

Laser Levels

2012



Brad Hussey

Reef Rescue Case Study: Laser Levels

Due to the long and intense wet season of 2010/11 it became evident that many cane properties in the region had issues with water logging.

This problem had gone unnoticed for years as irrigation was used in the previous dryer years. In 2010/11 the seasonal rain was more than enough and the many downpours of the season highlighted drainage issues on properties across the region.

Water logging occurs when water is unable to drain effectively from a property and can lead to reduced yields. Poor drainage can also cost

growers through the loss of sediments, and applied nutrients and chemicals in runoff, resulting in poor water quality leaving the property.

BSES sought to remedy the problem by supplying land managers with laser level survey equipment to assess their properties for any drainage issues. BSES obtained funding to purchase three laser levels through the Reef Rescue Industry Grants. The laser levels are now loaned to growers at no cost. If drainage issues are identified the growers can undertake earthworks needed to improve water flow.

This project is similar to another BSES project which loans Zonal Tillage equipment for growers to trial. The zonal tillage project also gained substantial funding through Reef Rescue's Industry Projects Fund.

"These projects allow growers to trial or use equipment at no cost. Growers are then in a position to make more informed decisions if they wish to purchase the equipment themselves," said Chris Dench, Reef Rescue Officer. As with Zonal Tillage equipment project, BSES provides technical assistance to the growers' trialling the laser levels to ensure the optimum outcome is reached.

Reef Rescue is funded through the federal government's Caring for our Country program.



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Example of flooding due to poor drainage



Poor drainage after 2011 wet season



Brad Hussey with a BSES laser level



Brad Hussey from BSES Limited said that the levels selected for the project are Trimble LL400 Lasers Levels which have an operating range of 400m and are capable of grade matching. Grade matching means that the level can be setup at the top of the ridge and then the beam of the laser can be manually focused to a point down the slope to enable a drain of constant slope to be constructed with no additional calculations.

The lasers are equipped with a tripod, staff and a CR600 detector which can be used either on the staff or magnetically mounted on the earth moving equipment. With the detector mounted on the earth moving equipment the operator can maintain accurate drain depth with laser assistance. The laser beacon turns the process into a one man operation and solves the issue of having to find someone to hold the staff, or to get in and out of the machine to check levels.

Mackay cane grower Vince Germanotta recently borrowed the laser levels from BSES to put in a 400m drain on his property. "Our land is pretty flat." said Vince, "We needed the laser levels to put in the drain so that we didn't end up with a hollow in the middle which would have been likely without using equipment. Using the BSES Laser Levels also meant that I could do the job on my own and get it done pretty quickly. I didn't need a hand which I would have if I was using Dumpy Levels". Vince is now looking to buy his own laser levels to use in the future to keep the water flowing off his land.

Loan Equipment Available from BSES

- Laser levels
- 3 Row wavy disk cultivator with crumble roller
- Single row wavy disk cultivator with crumble roller
- Bed renovator
- Zonal ripper
- Multi-purpose demo spray rig
- Zonal Rotary Hoe

Reef Catchments

Reef Catchments is the regional NRM body overseeing the Reef Rescue program in the Mackay Whitsunday Isaac region on behalf of the federal government.

Contact the Reef Rescue team at Reef Catchments on (07) 4968 4200 or email:
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If you are interested in finding out more about Laser Levels contact Brad Hussey at BSES
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