

2002/Q11



Producer Research Support

Fire Management for Profit

Seventy Mile Range LandCare Group



Rubber vine can be controlled effectively by fire if there is sufficient grass available to fuel a good vine burn-off. This project has shown that grass can be maintained after the fire, preserving valuable pasture for stock.

The project

The Seventy Mile Range Landcare Group set out to increase the productivity of rubber vine infested riparian systems by reducing weed infestations and fostering palatable and productive grasses in the riparian zones.

It has been documented both in this region, and elsewhere in North Queensland, that fire has a significant effect on rubber vine populations. This is the first trial in this region designed to quarantine and preserve valuable pasture to increase fuel loads so there can be a follow up fire. It is also the first trial to consider improving pasture quality by sowing exotic species following fires.

Objectives

1. Demonstrate a technique to increase the productivity of rubber vine infested riparian systems; and
2. Determine how more effective use of fire in riparian zones can improve capacity to control weeds and facilitate pasture improvement with exotic grasses.

What was done

The Seventy Mile Range Landcare group fenced approximately two kilometres of a rubber vine infested creek to allow for the build up of grass, and enable more effective burning of the rubber vine.

The group used photographs and site monitoring to inform decisions on rubber vine population and fuel load.

Photographs were taken at monitoring sites before the first burn took place. The trial site was first burnt in January 2003, with exotic pasture seed (Sabi grass and Gatton Panic) broadcast following the onset of rain in February 2003. More photographs were taken after the first burn and CSIRO helped the group to assess the effectiveness of the initial burn by evaluating rubber vine populations.

Rainfall in 2003 and 2004 was below average, but the trial site remained secured from cattle, allowing the preservation of grass for adequate fuel loads throughout 2003 and for a burn in mid November 2004. During the February to November 2004 period, the grass fuel load was measured at 2,675 kilograms per hectare, averaged across the entire site.

After the second fire, further photographs were taken and CSIRO again helped the group to record and analyse data. The data was recorded as counts of plants from ten sampling sites, each with a ten metre diameter.

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What happened?

Rubber Vine

Rubber vine plant numbers were significantly reduced at all sampling sites, with three sites completely eradicating rubber vine, and six sites eradicating all towers. All sites showed a continuing reduction in stems less than two metres after both fires, while towers above two metres showed a dramatic initial reduction but maintained populations from after the first fire to after the second. This may have been due to the fuel load not being in the same area of the towers, and not being able to ignite the remaining towers.

Exotic Grasses

Sabi grass (*Urochloa mosambicensis*) and Gatton Panic (*Panicum maximum*) were broadcast following the first fire. Populations of both species increased, with Sabi grass found in significant proportions at all sites, and Gatton Panic found at 50 percent of sites.

Populations of both these exotic species are now permanently established and it is anticipated that these species will self seed and increase the productivity of the surrounding area.

Discussion

The preservation of grass for a second fire had a significant impact on rubber vine numbers compared with just one fire, with negligible impact on the improved grass species.

Although this trial was performed under drought conditions, the results are pleasing and have added to the group's expertise in reducing weed infestation and being able to increase palatable and productive grasses in riparian zones.

On the trial site, all remnant rubber vines will be eradicated over time, with clean up using chemical control. Eradication of the infestation would not have been possible without the use of fire as a primary control mechanism.

This trial did not attempt to analyse the costs and benefits of the use of fire for the control of rubber vine, or the introduction of exotic grasses into a pasture system, but it would certainly be a worthwhile future exercise.