

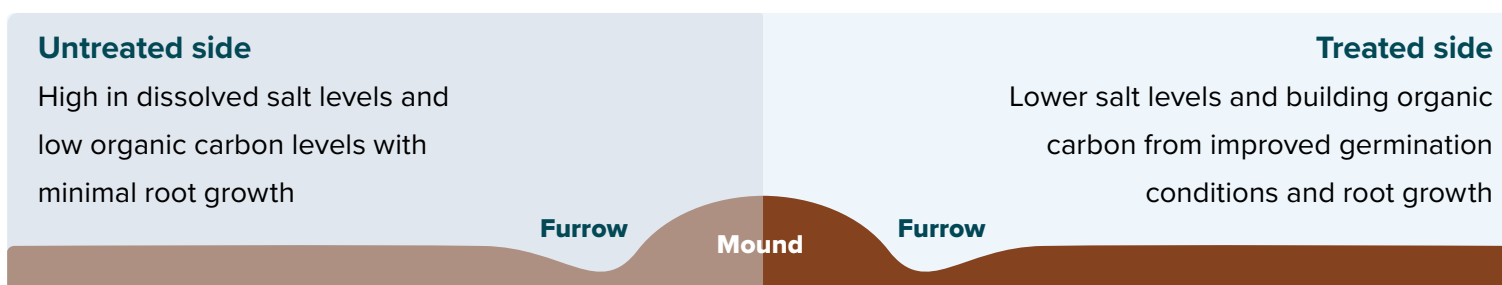


Control
Na (Sodium) 1120mg/kg
Carbon 0.44%

Treatment
Na (Sodium) 741mg/kg
Carbon 0.52%

Soil test results

The aerial view (above) in 2024 illustrates colonisation of chenopod species 14 years after mechanical plough works. See the below figure for further analysis.



Soil characteristics

After using a dumpy level for site set up and marking of contour lines, a Kim Seeder with two opposing discs was towed behind a tractor to plough the surface with the narrow tyne to a depth of 150mm. The plough lines pattern were created to form a brick work pattern. This allows water runoff to champagne to the next contour level, and also leave a convenient gap to allow a motorbike to be ridden through during mustering. To foster germination, some areas were mechanically seeded with local native seed. Species planted included *Maireana turbanata*, *Atriplex Vesicaria* and *Acacia Victoriae*. The majority of the plant recruitment in the contour lines occurred naturally.

Want to know more?

Scan the QR codes to view factsheets for extra learning.

Follow us on socials:

FB: @SAALLandscapeSA
IG: @saaridlands
LI: /sa-arid-lands-landscape-board



Erosion Control
Factsheet



Rangeland
Rehydration
Guide

This project has been funded by the State Government's Landscape Priorities Fund.



Increasing Rainfall Infiltration

Slowing down surface water flow in arid areas



A decade of soil remediation on Edeowie Station

Property Size: 26,000ha | Stock: Merino Wool Sheep | Soil Type: Dispersive Clays | Annual Rainfall: 230mm | Region: Flinders Ranges



www.landscape.sa.gov.au/saal

First step: Identifying the problem

Located on the western slopes and plains of the Flinders Ranges, extensive soil remediation works have been undertaken on Edeowie Station. Former managers Leonard and Sharon Nutt (pictured) were concerned by the **extensive scalded plains with very little perennial cover**. Three consecutive **dust storms** in a short time prompted them to start these soil remediation works to encourage the **regeneration of ground cover**.

The Nutts secured NRM funding to install contoured brick works patterns across large areas to slow and trap water, seed and sediment. Work focused on Number 1 paddock of about 5000ha stretching from Bunyeroo Creek to Brachina Overflow and a scalded area of Station paddock south of the Bunyeroo Creek. The paddock supported 400-500 ewes with lambs at foot.



Solution 1: Opposed discs

After using a dumpy level for site set up and marking of contour lines, a Kim Seeder with **two opposing discs** was towed behind a tractor to plough the surface with the narrow tyne to a depth of 150mm. The plough lines were created to form a brick work pattern. **This allows water runoff to champagne to the next contour level**, and also leave a convenient gap to allow a motorbike to be ridden through during mustering. To foster germination, some areas were mechanically seeded with local native seed. Species planted included *Maireana turbinata*, *Atriplex Vesicaria* and *Acacia Victoriae*. The majority of the plant recruitment in the contour lines occurred naturally.



Solution 2: Deep ripping

A 600mm mouldboard tyne was used to undertake the **deep ripping to a depth of 300-450mm**. The deep ripped areas created deep furrows and germinated lots of annuals and short-lived plants in the short term, but there were limited perennials established over time.

Why doesn't ripping always work?

Sodic heavy clay soils easily collapse when ripped. After a few rainfall events, the dispersive clays can seal the rip fracture reducing the effectiveness of the rip. Heavy water flows continue over the surface if plant-root establishment into the rip hasn't taken place.

What did improvement look like?

This project aimed to improve land condition and vegetation cover rather than increase stocking rates.

"We saw recruitment of Bladder saltbush, several Maireanas, Bindii and native clovers."

-Leonard Nutt.

Fifteen years on... what has changed?

Areas treated with the Kim Seeder generated seasonal growth more quickly than deep ripping. **Vegetation improved in less than three years**, which aligned with significant rainfall events from 2010-2013. These **results have stood the test of time** in the No. 1 paddock north of Bunyeroo Gorge, where a water infiltration test took 1 minute and 23 seconds in the ripline and 9 minutes and 15 seconds in the bare scalded area between the rip lines.

🕒 1hr + 🚜 7Ls (95hp) = 🧱 3ha brickwork



Before



After

Why does this method work well in these soil types?



The creation of a furrow and a mound increases the time and depth that water pools on the soil surface – improving water infiltration into the soil profile.



When water moves down through the profile it flushes salts and promotes root development at depth.

