PRACTICALITIES

RIPARIAN RESTORATION IMPROVES WHOLE FARM PRODUCTIVITY

by Alice Kammann

ALLOWING unrestricted stock access to rivers and creeks for drinking water may have environmental consequences including erosion of the riverbank, sedimentation, eutrophication, turbidity and damage to native vegetation.

By controlling and managing stock access to water courses, native vegetation will regenerate and stabilise the soil along the river's edge. Vegetation is able to filter surface water runoff to reduce the nutrients, soil and organic debris that may enter our waterways. Native vegetation also provides a habitat and a linking corridor for wildlife along water courses.

Trevor Sprigg is one of six farmers in the middle Blackwood Catchment participating in a demonstration of restoring farm riparian areas, and evaluating the costs and benefits of such work. The riparian area is simply the land on the edge of a watercourse that is regularly inundated during flood events.

Trevor said that it has always been a concern to see the degradation of the river bank, especially when compared to the thick vegetation in the reserve on the other side of the river. He realised that unless something was done, over a period of time the existing trees would fall into the river without new seedlings to replace them, causing more soil erosion and sedimentation of the river.

Two years ago, Trevor fenced off one kilometer of riparian land 20m to 50m back from the edge of the Blackwood River. He was initially reticent about fencing off the river bank because the Blackwood River was his sole water source on the property. It was unfeasible to build a dam because of his sandy and leaky soils, so Trevor decided to pump water from the river to a holding tank on a high point of the farm.. Water can then be gravity fed to strategically placed water troughs around the property.

Trevor Sprigg (second from left) demonstrating the solar pump and riparian restoration project to other farmers at a fieldday.

After investigating various types of pumps and power sources, a solar powered pump from B & W Solar was chosen. The power obtained from the sun by the solar panels is maximised by a battery operated tracking frame. The jack pump has the advantages of being made from plastic components which are non-corrosive in saline water. It runs very quietly making only a soft purring noise, and with its double acting style, it produces a steady flow of water. The solar pump is most effective in the summer months when more water is needed. Trevor has been pleased with the output from the pump with flow into the tank at a 30m head of about 10 litres per minute and an average of 5000 litres per day.

The Blackwood Catchment Coordinating Group through LWRRDC (Land and Water Resource Research and Development Corporation), have been monitoring the results of the riparian restoration along with Neil Pettit who is studying the site as part of his PhD in riparian restoration. Initial monitoring has indicated that *Eucalyptus rudis* and *Melaleuca rhaphiophylla* are regenerating well along the water's edge and in places where soil is exposed. Neil has found that the soil seedbank consists mostly of *E. rudis*, *M. rhaphiophylla* and various introduced annual grasses. Trevor is considering various revegetation options to encourage more trees and shrubs to cover the riparian area.

The pump.

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An economic analysis of the restoration work was done on the site by Agriculture WA to evaluate the costs and benefits of such restoration work. The analysis showed that profitability over the whole farm is likely to increase as a result of the restoration work. With the new efficient stock watering system distributing water across the property, the stocking rate on the farm is likely to increase from 8.22 dse/ha to 10ds/ha. An increase of only 0.79dse/ha will be sufficient to recover the costs of lost production from the riparian area, and to cover the establishment and maintenance costs over a 20 year period. Any increase above 0.79dse/ha will result in improved productivity of the farm.

This Blackwood project is demonstrating that restricting stock access to riparian areas and providing alternative watering points for stock not only provides environmental benefits, but can improve whole farm productivity.

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