



# Case Study

## Legumes in Fallow and Variable Rate Amendments



<b>LANDHOLDER</b>	CSLH010011
<b>LOCATION</b>	Hamleigh
<b>CATCHMENT</b>	Lower Herbert
<b>RAINFALL</b>	1877mm
<b>PROPERTY SIZE</b>	53ha
<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

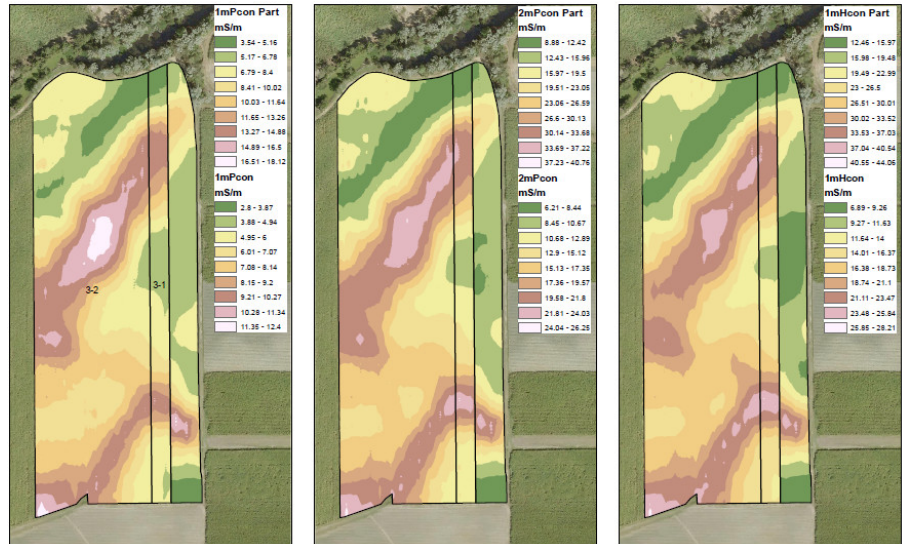
To determine, by EM mapping, the soil features and constraints of the farm and to establish mixed legume covers in fallow to improve soil condition and nutrient use efficiency.

●●●● Overview

This Hamleigh grower had previously maintained the trash blanket of fallow blocks and only grown a legume when was opportunity. Having seen the benefits of single-species legume fallows, the grower was curious to see how greater use of legumes across fallow blocks may improve soils for the following crop cycle. They were also interested in beginning to EM map their farm to define and addressing soil constraints spatially at a finer scale through site-specific inputs vs blanket approaches across blocks.



Legume seedlings



EM map for grower block. Note that the block was mapped at two different points after block cuts.

●●●● Action

- Harvested blocks will be EM mapped.
- EM mapping will provide a basis for soil sampling locations to identify soil constraints and set up management zones with similar constraints.
- Legume mix will be determined and planted weather permitting.
- Grower received a full Nutrient Management Plan with N & P budget. The plan contained soil maps as well as maps outlining block classes.
- Based on this resource, the grower identified high-priority blocks for EM mapping and fallow blocks for planting legume.
- A number of blocks were EM mapped following late season cutting.
- In addition to further refining their fallow legume practices the grower is also refining their nutrient management approach through their NMP, reducing their nitrogen by 5-10kg/ha in their late ratoons.

●●●● Outcome

- Several blocks have been EM mapped and site specific soil testing has commenced for determining soil constraints to crop growth. The grower is looking to continue the process of EM mapping and strategic soil testing in the coming season to further refine their amelioration practices across the farm.
- The grower planted a mixed legume fallow crop again in late 2023 which produced significant biomass despite the challenging conditions. They intend to continue using mixed legumes in fallow.
- The grower has received their updated nutrient management plan which included a recommendation for reductions of nitrogen in an old ratoon block of 10kg/ha.

