

Precision Farming

Better Farming, Better Business Records,

But

What & Who Will Make It Work on Your Farm

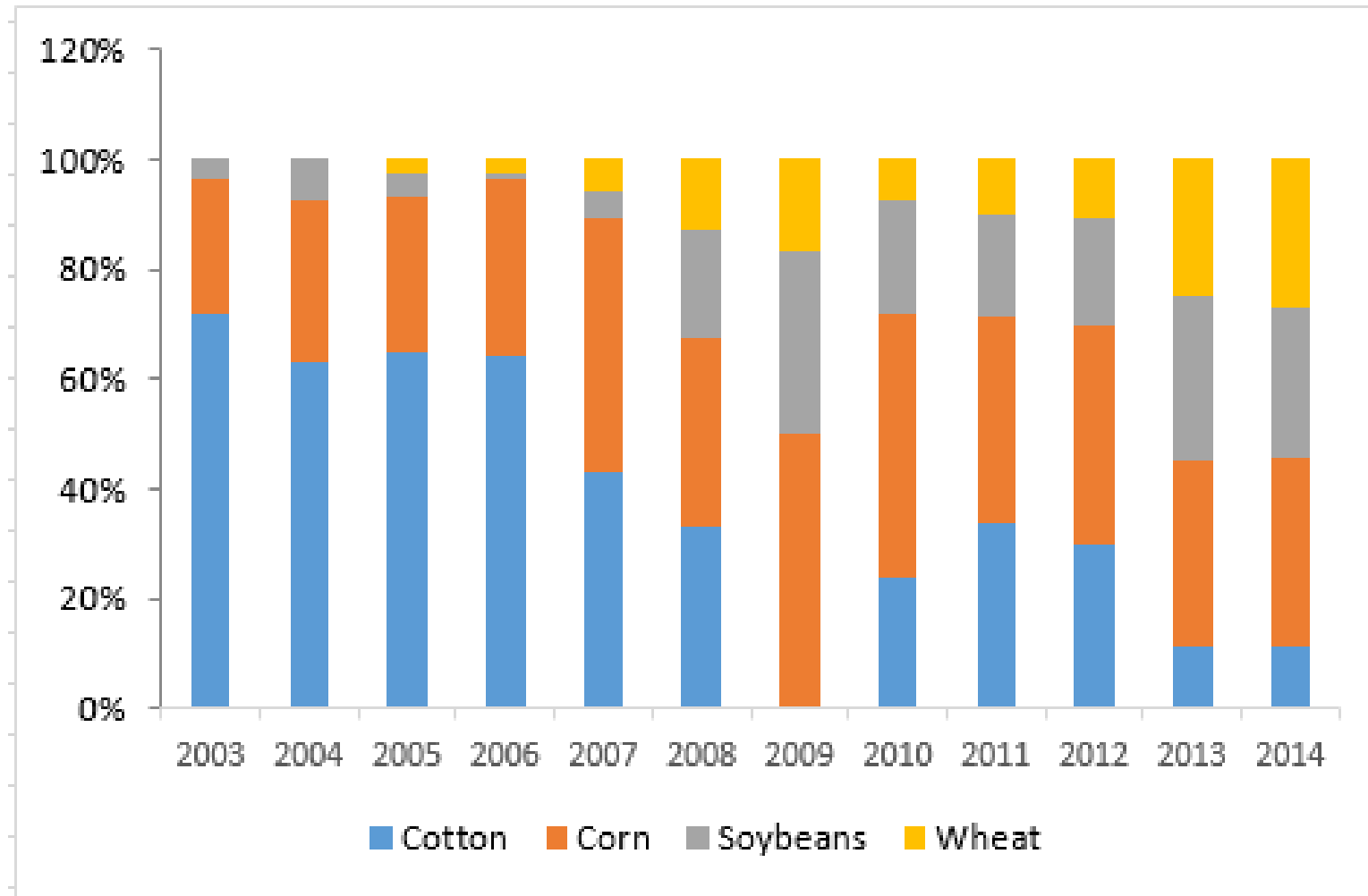
Our Farm

- Northern Alabama, Dryland
- Main Crops: Corn, Wheat, Soybeans, Cotton
- Also: Canola, Sesame, Peanuts & Sorghum
- 28 Different FSA Farms, 112 Fields, 2 to 3 crops in a Field
- Owned & Rented, Cash & Share
- Came to Precision Ag from a recordkeeping perspective
- No Precision Ag Consultant or Sales Representative Available

