FITZROY BASIN ASSOCIATION

CASE STUDY

Waterford — Isaac

Gully Erosion

Russell notes that over time cattle have exacerbated erosion as they move between water and improved pasture on flatter country.

Waterford is situated among basalt peaks characteristic of the region between Capella and Dysart and located on the watershed of the Isaac and Nogoa Rivers. It is operated by Russell and Sheryl Purvis who have owned the property for more than thirty years.

Using a rotational grazing system, Russell and Sheryl move their 1200 head Santa Gertrudis herd roughly every two months. In addition to running a successful breeding and fattening operation, they share-farm a small portion of their land for grain crops.

EROSION IMPACTS

Both Russell and Sheryl feel that eroded gullies on their Waterford property have had considerable impact on their grazing operation by restricting stock access and the movement of vehicles and horses around the property.

Despite improving their grazing management which focuses on retaining a good body of 3P grasses (including black spear grass, desert mitchell, urochloa and buffel) under virgin poplar box woodland, and constructing whoa boys along the boundary fence, Russell and Sheryl have been keen to trial more approaches to further improve eroded areas.

> **"Whilst we were keen to address these areas further, we lacked the confidence in our skills to try new approaches on our own without any help or advice."**

FUNDING REMEDIATION FOR MULTIPLE BENEFITS

To help Russell and Sheryl, and other landholders experiencing similar erosion issues in the Isaac sub-catchment, Fitzroy Basin Association Inc. (FBA) partnered with Capricornia Catchments 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

Erosion sites on Waterford primarily occur within the 155 hectare forested part of their 400 hectare paddock. The gullies occur at the foothills of ranges and tablelands, on moderate to steep slopes (4-8%), where the hard, shallow soils of lancewood and rosewood land types meet the deeper, sodic and highly erosive soils under poplar box country.

Historical photos of this area show that sometime between 1952 and 1973 most of the trees and shrubs were cleared along the property boundary for a fence line. This clearing appears to have exacerbated erosion processes, resulting in the steady cutting (>3m) and disturbance of the dispersive sodosol beneath the surface.

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

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SITE REMEDIATION WORKS

The point of pourous check dams (PCDs) is to capture organic material such as leaf litter and seeds as well as sediment from the upstream catchment, creating a favourable environment for grass cover to establish over the gully floor.

Some PCDs have been constructed with wattle suckers rather than sticks as suckers were more readily available in the vicinity.

In addition, brush and logs laid in strips along the contours are planned for scalded areas to trap sediments and accumulate organic matter. To enhance this process and create a more favourable environment for seed germination, round hay bales will be rolled out above these obstructions and seeded with a "Light Western Soil Mix" of grasses.

As the fenced area now excludes cattle access to dams, an alternative watering trough was installed in a central, less erosion-prone part of the remaining improved pasture. At the same time, a second trough was set up at a stable site within the exclusion area, for future grazing when the area has sufficiently reestablished.

POSITIVE IMPACTS FOR THE PROPERTY

Both Russell and Sheryl are grateful for the knowledge they gained during their involvement in the program and are excited to watch improvements to excluded areas in the years to come.

"The knowledge gained during this project has given us confidence to make the extra effort towards addressing the problem; knowing that there will be a positive outcome, rather than doing something else that might not work."

POSITIVE IMPACTS FOR THE REEF

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

After fencing the area, Russell and Sheryl have constructed 30 Porous Check Dams (PCDs) across six gully sites based on The Gully Toolbox guidelines.

Three kilometres of fencing has been constructed to exclude cattle from gullied areas for at least three years.

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