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Precision Agriculture
What are other industries doing?

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@TimNeale1

@AgPrecision

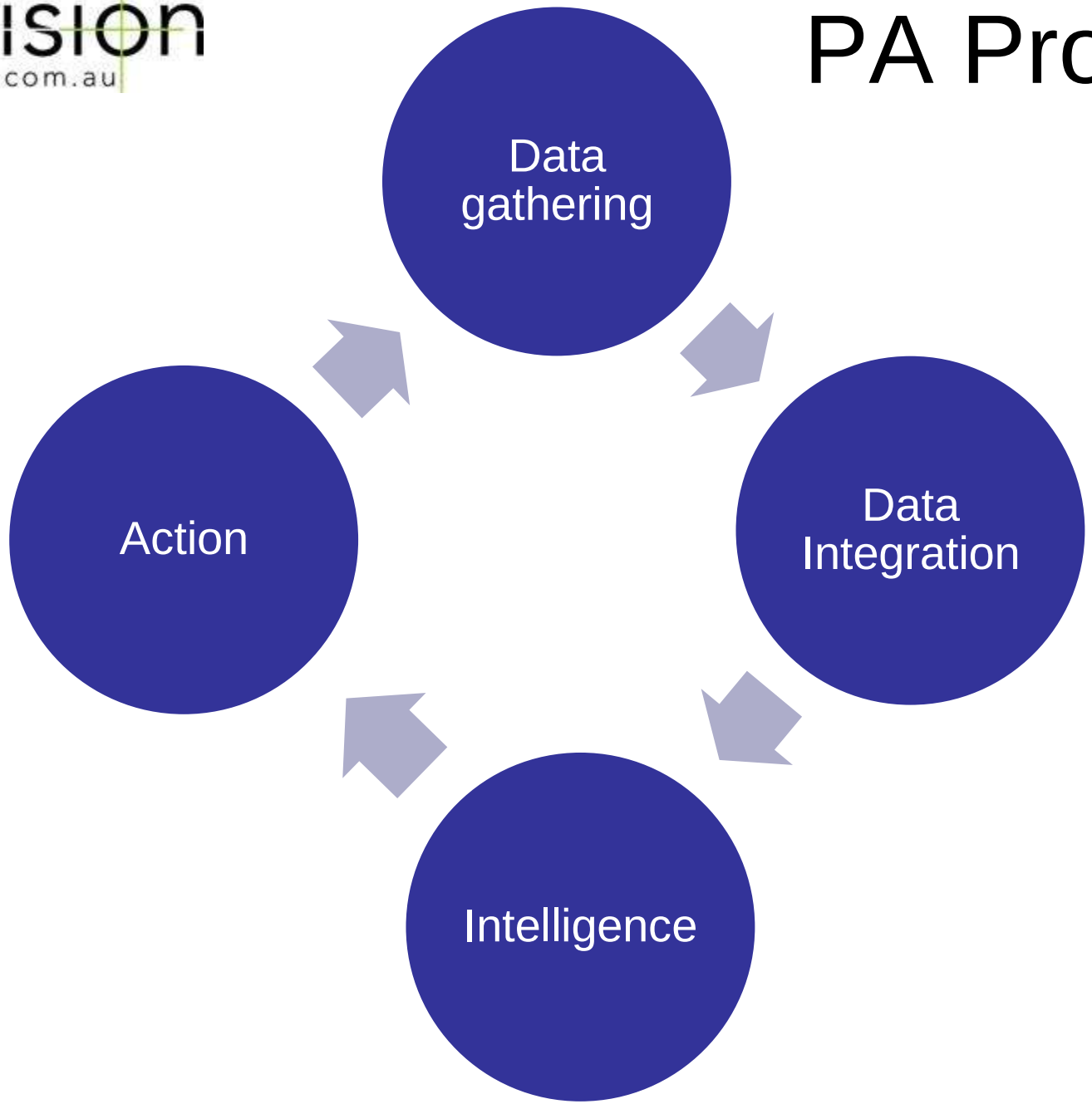
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Who am I?

- Precision Ag consultant based in Queensland (13 years consulting)
- Business has 12 people covering Aust/NZ
- Specialise in new technology for ag:
  - Satellite imagery and crop sensors
  - Yield mapping, on-farm trials, and VRT
  - Farm mapping
  - Loss assessment using PA tools
  - Soil mapping (pH and EM)
  - Topography mapping and drainage
  - Controlled Traffic Farming (CTF)

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PA Process



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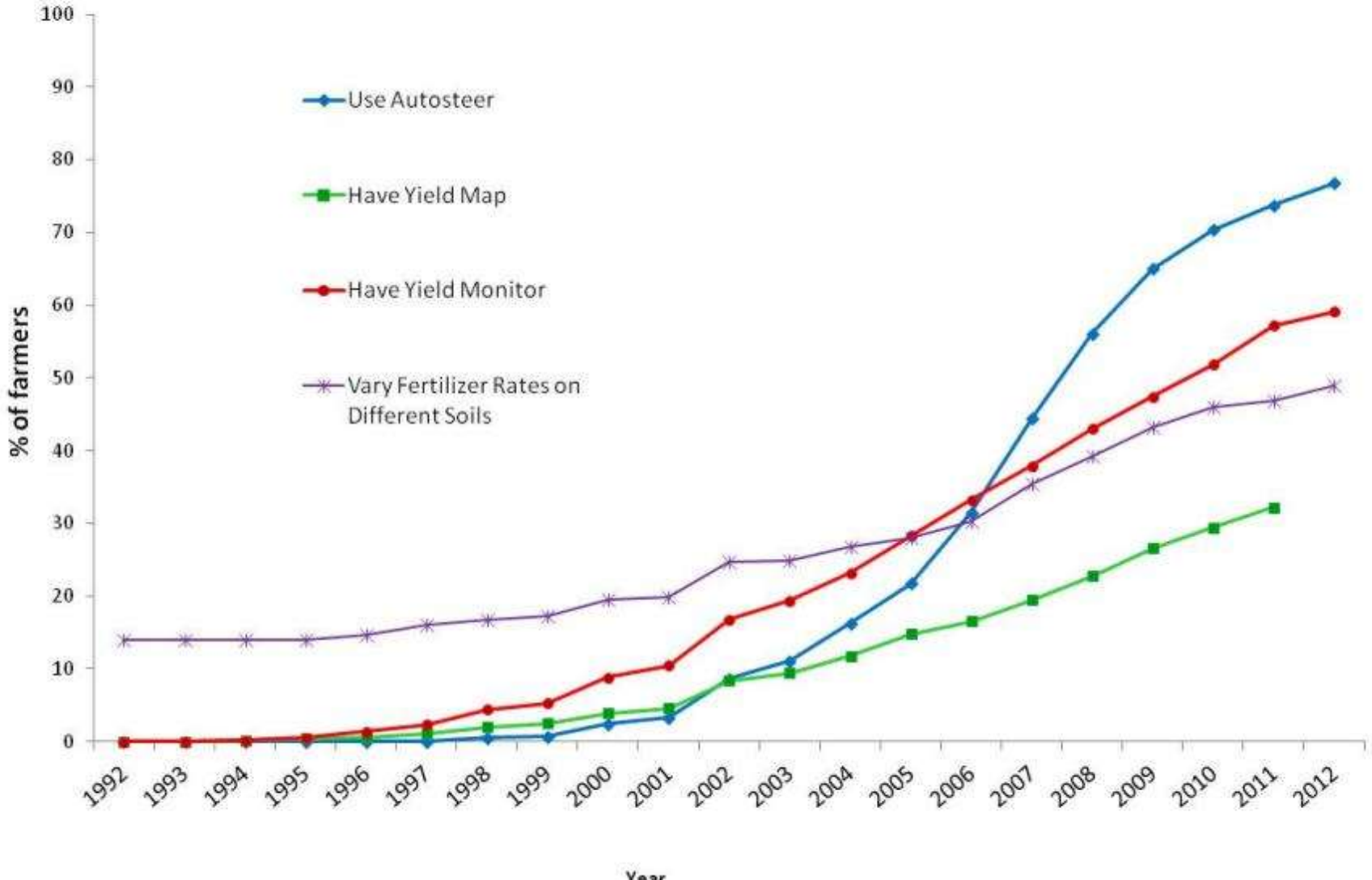
PA now…

- Focus on a need!
- *Cost, Convenience, Compliance, Capacity*
- Biggest wins in grains are:
  - RTK GPS autosteer
  - Drainage (waterlogging and erosion)
  - In-crop sensing
  - Yield stacking and zoning
  - On-farm trials
  - pH and EM mapping
  - Remote monitoring/telemetry