14.7 miles E to W,
7.7 miles N to S



Annual Decision - What to Plant

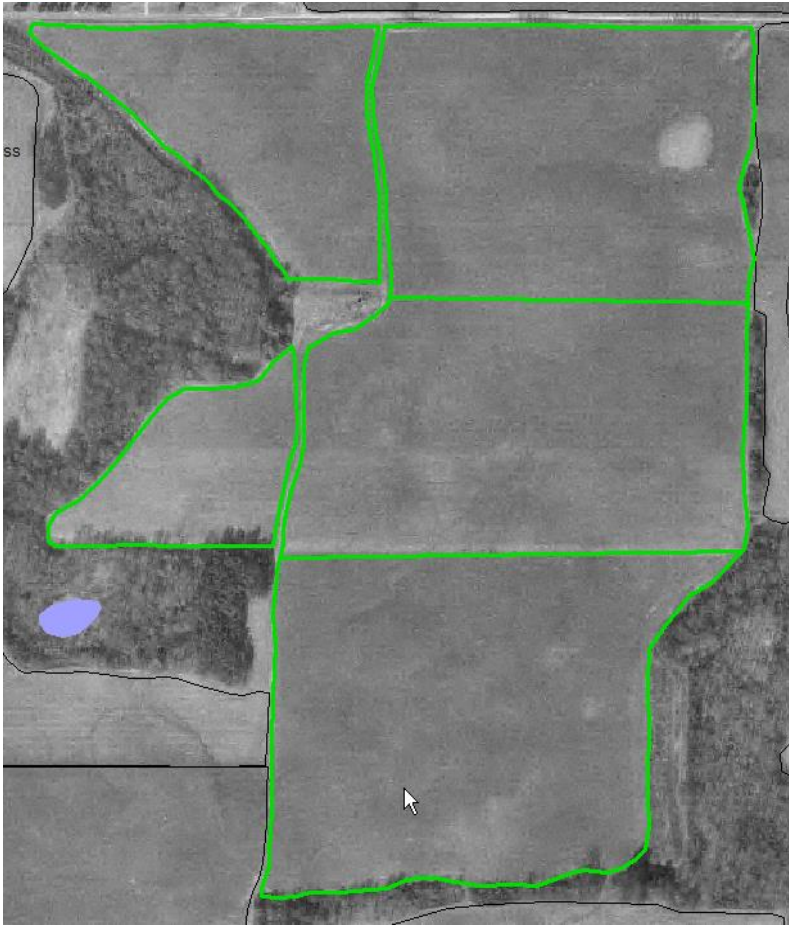


Current Uses of Precision Tools – All Business

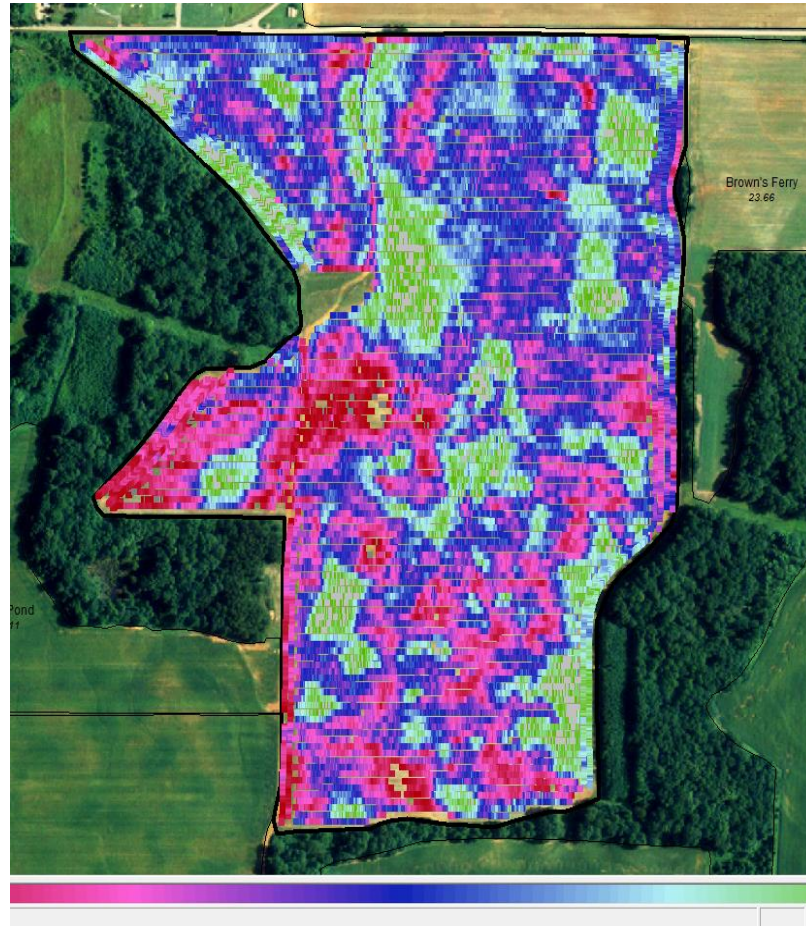
- RTK Guidance, Section and Row control on sprayers and planters, recently telematics for sprayers operating in the same field
- Use yield maps & soil maps to create soil sampling maps
- Prescribe variable rate P, K and lime applications in the farm office
- Have used NDVI imagery from airplanes (InTime) and on board sensors (Greenseeker) to determine variable rate applications of in season nitrogen on wheat and corn and growth regulators and defoliant in cotton
- Use “as applied” GIS data and manual data entry to keep detailed field records for business planning and share rent calculations

