

# Flood Recovery Case Study Recovering Prime Agricultural Land



Damaged agricultural land following the Flooding caused by Ex-Tropical Cyclone Oswald in January 2013

## Schmidt Property Branyan - Lower Burnett River

“ I am very thankful for the assistance from BMRG and the benefits of this project will continue beyond my time on the farm ”

- John Schmidt

### Background

When ex-Tropical Cyclone Oswald reached the Burnett region in January 2013, no one thought that the level of flooding would exceed that of 2011. They were wrong. Floodwaters ravaged homes, damaged infrastructure, inundated schools and other public facilities and left people stunned by the power of water. The Burnett River was changed dramatically, with entire islands removed, hectares of land eroded from the banks and new sand bars created. Many of these changes have directly affected farmers who use the highly fertile land adjacent to the rivers.

### The Project - Part 1: Gravel & Sediment Removal

John Schmidt's property at Branyan is located directly downstream from an abandoned sand and gravel quarry. The size and speed of the floodwater deposited a layer of up to one meter of sediment over the sugarcane crops from the unprotected quarry. Some of the cane was totally covered and in other areas only small green stems were left exposed. Twenty-three ha of sugarcane was effected seven ha described by John Schmidt as “unrecoverable”. It is estimated that this block could have been covered with up to 50 000 m<sup>3</sup> of gravel. To reinstate this block would have been a task outside the capability of the farm.

Once the sand and gravel was removed from the block and stockpiled, the final layer of gravel/soil mix was stripped and used to reclaim the headland that had been eroded away. Reinstating the headland allowed for maximum use of the original block for planting crops.

“Due to the mass of the gravel compacting the ground and the high levels of machine activity, the field required extensive ripping and ploughing to allow planting to occur” said John. He has taken this job upon himself and his first cover crop was planted in December 2014. Now that this land has been returned to production, it should generate \$20,000 in revenue for the farm and the land value is now restored after becoming rendered worthless while it was covered with gravel.

## The Project - Part 2: Riparian Repair

The second stage of this project was to address the problem causing the gravel deposition within the sugar cane crop. Large flooding events with high water velocities have an increased capacity for carrying sediment. When the water inundates the sugarcane, the water velocity decreases and the large sediments (sand /gravel) settle out and deposit within the crop. This can be prevented by reinstating a riparian buffer zone of native vegetation.

The headland was stabilized with rock armouring, and 1000 native tube stock planted to speed up growth of this riparian buffer. Once the vegetation buffer grows thick and tall, the main river flow will be redirected back into the main channel with the large sediments (sand/gravel) will settling out within this riparian zone preventing deposition with the downstream crops.

Significant flooding caused by Tropical Cyclone Marcia in February 2015 has proved the effectiveness of the project with the restored natural levee incurring no damage and the adjacent agricultural land remaining free of erosion and scouring.

## Results

The plants are looking strong and healthy with the early signs of fast growth, an indicator of a developing riparian buffer. Riparian vegetation management is crucial to the stability of our river banks and directly effects riverine health. Land managers are encouraged to look after their riparian zones by managing stock access and weeds which will encourage the growth of natural vegetation.



Top: Recovered land after restoration and ready for planting.  
Below: Installation of rock wall and revegetation to stabilise the bank



This project is part of the On-farm Productivity and Riparian Recovery Program supporting primary producing areas severely impacted by flooding following Ex-Tropical Cyclone Oswald in 2013 and is funded by the Queensland and Commonwealth Governments through natural disaster relief and recovery arrangements