



*The 46ha northern block of oil mallee alleys, taken from the air February 2020.*

## Alley farming shows results for salinity

Long term salinity outcomes on ‘Nepowie’ Sheep Stud, Nomans Lake

By Ella Maesepp, Katanning Landcare

*“There’s no question we need trees, but it’s where we put them that’s important. I think it’s better to surround the problem areas with good wide belts of trees – 50m wide at least – rather than run them through the middle of paddocks. It’s easier to farm with them, but you’re still getting lots of trees into the landscape.” Cam White, Principal ‘Nepowie’ Stud*

When Cameron White and his brother Lachlan decided to plant alleys of oil mallee trees on their farm back in 1994, there was more than one motivation.

“We are excited about the oil mallee industry –these new income streams we were going to see in oil, biomass and carbon. We were going to make a fortune out of oil!” explains Cam. “We also knew we had to do something about these low flat paddocks that were getting very wet and the salt was going to start coming up.”

Working with Land for Wildlife’s Avril Baxter, Wayne O’Sullivan of the (then) Department of Conservation and Land Mangement with the Toolibin Recovery Program and Farm Forestry Unit, and David McFall through the Oil Mallee Association, the brothers set about an ambitious undertaking, planting 67,800 trees in alley configuration in 1996.

The alleys were established at high planting densities, to maximise the expected economic return through the oil mallee industry. A lot of care was taken to plant in very straight lines too.

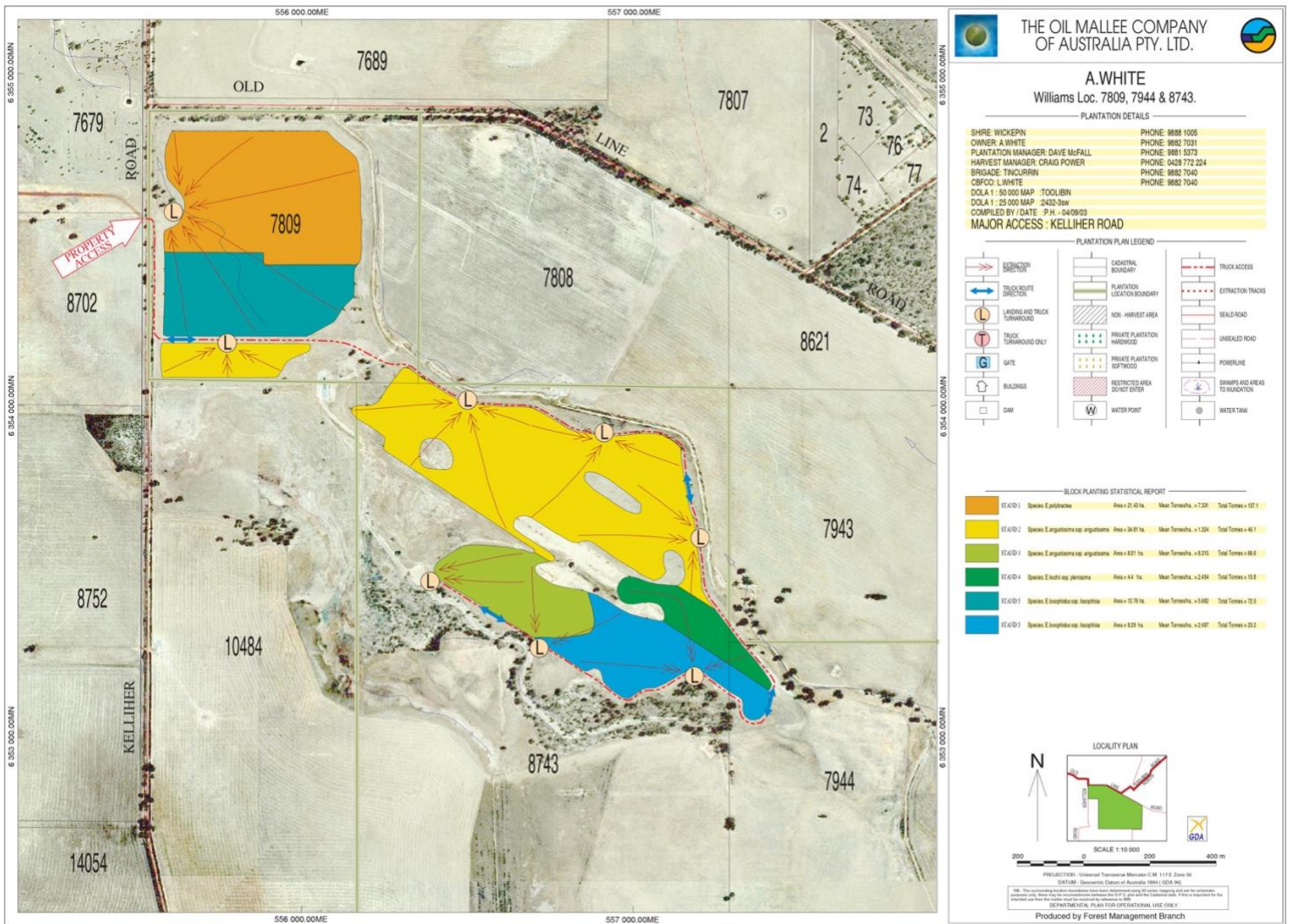
“Sites where we did this seem to have fared better with the transition into modern straight-line farming systems such as GPS guidance and tramlining,” said David McFall in 2020.

