

Creating a win-win situation by thinning cypress pine

"I like being the leader of our Maranoa River Landcare group, I reckon Landcare is a great organisation, with a lot of benefits. There is a lot of knowledge there and people can learn through it. I have had a lot of fun and they are a great group of people."

Despite the trials only just beginning, Merv is confident that these early observations are encouraging. *"Initially the investment in the thinning is expensive and very labour intensive but hopefully the long term gain will outweigh it, the gains through the biodiversity and grass species coming back."*

Where to from here?

Buoyed by the results seen so far, Merv plans to continue thinning across two paddocks, on an area totalling about 325 hectares.

On a broader scale, the Phillips family have plans to continue working with Landcare and the Queensland Murray-Darling Committee (QMDC) to work on making their enterprise more sustainable and efficient. Merv says the long term goal is to make sure the property can stay in the family.

"We hope we can do this through rotational grazing, fencing to soil and land type, spreading the grazing pressure more evenly so that every part of the place gets a chance to recover, so our grass species get a chance to recover and seed and we get future generations in our grasses," Merv says.

During the development of these thinning trials and also in past projects, Merv and the Phillips family have developed relationships with their neighbours and Landcare support staff to assist them with the planning and implementation. This coupled with their many hours of in-kind contribution to their projects has allowed them to reap significant benefits. This has motivated Merv to take on the role of leader in his local Landcare group.

"The Landcare and QMDC staff help us out a lot; sometimes it's very handy to have somebody else see your place through a different set of eyes. They can help point you in the right direction. I highly recommend being part of Landcare to anyone. I have seen big gains just on our place with water and stock management and managing erosion as well as our weed and pest control."



Cattle grazing on Currawong.



Merv Phillips, Currawong, Mitchell.

QMDC's Landcare Sustainable Practices project aims to deliver increased landholder engagement and adoption of sustainable and innovative natural resource management (NRM) practices by primary producers.

www.qmdc.org.au

www.facebook.com/qmdc.nrm

www.twitter.com/qmdc

Funded by:



For further information please contact:

Chantelle Doyle
Land Management Technical Officer
Phone: 07 4620 4609
Mobile: 0427 756 803
Email: landtor@qmdc.org.au

For further information, contact QMDC on (07) 4637 6200 or visit www.qmdc.org.au. While every care is taken to ensure the accuracy of this information, QMDC accepts no liability for any external decisions or actions taken on the basis of information contained in this document. © Copyright Queensland Murray-Darling Committee Inc.



June 2011

Creating a win-win situation by thinning cypress pine

On Currawong, Mitchell in south-west Queensland, Merv Phillips is trialling different methods to thin cypress pine to create a more sustainable grazing enterprise while creating a timber resource that can be harvested.

Goal: To increase the carrying capacity of the property as well as establish stands of timber that can be harvested, through innovative thinning of cypress pine and improving pasture growth and productivity.

Addressing the issue

The Phillips family have been running Currawong since 1962. During those years, Merv Phillips has observed cypress pine, *Callitris glaucophylla*, thickening on his property creating large areas of land where pasture species cannot establish, stock are hard to manage and biodiversity is declining. The lack of pasture species also creates excessive water runoff resulting in erosion.

"In areas of the property where the cypress pine is thickest, our carrying capacity is down to running just one beast per ten hectares," Merv says.

Cypress pine is a valuable economic species, however, and has long been acknowledged for its value as a building timber. To be of value as a building timber the growth of the cypress pine needs to be managed to establish thick, straight stems.

The cypress pine now present on Currawong is so densely concentrated that stems are narrow and are not growing to anywhere near their potential due to competition for water and nutrients.



This project is supported through funding from the Australian Government's Caring for our Country initiative and contributes to the sustainable farm practices national priority area.

"Working together—healthy landscapes, viable communities"

Producer
Merv Phillips

Location
Mitchell, Queensland

Property area
17,400 hectares

Enterprise
Grazing beef cattle, approx 2,500 head, mainly breeders

Soil types
Red sandy loam, deep sands

Annual rainfall
345mm

Catchment
Maranoa-Balonne



Through measurements, Merv estimates that the cypress density is around 2,500–3,000 stems per acre, with stems averaging 5-8cm in diameter and a height of 3.5 metres, which does not make it suitable for timber production. In a Grazing Land Management (GLM) framework, this indicates that the land is in a high 'C'/low 'B' condition.

