



Case Study

Lower Rates of N Fertiliser in Older Ratoons & EM Mapping to Target Soil Constraints



LANDHOLDER	CSLH010026
LOCATION	Halifax
CATCHMENT	Lower Herbert
RAINFALL	2129mm
PROPERTY SIZE	70ha
ON-GROUND PROVIDER	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.



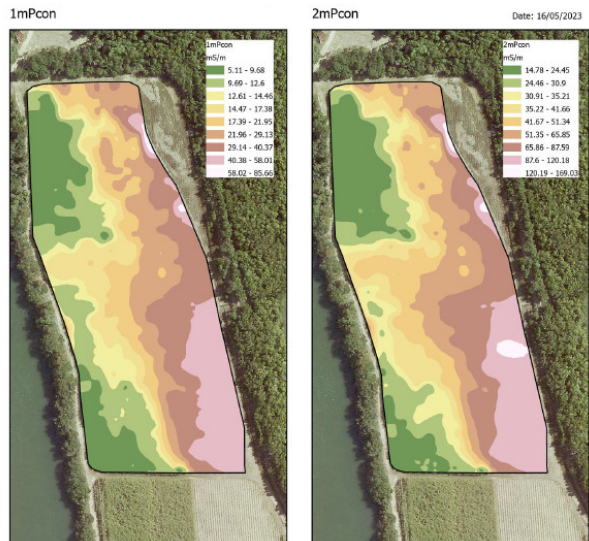
Great Barrier Reef Foundation



●●●● Goal

To reduce N in older ratoons where possible for simultaneously maintaining yields and reducing costs.

To EM map blocks to understand and address constraints as well as inform management zones.



EM map showing high EC readings indicating saline effects on the edge of the block

●●●● Overview

Electromagnetic induction (EM) mapping is a form of precision agriculture that helps determine soil chemical and structural changes across blocks. EM maps can help identify zones for different ameliorant applications and management.

This farm neighbours a mangrove wetland. The alluvial and clay soils are typically low in calcium and in some cases are salt affected. EM mapping to determine the affected areas will enable the grower to target ameliorant applications to reduce in-field yield variation, improve nutrient use efficiency across the block and reduce costs and run-off.



EM mapping a ratoon block

●●●● Action

Fallow blocks with previous cane loss were EM mapped early in 2023 and zone-specific soil tests were taken to determine the different requirements across 'good' and 'poor' areas. The EC maps showed significantly high readings and the soil test analysis showed the soil was both acidic and sodic in areas. Ameliorants were applied zonally across the marked zones. Further EM mapping will be undertaken throughout the season as blocks are cut and soil tested.

The grower will receive a full nutrient management plan for their farm which incorporates management zones determined by a combination of soil maps and tests, EM maps and the grower's own knowledge of their management across the farm.

●●●● Outcome

The grower received EM maps and soil tests results which provided a clearer understanding of what was constraining production in their paddocks. Using their prescription maps they were able to begin the process of ameliorating these areas zonally and as a result they were happy with the strike of their plant cane in these 'problem' blocks. They have since undertaken more EM mapping on fallow blocks in late 2023 to guide the soil testing and amelioration of their new fallow blocks. These blocks will also receive zonal amendments.

The grower has received their Nutrient Management Plan for 2023. As part of their plan they reduced their nitrogen application in older ratoons by 4kg N/ha.