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Adoption rates

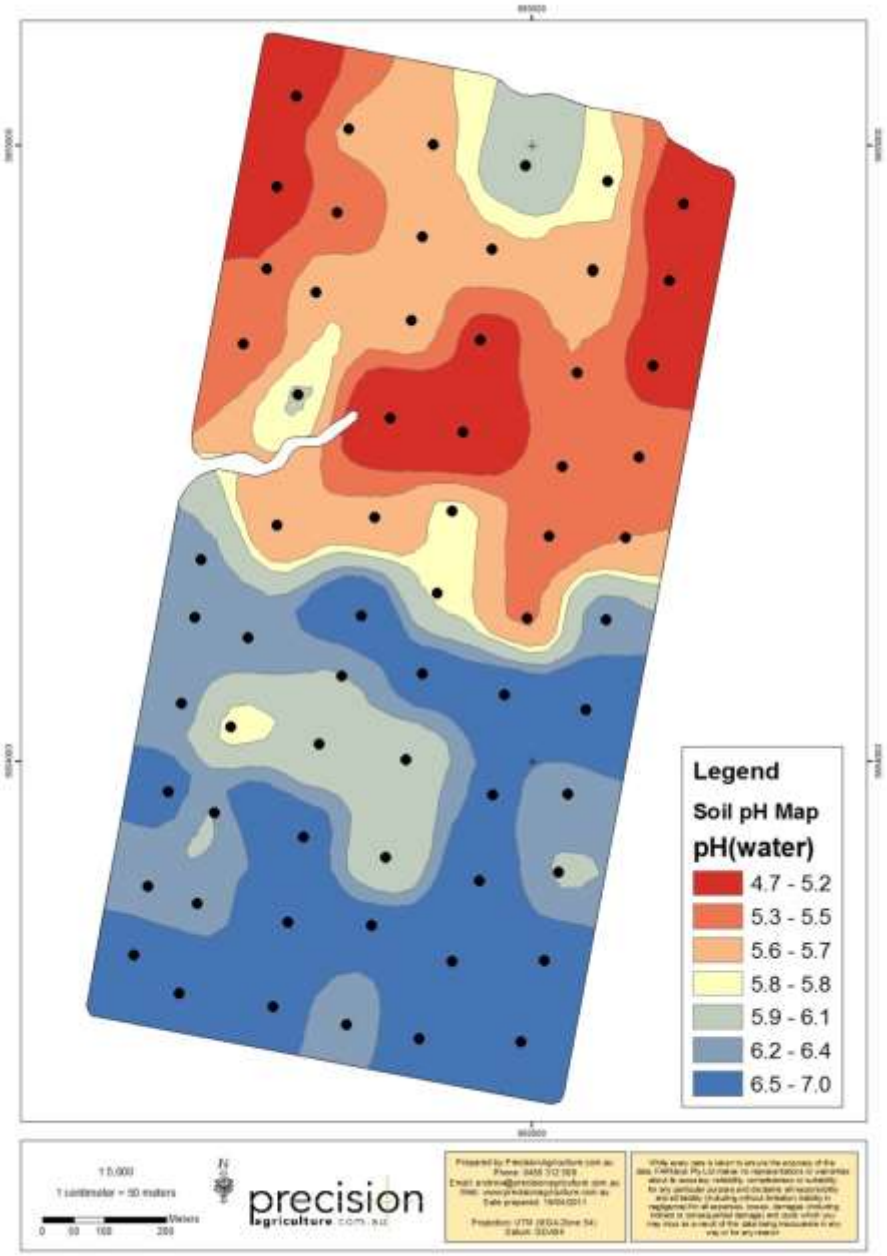
Dr Rick Llewellyn, CSIRO

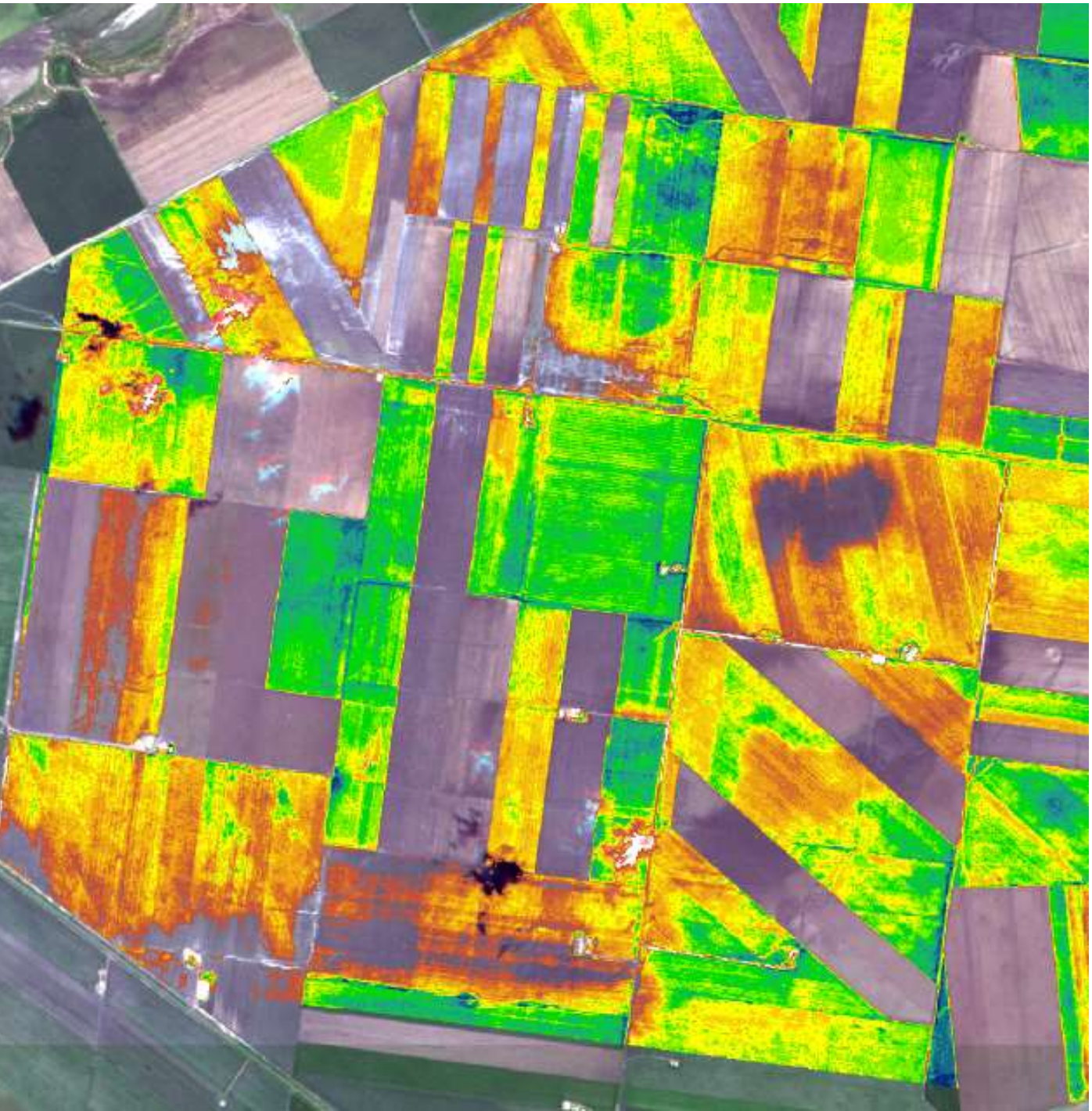


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Variable rate liming





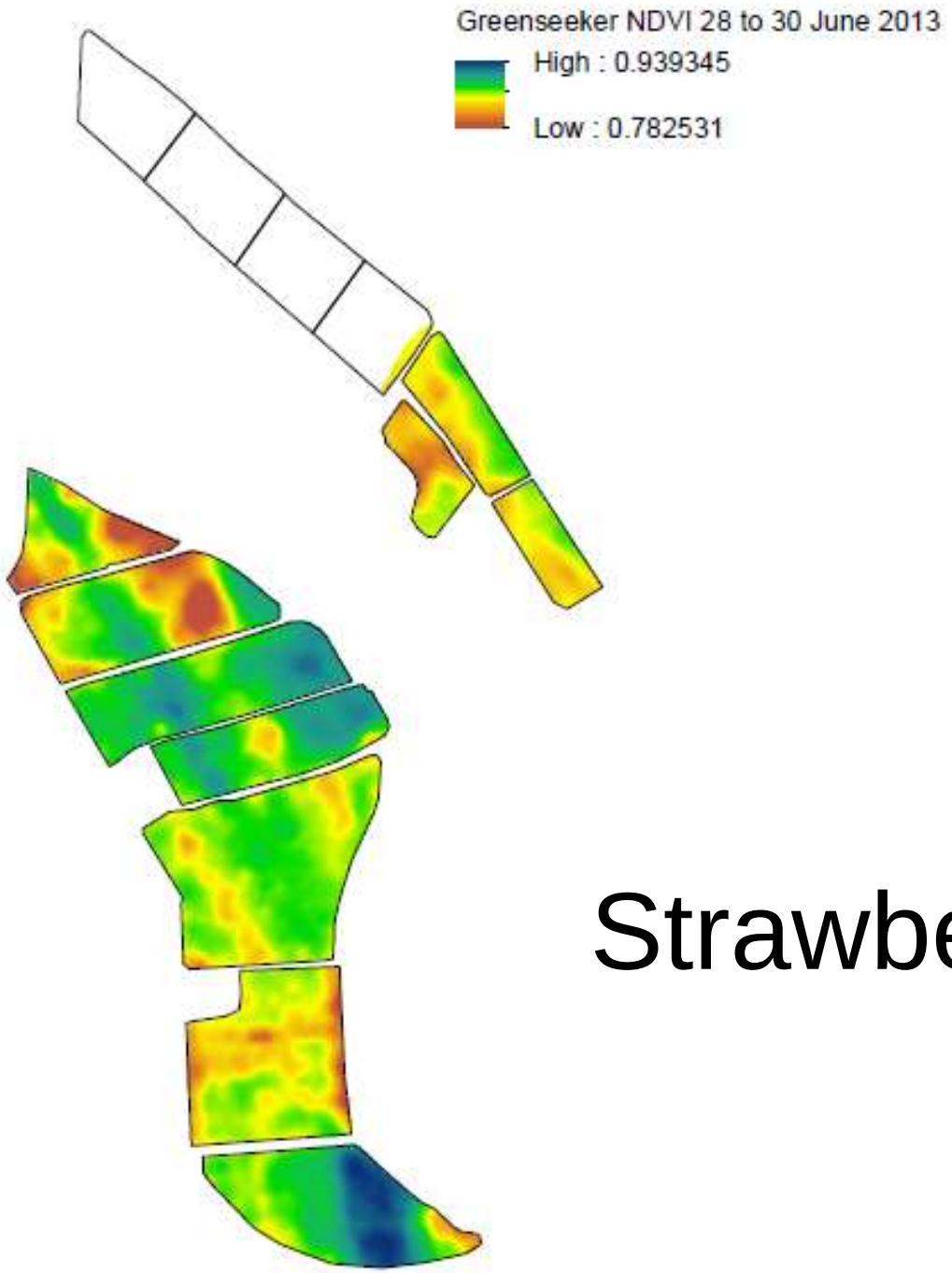


Biomass imagery (NDVI) from satellite or aerial platform

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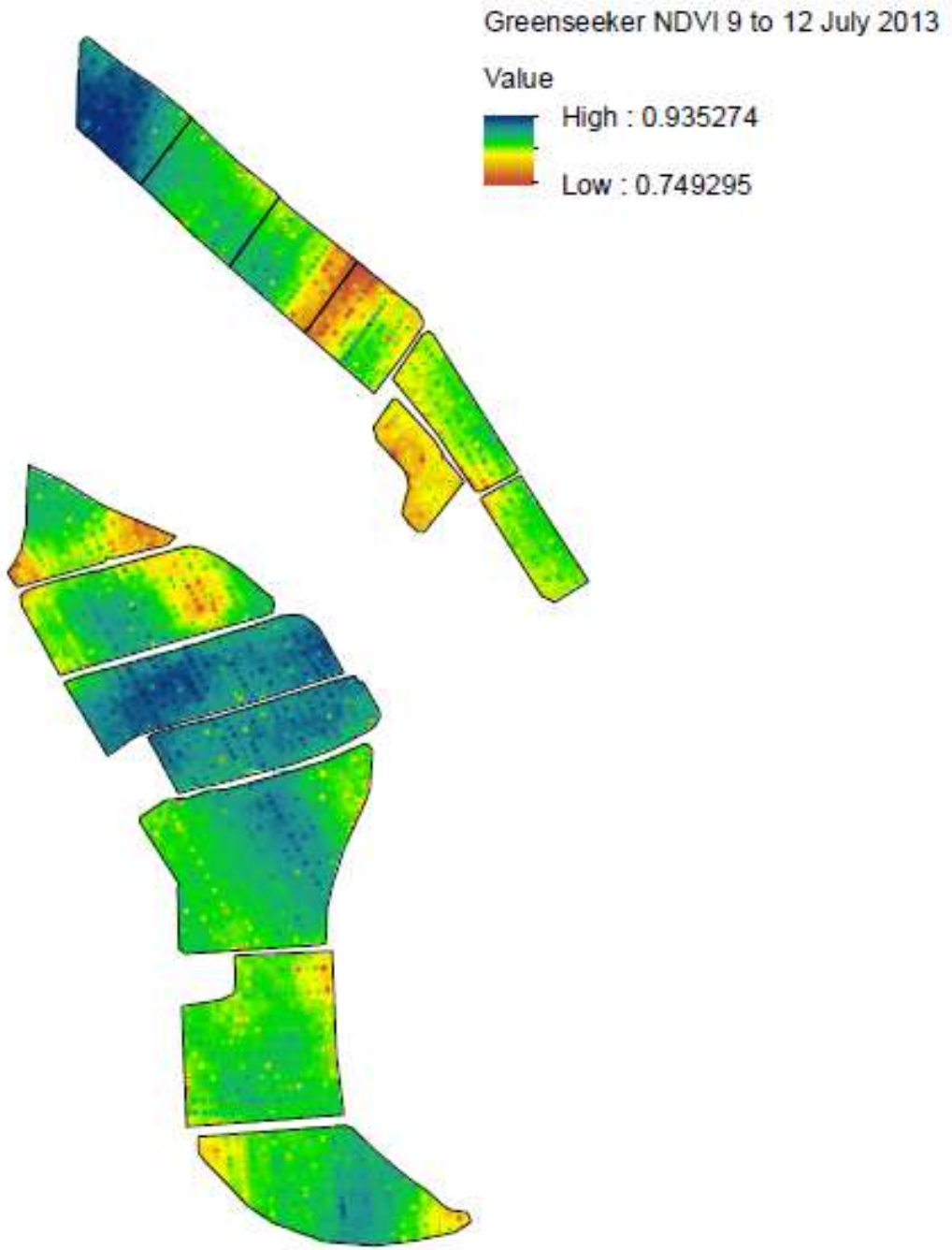
Crop sensing in horti



