



Our country, Our future.



Gully Stabilisation & Soil Conservation

Cooperation - the key to future flooding resilience

In January 2013, excessive rain from ex-cyclone Oswald—800mm over 20 hours—triggered massive flooding in areas higher than previously seen. The rain event caused major structural damage to fencing and water infrastructure, as well as land degradation through erosion.

While the immediate flooding impacts were felt deeply across the region, as the waters receded, the full impacts were starkly obvious to landholder Glen Kelly, of Oakleaf — a 2,500 hectare property west of Rockhampton. His neighbour, Gordon Hanrahan, was left with a gaping 6-metre-deep erosion chasm along a tributary of Neerkol Creek, which also affected Mr Kelly's adjoining property as it commenced directly below the boundary fence. The enormity of the soil loss and the restoration work needed was overwhelming.

Mr Kelly is passionate about ensuring his property is in excellent condition. In cooperation with his adjoining neighbour, Mr Hanrahan, and with the support of Fitzroy Basin Association Inc. (FBA) and Fitzroy River and Coastal Catchments (FRCC), through funding provided by the Queensland Government, the two landholders successfully repaired the damage so well that it withstood the effects of Cyclone Marcia in February 2015.

Immediate mitigation works

In the aftermath of Ex-Tropical Cyclone Oswald, a considerable amount of boundary and internal fencing had to be repaired immediately. The boundary fence between Mr Kelly and Mr Hanrahan's properties had to be realigned because of the erosion chasm on Mr Hanrahan's property. The chasm had started to erode under the boundary fence into Mr Kelly's property which meant the boundary fence fell away with no soil remaining underneath. The erosion significantly impacted Mr Hanrahan's property as he could no longer access that section of the paddock, making mustering very difficult.

Scoping the problem

The worst problem was the deep erosion chasm formed at a boundary fence that would continue to worsen, and cause more erosion down the sides of the gully in Mr Hanrahan's property in every future high rainfall event.



A 6 metre-deep erosion chasm caused by flooding in Ex-Tropical Cyclone Oswald in 2013 had impacts on more than one property.



A rock chute, constructed by landholders working together and with help from FBA, was so effective in addressing the problem that it withstood the impacts from Severe Tropical Cyclone Marcia in February 2015, with no erosion occurring at all.



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Mr Kelly and Mr Hanrahan didn't know how to solve that problem and ensure it didn't recur. FBA and FRCC provided advice and a solution that would help both landholders.

Mr Kelly's second problem was a breached diversion bank and contour bank around his cultivation areas, as well as a washout within a cultivation paddock. Over time, the affected cultivation paddock would have lost more and more sediment through sheet erosion with each flood event, and its productivity would have been severely reduced.

The project

Working together, the two landholders constructed an incredible rock chute to address the worst problem: the deep erosion chasm. Filling the erosion chasm would allow the boundary fence to be reinstated, and allow effective stock mustering.

In most circumstances, such massive earthworks would have been out of reach for each landholder. But by working together, and using one landholder's machinery, with access to rock and gravel, it made the project cost-effective.

Resilience for the future

The biggest result of the project is that erosion from the gully has ceased, ensuring a huge reduction in sediment flowing from the property to the Great Barrier Reef. As the water travels over the chute, it slows down, thus reducing its erosive force.

By repairing the erosion chasm, the boundary fence has been re-erected in its correct location and stock on the adjoining property can cross it safely.

Furthermore, the previously eroded cultivation paddock has been repaired and will remain highly productive.

The long term result

Mr Kelly was very pleased with the project and described it as "fantastic!" After the project was completed, he described it as "a learning adventure". He is now acutely aware of how much

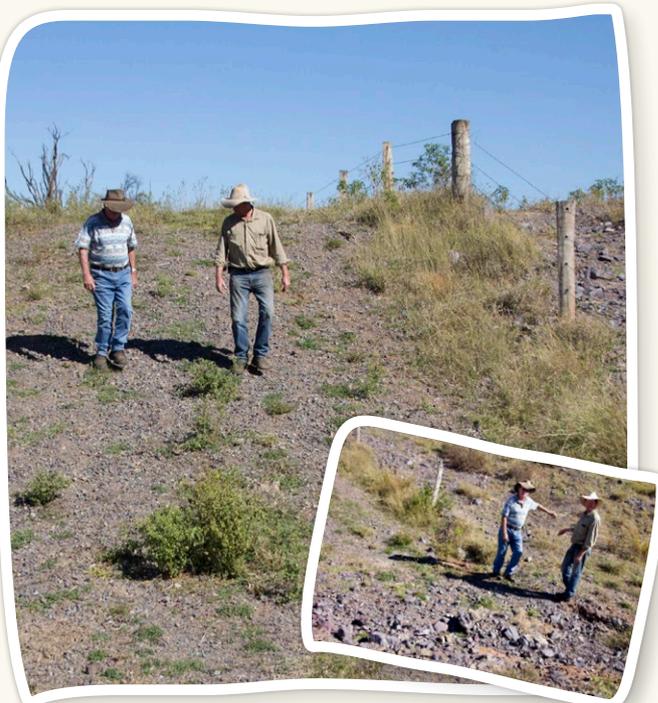
soil is lost through erosion because he has had to cart the replacement material to fill the chasm.

Cyclone Marcia, which severely impacted the region in February 2015, was the ultimate test of success. And the results are in:

- no erosion at the rock chute and therefore no impact on the boundary fence
- nil wash in the cultivation paddock

The fact that the reparation works withstood the flooding associated with Cyclone Marcia was a great example of the effectiveness of such work.

By working together to solve a mutual problem, no matter how overwhelming it first appears, long-term solutions really do work.



No more erosion - a fantastic result