



# Case Study

## Banded Mill Mud for Improving Soil Condition & N Fertiliser Rate Reductions in Late Ratoons



<b>LANDHOLDER</b>	CSLH010009
<b>LOCATION</b>	Yuruga
<b>CATCHMENT</b>	Lower Herbert
<b>RAINFALL</b>	2022 - 1822mm 2023 - 2026mm
<b>PROPERTY SIZE</b>	269ha
<b>ON-GROUND PROVIDER</b>	HCPSL

**Project Catalyst** is a grower led, sugar cane innovation and adoption project that explores, develops and validates farm management practice change to improve the enduring water quality of the Great Barrier Reef.

### **BROADER ADOPTION VALIDATION & GROWER SUPPORT**

Founded in 2009, the project operates in the Mackay Whitsunday, Burdekin and Wet Tropic regions to deliver valued practice change outcomes and develop methods for industry adoption. Under the Broader Adoption and Grower Support program, professional on-ground service providers assist selected growers to adopt and validate appropriate change practices. Service providers continue to monitor implementation benefits and derived environmental performance improvements. Through targeted extension activities, the program seeks to accelerate the uptake and broader adoption of improved farming practices at local, regional and industry levels.

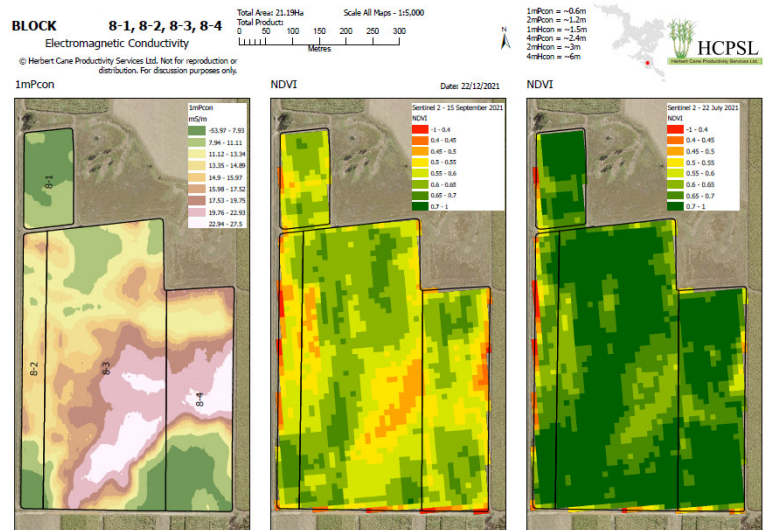


Great Barrier Reef Foundation



●●●● Goal

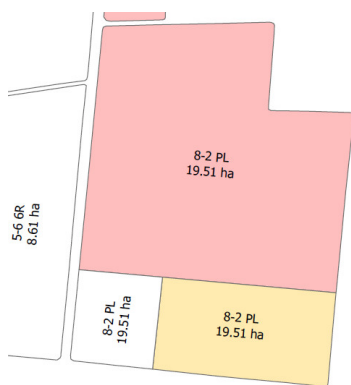
Explore the value of banded mud across poor patches within blocks and reduce nitrogen applications in late ratoons.



Comparison between EM and NDVI maps indicating poor patches within Block 8

●●●● Overview

This grower has previously experimented with broadcast ash across poor patches within blocks. Despite the positive response in yield and productivity as a result, mill by-products were not perceived as very cost-effective broadcast. However, the grower is interested to explore options around improving soil condition and water retention capacity for some challenging clays within their blocks. Banded mud offers an opportunity to improve their soil profile by increasing soil organic carbon. Furthermore, the grower is highly motivated to improve their crop nitrogen use efficiency and banded mud for reducing runoff.



Zonally applied lime at 0, 1 & 2t

●●●● Action

- Several blocks with challenging clays have been selected. Once cut the blocks will be EM mapped to determine soil zones. Soil sampling will then guide decision making around type and quantity of amendments.
- The grower was not able to access mud in the previous season so a review of blocks with poorer soils that may benefit from mud applications and which will form the practice change blocks is currently underway. After the blocks are selected mud will be sourced for application.
- The grower has received their nutrient management plan with the recommendation to reduce N rates (7kgN/ha) across several late ratoon blocks. This recommendation should enable immediate cost savings and improve the value of these blocks with reduced potential.

●●●● Outcome

- EM mapping was undertaken on several blocks following harvest. Drawing on the findings of the maps and soil tests as well as grower understanding of the soil type and form across these blocks lime was applied zonally across the block at 0, 1 and 2t. The blocks will be observed for evenness of yield.
- The development and yield for the late ratoon practice change block will be observed over the course of the crop cycle and compared with other ratoons.
- Rather than mud, the grower applied two rates (66t/ha & 88t/ha) of banded ash using an applicator across blocks with challenging clays constrained by high magnesium. The ash, banded in the furrow, has improved the soil structure of the heavy clay over the wet season and is expected to improve the yield of the entire crop cycle.

