

Precision Agriculture Project

Beswick Holdings, "Depot Farm", Sisters Creek

Site details

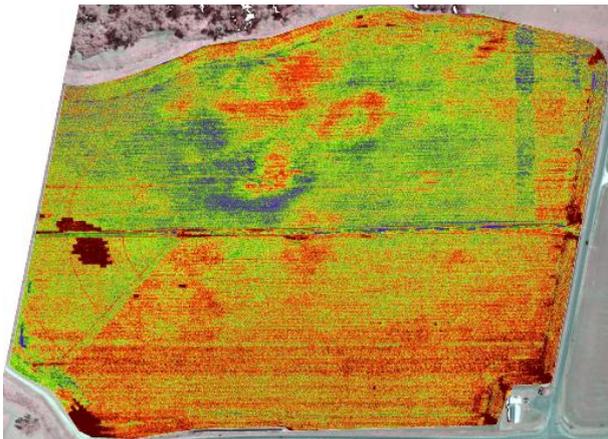
- predominantly ferrosol (red/brown light clay loam over dark red/brown light clay, with patches of grey/brown sandy loam over light sandy clay)
- 21 ha paddock, linear-move irrigator
- 2015-16 crop – processing potatoes
- representative of north-west cropping enterprises with some variation in soil type within a broad red ferrosol landscape

Representative data layers

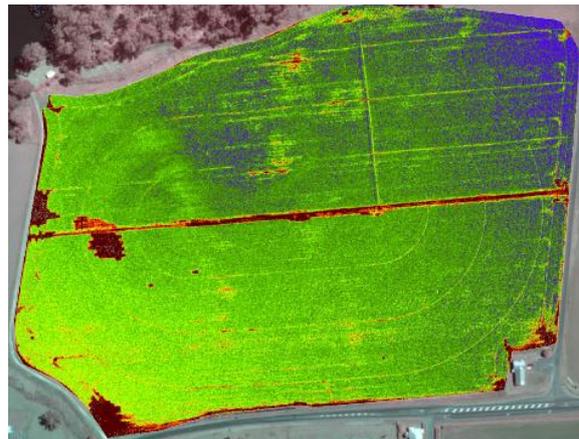
Various data layers, such as EM38 and soil pH, have been collected. Examples are shown on the next page.

In-season NDVI images

NDVI images were captured by Terrapix two times during the growing season, as seen below.



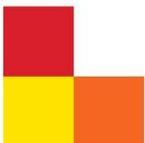
NDVI – 04 Dec 2015



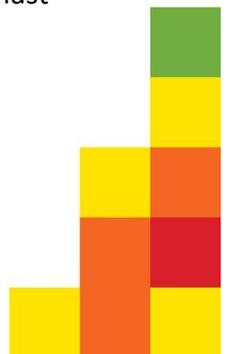
NDVI – 29 Dec 2015

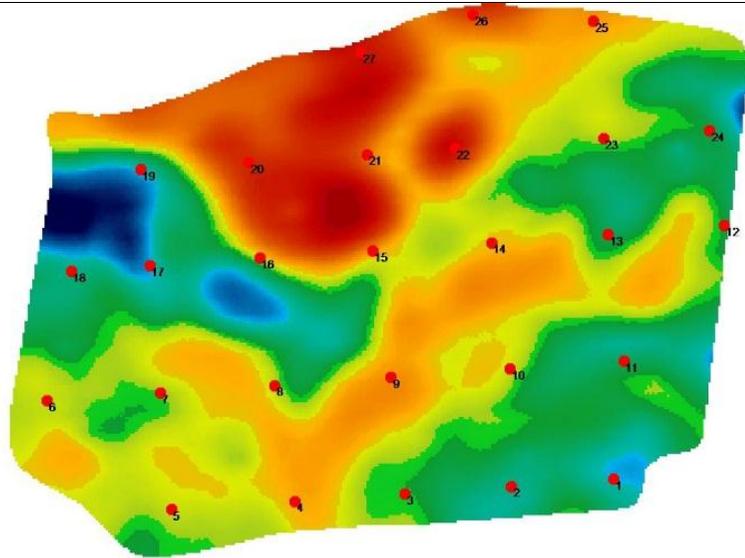
Yield variability

Yield samples were taken from 27 points in a regular grid across the paddock – see images on next page. This represents about one sample per hectare. Samples were taken from the range of soil conditions present. At each sample location, tubers were dug from 2 rows x 3 linear metres per row. Samples were graded in the field into over and under 250 g, and rejects. Variation in total and graded yield across the sampling points is shown on the last page.

