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Have a yarn

talking grazing trials with Phil & Caroline Smith

"From barren to bountiful, thanks to SGSL"

After major rains and flooding in 1999 left some of their best-producing paddocks susceptible to dryland salinity, Bonnie Rock farmers Phil and Caroline Smith began thinking about how to get the affected land back to production.

"After the major rains in 1999 the affected land just gradually got worse until it was almost barren," Phil said.

"We were going to do a saltland grazing trial with another organisation in 2001 but the season was too dry so we deferred it.

"In 2003 our local landcare officer suggested the Sustainable Grazing on Saline Lands program and from there we got in touch with the Department of Agriculture."

Bonnie Rock Farm is more than 350km south-east from Perth and is one of the easternmost farms in the agricultural region before station country begins.

Phil and Caroline run the 1880ha property, which carries sheep, cattle and a limited cropping program.

The main crops in 2006 are oats, triticale for stockfeed and a niche triticale blend which is sold to a large poultry producer.

Rainfall is usually about 300mm a year but there has only been about 250mm in 2006, with winter rainfall of 43mm for May-August.

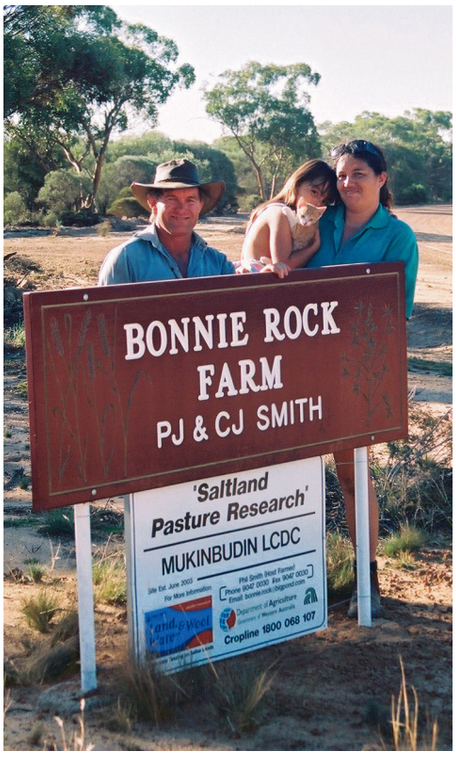
The Smiths run about 1000 pure Merinos, as wool and shipping wethers. They operate a feedlot for their Finn/Texel cross mob, with crosses bred for prime lamb production and lambs sold on the domestic market.

Caroline founded Timinta Park Dexter stud in 2003 and is working toward a commercially viable Dexter Angus cross herd.

DAFWA research officer John Paul Collins and technical officer Darren Michael visited Bonnie Rock Farm to gauge the progress of the Smiths' SGSL trial.

John Paul said when the site was first appraised in August 2003, it presented as a mid-slope seepage paddock where crops had started to fail and salinity was likely to worsen.

"We are really pleased with the success of the site."



"Early intervention was appropriate and so we developed a saltbush grazing paddock for sheep, to fit in with the surrounding crop stubble," he said.

Phil Smith said the farmland was originally cleared in the late 1960s and has been cropped on and off since then depending on the season, in a rotational basis. The salt scald area had been cropped with oats, lupins, wheat and triticale over the years.

"All that poorer country has had triticale planted on it but original vegetation was mainly wodgil trees and sand mallees," Phil said.

The 33ha trial site was initially treated with Roundup at a rate of about 1L/ha.

Within the paddock, a 5ha salt scald was enclosed with 1.5km of fencing.

This section was planted with saltbush seedlings at a density of about 900 stems/ha.

Caroline said a Chatfield tree planter was used to plant the saltbush.

"The Department wanted us to mound up the soil but we went the opposite way and semi-dammed it because the seedlings were able to handle that level of topsoil salinity at that stage," she said.

Old man, wavy leaf and river saltbush seedlings were used as well as some mulla mullas.

Caroline said enclosing the 5ha salt scald had helped to keep stock out and encouraged the vegetation to grow back.

"Originally the Department suggested perennial grasses," she said. *"But we attended a local community forum wl ere perennial grasses were discussed and there had been some negative experiences.*

"Combined with our climatic conditions we decided against using the grasses for now."

John Paul said the trial site had been ideally set up to allow Phil and Caroline to graze the saltbush in conjunction with crop stubble in the outer paddock.

"This provides them with a maintenance feed for their livestock and they can defer grazing their pasture paddocks to increase plant density after the break of season."

Phil said they would use the trial plot as an autumn haystack between feed gaps.

Soil salinity was measured at the beginning of the trial by conducting an EM38 survey across the 33ha trial paddock.

"In August 2003, average soil salinity was 40 milliSiemens per metre (mS/m)," John Paul said.

"Follow-up monitoring last month revealed that average salinity across the site was 5-10mS/m.

"Although these levels are at the mild end of the salinity scale, it is important to realise they were taken in winter and will increase as the temperature rises."

John Paul said it was promising that there has been a general decline in salinity across the site.

"Other constraints limiting plant growth have been the region's naturally acid soil types and dry seasonal conditions," he said.

John Paul said the saltbush mixture at the site had coped

well with the difficult conditions and now provided a useful source of moderate quality feed for the autumn months.

"Fortunately, species such as the mulla mulla have recruited between the saltbush alleys and provided diverse feed options for livestock," he said.

