

MAKING THE MOST OF WHAT YOU'VE GOT


Thomas Bradshaw



- Fletchers Farm
- Fordham
- Colchester
- 570mm rain
- Mixed soil type



@ProagriLtd

A world map with a blue background and black landmasses. Numerous small red dots are scattered across the map, representing population growth since 1 AD. The dots are most densely clustered in Europe, North Africa, and the Middle East, with a few scattered dots in North America and Asia. The text is overlaid on the map.

Population Growth since 1 AD.

Each dot represents 1 million people

A small, detailed map of the Roman Empire, showing its extent across Europe, North Africa, and the Middle East. It is positioned in the bottom right corner of the slide, below the text 'Each dot represents 1 million people'.

Roman Empire



2001

130 cows at Fletchers Farm

110 cows contract farmed

80ac arable

100ac maize

170ac grass



2017

2950ac arable – contract farming

150ac grass

Equestrian centre

- 70 stables
- Riding School with 13 horses

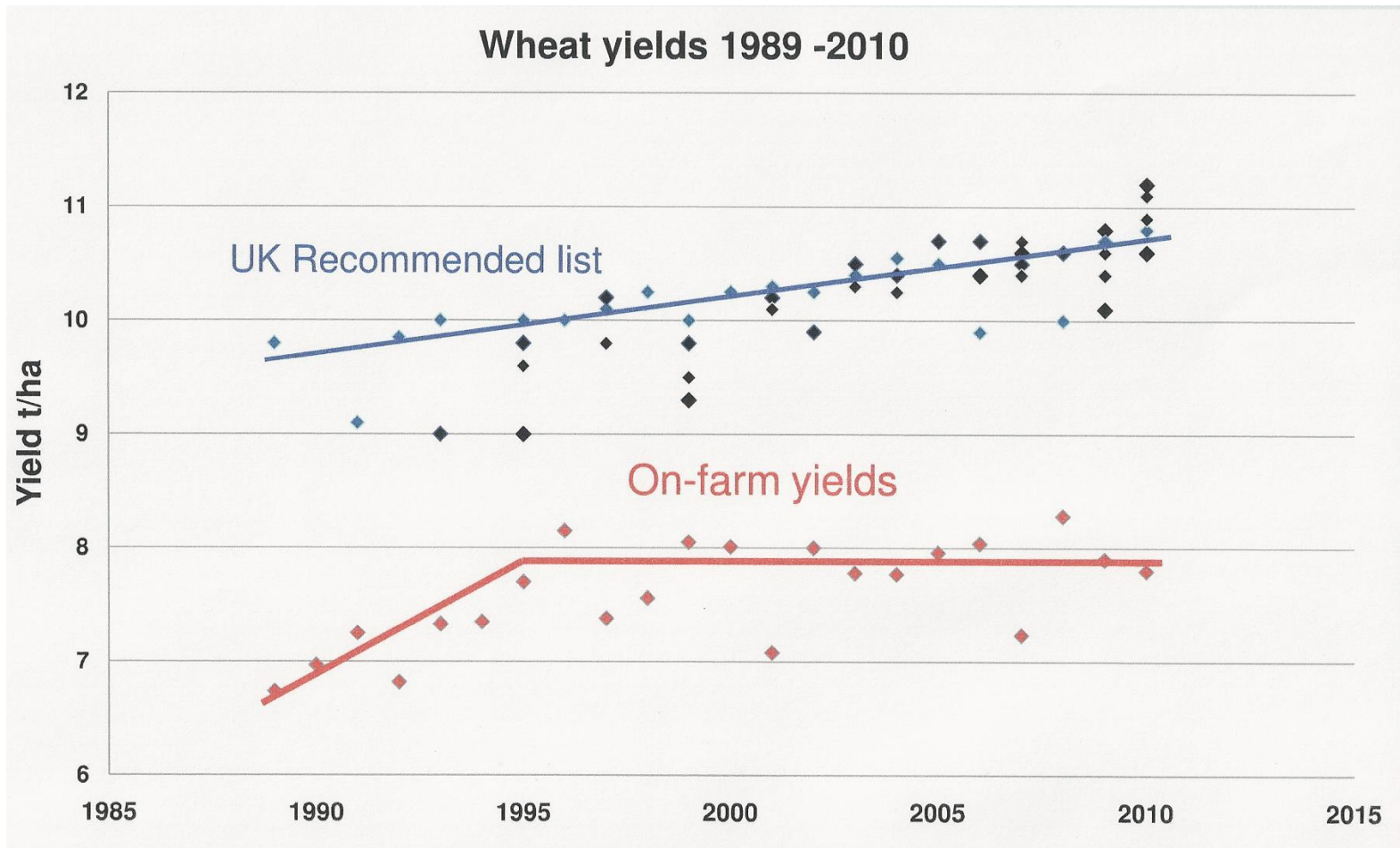
50kw solar

BBC Harvest, AHDB Monitor Farm, NFU Crops Board, Nuffield Scholar

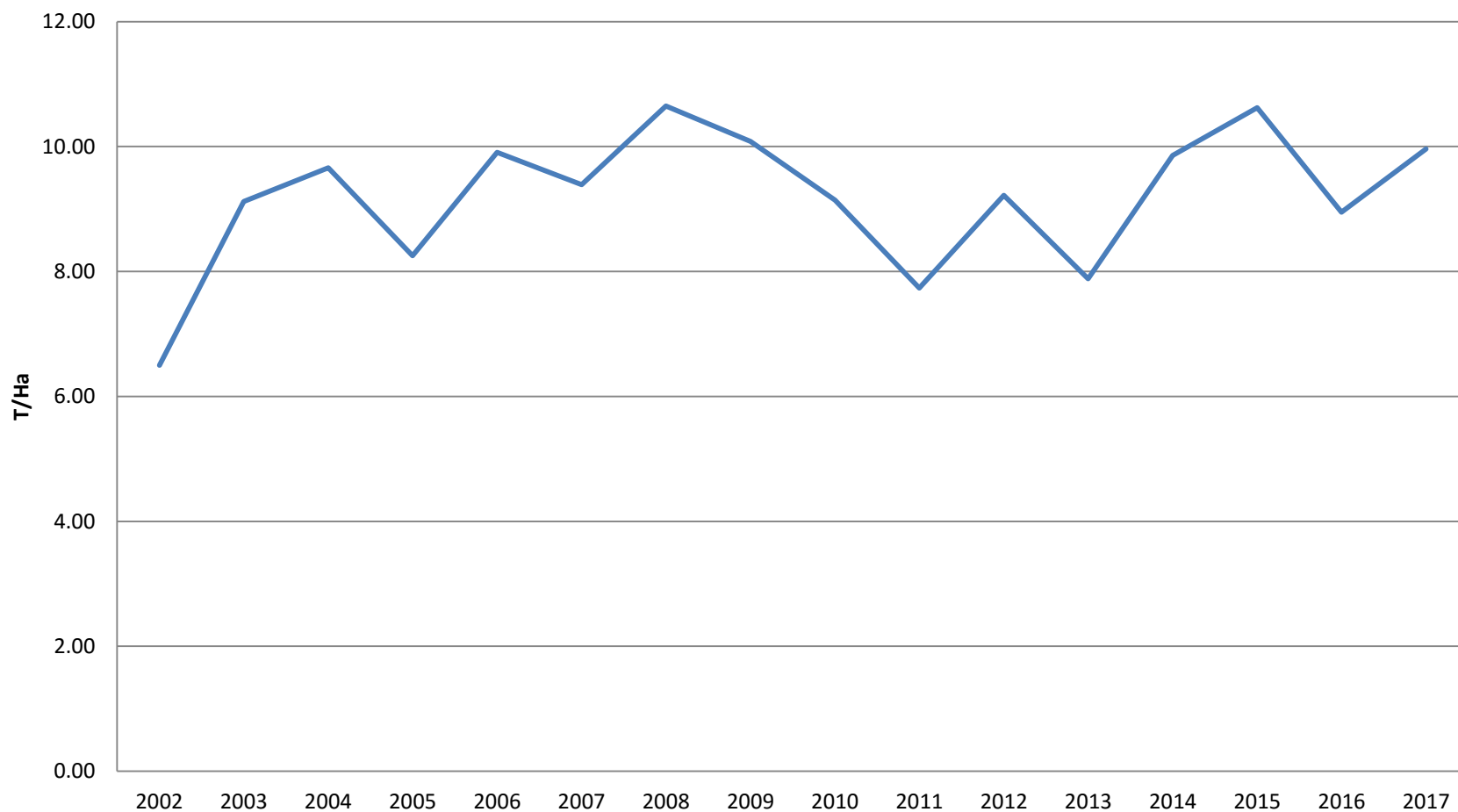
ARABLE BUSINESS CHALLENGES

1) The yield plateau

Yields have Plateaued



Wheat Yield 2002-2017



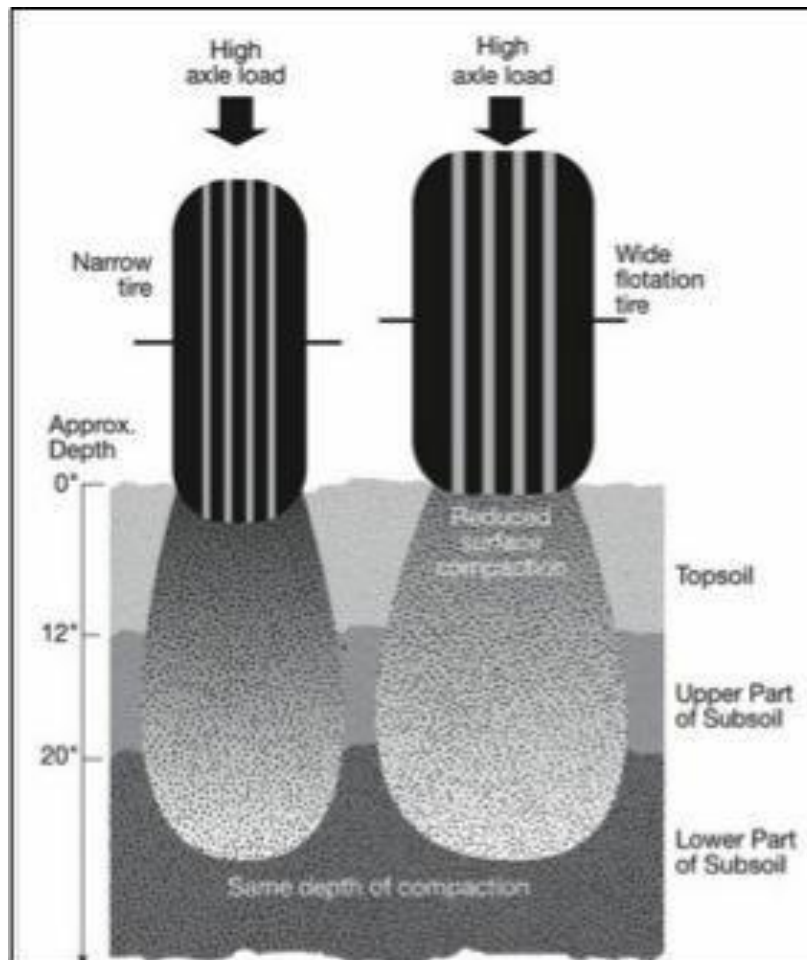
CHALLENGES

1) The yield plateau

2) Sustainable intensification

Sustainable Intensification?





