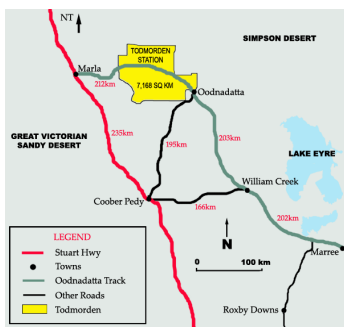




# Recovering Eroded Land in SA's Pastoral Lands



## TODMORDEN

### OWNERS

Douglas Lillecrapp, Gordon Lillecrapp and Mary-Anne McMichael

### LOCATION

Marla - Oodnadatta

### PROPERTY TENURE

Pastoral Lease

### ENTERPRISES

Cattle

Todmorden was originally taken up as a pastoral lease in 1885 and the Breaden Family developed it as a cattle and sheep station, from 1905. The Lillecrapp family purchased the lease in 1962 and Douglas Lillecrapp has managed the property as a cattle station since 1990.



Reid's paddock site was being drained of water through expanding gully heads, damaging the sustainability of the ephemeral swamp

Having long been interested in sustainable pastoralism, Douglas knew his country could be more productive and sought to restore the natural landscape function to create a healthier property.

He became motivated to recover eroded land on the property after attending the *A Grass with Class* information day run by the Marla Oodnadatta NRM Group in 2009. The event included presentations on cost effective and strategic restoration works.

Plans to restore an ephemeral swamp were aimed at the natural landscape function, reducing soil erosion, increasing water infiltration and rehydrating the landscape to ultimately grow more feed and restore biodiversity.



Douglas joined an Ecosystem Management Understanding (EMU™) project in 2009 and came to understand the greater implications of cattle and kangaroos padding over a natural sand bank and subsequent draining of an ephemeral swamp. The pads and tracks created exacerbated erosion which consequently lowered the natural base level of the ephemeral swamp.

A gully head marching straight up the animal pad was sucking water out of the swamp and draining the landscape every time it rained.

The area was no longer able to function as an ephemeral swamp. Invasive plant species were becoming dominant and there was decline in the more palatable species.



Gully erosion in Reid's paddock creek causing the drainage of important water from the landscape.



Reid's Paddock - Installing check banks below top contour bank and a gully head being addressed

Douglas was helped to identify and prioritize his key resources, which due to the amount of work involved had become overwhelming. He also identified where the interventions would be most effective to restore the functionality of the swamp.

A soil conservation officer was brought in to identify specific intervention types and provide the supervision and training to upskill Douglas and the Todmorden staff.

Douglas decided to fence off a fragile drainage line within a larger holding paddock prior to work starting. This ensured the earthworks could be protected from livestock impacts and also resulted in improved stock management. The smaller holding paddock could still be used on occasion when trucking or moving stock as the size of the smaller holding enabled easy and quick livestock management.



With the site secure, work began at Reid's Paddock, where gully erosion was causing the draining of important water. A bulldozer was used to remove the gully head and build contour and check banks to address the problem.

When the work in Reid's Paddock was complete, on-ground observations lead to the addition of a stage two site. Located further up the catchment, work on Mary's Well was designed to complement the Reid's Paddock project.

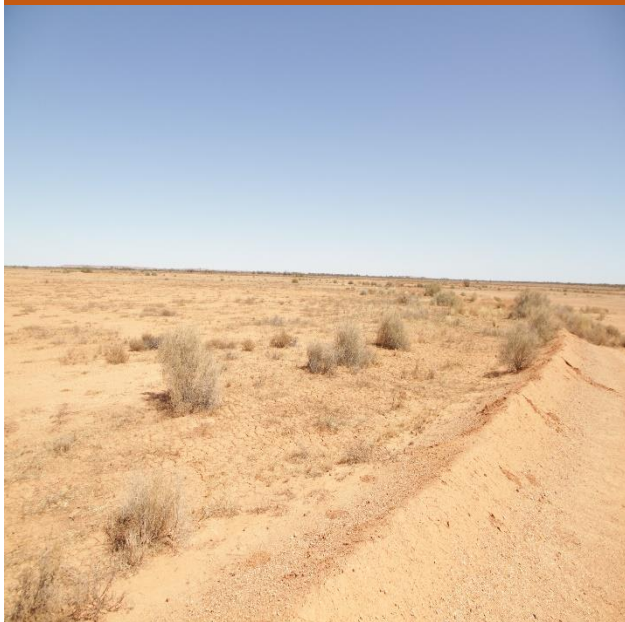
The Mary's Well site had similar issues, with water exiting the landscape too quickly due to animal pads and erosion processes, which altered the flow of overland run-off.



**Mary's Well – Check banks were built in 2010 (above). In 2014 (below) the banks remain, however cattle padding had created weaknesses. Douglas and his team are able to maintain them to ensure flow across the land.**



**Banks were created to encourage water flow**



Check banks were built at the site in 2010, however cattle padding created weaknesses. Having learned from the first project, Douglas and the Todmorden staff were able to repair and maintain the banks to ensure water flows across the land.

The work undertaken at Todmorden allowed Douglas to broaden his thinking about land rehabilitation and what could be achieved. He saw the greatest improvement in Reid's Paddock, in the regeneration of a significant number of preferred palatable species.

After a big rainfall event on the fresh banks in 2012, the banks slowed and spread the water before a smaller subsequent rainfall caused a breach in the main plug. This was easily repaired. The banks withheld the main brunt of the rainfall event and significantly reduced the potential water erosion in the Todmorden landscape.





Constructing the main bank/whoa boys on the homestead access road to reduction water erosion issues. This has resulted in a significant reduction in maintenance costs to keep the road serviceable.

His work on the first two projects lead Douglas to identify a number of others he felt comfortable addressing.

Swing filters were placed across boundary fences and Kruse's Dam was fenced off, to allow better stock control. Dam water is pumped into a storage tank and cattle drink water from a stock trough, located within a trap yard.

Douglas also worked on his roads, where whoa boys on the main road were too sharp to drive over comfortably. These were widened and are now working well. Kilometres of roadside windrows were also removed, significantly reducing the cost and time associated with road maintenance.

All earthworks undertaken on the property have improved landscape function and productivity, reduced erosion and reduced the chances of unnecessary drying out of the landscape.

After the good rains of 2010 and 2012, there was significant vegetation recruitment however the dry seasons and intense grazing pressure from the kangaroos has had an extreme impact on the survival and recruitment of grasses.

**Swing Filter at Alberga Creek (2019)** The purpose of the swing filter is to slow the flow of water in the creek and to minimise fence damage after flooding events.



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