Enriching Cowell Flats

Eyre Peninsula, South Australia has a tradition of innovative dryland farmers — perhaps it has something to do with the presence for almost a century of the renowned research centre at Minnipa. Scott Williams is an enthusiastic follower of research and one of the extensive band of farmers across southern Australia participating in trials of forage shrubs. He recently shared his story with Bruce Munday, research manager for the Joint Venture Agroforestry Program, which is a partner in the *Enrich* project along with the FFI CRC, MLA and AWI.

"Traditionally we have cropped about 1200 hectares of country on a year-in year-out rotation. But the past few years have been exceptionally dry, averaging about 150 mm of rainfall per year and restricting the area we are game to crop," Scott said.

"This has forced us to look at other options, and particularly how we might better integrate our livestock into the overall farming system where cropping seems to be increasingly problematic.

There is an area through here that we call the Cowell Flats, which has always been marginal for cropping. It is a fairly light grey-ash soil with some magnesia patches. In a good year it can be productive but realistically it has some pretty harsh soils which over the past few years has forced us to look at alternatives to cropping. The question then becomes: how do you make best use of it for grazing?

Over the years there has been quite a bit of interest in saltbush on Eyre Peninsula. Grazing shrubs certainly seem to make a lot of sense, but there probably hasn't really been enough attention paid to how to manage it, how to best fit grazing saltbush into the rest of the farming operation, and just what are the real productivity benefits.

farm info.

Case study: Scott Williams
Location: Cowell, Eyre Peninsula, SA
Property size: 2200 ha
Mean annual rainfall: 300 mm
Soils: (on trial site) fine particle clay loam
Enterprises: Grains and wool

Photo: Tony Zwar

Scott Williams (left) and Neil Ackland (right) monitoring woody perennial trials at four months.

key points

- Dry seasons have forced Scott Williams to investigate alternatives to cropping in problematic and marginal areas
- *Enrich* trials are helping Scott investigate the potential of woody perennials for fodder
- To date Oldman saltbush has been the star performer of the trials.

A couple of years ago we read about the CRC's *Enrich* project. The concept sounded really interesting, particularly as it seemed to broaden out the options beyond just saltbush and was looking at the sorts of questions that we were interested in.

Neil Ackland, who works with the Eyre Peninsula Natural Resources Management Board (EPNRM) in Port Lincoln, alerted us to the fact that the FFI CRC was looking for groups to set up regional trials and so encouraged us to apply. Seven farmers in the district saw this as a real opportunity for their area and Neil, with funding support from EPNRM, implemented one of these trials on our property.

Putting shrubs to the test

We have a one hectare trial site on our property measuring 200 m by 50 m where 15 varieties of woody perennials have been planted following deep ripping. We will be watching these shrubs with interest so that we can evaluate their nutritional benefits and see how they withstand long-term grazing.

Magnesia and salinity is an increasing issue in this area, and as some of this site takes in those magnesia patches we can compare the shrubs growing under all soil types.

The shrubs are all varieties selected for our conditions and several are native to this area. The seedlings were raised by Dr Jason Emms from South Australian Research and Development Institute (SARDI) and planted by hand last July by the local farmers with help from GreenCorp volunteers. To be on the safe side we gave the seedlings a drink on the day of planting.

We are also trialling a new low rainfall vetch, Safeguard ryegrass and clover that may have future potential as an understorey in these shrub-based grazing systems.

So far the best performer has generally been Oldman saltbush, which includes the Eyre's Green, a saltbush selected and

propagated from a variety on Eyre Peninsula But like everything else this year, most of these trial species are struggling. We had reasonable winter rain to get things going, but the season effectively stopped early in September. On top of that we had unusually strong winds, burying lots of the seedlings under the sand in their furrows that then crusted over following rain.

Where to from here

When you look at the trial site it would be easy to be disappointed. But then you have to remember it is just a trial with plants, many of which are unfamiliar to agriculture. Furthermore, we are planting into difficult soils in a season that has tested every plant on every farm — and it is not just the lack of rain, it has also been the wind.

We are still optimistic that we are on the right track with *Enrich*. As a group we have visited the main trial site at Monarto and seen some pretty impressive work with about 70 different prospective species. The amount of background knowledge accumulated there will be a huge asset.

We also visited Martin Wilkinson's property (see *SALT Magazine* Issue 13) at Snowtown where they have about 200 ha of excellent saltbush with understorey growing on some pretty ordinary soil. One of the interesting things there is the way they manage their saltbush and integrate the grazing into their whole farm system.

It has been great to work with the research team. Not only do we have the benefit of all their accumulated knowledge, they also really value the local knowledge that we can provide. Together we make a pretty good team.

On the one hand we always knew this was not going to be a 'quick fix'. But on the other hand, the way our climate seems to be changing a 'quick fix' is exactly what we need.

Next year we will extend the trial site and start looking at grasses, particularly natives, between the rows. This is part of exploring opportunities for taking advantage of summer rains that traditionally are wasted on nothing but summer weeds."

Photo: Tony Zwar

Daniel Schuppan and Mary Crawford (both RSSA) at planting in July.

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science behind the story

By Neil Ackland,
Eyre Peninsula, NRM Board

- **Until recently the trend on Eyre Peninsula was away from livestock towards more intensive cropping, all supported by improved plant nutrition, better disease and weed management, along with the well recognised benefits of reduced tillage.**

However, the past few years have caused many farmers to think again. A string of not just dry years, but dry growing seasons, has seen many farmers reconsider their attitude to livestock. Climate change conditions which look as if they could be here to stay have increased the risk to single enterprise farming systems.

The appeal of livestock has been helped by quite healthy and stable livestock prices along with improved management practices including containment during extended dry periods. Along with this is the realisation that there are gains to be made from new forage systems which can be integrated into the whole farm structure.

The farmers in the Cowell Flats group are very keen to explore the possibilities with new forage options. They see this as an opportunity reduce the economic and environmental risks in cropping marginal land in a low rainfall environment.

The great thing is that they are a very assertive group — they don't just stand back and let the researchers use a patch of land — they actually influence the research agenda by the questions they ask, the propositions they put and the local knowledge that they inject into our planning.

The added advantage for them is that they are now 'in the loop'. They are part of a national research project that has interviewed producers who have been using shrubs as part of their forage system, and catalogued some of their experiences, ideas and production systems. This has been coupled with whole-farm economic modelling to test a range of scenarios that impact on the optimal scale and the profitability of using forage shrubs.

Enrich has now identified more than 100 species of shrub with potential for use as part of a forage system; 50 species are well established at the evaluation site at Monarto and now replicated in Condobolin, NSW and Merredin, WA.

This Cowell Flats group is now one of nine regional groups across WA, SA, Victoria and NSW with up to 20 species planted across a range of environments.

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