Use Yield Maps to Create Soil Sampling Zones

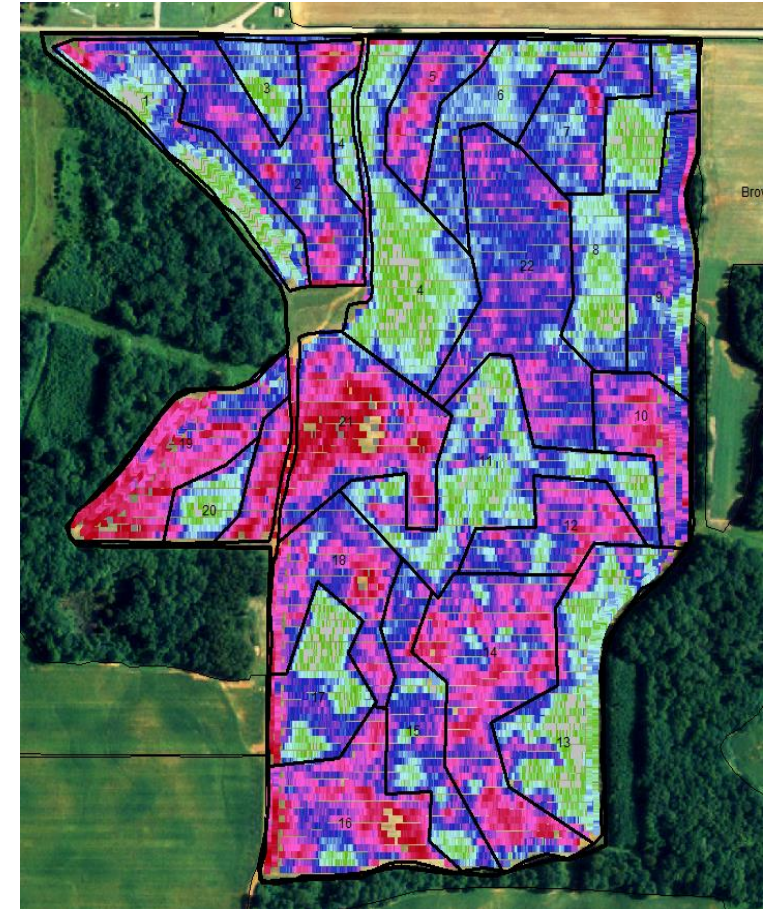
Old Soil Test Zones



Corn Yield Range of 9 to 145 bu/acre

