



# Have a yarn

talking salt scald with Barry Witham

## *“Resurrecting starvation corner”*

*A salt-affected paddock on the corner block of a Lake Toolbrunup property had become known to locals as ‘starvation corner’.*

The site was uncroppable with barley grass in some patches and one small salt scald. But since being bought by Barry Witham, three years ago, the land has been transformed.

His aim was to prevent salinity encroachment into higher, good cropping country, and make the site a productive grazing area for sheep.

After putting a proposal to the Sustainable Grazing on Saline Lands program and being accepted, Barry planned treatments in consultation with the SGSL team. The area was split into several smaller paddocks, one containing lucerne, one saltbush undersown with perennials, and another with trees.

Initially, Barry was not confident that saltbush would deliver the grazing capacity he was looking for.

*“I had seen a lot of saltbush sites and a lot of them looked like dead sticks,” he said. “But since then, I have changed my mind. It will grow and it is productive.”*

The fodder paddocks support large mobs of sheep which are rotationally grazed, and provide a handy management tool, particularly during the autumn feed gap.

In 2006 about 80mm of January rain boosted the lucerne growth, providing a green feed option for stock during summer.

The saltbush and perennials also got a boost from



## **“The area was ripped up and sown with an Evergreen Saltland mix.”**

the summer rains, providing a critical feeding option during the dry autumn and early winter months.

The site receives about 400mm in an average year and is prone to some waterlogging, with the soil ranging from moderately to highly saline grey clay, shallow duplex and gravelly sand.

*“With the autumn that we have just been through, it was just like having a haystack.”*

In August 2003, 14 ha of lucerne was sown on the moderately saline areas.

Three small strips of the lucerne were limed — at separate rates of 1, 2 and 3t/ha. No change to establishment or production has been identified so far from the varying rates.

Saltbush, which included the Rivermor strain of river saltbush, old man and wavy leaf, was seeded in winter 2003, with one section in alleys (three rows then a 5-metre gap).

The area was ripped up and sown with an Evergreen Saltland mix of perennials at 20kg/ha, then mounded and the saltbush seeded.

Six thousand fodder shrubs were also planted including wattles, melaleucas, casuarinas, saltbushes and bottlebrush in the tree treatment.

Barry has been particularly impressed with the performance of the Rivermor saltbush.

In June 2006, he planted oats and balansa clover in a lower-lying area, which was not as saline.

The dry start made establishment tough, but with good spring rains it is expected to be cut for silage later this year.

Barry has planted lucerne over several years, mainly to boost feed in the autumn gap and take advantage of summer rains.

*“I got sick and tired of myself and others saying the summer rain mucked things up,”* he said.

*“With the break, if we get a nice early rain and it’s still warm you get something straight away, whereas the annual pastures are still a few weeks away.”*

Saltbush and perennial grasses were also planted on another 20ha salt-affected site in 2003, which Barry uses as a flexible grazing paddock similar to the SGSL trial site.

Sheep are crash-grazed in large mobs through the sites to prevent preferential grazing.

Ewes and wethers are generally grazed on the paddocks instead of lambs or hoggets, which take longer to adjust.

However, opportunistic grazing in March this year allowed Barry to finish prime lambs in the lucerne paddock.

***“I’m really very pleased with what has happened — or what hasn’t happened.”***



While grazing a previously unproductive site is the obvious benefit of the SGSL trial site, the initial aim of halting the spread of salinity also appears to have been achieved.

*"I'm really very pleased with what has happened — or what hasn't happened,"* Barry said.

*"If someone came and offered me land similar to that before, I wouldn't pay the full amount for it but now I'd buy land like that again."*

Department of Agriculture and Food hydrologist Arjen Ryder said water usage in the paddock had increased by 50 per cent.

He said the design plan for the paddock has been "spot-on", with the plants selected matching the soil conditions.

Mr Ryder added that it was common for people to fence off and treat the worst saline area only. In this case the plan also included areas which are slightly affected but not worth cropping, leading to an improvement in productivity over a larger area and increasing the effectiveness of salinity control.

*"In this case Barry has taken the whole paddock and treated it as a complete unit, rather than just fence and treat the worst bit,"* he said.

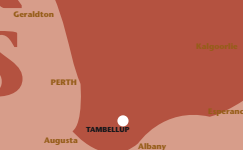
*"It can be more expensive. But you lift the productivity of the whole paddock, not just the worst bit."*

The trial on the Witham property was one of two sites the Lake Toolbrunup Group began in conjunction with SGSL in 2003.

The Lake Toolbrunup Group has been working on natural resource management issues for nearly 20 years.

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## QUICK FACTS



**Location:** 16km south-east of Tambellup on Aylmore Road

**Rainfall average:** 388mm

**Enterprise mix:** Sheep and cropping.

**Trial size:** 19ha

**Trial aim:** The group is interested in using soil ameliorates on saltland pastures to maximise livestock production off saline and structureless clay soils. This includes the trialling principles of the Albrecht model (Ca:Mg ratio). Treatments include lucerne, woody perennials, saltbush and perennial grasses.

**Saltland pasture mix:** lucerne, saltbush, tall wheat grass, Rhodes grass and puccinellia. Fodder shrubs were also planted.

**Original vegetation:** Paper bark/white gum

**Paddock cover before trial started:** Barley grass, bare scald, ryegrass and clover.

**Soil type:** Deep sandy duplex and brown loamy duplex.

**Watertable:** -0.75 metre below ground

**Water salinity:** 5800mS/m (seawater)

**Water pH:** 2.85



## A word from the gate...

Barry Witham's work on his saltland is another example of how with a bit of effort and good planning, unproductive saline land can be turned around to provide a valuable grazing paddock.

Salinity is a very site-specific phenomenon and options for management need to be developed on a case by case basis. One of the first things farmers should consider is whether waterlogging is an issue on their site. Waterlogging can exacerbate the effects of salinity on plant growth. If it is an issue, some careful planning and installation of shallow drainage structures such as spoon or W-drains or mounding of seed beds can assist in drainage from the root zone. With this site, Barry and the SGSL team got together and used the collective experience of everyone plus the salinity map to design a system that made the best possible use of the varying capabilities within the site. The result was a block of trees on the worst waterlogged sodic clay, lucerne on the mild-moderate saline areas, alleys of saltbush with tall wheat grass on the moderate-high salt areas and block planting of saltbush on the high-severe saline areas.

How saline the site is will determine what species are best suited to each site or parts of each site. On a recent visit in the Northern Agricultural



Mike Clarke

Region we examined a hillside seepage which had recently developed and was totally bare. With the help of an EM38 (to measure soil conductivity) the site turned out to be very fresh and was suitable for sorghum or millet as a summer fodder option. In most cases however saline areas in the wheatbelt are eventually treated after many years of being salty and are now best suited to saltbush pastures.

Barry has established alleys of saltbush on part of his property and has elected for three rows with a 5 metre gap arrangement. Alleys are a good approach to designing a saltbush system as it allows for future inter-row plantings with salt tolerant pasture or crop varieties that are being developed. It also allows machinery access for routine maintenance such as fertilising and spraying where needed. The width of the inter-row depends upon the farmer's machinery.

Many farmers now use their old combines entirely for their saltland areas and design alley systems that allow one, two or three passes on their combine width. Other farmers with airseeders may prefer wider inter-rows with up to six rows of saltbush. There are no hard and fast rules on the ideal row and alley width and farmers should design systems that best suit their situation.

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*Mike Clarke is a Research Officer with DAFWA with a particular interest in perennial pastures and managing salinity.*

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"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](http://www.landwaterwool.gov.au)

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