Using low input to improve long-term profitability and sustainability of farm business

Profile

Grower:	Rod and Katrina Butler
Location:	North East of Perenjori, WA
Soil type:	Yellowish clayey sands, red sandy-loam, stony sandy loam and duplex
Annual rainfall:	320mm
Enterprise:	Livestock & grazing crops

Property Background

Rod and Katrina Butler's property *Gimlet Ridge* is located 20km north east of Perenjori. It extends over 2,838ha – comprising of 1,644ha of arable land and 1,194ha of original native vegetation. Remnant vegetation in the property includes shrublands, mallee, and sheoak, and eucalypt woodlands, including Gimlets (*Eucalyptus salubris*) – from which the property's name originated about 20 years ago.

Much of the remnant vegetation at *Gimlet Ridge* provides invaluable habitat for threatened Malleefowls (*Leiopoa ocellata*), which is a listed vulnerable species under Australia's Environment Protection and Biodiversity Conservation (EPBC) Act 1999. In Western Australia, Malleefowl is listed as "rare", or likely to become extinct – under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice 2005 (Benshemesh 2007).

The soil types at *Gimlet Ridge* include yellowish clayey sand, hard-setting red sandy loam, clay loam over red-brown hard pan, stony sandy loam and duplex, and rocky outcrops.

The average annual rainfall at *Gimlet Ridge* is about 320mm.

Rod and Katrina's Farm Story

The property was cleared from the early 1960s through to the mid-1970s, when it was owned by Rod's uncle and father as part of Bowgada Station. In 1986, *Gimlet Ridge* was split from the joint entity, and managed by Rod's father.

Rod took-over the farming business from his father and uncle in 1997, and has since run it together with his wife, Katrina. Rod said he pretty much learned all he need to know about farming to get started from his father and his uncle.

Between 1960 and the mid-1990s, the farm was used primarily for wheat and sheep production. The crops were sown after the land was tilled, and sheep were run in set stocking/grazing systems.

To sustain the farm productivity, Rod's father used to apply high chemical inputs – as most farm chemicals were cheap at the time, and fertilisers were subsidised by the then-government. Rod said

that while the farming methods used in the past were productive, they did a great deal of damage to the land.

Rod recalls seeing for himself some parts of the property decrease in productivity because of erosion, compaction, soil acidification, salinity and structure decline. He remembers seeing many patches of capped soil in the paddocks, which made it difficult for water to infiltrate and any plant regrowth to occur.

Low-lying areas of the property became saline, resulting-in trees dying, and decreased regeneration of native perennial pastures on the farm. Added to this, droughts during the 1970s further exacerbated the problems and caused significant issues across the farm.

In the late 1990s, Rod and Katrina realised that they had to do something other than "business-as-usual" on their farm if they wanted to return it to a more balanced system and, in so doing, achieve long-term profitability and sustainability, based on sound ecological outcomes.

Rod and Katrina were convinced that by switching to low-input farming systems, they could still get good economic returns, without damaging to the landscape as their previous practices had done. In response, they started exploring alternatives to the conventional farming practices which had been used on the farm for many decades.

New Sustainable Approaches

Rod and Katrina began researching new methodologies and techniques, science and information, attended holistic management training courses, and read as much innovative farming practices' materials as they could get their hands-on.

Convinced of the benefits, they soon began to employ holistic management practices on their property.

In 2001, the Butlers switched their farming focus to free-range pig farming and organic fat lambs. They said that while the pigs were economically rewarding, the enterprise was just too labour intensive, so in 2004 they moved-out of growing organic lambs and the free range pigs.

In 2005, cattle were agisted on the property for a short time, after which the farming systems shifted to breeding sheep (black and white Dorper, and Suffolk crosses). Even then it wasn't straight-forward, as overgrazing soon became an issue.

To address the overgrazing, the original seven paddocks on the property were divided-up into 40 small size paddocks, using permanent and temporary electric fences. The system was designed so that water points could be located centrally – allowing access from a number of adjoining paddocks. Additionally, a dedicated laneway system was set-up to provide controlled and easy access to stock yards. The increase in the number of paddocks and the decrease in paddock size allowed for an increase in stock density. Paddocks can be rotated and grazed intensively, but allowing for a considerable increase in resting period of the pasture, particularly in the spring time.

After attending a stock-handling training course, Rod and Katrina introduced low-stress stock-handling techniques, which allowed them to change animal grazing behaviour on the farm. This also

enabled them to run stock over some of the more degraded areas of *Gimlet Ridge*, which were problematic due to hard-capping, and rocky outcrops. The idea is to encourage stock movement over areas in which they would not normally spend much time, and to possibly encourage sheep to graze on plant species that are not normally utilised. This technique is also used to train sheep to eat plants that they would not normally try.

To increase the property's carrying capacity of their merino sheep, in 2011 Rod introduced a "No Kill Pasture Cropping System". "No Kill Cropping System" is a practice that involves sowing zero-till winter cereal crops directly into existing summer-growing native perennial pastures which are dormant in winter.

