

Long-term focus brings peaceful co-existence

During 2003 Bruce Maynard and his innovative farming system featured in the former CRC Salinity *SALT Magazine*. Fleur Muller recently caught up with Bruce to see what he was up to these days.

“We’ve changed many things during the past six years but continue to implement strategies appropriate for long-term landscape regeneration,” Bruce said.

“Our major achievement is that we can demonstrate how grazing, cropping and biodiversity can co-exist in the same areas at the same time.

Our philosophy of maintaining and regenerating natural functions, while still generating a profit in ways that enhance enjoyment for the family has remained fairly constant for the past 20 years.

We take a triple bottom line approach and aim to mimic natural processes to maximise outputs, while minimising inputs. This is done by using a combination of techniques including cell grazing, holistic management, no-kill cropping, regeneration areas, trees for carbon credits, alley farming, shrub plantings and stress-free stockmanship.

All these methods are implemented with a long-term context – in fact we take a 100-year view on sustainability.

Perennial focus

Perennial-based grasslands are the backbone of our farming program and we don’t think of them as simply pastures; we view our farming system in terms of integrated grassland, shrubland, woodland complexes (which we work with to gain the maximum amount of natural cycling) and biodiversity functioning.

key points

- Perennial grasses and shrubs provide the backbone of a low input farming system
- Cattle and sheep can help regenerate native perennial species and generate profit
- Planting saltbush on the contour or slight curve reduces wind flow and creates more diverse micro-habitats for the same cost as planting in straight rows or blocks.

farm info.

Case study: Bruce Maynard

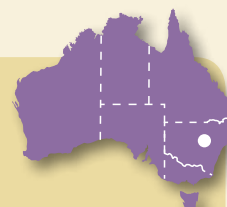
Location: Narromine, New South Wales

Property size: 1476 ha

Mean annual rainfall: 520 mm (evaporation 1980 mm)

Soils: Hard-setting red clay loams, sandy clay loams and grey cracking clays

Enterprises: Beef cattle, sheep breeding and mixed cropping



Photos: Bruce Maynard

Bruce Maynard has implemented a whole farming system approach based on perennial shrubs and pastures that delivers a balance between profitability, farming and lifestyle.

Pastures regenerate naturally and consist of a complex mix of mostly native summer-active and winter-active grasses. They include wallaby grass, lovegrass and curly windmill grass together with some naturalised clovers, medics and forbs. We have counted up to 80 different species in some paddocks and we don’t rely on introduced species such as lucerne any more.

Paddocks are increasingly complex grasslands with trees regenerating of their own accord. The place is moving back towards open woodland – like it would have been in its natural state.

Livestock fit

Cattle and sheep are a tool we use to regenerate the landscape, encourage more native perennial species back into the system and deliver an income.

During the past four years we have started breeding and trading sheep again. We now

run around 2000 damara and dorper cross lambs and ewes.

It was always our plan to reintroduce no-shear sheep, which suit our lifestyle and economic goals, but we just wanted to wait until these shedding breeds were more widely accepted by industry.

We also grow, finish and background cattle, but we do not breed anymore.

Averaging 120 kilograms on entry, cattle are turned off at around 350kg. Importantly, we run a beef profit rather than a beef production system. We focus on returns to capital and turnover period goals instead of beef production targets. This allows us to manage our stocking program to optimise natural function and sustainability while still generating economic returns.

Grazing tools

Our cell grazing approach is based on elements of holistic grazing and fodder

Weed Risk Note: Future Farm Industries CRC advises farmers to be wary of not confusing agronomic varieties of lovegrass with African lovegrass, which is a declared noxious weed in much of Australia.



budgeting and time control grazing methods and we strive to constantly enhance the diversity and biomass of our grasslands.

Paddocks are grazed intensively for short periods and then given adequate time to recover, which is mainly determined by plant growth rates. Rest period, recovery, utilisation, spatial grazing variation, growth stage and seasonal timing determine stock movement around the farms 120 paddocks.

On average, paddocks are grazed three times a year for 1-3 days, which means over a year they will be grazed for up to 10 days. But the severe drought of the past few years has meant some of the paddocks have only been grazed once during the year.

We aim to achieve 100 per cent groundcover 100% of the time and this has been a challenge at times during severe drought. Groundcover as low as 85-90% has occurred in some paddocks but we have always given those areas extensive rest and recovery time to ensure 100% groundcover again before any further grazing.