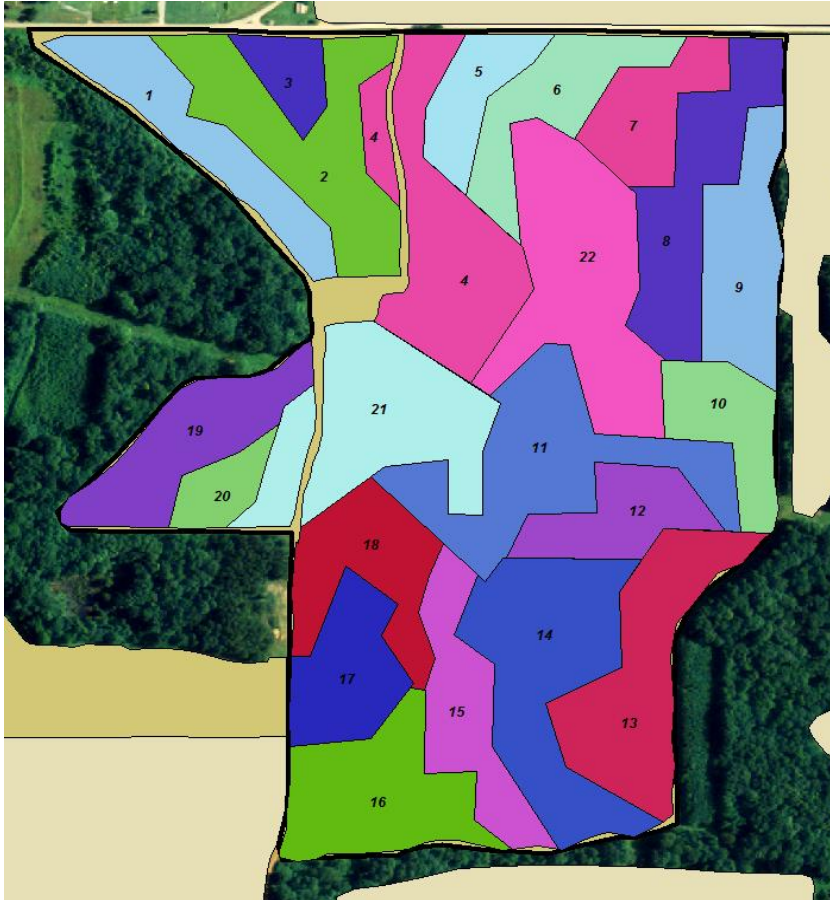


Create Soil Test Zones



Soil Sampling Zone Map Created

Soil Test Zone Sampling Map

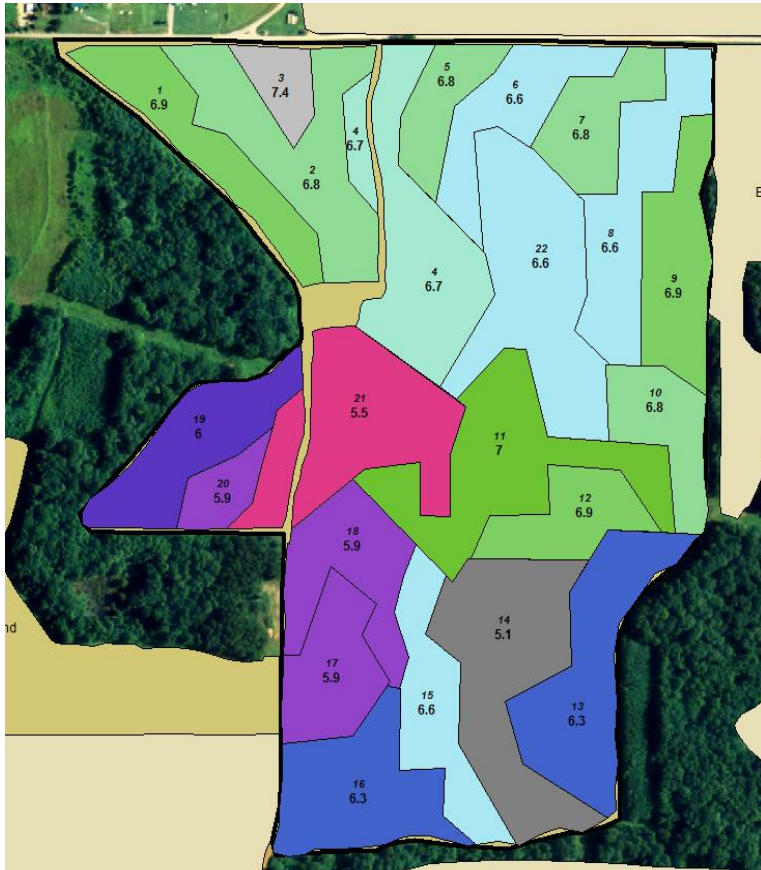


