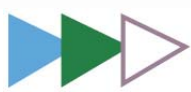


lippia
case study



Natural regeneration

Management technique: relieve grazing pressure and allow natural regeneration

Property name: St Ruth's Reserve
Location: 10km south of Dalby
Land trustees: Wambo Shire council

- Key points**
- State-owned 150 ha (370 acres) timbered area on the Condamine River
 - Black clay soil
 - Heavy infestation of lippia
 - Cessation of grazing led to reduction in lippia and regeneration of native trees and grasses



Above: St Ruth's Reserve outlined in red

background

St Ruth's Reserve is a State owned reserve on the Condamine River approximately 10 km south of Dalby. It is well timbered with river red gums (*Eucalyptus camaldulensis*), Queensland blue gums (*Eucalyptus tereticornis*), poplar box (*Eucalyptus populnea*) and myall (*Acacia pendula*) being the dominant species. The area was formerly held under a grazing lease and was used to run cattle.

effects of lippia

By the late 1990's the reserve was becoming heavily degraded with erosion along gullies and the river bank and experiencing dieback of trees. A groundcover monoculture of Lippia (*Phyla canescans*) was contributing to displacement of native grasses. The area demonstrated reduced production, ecological and environmental value.

control strategies

1. Relieving grazing pressures

In 1999 the Department of Natural Resources responded to the condition of the area by revoking the grazing lease. The area was then made into a state recreational reserve and Wambo Shire Council was appointed trustee. Since then, the site has not been grazed and observations have been made regarding the natural rate of regeneration.

2. Small scale trials

In 2001, the Department carried out a range of small scale trials to determine useful management strategies for the area. Initially, one side of the reserve was burnt with a cool fire. Another trial looked at some chemical control of the reserve, while a further trial involved the planting of river red gums, Queensland blue gums and she-oaks over several small plots.



Above: St Ruth's Reserve in 2000, almost one year after the grazing lease was revoked - only isolated tufts of grass amongst a mat of Lippia.



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the outcome

Five years after the cessation of grazing, the condition of the property has improved. Many native grass species have regenerated and provide good ground cover. Natural regeneration of the Queensland blue gums, poplar box and myall trees have also occurred.

Discontinuation of the small scale trials lessened the overall, observable impact of the measures. However, in the area where trees were planted, there is a reduced density of Lippia associated with the soil disturbance. Lippia is still present throughout the reserve, however it now largely exists as an understorey to the grasses. Some heavy patches of Lippia still remain around the base of trees and in some gullies.



Above: 2000 - Lippia dominates the ground cover.



Above: 2004 - Queensland blue grass dominates the site with Lippia persisting as an understorey.

Craig Hunter, Land Protection Officer based in Dalby, regularly monitors the site. Craig believes the native grasses and trees will continue to germinate, re-establish and increase in density in many areas, but that Lippia will always be present to some degree as an understorey. Further, "If grazing was introduced back into the site today it would have to be carefully monitored to ensure Lippia did not begin to dominate the landscape."

Some of the main groundcover species to have regenerated:

- Queensland Blue grass (*Dicanthium sericeum*)
- Forest bluegrass (*Bothriochloa bladhii*)
- Warrego summer grass (*Paspaladium jubiflorum*)
- joy weed (*Alternanthera denticulate*)
- nardoo (*Marsilea drummondii*)

the future

The Department of Natural Resources plans to keep the area as a state owned reserve and leave it open for use as a study site for universities and other research bodies. There are no plans to lease the site for grazing again.

Controlling the Lippia at this site has not yet attracted a specific action plan beyond allowing for regeneration of native grasses in the absence of grazing pressures. As the grasses and other vegetation continue to increase in density, Craig believes that development of a fire management strategy would be appropriate. Craig says, "I think re-introducing fire back into the ecosystem would really help the grass and other vegetation establish effectively and it would also be interesting to see how the Lippia reacts. I believe the occasional well timed burn should become part of the management of St Ruth's."

Craig believes that if the site was left to itself, it could take a very long time (at least 10-15 years) for the Lippia to reduce, based on its current rate of displacement. He also believes that while Lippia continues as an understorey, the removal of grazing alone may not be the answer. He maintains that integrated management by using other methods, such as herbicides and fire, may be required.

Photos and satellite imagery courtesy of Craig Hunter

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