Sansom, B.F., Manston, R., Allen, W.M., 1984. Importance of water for the health and productivity of the dairy cow. *Res. Vet. Sci.* 37, 283–289.
9. Looper, M., Waldner, D., 2007. Water for dairy cattle. Division of Agricultural Sciences and Natural Resources, Oklahoma State University.
10. Umar, S., Munir, M.T., Azeem, T., Ali, S., Umar, W., Rehman, A., Shah, M.A., 2014. Effects of water quality on productivity and performance of livestock.
11. Austin, P., 2014. The economic benefits of native shelter belts. Basalt to Bay Landcare Network.
12. Price, P., Lovett, S., Lovett, J., 2005. Wool Industry River Management Guide: High rainfall zones including tableland areas. Land & Water Australia.
13. Polyakov, M., Pannell, D.J., Pandit, R., Tapsuwan, S., Park, G., 2014. Capitalized amenity value of native vegetation in a multifunctional rural landscape. *Am. J. Agric. Econ.* aau053.
14. Polyakov, M., Pannell, D.J., Pandit, R., Tapsuwan, S., Park, G., 2012. Valuing environmental assets on rural lifestyle properties, Working Paper 1210. The University of Western Australia.
15. Polyakov, M., Pannell, D.J., Pandit, R., Tapsuwan, S., Park, G., others, 2013. Valuing environmental assets on rural lifestyle properties. *Agric. Resour. Econ. Rev.* 42, 159–175.
16. Walpole, S.C., Lockwood, M., Miles, C.A., 1998. Influence of remnant native vegetation on property sale price. Johnstone Centre, Charles Sturt University.
17. Ede, F., 2011. Riparian Works Evaluation Project: Final Report. Department of Primary Industries, Victoria, Australia.
18. Ryan, R.L., Erickson, D.L., De Young, R., 2003. Farmers' motivations for adopting conservation practices along riparian zones in a mid-western agricultural watershed. *J. Environ. Plan. Manag.* 46, 19–37.
19. Evidentiary Pty. Ltd, 2016. What are the benefits to landholders of adopting riparian work? A summary of evidence and technical information.

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