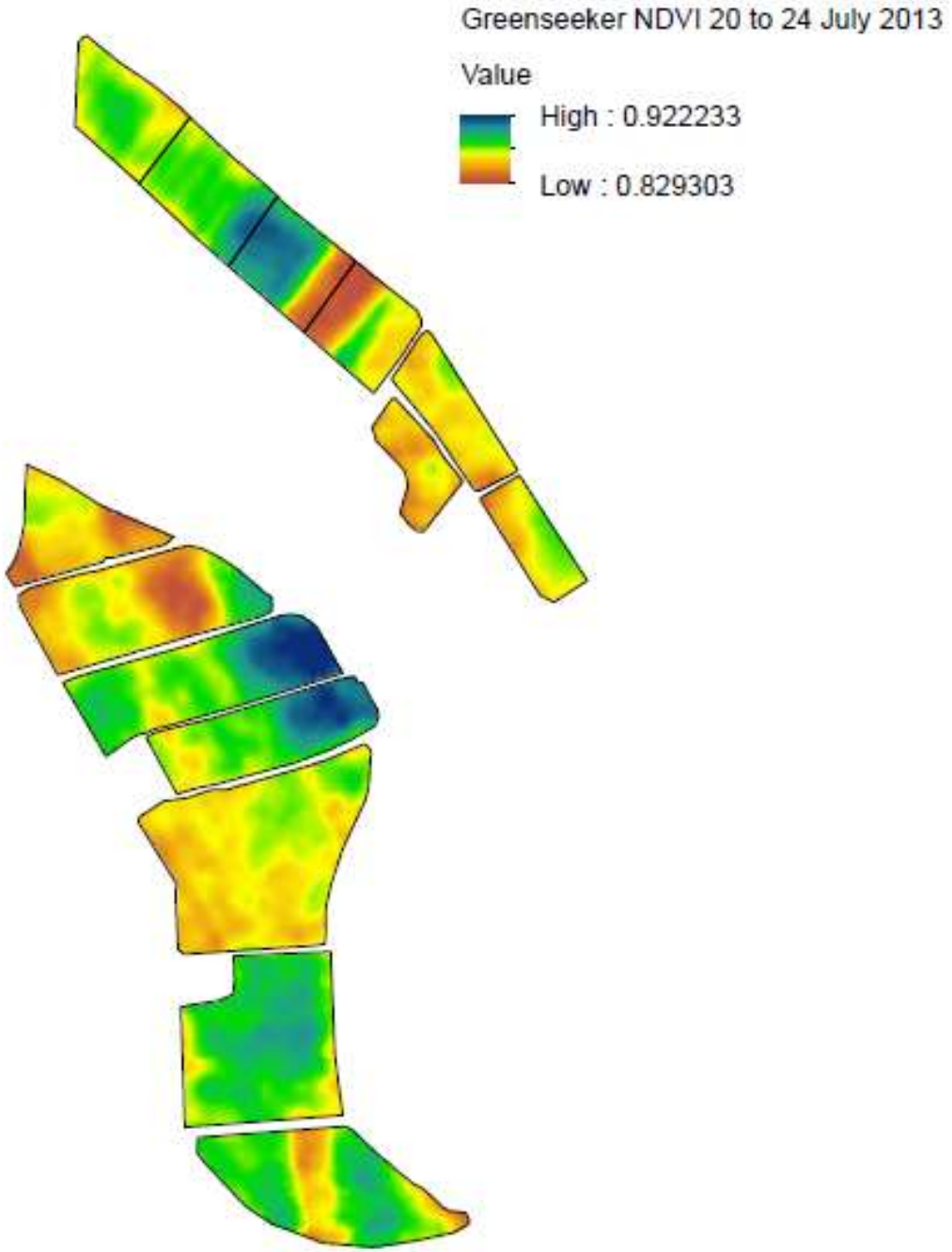


- Late June

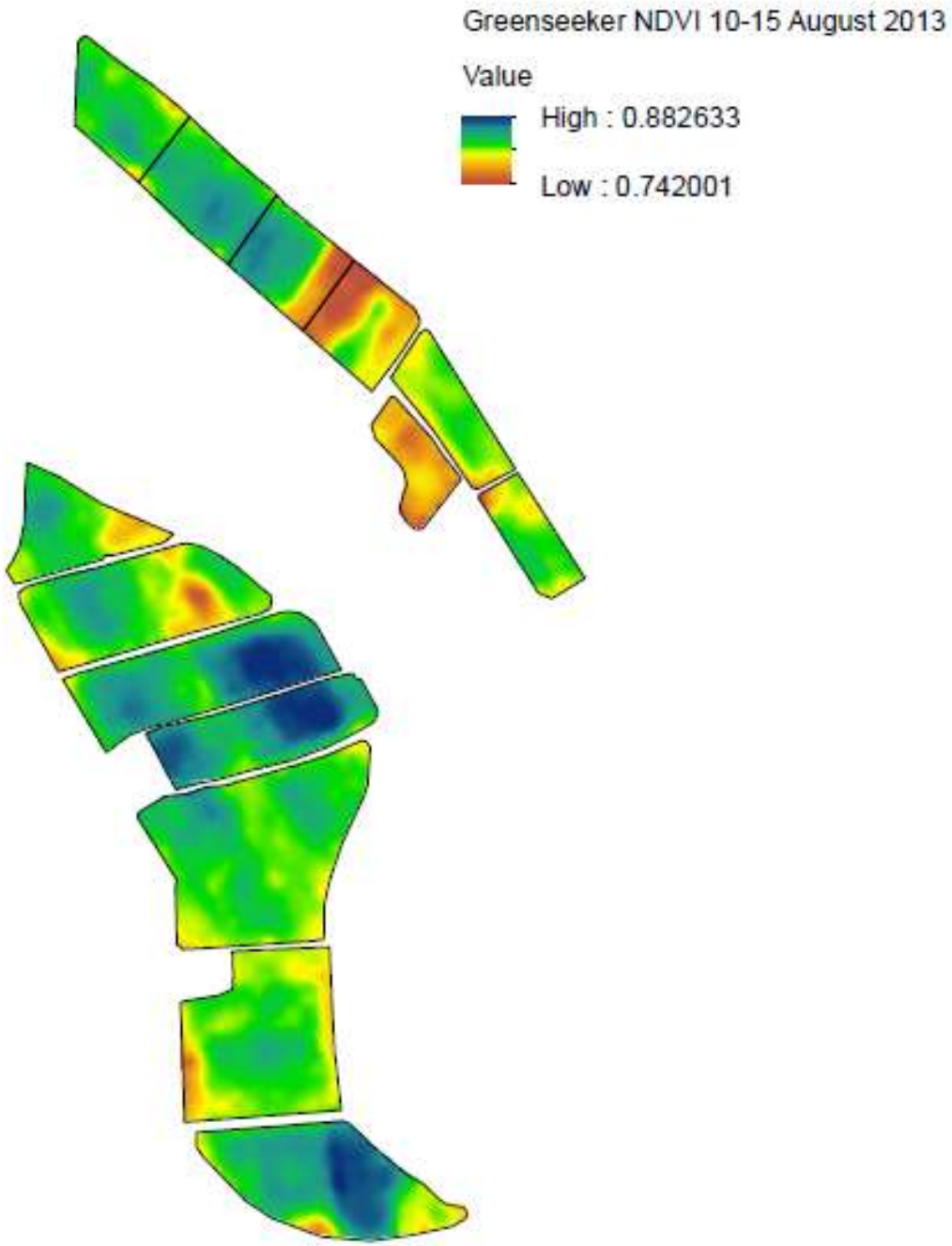
Strawberries


Greenseeker NDVI 9 to 12 July 2013
Value
High : 0.935274
Low : 0.749295

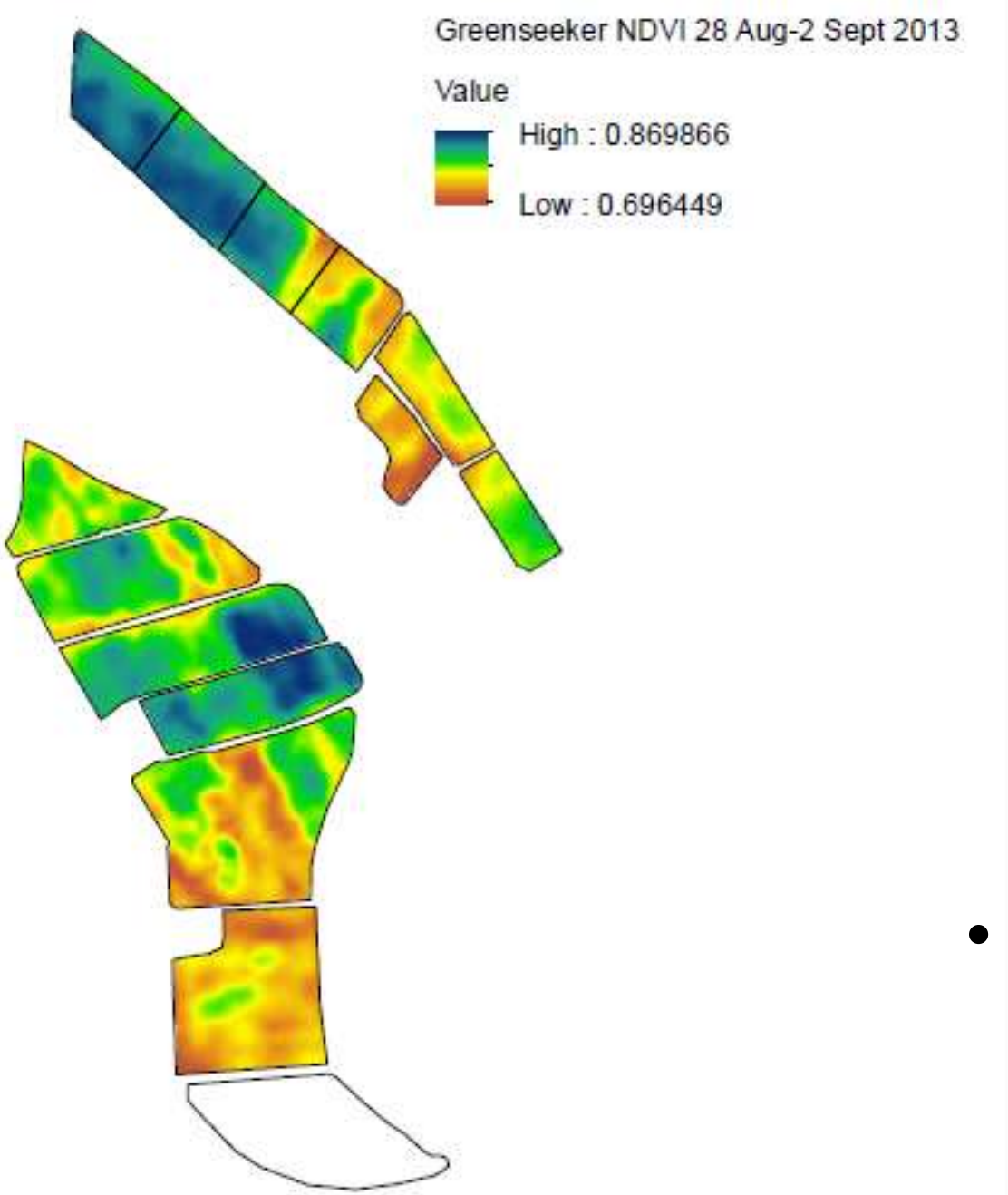
- Early July


Greenseeker NDVI 20 to 24 July 2013
Value
High : 0.922233
Low : 0.829303

- Late July


Greenseeker NDVI 10-15 August 2013
Value
High : 0.882633
Low : 0.742001

- Early Aug