Saltbush

We first planted saltbush during 1998 as a drought fodder reserve and now more than 365,000 saltbush plants cover a quarter of our property in all sorts of configurations: block plantings, straight alleys, squares, herringbones, triangles, concentric circles and spirals. Initially, we planted in blocks and then alleys 20 metres apart as this configuration gave us a balance of perennial

grasses and saltbush. But we found even short lines of saltbush in opposite directions to prevailing winds reduce wind runs.

Planting saltbush on a slight curve or along the contour breaks the wind flow. This helps to create micro-habitat, with more shelter, shading and moisture retention.

We manage the saltbush as we do the other perennials plus there is a structural grazing requirement, making sure the shrubs are sufficiently pruned and don't grow higher than the height of the grazing animals.

This means saltbush paddocks are grazed for longer periods than other paddocks but they are also given a longer rest period than those without saltbush.

No-kill cropping

We have been using our no-kill cropping method since 1996 and it allows us to grow crops within grasslands rather than replacing grasslands as conventional systems do. It's an environmentally friendly method that slashes input costs and gives us greater flexibility and helps us regenerate degraded areas.

All components of the grassland are retained and we don't apply chemicals or fertilisers. Our grasslands respond well and are profitable in almost all circumstances because it focuses on profitability rather than productivity.

For the first time we sowed 140 hectares of cereal rye, as it has been found to perform well both economically and biologically.

Cereal rye has a tough straw that remains for a longer period than other crop species and helps promote regeneration. The crop germinated well but unfortunately provided some great early feed for a swarm of locusts.

Looking to the future

Our biggest challenge is to ensure we are true to our long-term goals and not being drawn toward short-term treatments that don't address the basic cause. We see opportunity for us to continue to show the way with deep sustainability and applied innovation.

We have achieved a balance between profitability, sustainability and lifestyle aims by putting people first, long-term landscape function second and profits as the means by which the first two aims are achieved.

Our future plans are to achieve more diversity in shrubs and we will direct seed more wattles and other shrubs during the next few years. The aim is to provide grazing animals a more diverse diet, which we believe may lead to reduce methane emissions. These experiments are long term so maybe in 5-10 years I might be able to give an early opinion on the results." 🌱

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By John Friend, I&I NSW

science behind the story

- **Bruce's system has a number of strong points including increased biodiversity, reduced erosion potential, low input costs and year-round water use.**

A current NSW Industry and Investment (I&I NSW) trial and the national EverGraze® project at Panuara near Orange are comparing a high-intensity grazing management system (similar to Bruce Maynard's), a lower (four-paddock) rotational grazing system and a set stocking system. The trial shows there has been more herbage mass in an intensive rotational system compared with the other systems. The pasture composition between the three systems showed little differences, except for more annual grasses during spring in the intensive rotational management system. Weight gain per lamb was higher in the less-intensive systems but total lamb production was higher in the high-intensity system due to a higher stocking rate.

Based on this trial, Bruce's grazing strategies should result in higher pasture production, higher levels of groundcover and increased livestock production compared with either set stocked or lower-intensity grazing rotation systems.

Although saltbush is low in nutrients, it can provide a valuable alternative fodder. Work on windbreaks has found they can reduce wind and subsequent evapotranspiration to at least 20 times the height of the windbreak. This can increase pasture production and extend it during drier times. Saltbush's low water use characteristics also mean it does not compete strongly with pastures for soil water – this can be a problem with traditional tree windbreaks.

No-kill cropping introduces an annual crop during winter, when summer-growing (C4) grasses are dormant and there is available moisture for a crop. This often results in harvest failure, but pasture croppers such as Bruce take advantage of the extra

feed supplied by the crop in the event of crop failure. Soil moisture and nitrogen are usually the two most limiting constraints in a no-kill system. Where herbicides are not used, failure to apply post-emergent herbicides can further limit crop yields. However, producers' goals need to be taken into account and no-kill cropping is a useful tool for producers who concentrate on grazing enterprises and only expect to harvest a crop in above average years.

- **John has more than 20 years experience in the private and public sectors. He has worked on agronomic, farming systems and soil science issues and currently coordinates I&I NSW's soil and salinity extension programs.**

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