



# Have a yarn

talking salt scald with Graydn Wilcox



## “Inspirational local gets results”

*Inspired by impressive results achieved in local trial work, Graydn Wilcox has had similar success establishing saltbush and perennial grasses.*

By his own admission, the Woodanilling farmer's first attempt at direct-seeding saltbush in 2002 failed badly.



But his second attempt in 2005 was much more successful.

According to conservative estimates by Department of Agriculture and Food research officer John Paul Collins, Graydn could recover establishment costs in five to seven years.

Graydn and wife Jenny farm 2400ha in a 400mm rainfall zone west of Woodanilling.

Of this, 1200ha is arable, with 35 per cent cropped.

They mate 3200 ewes to Merinos and run 7000 sheep, of which 2800 are weaners.

Although half the farm is salt-affected, with about 600ha being samphire floodplains, Mr Wilcox said salinity on was under control.

Prior to recent attempts to establish saltbush, the Wilcox family had used a number of measures to minimise the effects of salinity.

In Graydn's first experiment in direct-seeding saltbush in 2002, he did not under-sow the pasture and established it on samphire flats.

*“I have since found out that this is a high-risk area,” he said. “It failed fairly badly.”*

But subsequent trials by the Beaufort Flats Pasture Improvement Group, which Mr Wilcox chairs, had demonstrated that saltbush could be highly successful.

Since 2002, the group has tested dozens of pasture species on Russel Thomson's farm to identify varieties suited to local saline conditions.

Direct-seeded saltbush under-sown with a mixture of perennial grasses had been a standout performer.

As a result, in 2005 Graydn decided to seed saltbush on a 20ha site this time with the saltbush under-sown with perennial grasses.

Before establishing the saltbush, Mr Wilcox had EM31 and EM38 surveys conducted on the block to indicate the total amount of salt in the soil.





While some of the 20ha site contained severe salt scalds, it was generally less saline than the area to which he had unsuccessfully seeded saltbush in 2002.

*"It appears that when direct-seeding, you go on to country that is at risk of going salty, or is slightly saline, rather than on land that is completely stuffed,"* He said.

Emulating the local trial work, he decided to seed perennial grasses thickly, then direct-seed saltbush rows over the top to provide a good mix of pastures.

In September 2005, sprayed the 20ha with 1.5L/ha of Roundup Power Max and 100mL/ha of alphacypermethrin.

A fortnight later he worked up the site, getting bogged a few times in very wet conditions.



In the first week of October, he seeded the site to the mixture of perennial grasses using an air-seeder with a width of 27 feet.

A converted John Deere chisel plough with knife points on a sleigh system created enough soil throw to cover the seed.

The seed was mainly sown shallow, but quite a bit was dropped on the top.

The seed included Evergreen Mix – a combination of subtropical grasses – sown at 2.5kg/ha, tall wheat grass at 2.5kg/ha and kikuyu at 40g/ha.

Agflow fertiliser was drilled with the seed at 80kg/ha.

The next day, contractor Ian Walsh used a single-row Kimseed Saltland seeder to direct-seed a mixture of river, old man, wavy leaf and creeping saltbushes, as well as *Acacia saligna*.

Mr Walsh seeded six closely-spaced rows, then left an inter-row gap for vehicle access.

In the main mix, a blend of river, old man and wavy leaf saltbush was dropped every 2 metres at 0.8 1kg/ha.

In a separate mix, 0.08kg/ha of creeping saltbush and 0.02kg/ha of *Acacia saligna* was dropped on the side of the mound.

The creeping saltbush was separated from the other varieties as it is an aggressive competitor.

Mr Wilcox said the optimum time to seed saltbush and subtropical grasses was usually August and September while the soil was warm and moist.

*"But because 2005 was so wet, we sowed in the first week of October,"* he said.

Mr Wilcox said he would probably seed perennial pastures earlier in future, even at the risk of getting bogged.

*"I reckon I did lose a little bit in the first spring, because the saltier areas didn't end up with saltbush germinating all over them,"* he said.

*"What didn't germinate in the first spring germinated last spring."*

*"But if I could have sown in September rather than October I reckon it would have all come up that first spring."*

To provide early protection from insects in 2006, a contractor sprayed the germinating saltbush with alphacypermethrin and chlorpyrifos at 100mL/ha during the first week of November.

In March 2006 the site was top-dressed with Super Potash 3:1 at 150kg/ha.

To help fill any gaps in the pasture, the fertiliser was mixed with Ball-SalinA seed mix from Ballard Seeds.

Ball-SalinA includes Cavalier burr medic, balansa clover, Rocket and Tetila Gold Italian ryegrasses and ALOSCA (dry flowable inoculum).

*"But it was such a poor year last year that a lot of it never germinated,"* he said.

The 20ha site was fenced in September 2006 and he plans to eventually fence the rest of the site into cells.

*"I'm trying to do it as cheaply as possible,"* he said.

He had not yet been able to graze the 20ha as there was no reliable water source yet.

However, he had always intended to allow the pasture to become well established for 18

months, he planned to put sheep on to the site this autumn.

*"Initially I will just try to tidy it all up using high stocking rates of at least 20 to 30DSE/ha."* He said.