Wide vs narrow tire and axle load
Source: Sjoerd Duiker, Penn State University

CHALLENGES

1) The yield plateau

2) Sustainable intensification

3) Soil fertility



This satellite image, taken on 16 February 2014, shows where our soil goes once it's washed off our fields. Photograph: Dundee Satellite Receiving Station



CHALLENGES

1) The yield plateau

2) Sustainable intensification

3) Soil fertility

4) Rising Costs both FC's and VC's

Tractor running costs

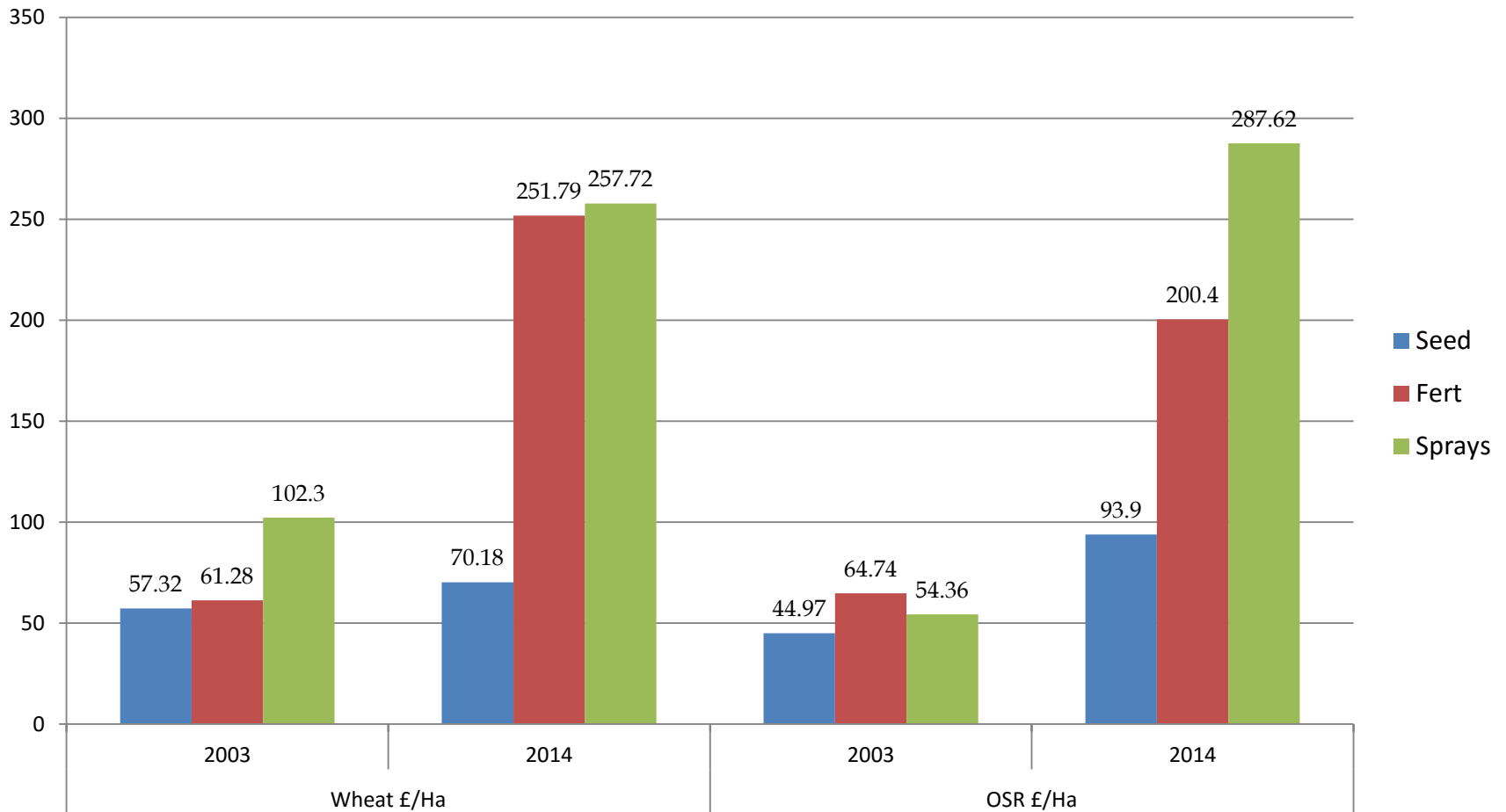
550HP Tracked Machine

- £295,000
- 750hrs per year
- 70lts fuel per hour
- Wages
- Repairs and maintenance
- Depreciation
- 5yr warranty
- **£115/hr**

