

Mt Ball — Theresa Creek

Gully Erosion

Stuart Donaldson and his family have lived on Mt Ball since 1997, a 9,000 ha property originally part of the neighbouring property Keilambete purchased by his father in 1968. Mt Ball is situated on the Clermont-Rubyvale road (north-west of Rubyvale) and consists mostly of undulating country of very old geology scattered with numerous 'younger' basalt peaks.



Site 1. A 2.4 hectare area of alluvial gully erosion along Carbine Creek, beside the old windmill and trough located in the corner of Carbine paddock.

Catchment runoff on Mt Ball enter a number of Carbine Creek's tributaries, although these waterways do not hold surface water for long due to their deep sand channels. Groundwater is a valuable but unpredictable resource on Mt Ball where bores and dams are used for watering stock.

EROSION IMPACTS

The Donaldson's operate a successful breeding operation, carrying anywhere between 600 and 1,000 head depending on the season. However, areas of erosion and gullies have made it difficult for them to navigate vehicles and muster around the property, impacting production activities and yarding.

“Although I wanted to improve these eroded areas, I just couldn't economically justify doing it.”

FUNDING REMEDIATION FOR MULTIPLE BENEFITS

To help Stuart and other landholders experiencing similar erosion issues in the Theresa Creek sub-catchment, Fitzroy Basin Association Inc. (FBA) partnered with CHRRUP to work with graziers. Together they have implemented a range of innovative gully repair works through funding provided by the Australian Government's Reef Trust.

In addition to helping graziers improve their land condition and overall productivity, on-ground works are specifically designed to reduce excess sediment and nutrients from gullies washing off

property and into local creeks which eventually combine with rivers that discharge into the Great Barrier Reef Lagoon.

SITE DESCRIPTION

Whilst mountain coolabah woodlands typify the basalt peaks, and alluvial box flats cover the riparian zones on Mt Ball, the property is predominantly a silver-leaved ironbark on duplex soils land type; making it highly prone to large scale erosion once sodic subsoils are exposed.

Two large areas of erosion occur on Mt Ball within the silver-leaved ironbark land type.



Site 2. A significant 20.5 hectares of similar erosion.

Based on historical imagery the erosion at Site 1 is thought to be the site of an old farm track heading directly upslope (another track has since been cut further east). Erosion at Site 2 is assumed to be caused by historical gem fossicking, preferential grazing and the installation of a windmill and watering point on the creek bank. Over time, cattle access between water and preferred grazing areas has compounded erosion at both sites resulting in a significant loss of top soil, leaving a hard-setting soil surface and exposed sodic subsoil.

This project was supported by Fitzroy Basin Association through funding from the Australian Government and delivered through Reef Trust, in collaboration with CHRRUP.



“The project has already reduced my helicopter hours — so there is \$900!”

SITE REMEDIATION WORKS

At both sites, stock exclusion fences (0.6 km and 3 km) were installed, as much as possible, along the contours in each paddock to allow gullies to rest and recover.

In order to trap sediments and seed on gully floors and facilitate natural revegetation, Stuart constructed 31 Porous Check Dams (PCDs) using The Gully Toolbox guidelines.

Round hay bales were also rolled out on the hard-panned surfaces in and around gullies. With time it is expected that organic matter and sediments will accumulate in the hay allowing a variety of native grasses to establish.

POSITIVE IMPACTS FOR THE PROPERTY

Soon after completing the remediation works, Stuart noticed some unexpected pay-offs to his business operations. Since fencing out the gullies, he has not only observed a reduction in his animals' stress levels, but also a reduction in the effort required to muster them which is saving him money.

POSITIVE IMPACTS FOR THE REEF

Over time, Stuart expects to see further benefits across his property from the works he has completed and training and knowledge he has gained through participating in this funded program. Stuart's new skills in managing erosion, improving ground cover and enhancing land condition have positive flow-ons for the Reef.

By working to reduce the amount of soil leaving his property, Stuart is helping to improve water quality in his local creeks, the rivers they join as well as reducing sediment loads reaching the Great Barrier Reef Lagoon.



AFTER REMEDIATION WORK

To offset loss of water access in the erosion sites, two off-stream watering points have been strategically placed where they are least likely to lead to future erosion issues.



SITE 1 - BEFORE REMEDIATION WORKS

Before construction of a PCD.



SITE 1 - AFTER REMEDIATION WORKS

2 weeks following construction the PCD at Site 1 is already collecting organic debris and sediments.