

CASE STUDY - *Jim Wedge, West Binnu*

Jim Wedge farms in the far north of Northern Agricultural Region at West Binnu. He jokes that he actually farms in south Kalbarri – a hint that his is one of the last farms before the vast expanse of pastoral country. But by being close to the coast, the farm has historically fared well from winter cold fronts giving it a reliable winter / spring growing season. However recent computer modeling by DAFWA indicates that this part of WA is likely to suffer more than most from the effects of climate change, with rainfall reductions greater than 20% likely.

And in a sign of what might be coming, both 2006 and 2007 were “drought” years, with growing season rainfall of only 193 mm and 245 mm compared to a long term average of 450 mm.

Jim purchased “Wileri” in 2001 having moved north from the greener pastures of Dandaragan. He brought his interest in livestock with him, and spent the first five years trading live export boat cattle on largely unimproved pastures. However, the poor productivity of the deep sands on the property soon became apparent with the worst of it supporting a stocking rate of less than 1 DSE/ha.

Things had to change. So in 2003 Jim started by sowing tagasaste on 50 hectares of gutless sand. This was successful and subsequent sowings have seen the area planted to tagasaste grow to 150 hectares in total. The changes didn’t end there. Since 2005 Jim has sown over 300 hectares to a mix of subtropical perennial grasses including Gatton Panic, Rhodes and Signal grass. The combination of tagasaste and perennial grasses has seen the productivity and sustainability of the deep gutless sands completely transformed.



Jim Wedge sharing his experiences with perennial pastures at an Evergreen Field Day



Oats disced in to an existing subtropical perennial grass and blue lupin pasture making the most of a mild West Binnu winter

Jim’s predilection for livestock in those first few years meant he also ran cattle on his heavier shaley loam soils, which comprise half the farm. However, over time, as returns from cattle have shrunk, Jim has switched to cropping on these better soils to improve whole farm profit.

Impact of drought

The almost complete lack of rain in 2006 meant that no crop was sown in that year. It also caused a massive reduction in stock numbers – with a recently purchased herd of 200 breeding cows reduced to just 30 by years end. Meanwhile, hay had been purchased in from far and wide to keep stock alive. No trade cattle, which historically had been traded during the growing season, were purchased.

In 2007, which was a slightly better year than 2006, a large area of heavy country was sown to oaten hay crops in an effort to capitalise on the shortage of hay coming out of the drought. But the drought continued and these crops yielded very poorly (less than 1 ton/ha). An area of wheat was grown and this performed better than oats in the dry conditions, with the best yielding 1 ton/ha of grain.

Cattle numbers started at a very low 30 breeding cows and calves but expanded during the year through purchases to reach 80 breeding cows by years end.

By comparison, 2008 was an above average year.

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Subtropical perennial pastures sown between rows of tagasaste

Wheat crops yielded 2.5 ton/ha and canola 1.2 ton/ha. Breeding cow numbers remained static at 80 but to make use of spare feed 350 pastoral heifers were taken on via agistment from January to October. As these heifers departed, another 450 agistment heifers were taken on from October to March 2009.

Lessons learned

The drought years confirmed to Jim that his new farming system was the right approach. Even though he only had small areas established to wheat and perennial pastures during the drought, the way they performed relative to the rest of the farm was like chalk and cheese. In fact monitoring by DAFWA showed that both the tagasaste and perennial grasses were able to maintain a stocking rate of 4.0 DSE/ha during 2007 while annual pastures could only maintain a stocking rate of 1.4 DSE/ha. In addition, the paddocks with perennials had considerably more ground cover, and suffered considerably less wind erosion than annual paddocks. Anyone who witnessed the erosion in this part of the state in 06/07 knows just how bad it was.

During the drought years, Jim was involved with a number of other northern producers in a "High Stocking Rate" project, with the aim of running more stock and suffering less erosion. It seemed like an unlikely objective. But Jim's experience showed that perennial pastures could do just that, and this was backed up by data coming from the other farms. This gave the whole group confidence that these new systems worked. Their regular meetings also helped get them off their farms, and to talk and socialise with their peers. This was a critical factor in helping them deal with the drought.

The process of changing his farming system is something Jim has been working on since prior to the drought years. He believes his new system is more drought tolerant, responds quicker to rain at any time of year, and provides more ground cover to reduce the risk of erosion during drought events. It is also quite flexible, with the



Drought tolerant subtropical perennial grasses such as Gatton panic survive the long, hot summers at West Binnu by going completely dormant

combination of trading stock, which can be quickly sold off in a drought, and breeding animals to maintain a core base of numbers.

Importantly it is also more profitable as the productivity of the perennial pastures and fodder shrubs is higher than the old annual system in both wet and dry years. And the focus on wheat in the cropping enterprise maximizes returns in good years and minimizes failures in dry years.

Moving forward

Jim is constantly looking for new ideas on how to further improve his farming system. After hearing NSW farmers Colin Seis and Bruce Maynard speaking about Pasture Cropping and No-kill Cropping, he has decided to test both concepts at "Wileri". Oats and Cadiz serradella were dry sown (no-kill style) in May 2009 into some existing stands of subtropical perennial grasses to improve pasture density and productivity. And he has also sown some perennials in 2009 on some slightly better sand with the intention of pasture cropping wheat into these in future years.

Part of the attraction of no-kill and pasture cropping is the claimed increase in soil carbon from the combination of perennial grasses and annual crops and pastures. And to measure his soil carbon, Jim got involved with the Australian Soil Carbon Accreditation Scheme (ASCAS) initiated by soil scientist Dr Christine Jones. As part of ASCAS, he will be paid for any increases in his soil carbon. Jim says big carbon emitters could be looking to buy carbon offsets in the future, so it is great to be getting some local data on how much CO₂ perennial pastures can sequester.

Not happy with just improving his soils and pastures, Jim has recently turned his hand to marketing having developed a grass-fed beef brand for his Angus cattle. His aim is to market a significant proportion of each year's calf crop as high quality grass-fed beef. And his tagasaste

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and perennial grasses will be invaluable in getting the animals finished. It is early days, but Jim has already had a number of repeat orders, so he is confident he is on the right track.

Dealing with future droughts

When asked what he would do differently when the next drought hits, Jim said the first thing he would do is develop a feed budget. This would give him an accurate picture of his livestock's feed requirements, and the costs involved for a range of scenarios.

He then says that because he has been expanding the area sown to perennial pastures, the initial impacts of a future drought would be less severe than in 06 and 07. Even in a drought there are usually some small rain events, and the perennials would respond to these, whereas annuals would not. Following the drought years, Jim now runs a more moderate stocking rate of cattle rather than being "packed to the rafters" all the time. This provides a little bit of slack in the system, and along with the perennial pastures, provides a degree of drought preparedness.

Jim said when faced with the decision to buy hay to keep his cows alive or sell some cows, he would be much more inclined to sell cows next time. And importantly he would make the decision earlier when the cows are still in good condition and more valuable. The stress and work load of sourcing, transporting and then feeding large amounts of hay is not something he is too keen to experience again.

And Jim said he would probably plant some wheat based on his 2007 experience. Compared to other crops, it has a remarkable ability to yield a harvestable crop on very little rainfall. If it failed, he could always graze it off with our cattle.

This case study is written by Philip Barrett-Lennard (Evergreen Farming / agVivo) as part of the Perennial Pasture Companions Project supported by Caring for our Country.



Central watering points allow perennial pastures to be easily and cost effectively rotationally grazed



Part of the undercarriage of the converted combine Jim uses to sow subtropical perennial grasses