Moderate Correlation to Imagery

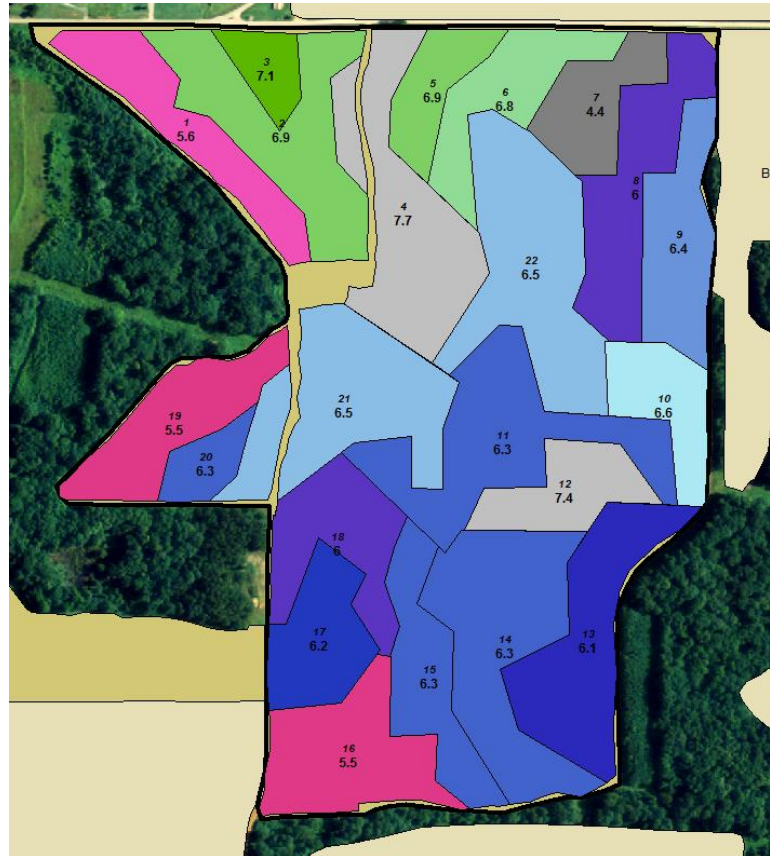


Variance in Results Indicate Sampling Issues

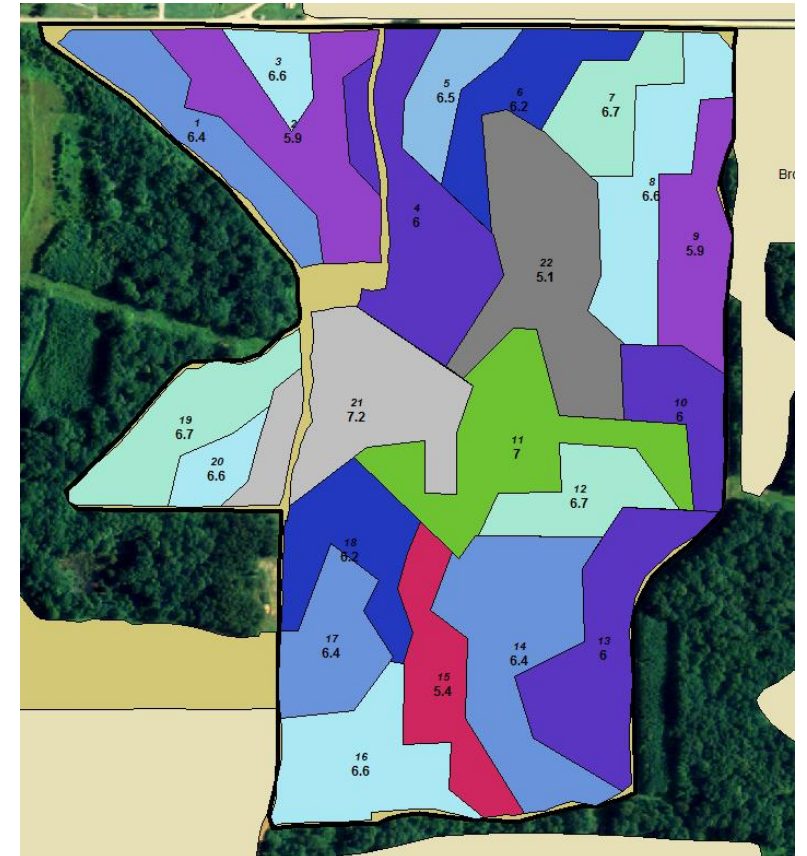
2008



2009