*"I reckon they might only be on it for a week to eat it all. After that I'll always aim to graze it - probably not through the winter months because it might bog up – but certainly through the summer and autumn."*

When more of the site is planted to saltbush, Graydn plans to conduct cell grazing throughout the year.

He was very pleased so far.

On less saline soils, saltbush had thinned out while the grasses had taken off.

*"On saltier areas the saltbush stood out as the star performer,"* Mr Wilcox said.

He said the success of the project meant he would seed more of his farm to perennial pastures in future.

*"I'm a bit of a sheep orientated farmer, and I see that this will hopefully help me expand my winter grazing hectares."* he said.

Mr Collins calculated that, including the cost of Graydn's own labour, the

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total cost of establishment for the site was \$492/ha.

*"Although this is on the high side, the establishment was excellent and the grazing returns will be high."* Mr Collins said.

*"Economic analyses have demonstrated that the establishment costs can be recovered in five to seven years ... and that for every dollar invested there is a \$2 return."*

Graydn believed establishment costs were less than the department's estimate because some fencing had already been in place.

Excluding his own labour, he estimated he had spent about \$7000 when chemicals, contractors, fencing, seed and fertiliser were taken into account.

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## QUICK FACTS



**Location:** West of Woodanilling

**Rainfall average:** 400mm

**Enterprise mix:** sheep and cropping

**Trial size:** 20ha

**Trial aim:** Establishment of a mix of perennial grasses, annual legumes and shrubs to lift productivity from 1 to 7DSE. From 2007 will investigate best grazing management strategies to maximise on-going productivity.

**Saltland pasture mix:** Because the site is highly variable an initial pasture mix sown of 50% Evergreen subtropical and 50% tall wheat grass with a small quantity of kikuyu was sown. Then the fodder shrubs (saltbushes and Acacia) were seeded using the niche seeder.

**Original vegetation:** Flat top yate, and White Gum with some Flooded Gums

**Paddock cover trial started:** Silver & barley grass, bare scald (approx 50% of the site), with puccinellia in specific adapted areas

**Soil type:** highly variable with better areas having a coarse sand over grey clay and salty areas of coarse grey clay

**Watertable:** still to be determined

**Water salinity:** stock quality

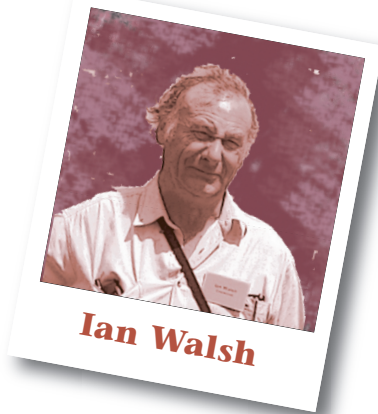
**Water pH:** still to be determined



## A word from the gate...

The key carrying capacity driver in any pasture is plant density. Other drivers such as biomass, plant vigour, and nutrient availability are secondary. This is true for saltland pastures as with any others. It can be achieved through good site preparation, correct species selection and time of sowing. One of the main hurdles in successful saltland pasture establishment is that of **negative thinking!** Saltland should be regarded and treated as a valuable resource. The same planning and research that goes into cereal and canola establishment should be applied to establishing saltland pasture. Novices should make use of advice available through various agencies, private seed merchants and grower bodies including DAFWA and the Saltland Pastures Association. On this site Graydn has followed my preferred method but the main principles to follow are:

- 1. Site preparation:** Aim to have as little vegetation on the area (dry or green) at the time of final working in spring as possible.
- In the spring and summer prior to establishment, graze the site at high stocking rates to force the sheep to eat less palatable species such as barley grass, silver grass etc. If not possible, then use a knockdown herbicide in the same time frame to reduce dry matter in the following spring. Do not use chlorsulfuron or Metsulfuron in the knockdowns!



- At the break of season in the year of establishment, stock heavily through winter and early spring (or knockdown after seeding).
  - Work up the area with full cut machine in May/ June if using the chemical option. Some salt affected land can become tight and compacted for many reasons. This will require another knockdown in July as the cultivation will stimulate new germinations.
- 2. Seeding:** Begin final soil preparations as soon as the site is trafficable after winter, usually mid-August in the lower Great Southern.
    - Spray the area with a knockdown and insecticide.
    - Work up area to a reasonable seed bed, as establishment of perennials on neglected ground this way is generally better than zero-till.
    - Sow the chosen perennial mix over entire area from early September onwards, depending on the season. In dry years sow early; wetter years early October. Seeding can be carried out using your machine of choice but making sure that the seed is sown shallow.
    - Immediately follow with the over-sowing of the chosen saltbush mix using a niche seeder.
    - Ensure as far as possible that the niches formed allow for the draining of surface water.
    - Keep a close eye on redlegged earth mite, bryobia mite and aphids. These insects can destroy emerging saltbush before they are through the ground.
    - Defer grazing till the following year, but pastures can be carefully grazed earlier if growth has been fast.

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*Ian Walsh is a Sheep and Wool Producer Cranbrook, WA. Experienced niche and saltland seeding contractor.*

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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)

## Contact

Graydn Wilcox  
9823 1550

Arjen Ryder  
Department of  
Agriculture & Food  
9892 8444  
[aryder@agric.wa.gov.au](mailto:aryder@agric.wa.gov.au)