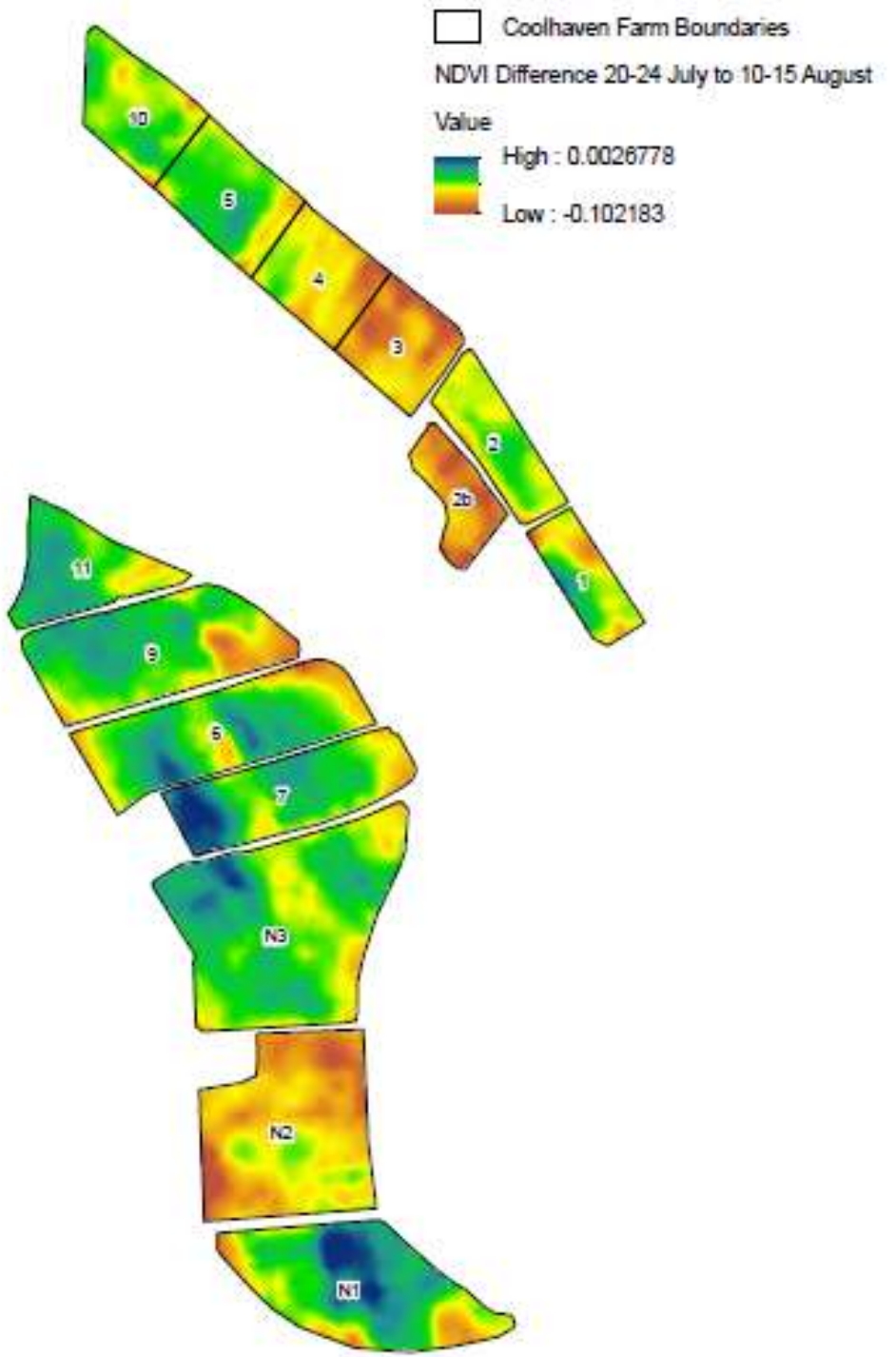

Greenseeker NDVI 28 Aug-2 Sept 2013
Value
High : 0.869866
Low : 0.696449

- Late Aug

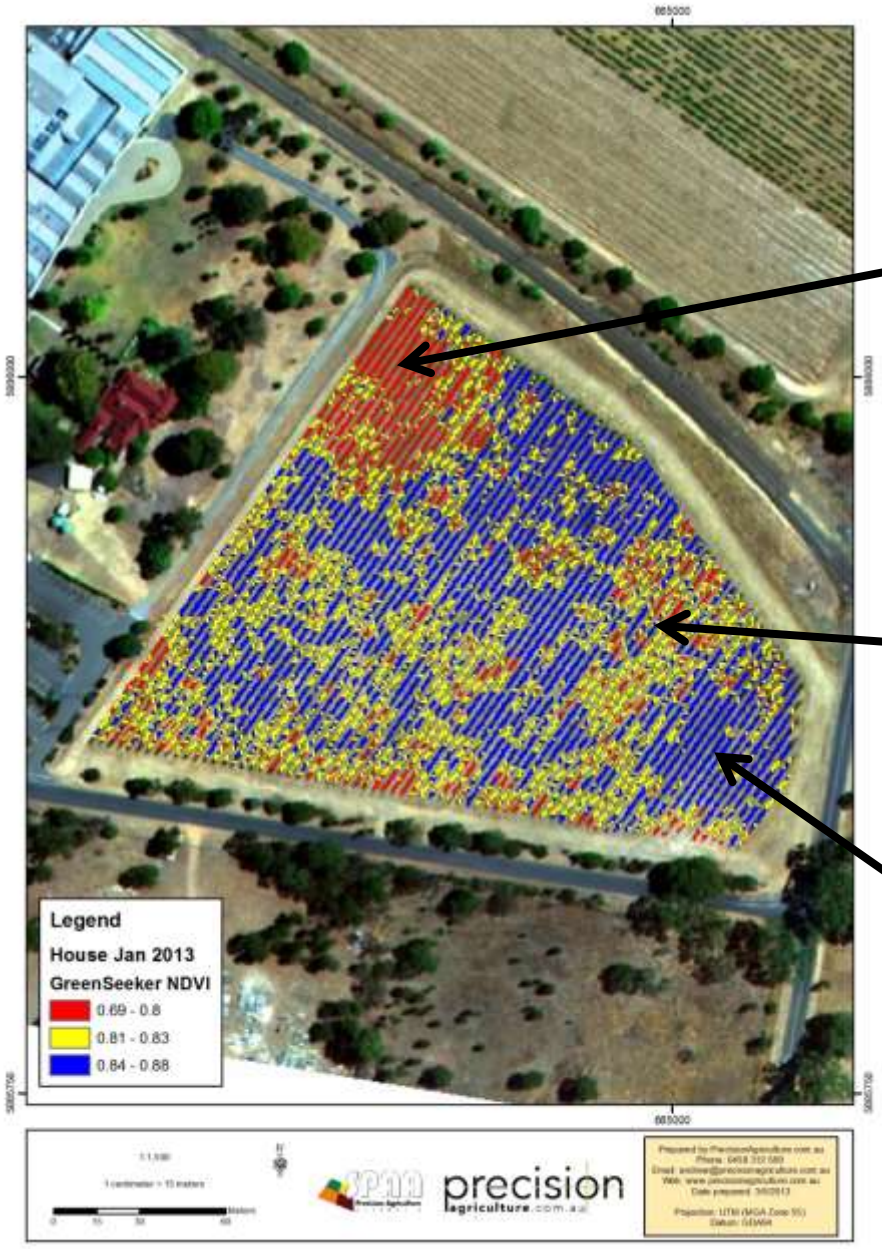
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Growth rate changes

July to Aug






Legend
House Jan 2013
GreenSeeker NDVI
0.69 - 0.8
0.81 - 0.83
0.84 - 0.88
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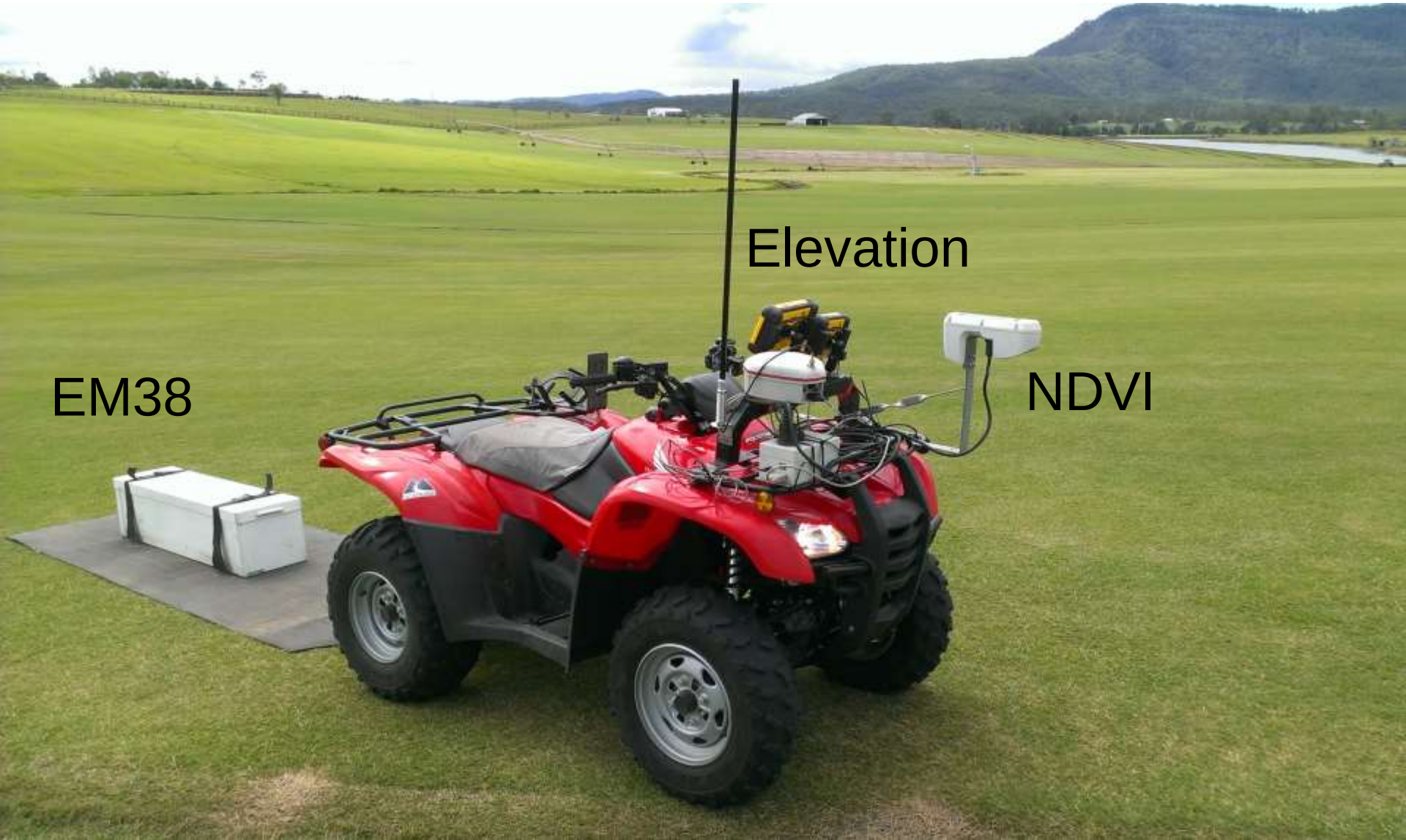






