

# SGSL TRIAL SITE SUMMARY #1



## ESTABLISHMENT AND EVALUATION OF SALINE PASTURE BETWEEN EXISTING WIDE SPACED SALTBUSH Northern Stokes Landcare Group, Ungarra, Eyre Peninsula

### Research Objectives

To obtain information on the best way to establish puccinellia and legumes into existing saltbush.

To identify the most appropriate species for different soil salinities.

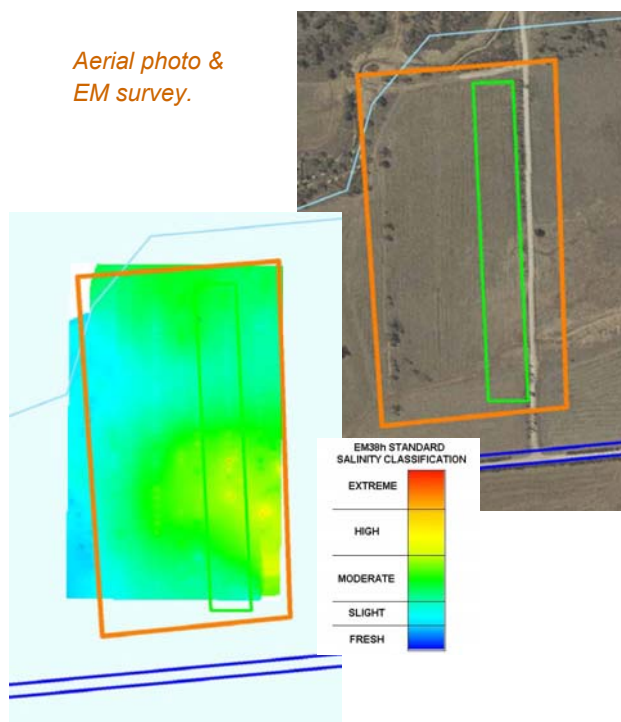
To identify the most appropriate sowing and management techniques.

- Feed value was estimated through grazing day measurements.

### The Trial

- Prior to pasture establishment, 1-2m deep drains were constructed across the property to improve flow in silted up creeks.
- In 2003, puccinellia (10 kg/ha) and Frontier balansa clover (5 kg/ha) were sown between existing rows of old man saltbush.
- In the establishment phase, 100 kg/ha of 18:20 DAP and 100kg/ha urea were applied.
- Urea applications (100 kg/ha in winter) have continued in following years for pasture maintenance.
- In early 2004 (following only limited success from the 2003 establishment), a Grizzly plough was used to cultivate inter-row spaces. This was designed to help control invading samphire and boost soil organic matter.
- In 2005, inter-row species were monitored for persistence.
- The saltbush and understorey were grazed with dried understorey in April-May, and with green understorey in winter-spring.

Aerial photo & EM survey.



### Fast Facts

**Location:** Ungarra, Eyre Peninsula

**Soil Type:** Sands and clays

**Rainfall:** 400mm

**Pasture Base:** Saltbush, puccinellia, volunteer ryegrass and medics

**Landscape:** Creek flat in a hill and gully landform



*Before (2001) – Invading samphire, between establishing saltbush rows.*



*After (2005) – Understorey dominated by volunteer ryegrass and medics.*

## Results

- The impacts of drainage at this site were spectacularly successful. When combined with high water use saltbush and lower than average rainfall, this has caused watertables to drop. A previously highly saline site (with invading samphire) now has only low to moderate salinity.
- Despite a good year in 2003, establishment of puccinellia and Frontier balansa clover had only limited success. Mostly non viable seed was thought to be the problem.
- Cultivation between saltbush rows in early 2004 helped to control invading samphire and has enabled higher productivity volunteer species to emerge.
- For successful establishment of saltland pastures on secondary saline sites, it is

essential to control invading samphire\*. (\*Samphire is normally a protected native species. However, on agricultural land it can be cleared subject to a management plan approved by the Native Vegetation Council.)

- Ploughing back vegetative growth also increases organic matter & nutrition.
- With improved salinity conditions, high productivity volunteer ryegrass and medics now dominate the understorey. Some puccinellia and Frontier balansa clover has persisted, however conditions now suit the higher productivity volunteer species.
- Fertiliser application has boosted production from the understorey species. However, now that there is a legume component present, future nitrogen inputs will be reduced.
- From a 12 week period, stocking rates were estimated at 5.3 dse/ha. This included supplementation of 300kg of cereal hay every 3 days for the last 4 weeks.

Elsewhere on the farm, David has found that:

- Drainage and lowering of the watertable has improved production in cereals and lucerne.
- Small paddocks (8-12ha) are ideal for grazing management.
- Salt pans require working up before seeding puccinellia to allow for easy root penetration. In particular, hard-setting clay soils need ripping up and a fine tilth. Ridging allows salts to flush and retains puccinellia seed.
- High seeding rates were successful: 5-10kg/ha of lucerne, 8-10kg/ha of puccinellia.
- Strategic planning is essential as it can be 10-15 years before some investments pay off.
- Work on the property since 1985 has cut the extent of unproductive saltland from 136ha to approx 27ha, mainly in creek lines.

## Want to know more?

### Participating Host Farmer:

David Liddicoat

### Technical Support:

Linden Masters, Tel: (08) 8628 2091