390HP Wheeled

- £157,500
- 1000hrs per year
- 40lts fuel per hour
- Wages
- Repairs and maintenance
- Depreciation
- 8yr warranty
- **£58/hr**

VARIABLE COSTS '03 - '14



IMPACT ON CAPITAL REQUIREMENT

	2003	2014
OSR VC's	£21,876.00	£77,589.33
Wheat VC's	£58,906.67	£154,584.00
Machinery Costs	£64,000.00	£140,000.00
Total	£144,782.67	£372,173.33

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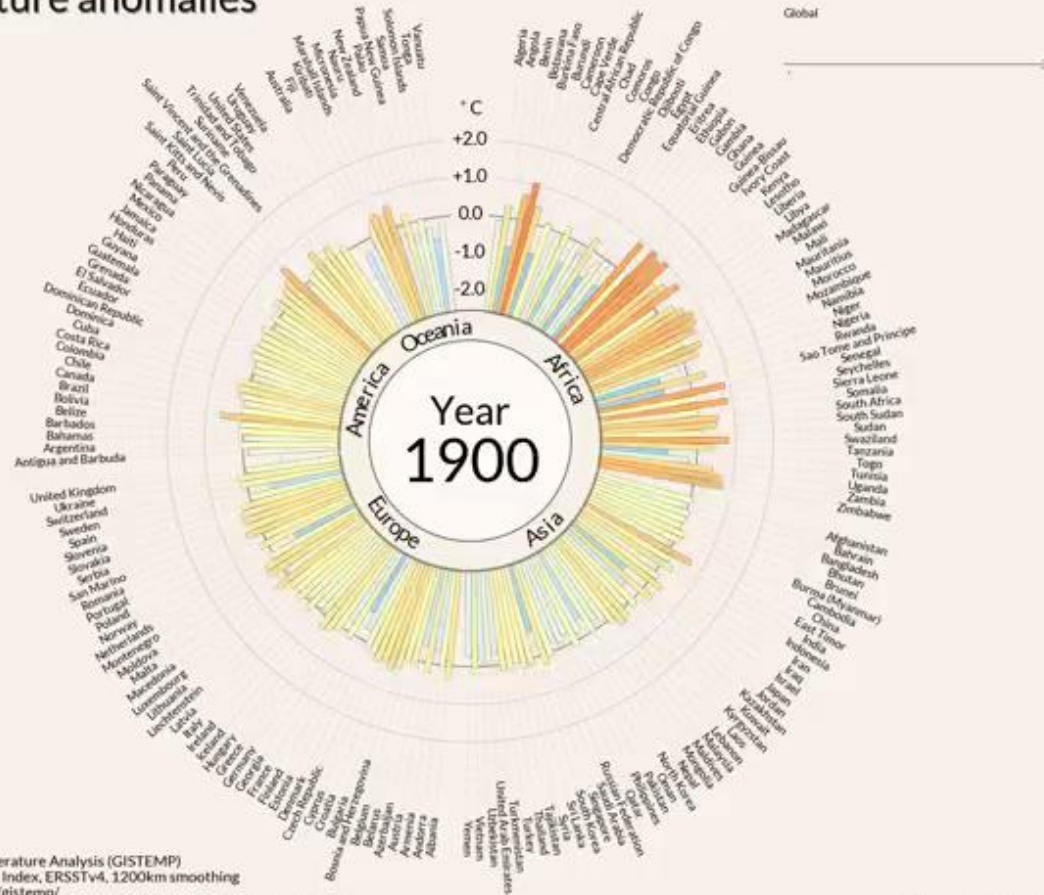
2) Sustainable intensification

3) Soil fertility

4) Rising Costs both FCs and VCs

5) Politics, pressure groups and temperature change

Temperature anomalies



Data source:
 NASA GISS Surface Temperature Analysis (GISTEMP)
 Land-Ocean Temperature Index, ERSSTv4, 1200km smoothing
<https://data.giss.nasa.gov/gistemp/>
 Average of monthly temperature anomalies. GISTEMP base period 1951-1980.