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Turf farm mapping



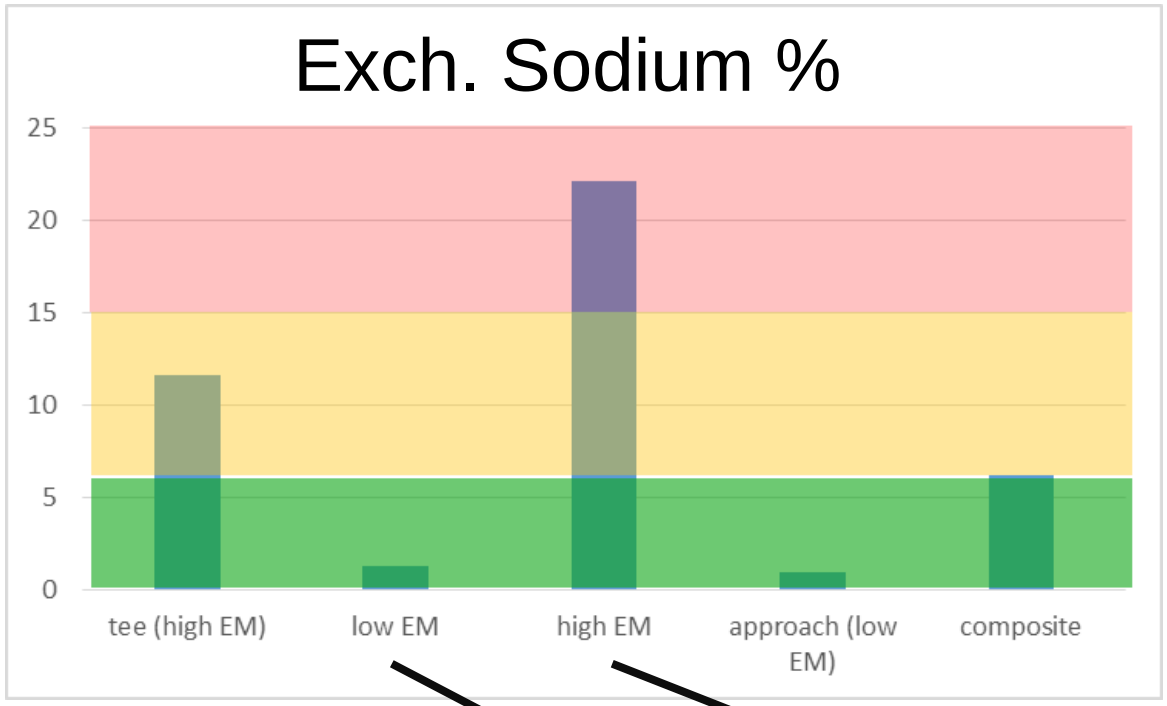
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Variable Rate Irrigation