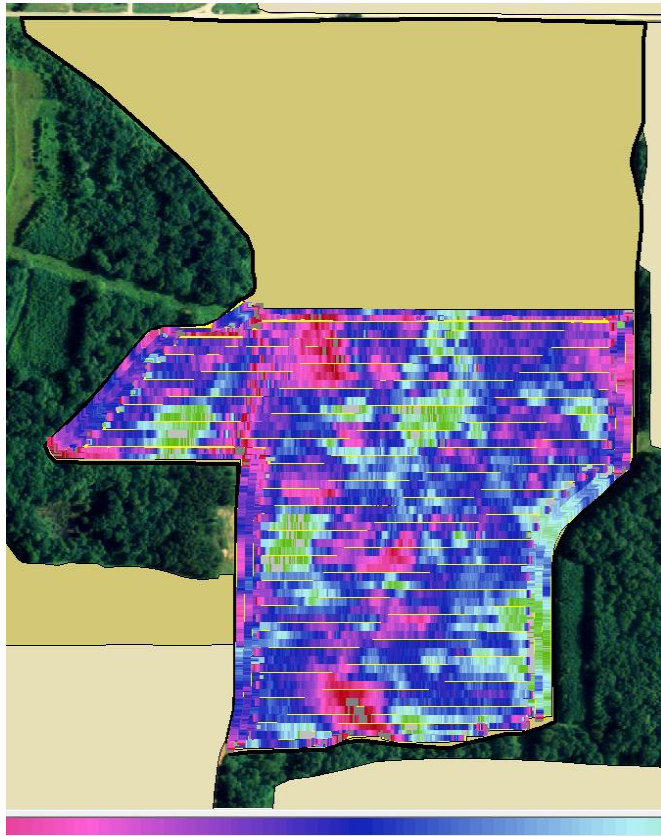


2011



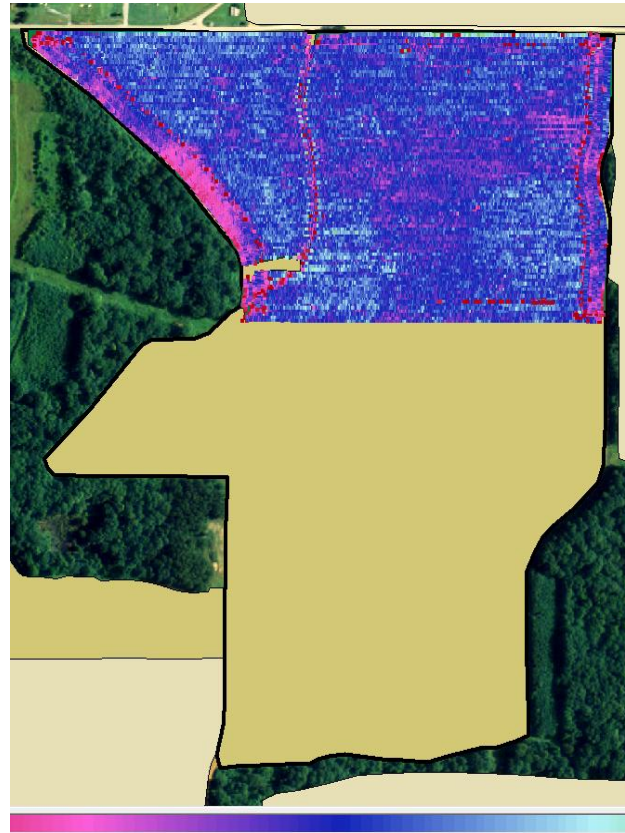
New map every few years.
In 2012 the field had 2 crops, corn and cotton.