PRIORITIES FOR THE FUTURE

1) Soil health

PRIORITIES FOR THE FUTURE

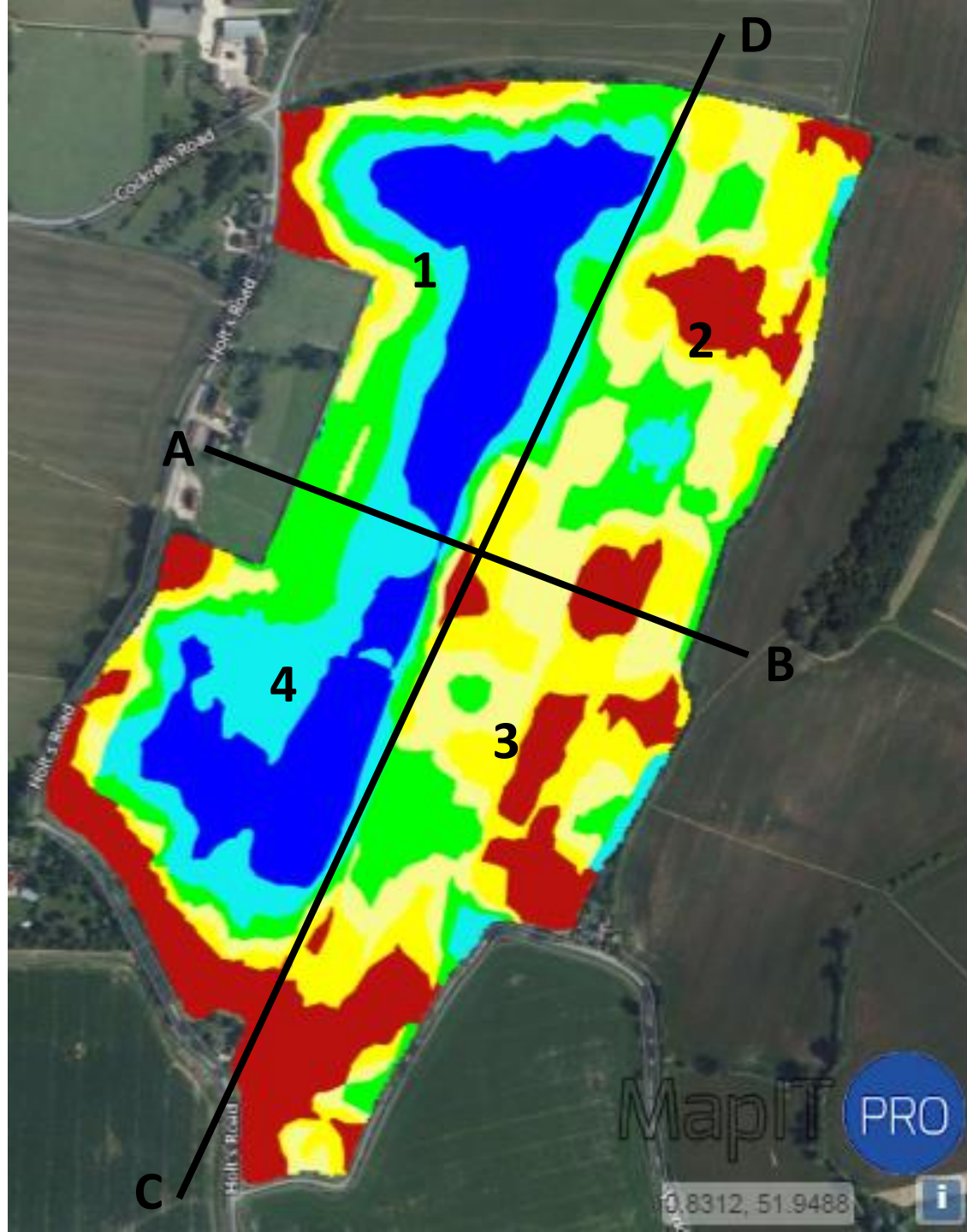
1) Prioritise soil health

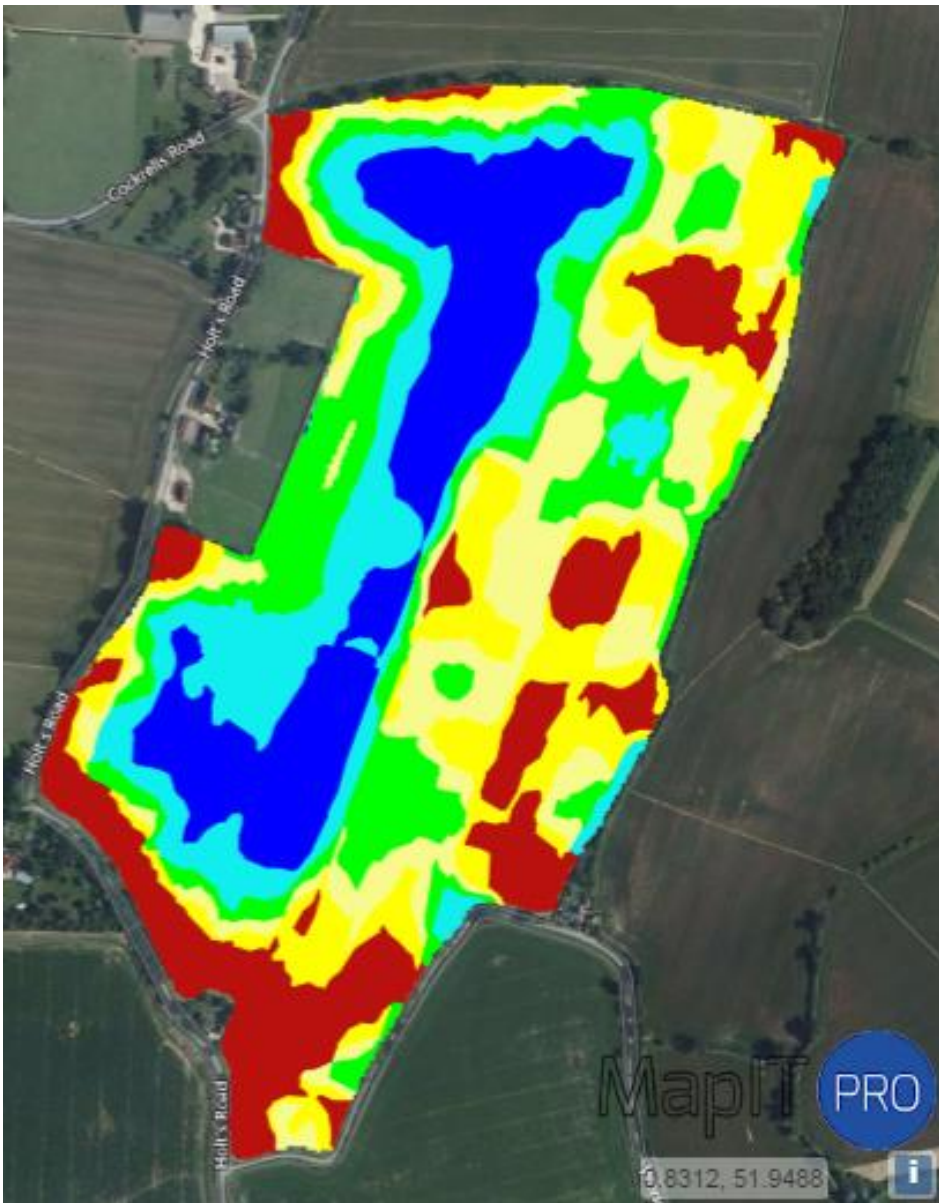
2) Maximise harvesting of sunlight



Soil structure with cover crops







- We can't sell worms
- Lots of work to do understanding termination timings
- Soil doesn't dry on the surface but drier at depth
- Theory is great and I'm sure it is the future but difficult putting into practice

Aerial view of Spring Barley



PRIORITIES FOR THE FUTURE

1) Soil health

2) Maximise harvesting of sunlight

3) Reduce fuel usage from 80 – 50lts/ha

The Past



The Future