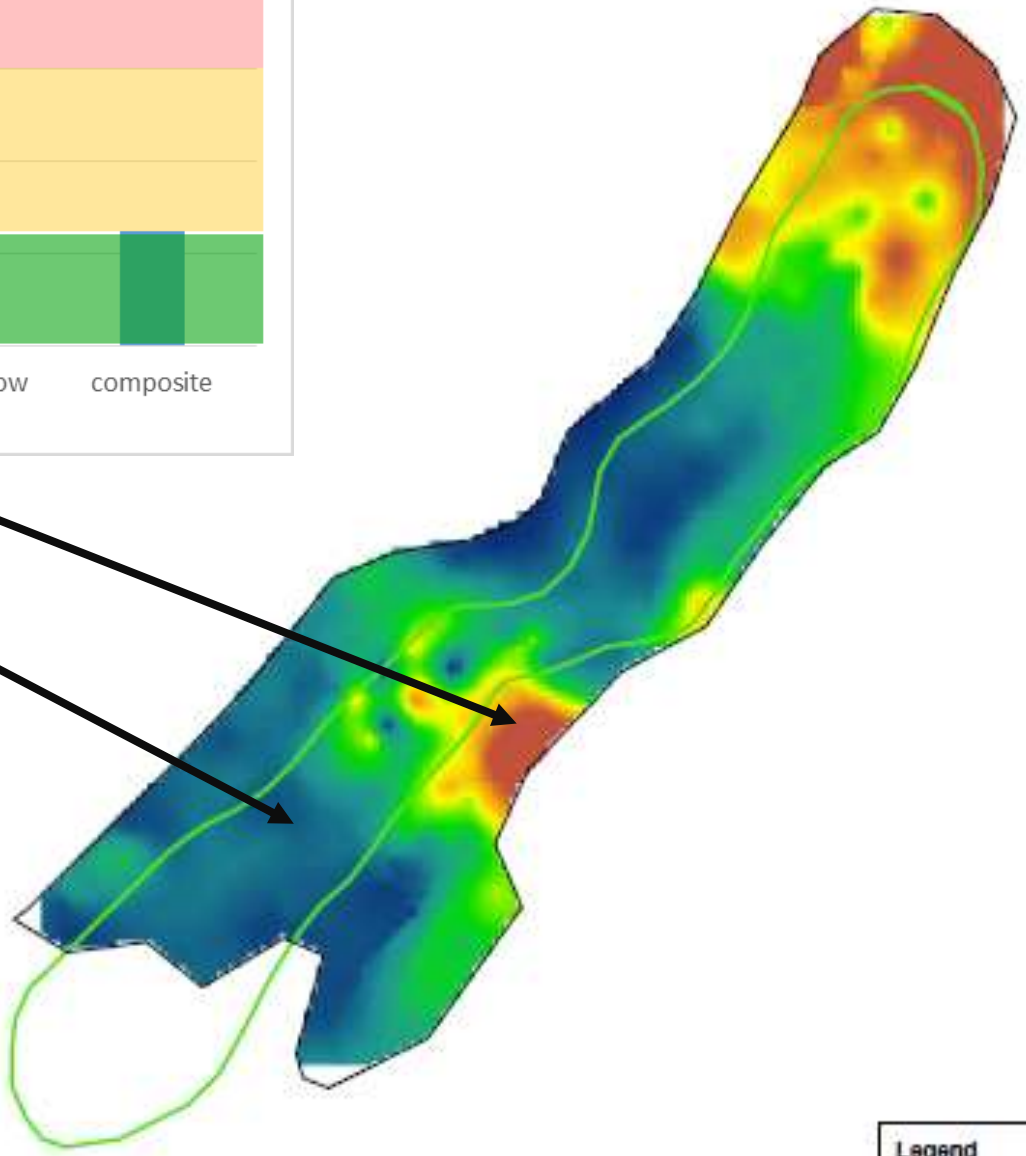


Golf course mapping



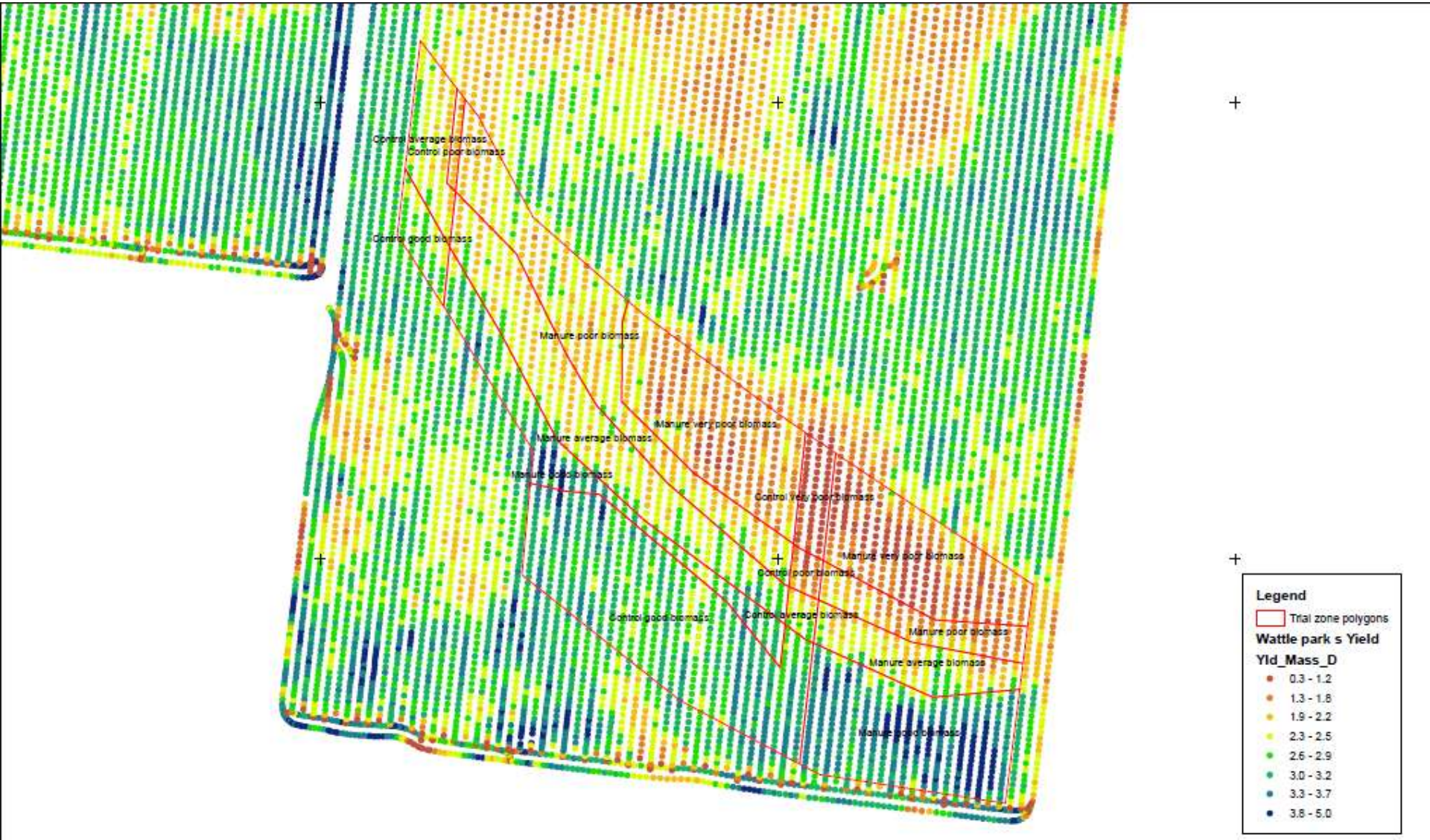


EM vs soil tests



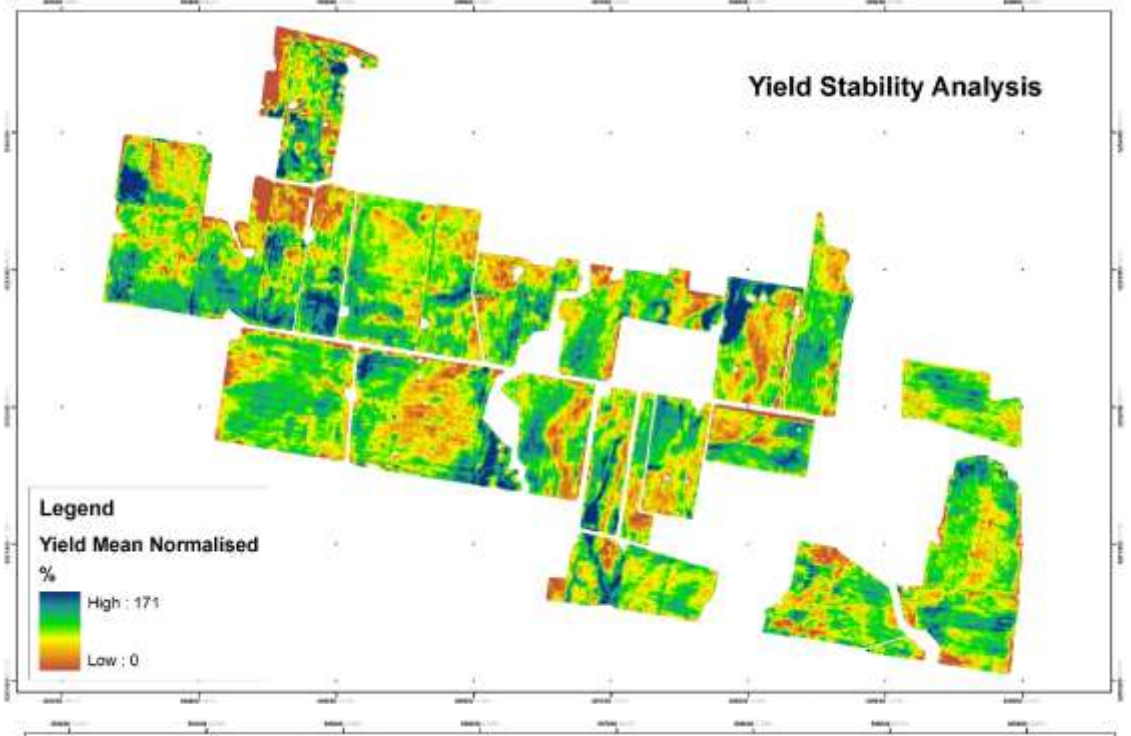
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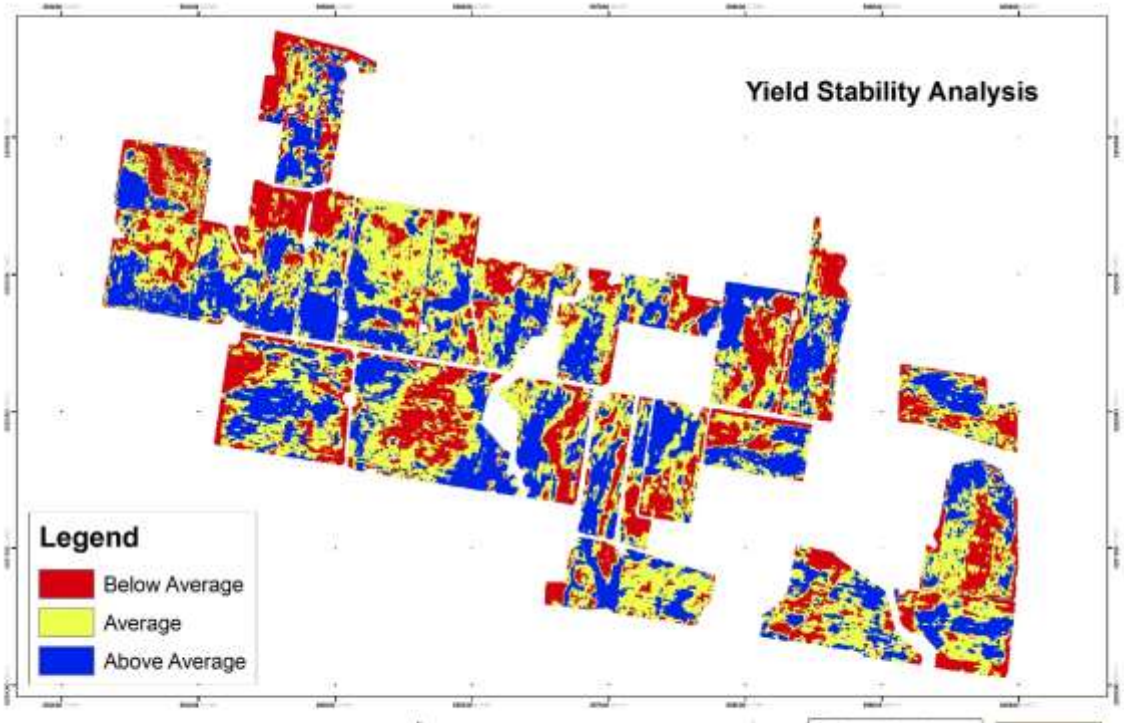
Yield mapping



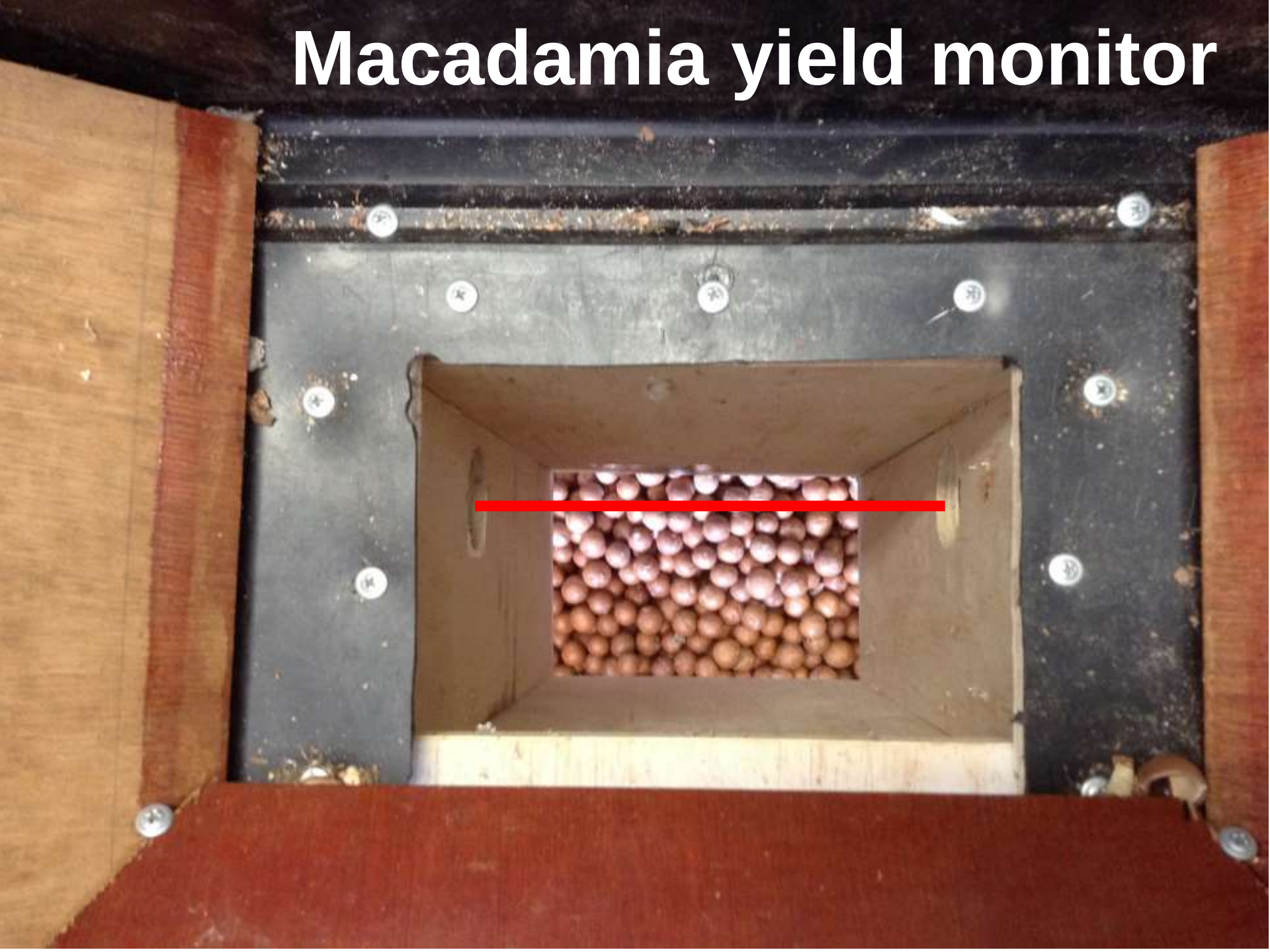
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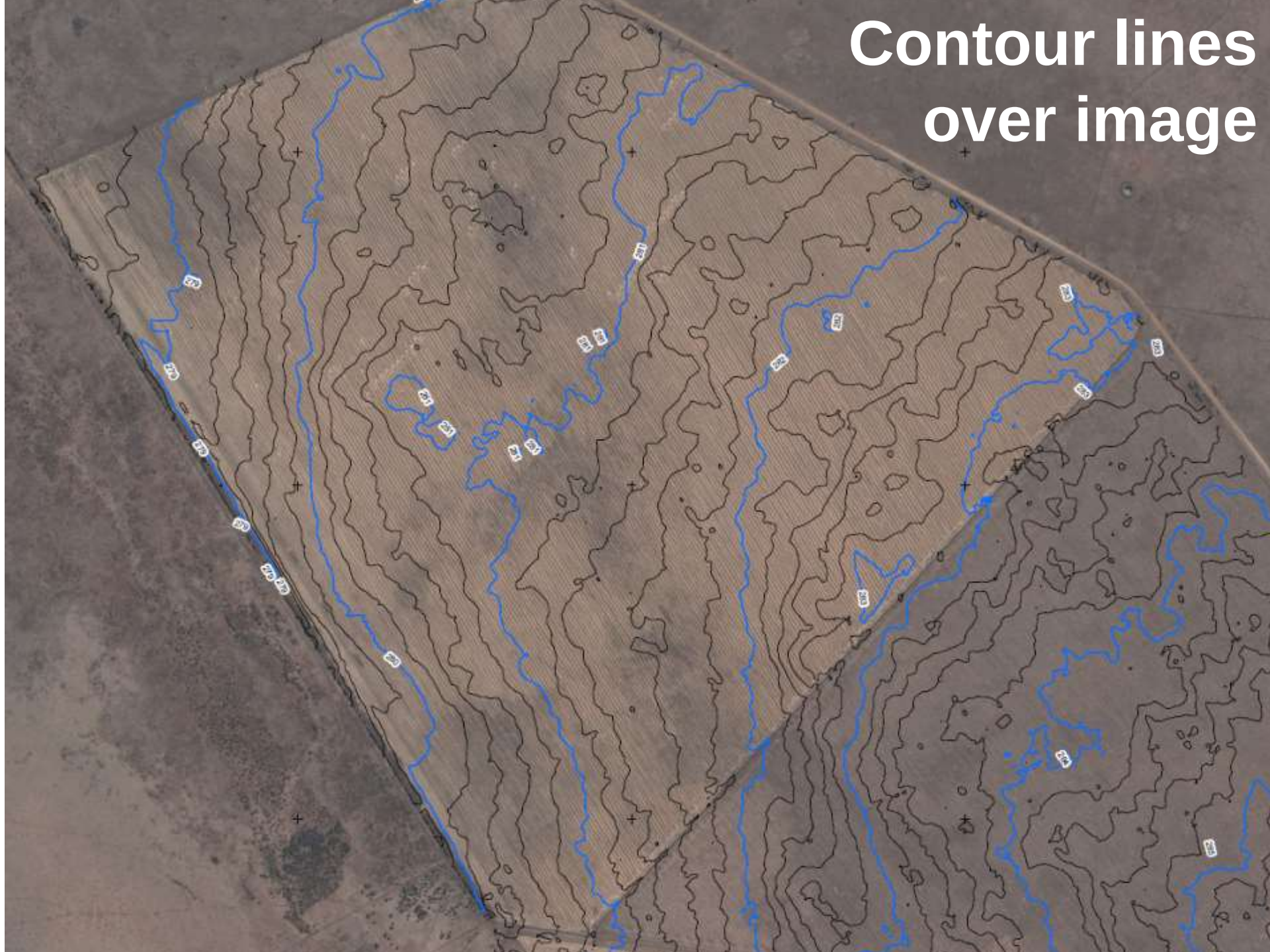
Yield performance over time

