Case Study 2014

Trees for farm productivity

Strategic tree planting and fencing to restore eroded gullies & improve productivity

Cygnet, Huon Valley, Tasmania

At a glance

Owner & location  Chris & Giuliana White

‘Willow Bend Farm’

Property size 61 hectares

Enterprises Dairy, garlic & timber production

Average annual rainfall 1050 mm

Soil types Duplex soils – sandy loams / light clays

Tackling change

Cygnet farmers Chris and Giuliana White are using trees to improve the health and productivity of their 61 hectare dairy farm in Southern Tasmania.

When they took the farm over in 2000, Chris described it as looking worn out. The creek sides were denuded, with soil eroding and washing away, so that soil health and water quality were badly affected. The cows were getting sunburned due to the lack of shade and they suffered from foot problems and dirty udders due to contact with the muddy gullies.

To make matters worse there were harmful levels of E.coli bacteria in the gully water, and the paddocks were full of rushes, blackberry and cape weed. All these combined problems led to a loss of farm productivity.

By Tim Ackroyd

A worn-out farm that needed some help

“When we started we had 10 acres of gullies that were lost to soil erosion and compaction by livestock, water sources contaminated with harmful bacteria, animal health problems and infestation of pastoral weeds”

Chris White
Benefits of a planned approach

Private Forests Tasmania (PFT) helped Chris and Giuliana develop a Forest Property Management Plan, which identified measures to protect the riparian areas from livestock and revegetate the stream sides within the farm. The aim was to improve water quality in the streams, improve soil health, provide additional income streams from commercial timber production and create a habitat for native fauna and flora.

CSIRO also worked with PFT to carry out water quality monitoring research within the riparian areas to determine what the effects of planting trees would have on water quality.

Chris and Giuliana have now fenced and planted blue gum, shining gum and blackwood. These plantations are being managed for veneer and saw logs, with blackwood being managed for higher grade timber. Firewood will also be harvested and could be sold locally.

Additional blue gums have been planted to extend an existing area, which it is hoped will enhance foraging habitat for the endangered swift parrot.

Since the project began, Chris and Giuliana have seen the farm become more productive. Chris says, “Our gullies are not sick anymore, our cows are healthier and more productive with notably increased calving rates”.

The pastures can support higher stocking. The established plantations are now accessed by stock and are used as part of a productive grazing system. The fenced plantations provide shelter in cold or hot weather, act as calving areas and provide the cows with a water source from the newly restored creeks.

Soil health has improved through increased drainage and the prevention of soil erosion. Water quality has improved within the gullies. The CSIRO study has shown that previously harmful levels of E coli, as well as key nutrient and soil runoff, has been reduced considerably.

The local microclimate has improved and the Whites feel the farm suffers less from the effects of weather extremes. There is noticeably more birdlife and the farm is looking healthy and more productive.

“When we first came here, if you had asked me what effect planting trees on the farm would have on our pastures, I would have said that there would be less grass for our cows, but in fact pasture productivity has increased and we have more grass than when we started. Shelter is not just for the cows, it’s for grass too.” Giuliana White

“There was some work initially to set up the plantations, but now the tree growing program almost runs itself and only requires a few days’ monitoring a year” Chris White
Trees increase farm values

Studies have shown that well vegetated land can receive a premium over average land values (e.g. between 15% and 35% more, in Central NSW).

Source:

Above: Trees were planted at a rate of 1100/ha.

More information on the plantings is available in the Willow Bend Field Day Notes – link provided on page 4

‘Willow Bend Farm’, before and after…..

Before – the site in July 2007 showing the five planned riparian planting areas before establishment

After – the site in November 2012 showing the planted riparian areas
Trees on farms improve productivity and land health, and they capture and store carbon

The Whites improved their productivity, through for example; better pasture growth, improved animal health and better calving rates. This has the potential to reduce their green house gas (GHG) emissions intensity (i.e. GHG per litre of milk produced).

By planting trees for timber production, biodiversity and shelter, the farm stores more carbon. Potential future emissions from harvesting operations are minimised through the sale of harvested timber for veneer/saw logs (e.g. construction and furniture). These activities further mitigate against GHG emissions on the farm.

Further information, advice and support

If you are thinking of planting trees on your farm you may wish to undertake a carbon storage project or just seek advice on how to increase farm productivity. Tree planting can be part of your overall farm business plan and act as a risk management tool by diversifying income streams, while providing additional benefits to other parts of the farm and other farm enterprises.

For more information on the benefits of trees in productive landscapes, visit the Private Forests Tasmania website on: http://www.pft.tas.gov.au/

For more about what Chris and Giuliana have been doing, follow the link below: http://www.pft.tas.gov.au/images/pdfs/WillowBendFieldDayNotes.pdf

To learn more about increasing farm productivity through the reduction of greenhouse gas emissions and carbon sequestration, please contact your local extension officer or visit our project webpage (see details, left).

Key Lessons

- A planned approach helped Chris and Giuliana find the best options for their enterprise
- The planned tree plantings have improved farm aesthetics, animal health, water quality, pasture growth and stocking rates
- Additional benefits include future income streams from on-farm forestry