

# Reclaiming an erosion prone paddock to a useful 'living haystack'

**Location:** Wharminda

**Region:** Eyre Peninsula, SA

**Industry:** Mixed farming

**Issue:** Large blowouts on non-wetting sand dunes had developed over many years and were now in need of urgent rehabilitation and reclamation. Previous attempts had not provided a long-term solution.

**Key Outcomes:** Changed management practice - consisting of stabilising a fragile non-wetting sandy paddock, planting and managing a successful perennial pasture over previously extensive blowouts to establish a valuable living asset for the farming business.

## Background

Darren and Fiona Millard manage a 1500 ha family farm in a mixed farming system at Wharminda, running 1000 ewes and 500 hoggets in a 355mm rainfall zone. The property is typically characterised by deep non-wetting sand over clay soils that have traditionally been hard to manage, particularly in dryer years.

In 1981, the Millard family purchased a nearby farm with two paddocks that could not be stocked due to the erosion potential. During the 1980's the previous owners had traditionally destocked the 24 ha paddock to maintain soil cover however, Darren needed a sacrificial paddock for livestock and as a result soil cover declined and the dunes started to erode.

Large blowouts developed and expanded over a number of years and in the early 90's, Daren and Fiona researched options used elsewhere to stabilise the erosion and provide a living haystack for the livestock. As a result they built contour banks to create ridges across the paddock and planted Tagasaste trees to combat the erosion issues and provide cover/shelter for stock. They found that after two to three years that the Tagasaste trees did not establish well on the upper slopes of the dunes. Tree establishment was better on the lower slopes and flats they were out of reach of the stock for grazing.

Over the years, veldt grass was another tool they used to combat erosion whilst providing some feed with varying degrees of success. The lack of ground cover started to have an impact on yield. Over several years' wool output declining from 62% to 49% due to sand in the wool.

The reduction in yield and increasing fragility and unusable of the paddock become the catalyst to take remedial action.



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## The project

Through local Natural Resource Management contacts grant funding became available to undertake significant work to stabilise the site and restore soil cover. After seeking advice from several sources and obtaining quotes to undertake remedial works, Darren engaged a contractor to begin eight days of earthworks on the 15 May 2013. As you can see by the photos, this was a large portion of the work to be undertaken so the paddock could be set up for the future.

Remediation of the paddock was done in several steps:

**Step one:** remove all remaining tagasaste trees and burn them.

**Step two:** level out the sand hills and fill in the blowouts. This way they could be 'treated' the same as the rest of the paddock.

However, even after this remedial work there were still sections of the paddock exposed to erosion. Darren wanted to spread clay on these erosion at risk areas, however, no contractors available at the time. Instead ..."To reduce wind erosion, I took twenty-five bales of straw and rolled them out over the at risk areas. Particularly on the tops of hills and spread the bales through light cultivation," Darren said.

The paddock was sown on the 2 June 2013 with 40kg/ha barley and summer active lucerne L56 at 9kg/ha, with 85kg of 27/12 fertiliser.

A further 80kg/ha of barley was sown over the 'high risk erosion areas' with 170kg of 27/12 fertiliser to ensure high plant densities.

"The germination was fantastic with a good to moderate stand of lucerne and veldt grass established on the site with no blowouts occurring," Darren reported.

A further follow up of super 27/12 was spread over the Lucerne in 2016 to encourage growth to make better use of the feed available.

Darren let lucerne go to seed over a few years, knocking the seed off with harrows in the hope that it would fill in some gaps in the lucerne stand. "I believes that this has worked well and I am happy with the lucerne stand now," Darren said.

## Outcomes

On the 6 February 2014, over 250 lambs and ewes were introduced for one week into to the twenty-four ha paddock to make use of the feed on offer.

"It was important that the paddock was not overgrazed and all my work undone," Darren said.

Clay spreading, the final step in reducing the paddocks susceptibility to erosion, was undertaken in autumn 2014. Darren was then able to manage the paddock more effectively and efficiently. As mentioned several times Darren's 'mind is now at ease' when moving stock to that paddock.

The paddock was rested for two year, due to good seasons and ample feed in other paddocks.



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With the dry start in 2017, the paddock proved beneficial. Due to the lack of feed at the end of April, Darren introduced 250 ewes and 250 lambs onto the paddock, where they were kept for up to six weeks.

Using this paddock as a stock confinement area, with excellent cover in a dry start year had enabled the Millard family more flexibility in decision making, with regards to either sell stock or buying in feed.

It's now 2018 and Darren has been able to maintain his stock numbers. Utilising the established lucerne and veldt grass in March 2018, a month earlier than the previous years, due to low feed reserves. The lucerne and veldt grass has been carefully rotationally grazed, with a 2-3 week spell to recover between grazing.

## The future

Darren's plan is to maintain the veldt grass and lucerne through conservative grazing strategies and has a nutrition plan to encourage long-term viability of the paddock. He would like to increase soil cover on some erosion prone areas with more lucerne and opportunistic cropping.

"I plan to keep the sheep numbers stable as they are an important part of the farming business. I have invested a lot into this paddock and, particularly in dry years, it has proved to be a valuable resource in my management strategy," Darren said.

Darren hopes that in four to five years he would have broken even after the cost of remediation, increased production from the paddock, and not having to buy in hay or reduce stock numbers. "Peace of mind knowing that the paddock erosion risk has been rectified and the whole paddock can be managed more efficiently is great," Darren said.

Darren outlined a few key points to consider.

### Pros:

- Paddock management - he has trust in the work that has been done to the paddock to make it useable and erosion proof.
- Has established a reliable 'living haystack' that is useable in times of need
- Wool yields are back up over 60% on wool records
- The paddock is workable and driveable now providing more manage options for Darren in the future.

### Cons:

- Initial dozer and earthworks costs – large expense
- Paddock was 9-10 months out of use for reclamation work and establishment of lucerne, veldt grass pastures.

### Food for thought

Darren has been investigating the use of summer crops such as millet and sorghum to fill in the tops of sand hills and provide another feed source at differ times of the year. These summer crops are generally seen as an annual crop but Darren is investigating their viability for a longer-term strategy such as a three - four year period.



**Cover has been established on blowouts with perennial grasses. Now sheep can graze these areas for short periods of time. This is (almost) a before and after to the photo with Darren standing in the blowout.**



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