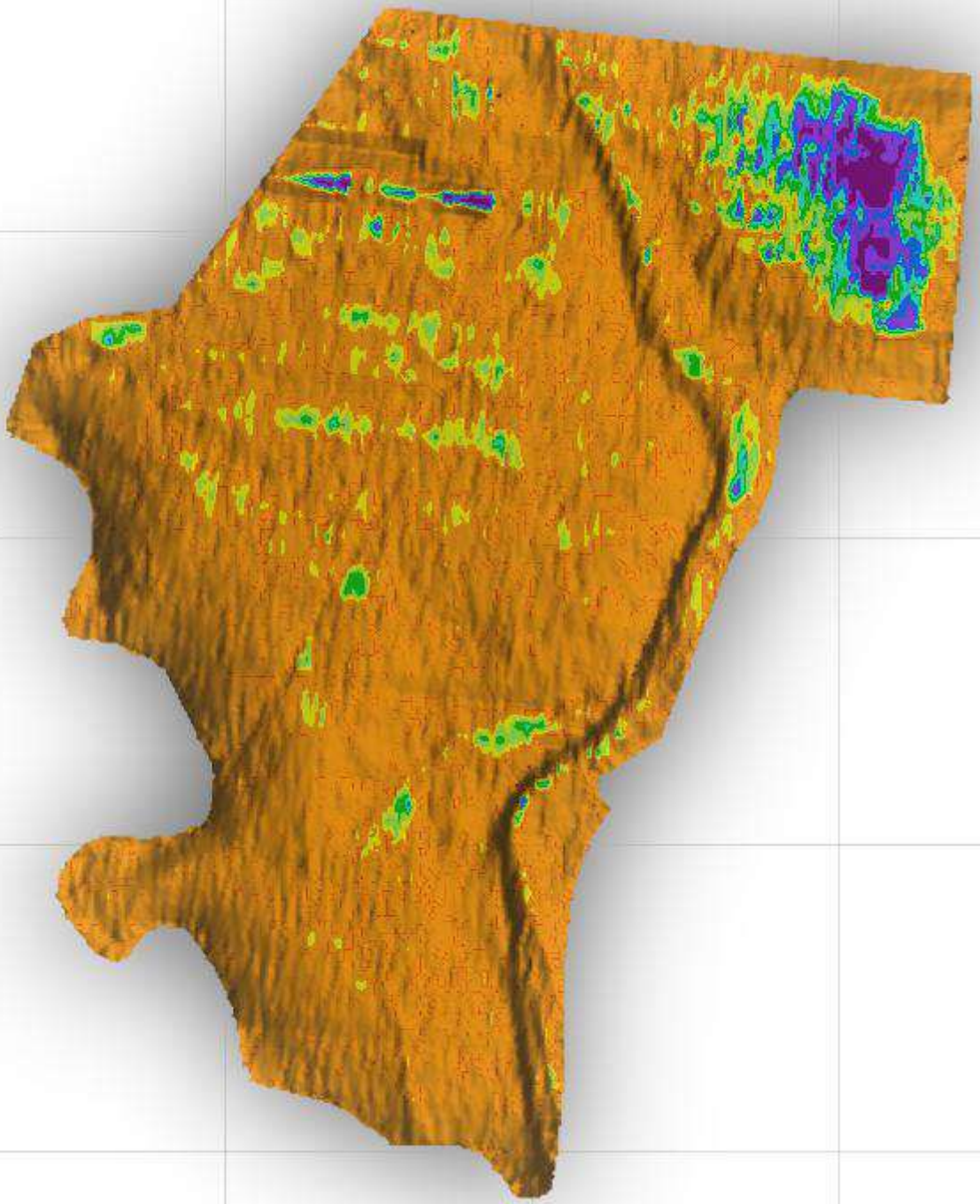




Macadamia yield monitor



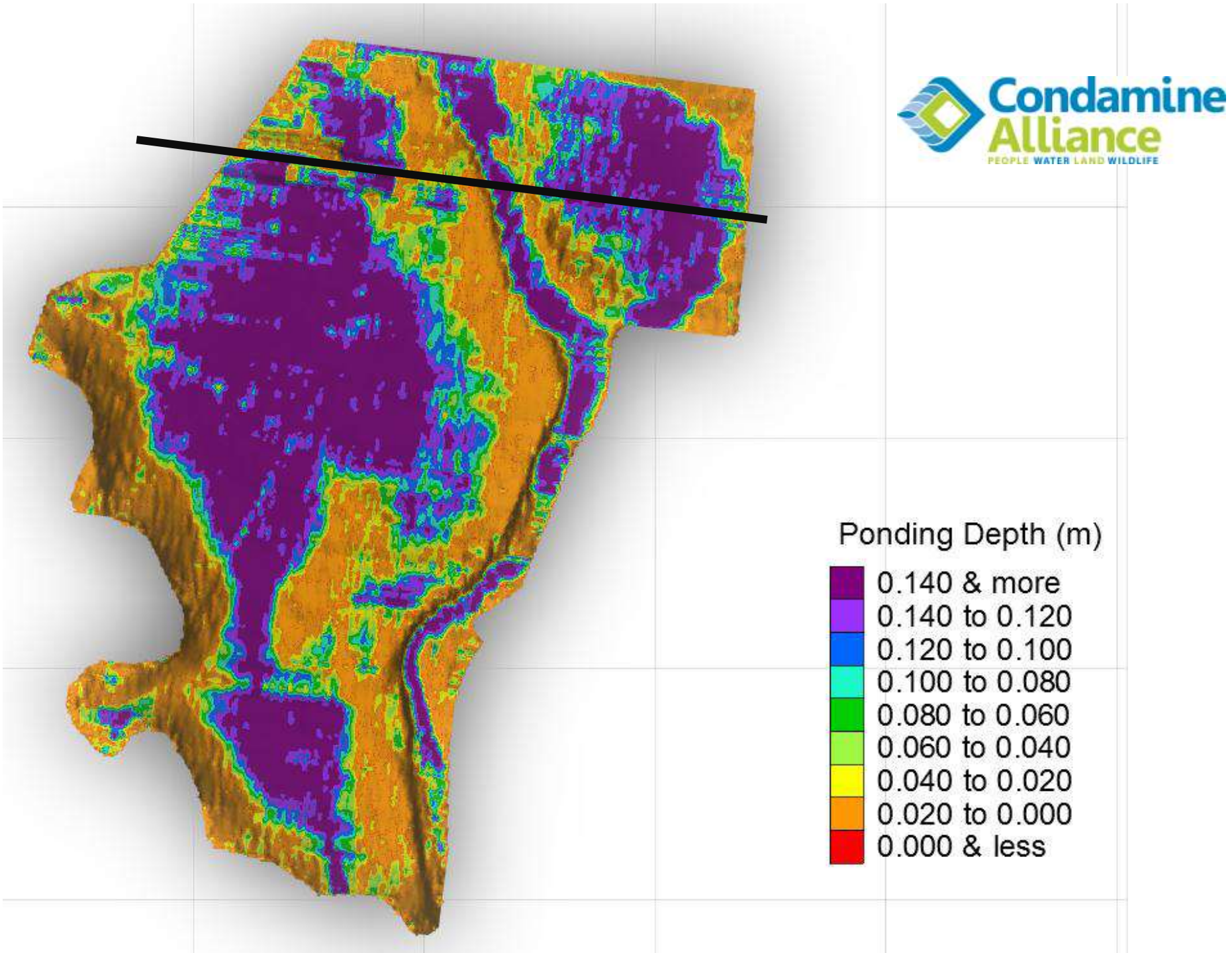

Contour lines
over image

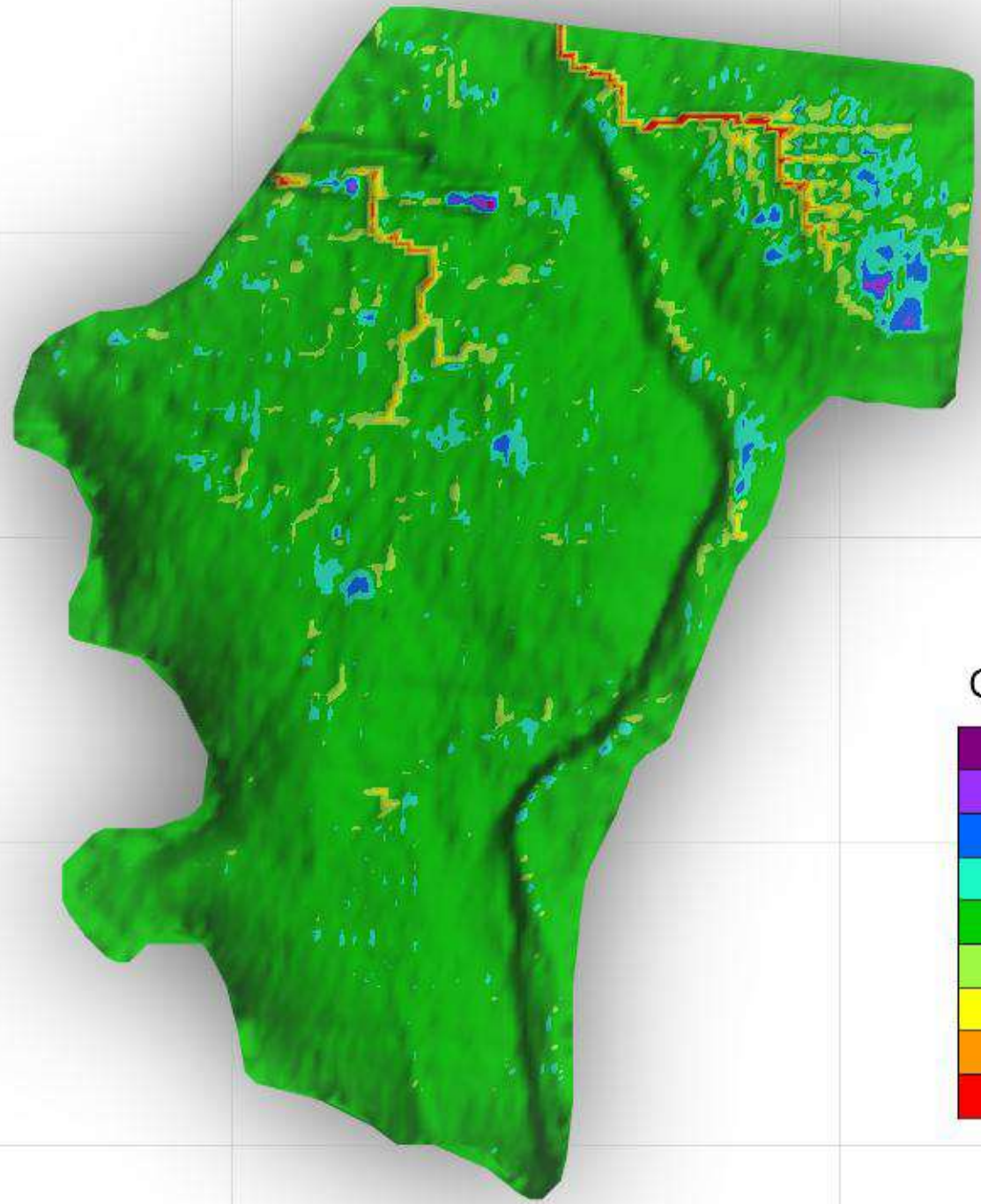


Condamine Alliance
PEOPLE WATER LAND WILDLIFE

Ponding Depth (m)

- 0.140 & more
- 0.140 to 0.120
- 0.120 to 0.100
- 0.100 to 0.080
- 0.080 to 0.060
- 0.060 to 0.040
- 0.040 to 0.020
- 0.020 to 0.000
- 0.000 & less


Condamine Alliance
PEOPLE WATER LAND WILDLIFE
Ponding Depth (m)
0.140 & more
0.140 to 0.120
0.120 to 0.100
0.100 to 0.080
0.080 to 0.060
0.060 to 0.040
0.040 to 0.020
0.020 to 0.000
0.000 & less



Condamine Alliance
PEOPLE WATER LAND WILDLIFE

In-field display of data

- Apps
- GPS connection