Corn



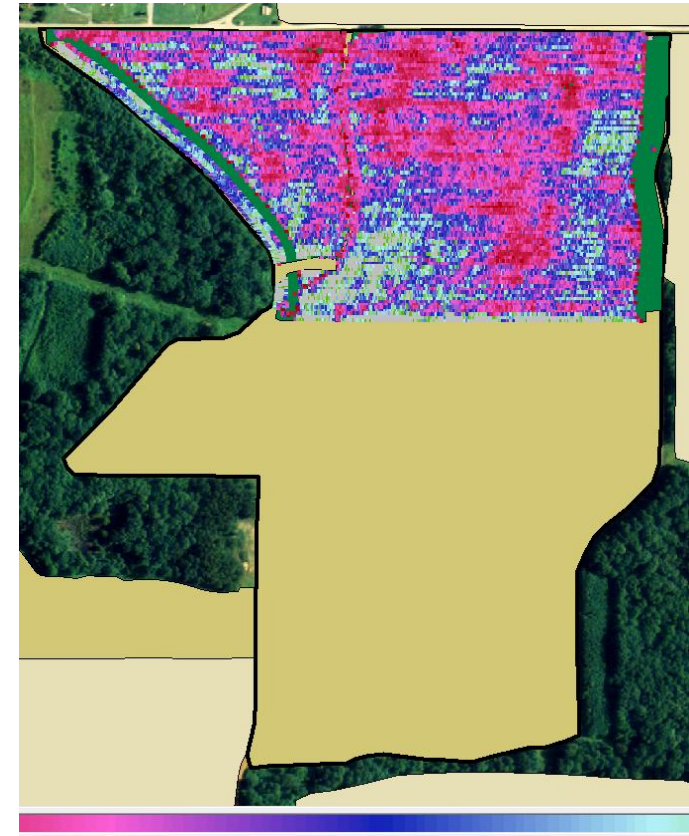
3 to 116 bu/acre

Cotton – 1st Pick



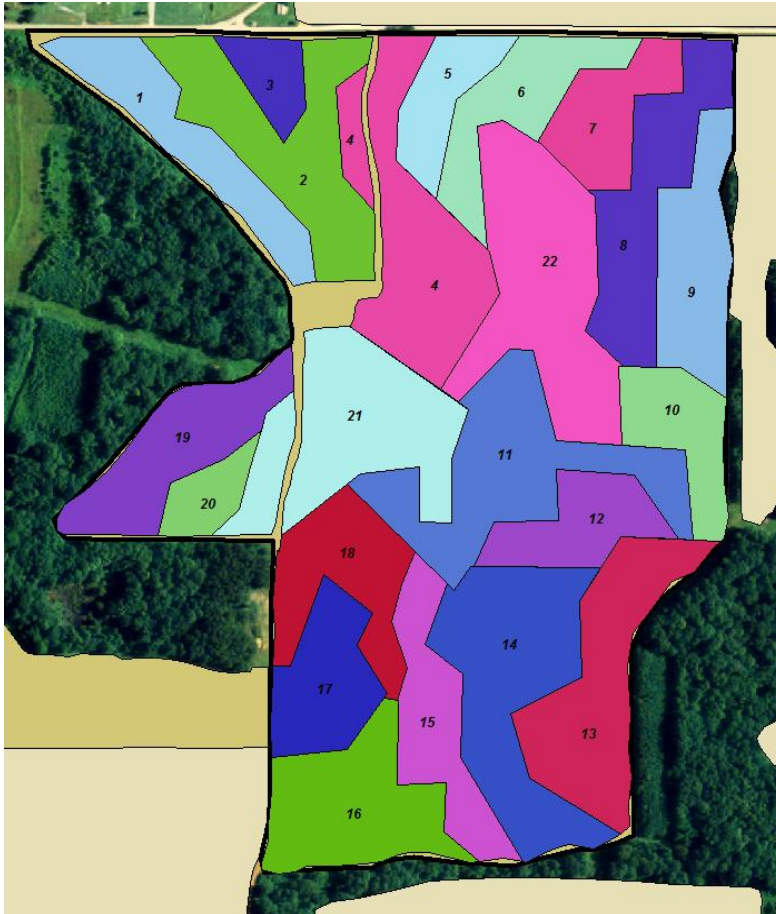
0 to 1,702 lbs/acre

Cotton – 2nd Pick