"The Department and Phil and Caroline were always aware that the site was fairly dry and as such would probably be used as a saltbush feedlot."

The soil pH level of the site had stayed at a moderately saline 4.5, according to Department tests.

Being the most easterly of all the SGSL sites, the Department's research officers did have some initial concerns about the Bonnie Rock site.

"The farm borders station country and we had limited experience growing saltbush in comparable areas so we were a little bit apprehensive," John Paul said.

"We are really pleased with the success of the site so far and hope others will see the benefits that saltbush can have, particularly in a difficult season like the current one," he said.

Practical and economic gains from the trial were most important but there were often human benefits too.

"From an aesthetic point of view, seeing forage shrubs on previously unproductive paddocks can really help to instil a sense of pride in the land owners," John Paul said.

"A good trial provides further incentives for farmers to extend this success to other parts of their farm."

Caroline said they got involved with the SGSL program because it was the right time for them, it could be done in the right place and the SGSL team was easy to work with.

"We also wanted to know if we could grow saltbush that we had sourced from a local nursery," she said.

"We would love to get that area back as grazing land but we will be happy just to get some production from it."

Caroline said the DAFWA staff had been highly flexible about the Smiths' involvement.

"Throughout our involvement in the program they have had our interests and wishes, as growers, always at hand," she said.

The Smiths have found that every SGSL trial was site-specific and there was no silver bullet for salinity.

If they did another trial they would run the planting rows across the paddock slope rather than down. If the Department wanted them to host another site they would be more than happy to do so.

"The support and back-up we have received has been fantastic," Caroline said.

QUICK FACTS

Location: 50km north of Mukinbudin on Moondon Road

Property size: 1800ha

Rainfall average: 320mm

Enterprise mix: Sheep, cattle and cropping.

Trial size: 33ha

Trial aim: Identify the most adaptable, productive and grazable perennial and annual species for establishment on moderately saline and semi-saline soils through the promotion of initial research on demonstration sites on different soil types.

Saltland pasture mix: Old man, wavy leaf and river saltbush, along with mulla mulla.

Original vegetation: Wodjil and sand mallee.

Paddock cover before trial started: Samphire and barley grass. Only barley grass areas were picked out for the trial.

Soil type: wodjil

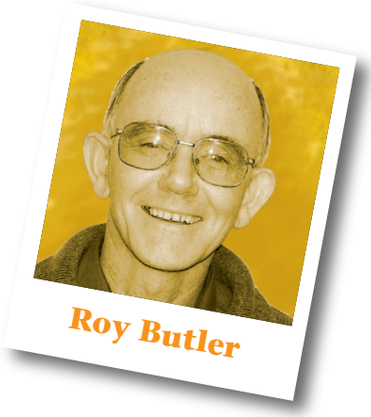
Watertable: -0.75m

Water salinity: N/A

Water pH: 4.5

Clearing date: 1960s

A word from the gate...


Roy Butler

In a semi-arid environment, such as Phil and Caroline Smith face at Bonnie Rock, it makes sense to investigate the potential farming uses of any native plant species already growing in the vicinity.

Yes, some are poisonous, unpalatable or indigestible, but from the early days of settlement wheatbelt farmers have known that some native plants provided safe and useful fodder for stock. These included various kinds of saltbush and bluebush and Acacia saligna.

The interest in native fodder plants includes herbs and grasses. Ptilotus polystachyus (green mulla mulla) is a widespread annual native herb, growing up to one metre high. It seeds freely and, especially following good rains, it may dominate other ground flora through its vigorous growth. When green, it is palatable and moderately nutritious, as shown in the laboratory analysis below.

Though Phil and Caroline decided against using perennial grasses in the plant mix for their salt scalded area, it is likely that native perennial grasses will appear voluntarily at the site.

Not all native grasses are valuable for grazing but if the volunteers do no more than help to bind and cover the soil surface they will be useful.

The proposed use of the area as an autumn haystack – with relatively short grazing and long rest periods – will favour both the survival of existing plants and the natural recruitment of other species.

Saltbush has low to moderate feed value for stock, and alone it does not provide an adequate diet. Greater diversity of plants will give animals the opportunity to select a better diet.

	Mulla mulla Ptilotus polystachyus
Date collected	21/05/99
Location	Merredin
Moisture %	76.4
Dry matter as received %	23.6
Acid detergent Fibre %	36.2
Digestible dry Matter %	59.8
Est. Metabolisable Energy MJ/kg DM	8.5
Crude protein %	14.3

Dr Roy Butler is a vet with DAFWA. Based in Meredin he has a special interest in the uptake of native grasses for broadacre agriculture.

"The Sustainable Grazing on Saline Lands program (SGSL) aims to support sheepmeat producers and woolgrowers profitably manage by dryland salinity on their farms.

SGSL involves building a network for testing and exchanging information, providing farmers with useful, timely and relevant information and conducting on-farm research into saltland production options.

The program operates in WA as a producer network of regional farmer groups undertaking individual sustainable grazing projects on local salt-affected farms as well as a Research & Development project through the CRC Salinity of which CSIRO and DAFWA are principal contributors.

The SGSL is a National program initiated and funded by Australian Wool Innovation, MLA and the Federal Government's Land, Water and Wool agency. In WA the project is co-funded, administered and delivered by the Department of Agriculture and Food WA, in conjunction with the CRC Salinity and CSIRO."

Further products in this series available at www.landwaterwool.gov.au

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