'C' condition land has one or more of the following characteristics:

- general decline in 3P pasture species
- large amount of less favour species and/or bare ground (>60%) in most years
- obvious signs of past erosion and or susceptibility currently high
- general thickening of woody plants.



“By doing the thinning hopefully we gain our biodiversity back and have healthier country with more grass.”

“We have also noticed that in some areas the spinifex grasses are being outcompeted by cypress. This means we are losing a good general purpose grass that is drought resilient. We've also noticed as the years have passed that there has been a decline in wildlife activity such as lizards, rodents, birds and beetles. By doing the thinning we hope will hopefully increase our biodiversity as well as having healthier country with more grass,” Merv says.

Merv believes that thinning the cypress pine will create a “win-win situation where we can benefit from improved grazing production and forestry; cypress pine is a good product and it would be good to contribute to the continuation of the industry”.

Merv decided to undertake the Landcare Sustainable Practices trial to test and demonstrate the benefits of thinning to neighbouring landholders. Merv believes that if the thinning works, he can increase his carrying capacity to one beast per 2.8 hectares.

The strategy

Merv has worked with technical staff from the Queensland Murray-Darling Committee to design a thinning trial using four techniques. The thinning in the remnant vegetation can occur under a thinning permit obtained from the Queensland Government by the Phillips family.

There are four proposed methods of thinning:

- burning
- using a dozer
- using a chainsaw
- using a ‘chopper roller’ implement.

Ongoing monitoring will be conducted throughout the treatment sites to observe the changes in pasture species and biodiversity that have occurred as a result.

What is a chopper roller?

Chopper rollers are large drums with a series of longitudinally mounted blades. As the drums rotate they chop and crush brush debris, small trees, and slash. They also form small trenches or pits in the soil to capture rainfall, increase infiltration, and provide a seedbed. The drums are hollow and are usually filled with water to increase their weight and chopping action.



Selective thinning using a chainsaw.

Merv has observed a number of changes in the areas where the thinning has occurred. “I reckon we have lifted our carrying capacity by two-thirds just by doing the thinning. There is a huge increase in grass growth. The pasture species that are there now are growing a lot more and more frequently and I am hoping we see some new species turn up as well.”

In the areas where Merv had observed erosion through the cypress, he is now able to see some improvements. “People think that sand doesn’t run water but it does run a lot of water. The grass cover and timber that is on the ground now is holding the water back and if the grass doesn’t take it up at least it is going back into the soil and recharging the watertable. Once you get the groundcover you can slow down the movement of water and get some gains out of it.”



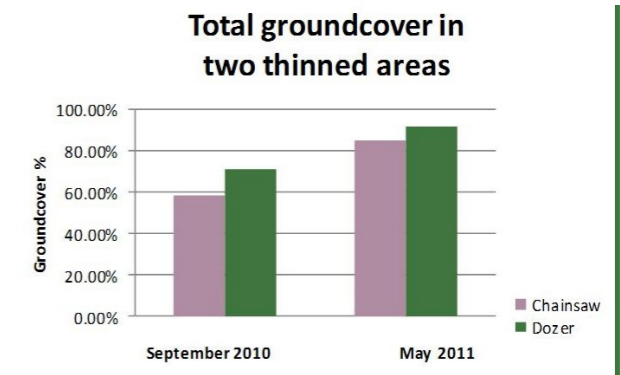
Thinning using the bulldozer.

Merv believes that both methods tried so far have their upside. “Between the two methods we have used so far the dozer is probably the most economical. Using the dozer you can establish pasture more effectively by giving the seed a seed bed. The dozer is fairly easy to manoeuvre around the trees you want to leave because the stand is so thick and uniform; this leaves you with one tree every 5-6 square metres. You can select better commercial

timber with the chainsaw but it is labour intensive and time consuming.”

The data collected during the monitoring undertaken by the Queensland Murray-Darling Committee staff shows some encouraging changes in groundcover, biomass and species composition since thinning has occurred.

Graph 1 shows average total groundcover in each of the treatment areas where thinning has occurred to date, measured in two different seasons. The groundcover includes all organic matter, not just plants but litter manure etc. This demonstrates that groundcover is increasing in the thinned sites, which is also driven by the change in season. In the thinned areas the groundcover composition is changing to more pastures than litter and other organic matter.



Graph 2 shows the average total biomass of plants in each of the treatment areas where thinning has occurred to date. In areas where thinning has occurred the total biomass is increasing. It is important to note that total biomass includes non 3P grass species, the average content of 3P species across all treatments is less than 50%.