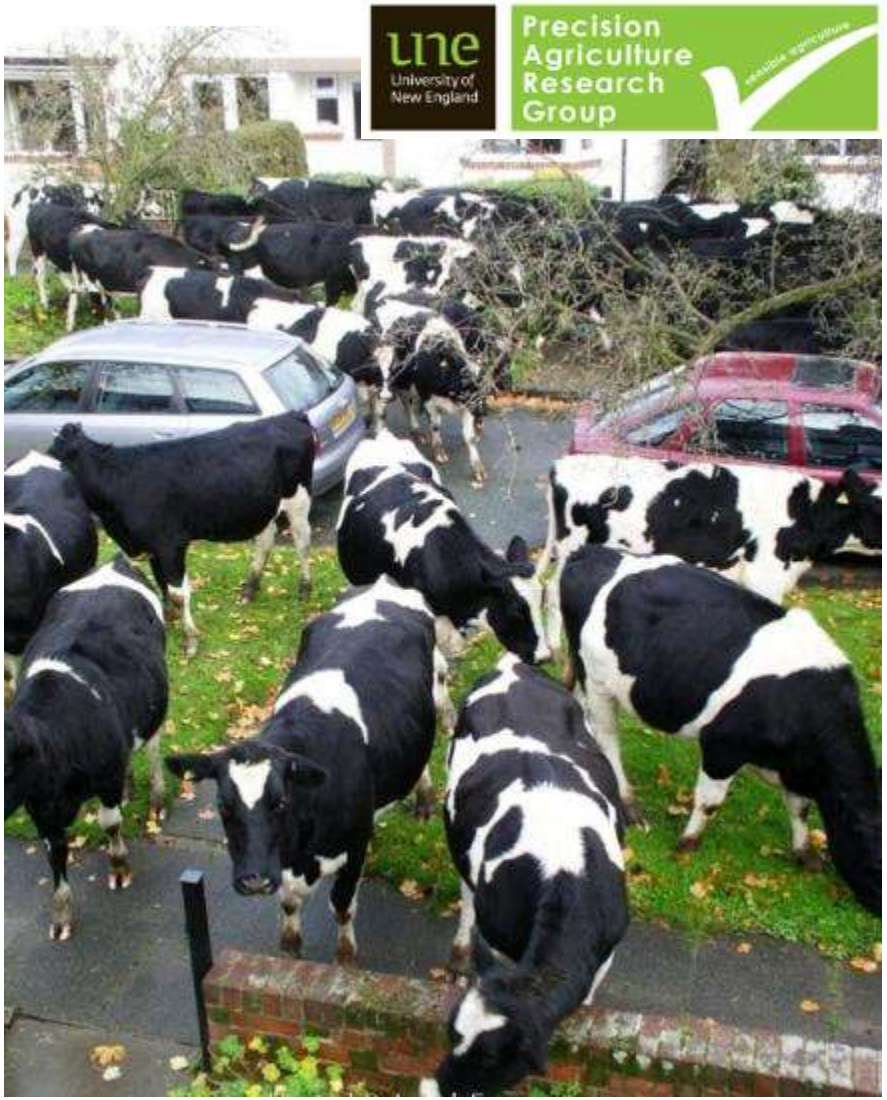




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Where are my cows?

- Are they in the right paddock?
- Are they in the recently sprayed paddock?
- Are they on the farm?



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Taggle Systems

taggle

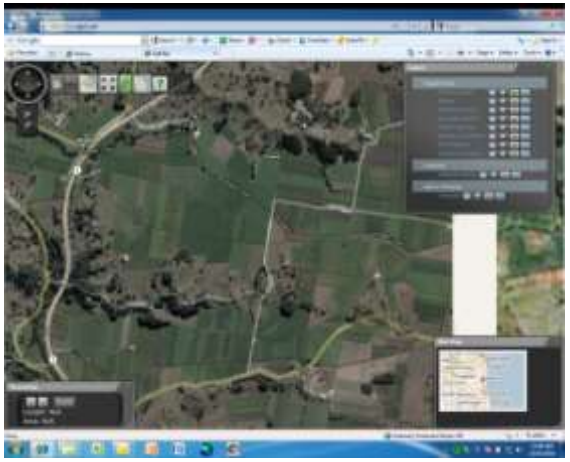
- Radio Beacon technology
- Cheap ear tag

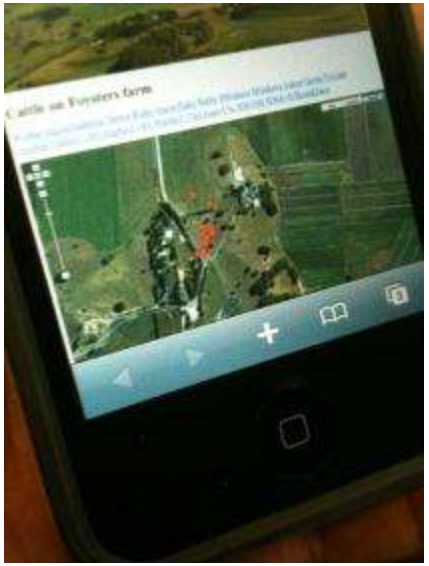


une University of New England

Precision Agriculture Research Group

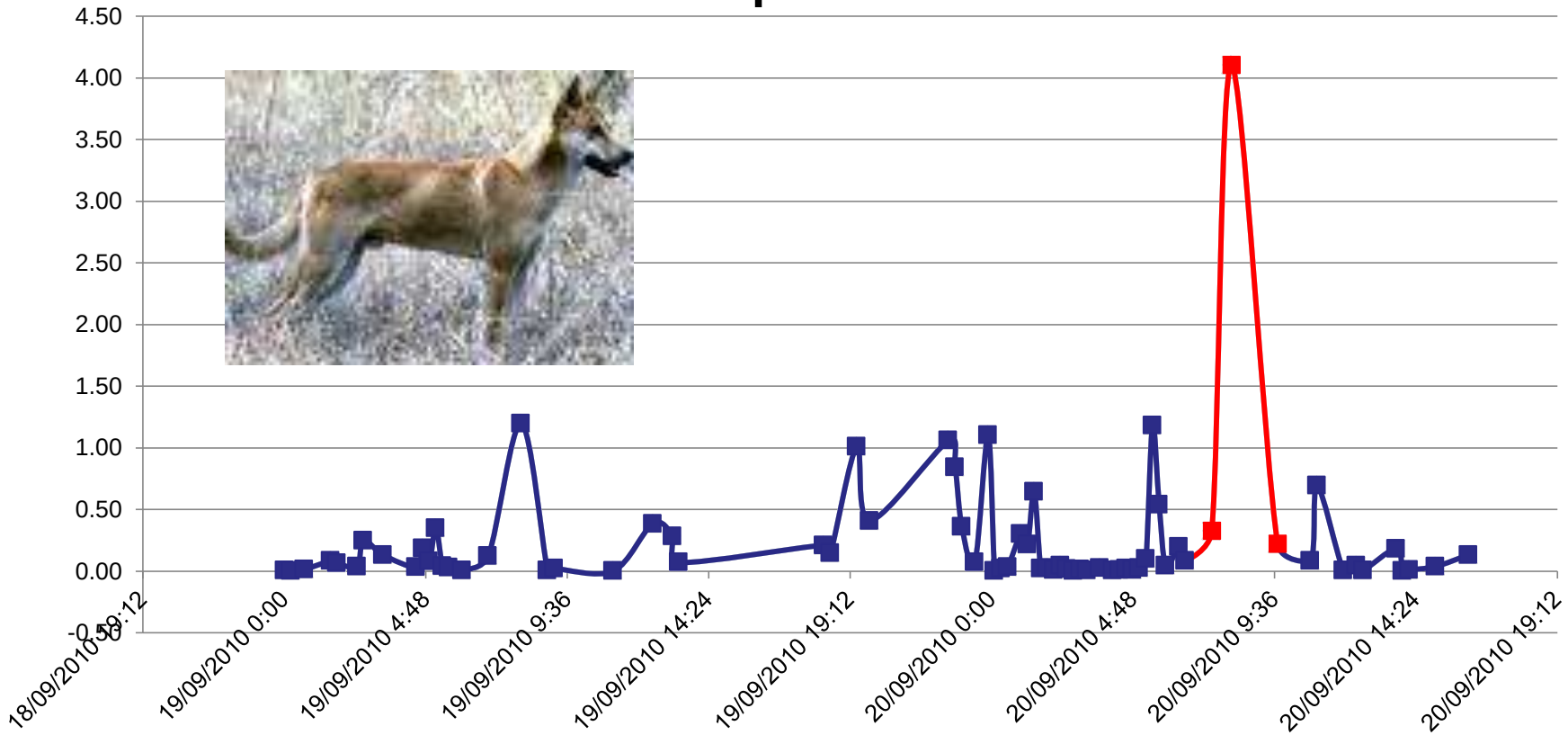






Monitoring behaviour in critical events

- Livestock theft and predation



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QUT/Swarmfarm.com Robot

http://youtu.be/lM_DyPCTSn8 - Gordon Wyeth