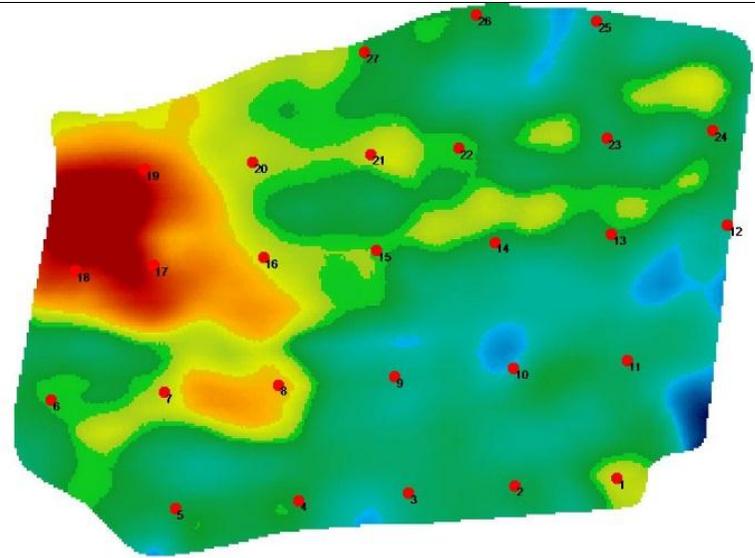


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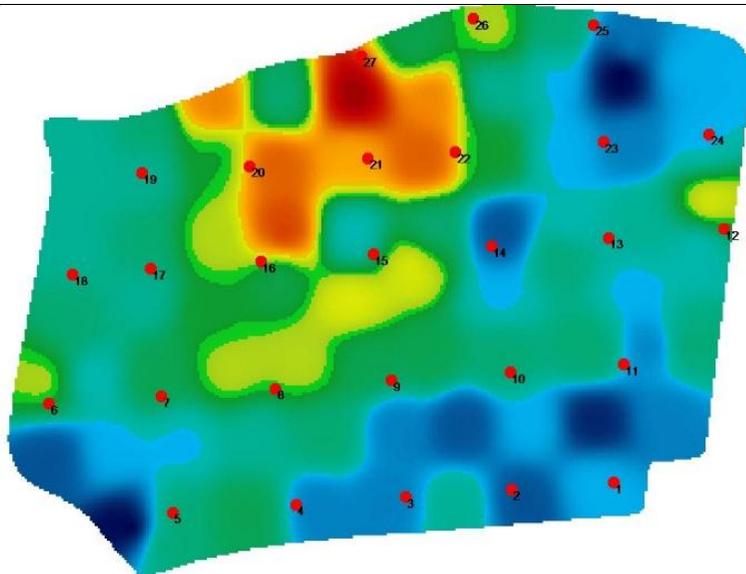