"It was encouraging to adopt a system that allowed you to integrate cereal crops into the existing native pastures without killing them," said Rod.

"In the past we could have killed all existing native perennial pastures prior to sowing crops, but such is not the case anymore. We have been direct drilling our oats and barley into the existing grass which has resulted in improved density of the existing native perennials, and we are happy to therefore have ground cover all year round."

The Butlers have also used a "No-Kill" approach to sow oats and other seconds grain mixes into the bare clay pan paddocks – which has helped improve water infiltration, and germination of plants in areas that were difficult for any regrowth to occur.


Rod and his nephew Frazer McLennon in their pasture cropping paddock

"With this system, we don't need herbicides. Ground cover is maintained all year round, so that erosion is avoided. You also have minimal disturbance to the soil – which is important for soil biota and to allow carbon to build-up in the system," Rod said.

Rod and Katrina also recognise the importance of retaining native vegetation in their farm, recognising their importance for wind breaks, but also as habitat for native flora and fauna.

Several years ago, an area that had become saline was fenced-off and planted with a mix of native tree and shrub species. The revegetation established well, resulting-in no further spread of the salinity. This area is now interconnected with other, nearby patches of bush, helping to form a wildlife corridor with pre-existing remnant vegetation.

In order to address acidity problems on the farm, lime has been applied extensively to all of the lighter soils, while gypsum has been applied to the heavier soils.

At *Gimlet Ridge*, the Butlers consider sheep to have positive impacts on biological activity, such as stimulating growth and reducing hard-capping, if they are managed and rotated among the paddocks in appropriate time intervals and resting periods in a planned grazing rotation.

As a result, many fences have been constructed around the perimeter of remnant vegetation patches, so that stock access to these areas can be prevented and/or better managed. The exclusion fencing helps the understorey species and new growth to occur.

No chemical fertilisers have been used at *Gimlet Ridge* for more than 10 years, and there are some paddocks on the property which have not had chemical application of any sort for more than 33 years.

The Butlers occasionally apply natural compost fertiliser to targeted paddocks – applying the compost fertiliser in test strips to enable accurate monitoring of the effects of the fertiliser.

In terms of water supply in the property, the Butlers use several bores. Water is pumped to hill tops, and then gravity fed to the rest of the property. According to Rod, there has been a negligible fluctuation in the quality or quantity of their water sources since they were installed, so future water sourcing is not an issue of great concern. Several temporary and transportable water points for stock are also used, which creates flexible access for the livestock.

Reaping the Benefits

Rod said it is always a win-win outcome when a low input natural resource-based farming method is introduced on the property. “I don’t have any regrets; but I’ve also got less stress, and less worries. There is no such thing as bad experiences; there are only experiences,” he said.

“With the sort of management techniques we’re now applying on the farm, our stocking rate is matching well with the pasture-carrying capacity. This allows us to trade in sheep and sell-out completely if feed stock deteriorates below a point that we are comfortable with.

“With the fact that the livestock are no longer allowed to stay in one paddock for too long a time, the incidence of pests and diseases have been reduced significantly.

“The combination of pasture cropping and native grass has led to better ground cover and good litter cover on the soil, all contributing to creating soil organic matter, and leading to greater water absorption, and minimum surface erosion and run-off. For example, there used to be a lot of capped soil on the property, which is slowly and continually being reduced.

“With the existence of all-year-round pastures, there has been a noticeable increase in biodiversity. We have seen lots of vertebrates and invertebrates – which are said to be good indicators of a healthy landscape.

“We haven’t fully evaluated the new techniques we’ve introduced on the farm, but the farm’s profitability looks better and the landscape is telling us that we are on the right path.”

Lessons Learned

Rod said it’s not realistic to say it’s all been easy. “Integration of various low-input techniques is a huge challenge,” he said. “But you have got to continue trying, have the courage to make mistakes, and spent time seeking solutions for improvement.

"We live in a dry country with insufficient and increasingly variable winter rains, and we believe that techniques such as pasture cropping, when managed symbiotically with native perennials, can help better manage the limited-available moisture more efficiently."

Way forward

Rod and Katrina said their future goal for *Gimlet Ridge* is to achieve 100 per cent ground cover 100 per cent of the time.

Good groundcover is crucial for livestock performance, as well as for reducing run-off and erosion, reducing the incidence of hard-setting topsoil, resulting in better water infiltration. All of this will have agronomic benefits for plant growth.

Rod said they would also like to see an increase in the diversity of plants in the system. This includes the ability of weeds to colonise bare areas and prevent soil loss. Overtime the weeds are being replaced by native plants – resulting in a low-input rotational grazing system. This is an interesting and innovative strategy that will hopefully be sustainable in a drying climate.

They are looking forwards to a more sustainable farming future, with a productive and profitable farm "in synch" with its natural landscapes and environmental conditions.

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More information

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