The survival rate of the plantations was excellent – results over 96% - and the trees grew well. Stock was excluded while the trees gained size, and within a few years of being returned to grazing, the paddocks had become some of the best pasture sites on the property. The alleys also became a seed source for propagating new eucalypt seedlings.

*Cam White, Principal of ‘Nepowie’ Stud checking a 1985 aerial photo of the site.*







The original planting and harvest management plan for the site.

**Fast Forward to 2020**

Talking to Cam about his 25 years of experience farming with these alleys, you can't help but get a sense of mixed feelings. He has seen some real positives, and some challenges with the system.

**Sheep**

As a passionate sheep farmer, and principal of the Nepowie stud, Cam speaks highly of the value of the alleys for shelter for sheep in tough weather, off-shears or during lambing. There is good shelter and feed. But the challenge – mustering! “You learn to train your dogs really well!”, quips Cam, as he describes the difficulty in working with a ute that can't nip between the rows of trees, when sheep easily can. Designing for good vehicle access between rows in addition to along rows, for activities such as mustering or fire management, was an early learning from these types of plantations.

**Oil Mallee Industry**



Cam is pretty clear that the early excitement of a good economic return from the oil mallees has become a disappointment. “With the oil mallee industry pretty much collapsing, we never harvested the trees, so never made any money off them,” says Cam.

**Salinity and Waterlogging**

Since the trees have been planted, Cameron and Lachlan have split the property, each now managing his own part – and each having alleys on them.

Both brothers noticed that the waterlogging and rising salinity issues that were evident back in the 1990's had all but vanished.

View along the alley rows.



The paddock health had improved, to a standard that they could potentially now be cropped again, and this led to them each reviewing the future for the trees. Cam's brother made the carefully considered decision to clear part of his Yate alleys in 2007, as the land looked like it had recovered. "However, the salt came right back, and quickly too," says Cam.

Cam had been considering removing two thirds of the rows in his alley system, leaving every third row only, to allow more space for modern larger farming equipment. "Put it this way, you are very careful about who you allow to operate big equipment such as a boomspray in there," Cam says with a serious undertone. "You have to be a very accurate driver to not risk hitting the trees and damaging gear." But after seeing what happened at Lachlans, he's now considering only taking out every second row. "I don't think the alleys have fixed the salt problem, but what I think they are doing is keeping it in balance. If I take out all the trees, I'll upset that balance again and could be back at square one."

### **Pasture and Cropping**

"We get good autumn and winter grazing between the trees. It's basically barley grass, ryegrass, a bit of everything. We still put fertiliser on it." The farm runs at about 6DSE (dry sheep equivalents), with the alley farm area providing opportunistic autumn grazing for 2400 ewe hoggets last year.

The site isn't spray topped, so the grass seeds are too prolific for summer grazing (contaminant in wool). But the site is one that is able to be grazed hard, because the trees offer protection from wind erosion. The trees do create an edge effect on pasture growth adjacent, which is particularly noticeable in drier years.

### **Surrounding Paddocks**

The area where the alleys are located are on very flat country, immediately east of Taarblin Lake and a crescent of smaller lakes, and south of Toolibin Lake. It's country that's at high risk of salinization simply due to its landscape position.

Cam truly believes that the trees have made a difference in protecting the adjacent paddocks too. "I'm not sure if this would have gone salty here, but I know the trees have taken a lot of moisture because there's a dam in the next paddock that's freshwater, so the groundwater's gone down far enough that the groundwater doesn't sit in the bottom of it," reasons Cam.

He also points to mature remnant vegetation and individual trees that have been showing signs of stress due to salinity and waterlogging for years. "Ten years ago you wouldn't think they would still be here, but they are still holding on. I think the revegetation is helping save the old trees."



*Healthy growth showing on the planted trees.*

### **PROPERTY OVERVIEW**

**Property:** Cam & Lisa White "Nepowie"

**Property Size:** 5150ha 50% crop, 50% pasture.

**Rainfall Average:** 400 / 350mm

**Soil Type:** Grey clays – red morrell – sandy gravel

**Enterprise:** Sheep and cropping

**Trees Planted:**

*Eucalyptus polybractea* 21.43ha

*Eucalyptus angustissima ssp angustissima* 46.42 ha

*Eucalyptus kochii ssp plenissima* 4.4ha

*Eucalyptus loxophleba ssp lissophloia* 22.05ha

### **The Future**

It's clear that Cam sees a huge role for trees within the agricultural landscape, based on his first-hand experience of the impact of planting on his own property.

"There's no question we need trees, but its *where* we put them that's important. I think it's better to surround the problem areas with good wide belts of trees – 50m wide at least – rather than run them through the middle of paddocks. It's easier to farm with then, but you're still getting lots of trees into the landscape."

### **For further information contact:**

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