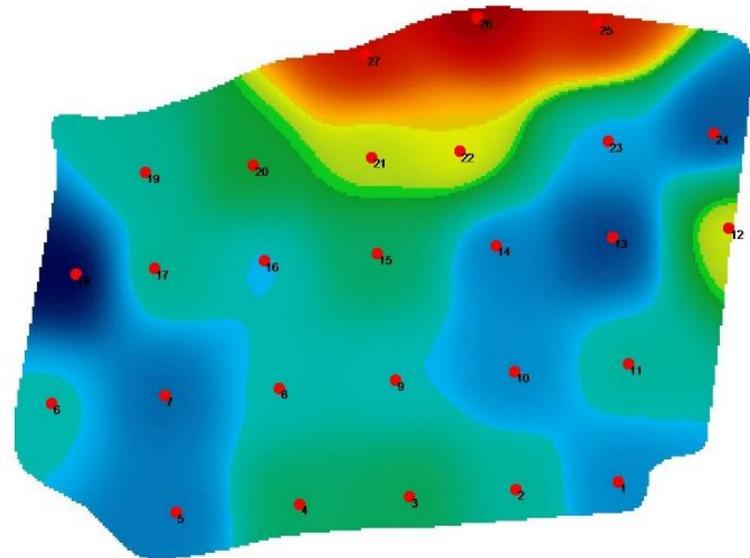
EM38 shallow



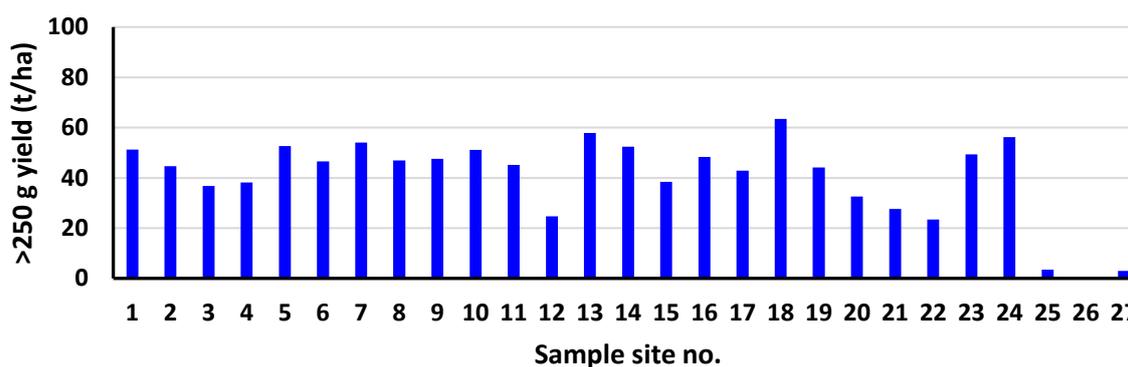
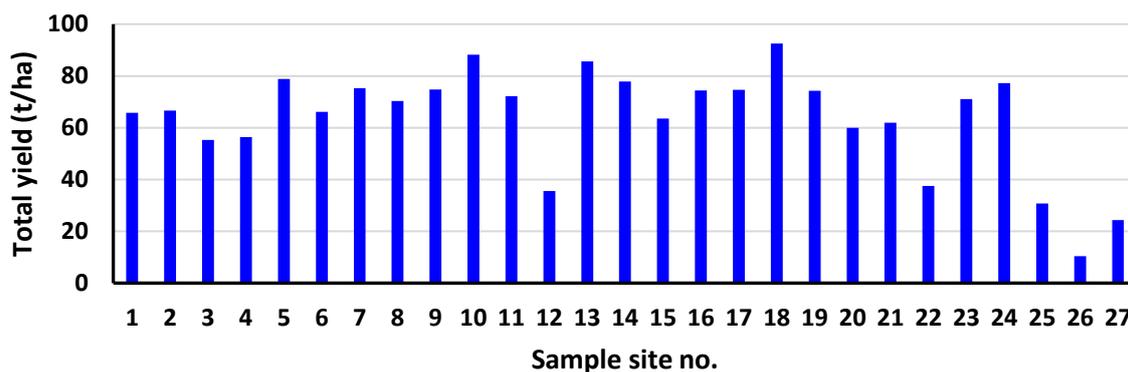
EM38 deep



Soil pH



Yield >250 g



Crop	Measure	Units	Average	Min	Max	Variation (%)
Processing potatoes	Total yield	t/ha	61.5	10.3	86.9	840
	Yield >250 g	t/ha	38.4	0	59.7	infinite

Comments

The lighter soil at the top of the hill (points 21, 22, 25, 26 and 27) definitely under-performed compared to the rest of the paddock. The other low yielding point (12) was a headland sample. Nothing in the Dec 29 NDVI indicated any significant issues with this area in relation to plant vigour, although it is possible that the very edges of that zone were under-watered. The next crop planned for this paddock is carrots.

Considerations from 2015/16 season for following crop

- What management decisions (if any) can be attributed to the loam, gravel portion of the paddock?

What amendments (if any)?

- Consider soil conditioning/organic amendments to this area.
- Is there additional in-crop nutrition that can be targeted to this area?

Future data sets

- CSIRO Imagery product – 12 month NDVI & biomass subscription
- P & K grid mapping – late summer/Autumn 2017