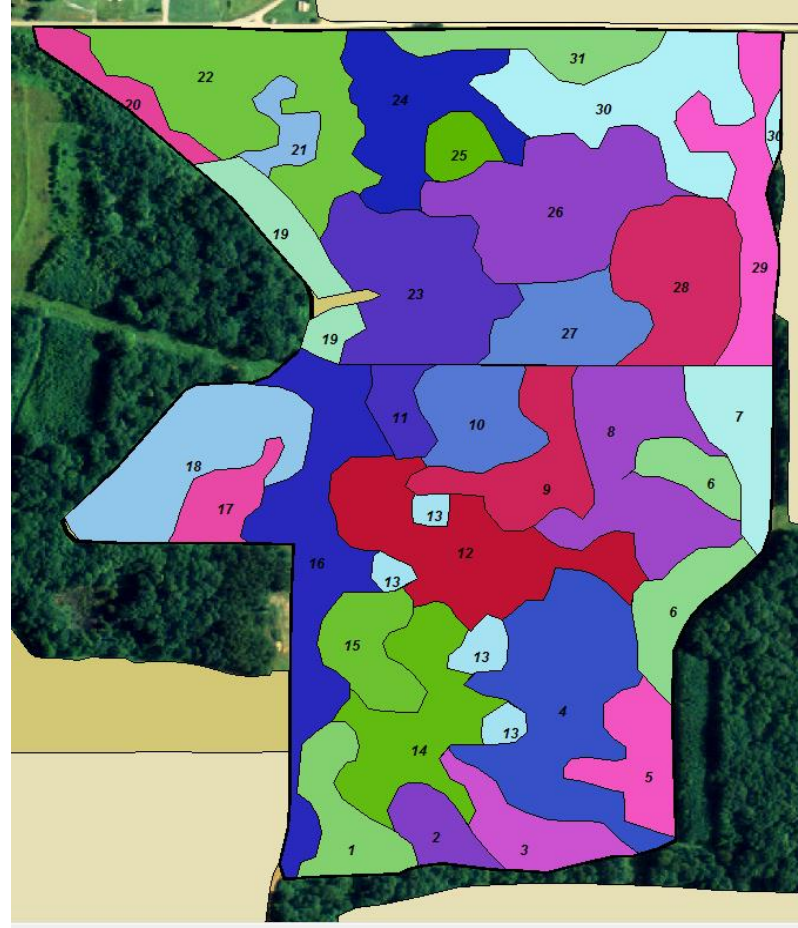


0 to 369 lbs/acre

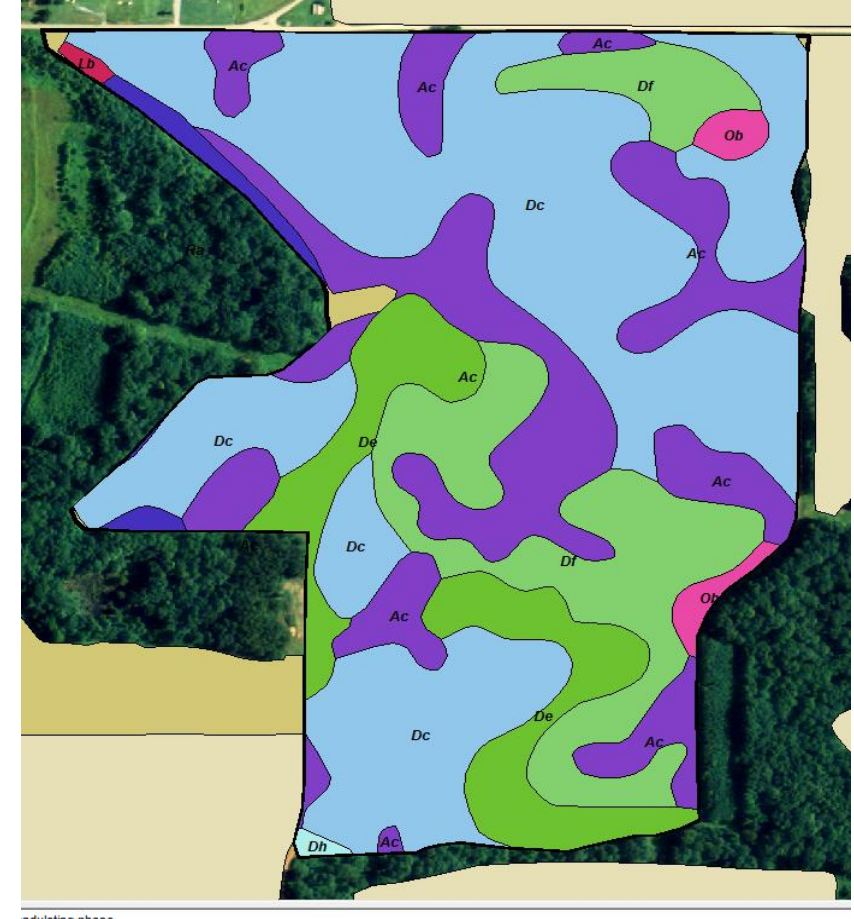
New Zones Created - Soil Map Match?



2008-2012

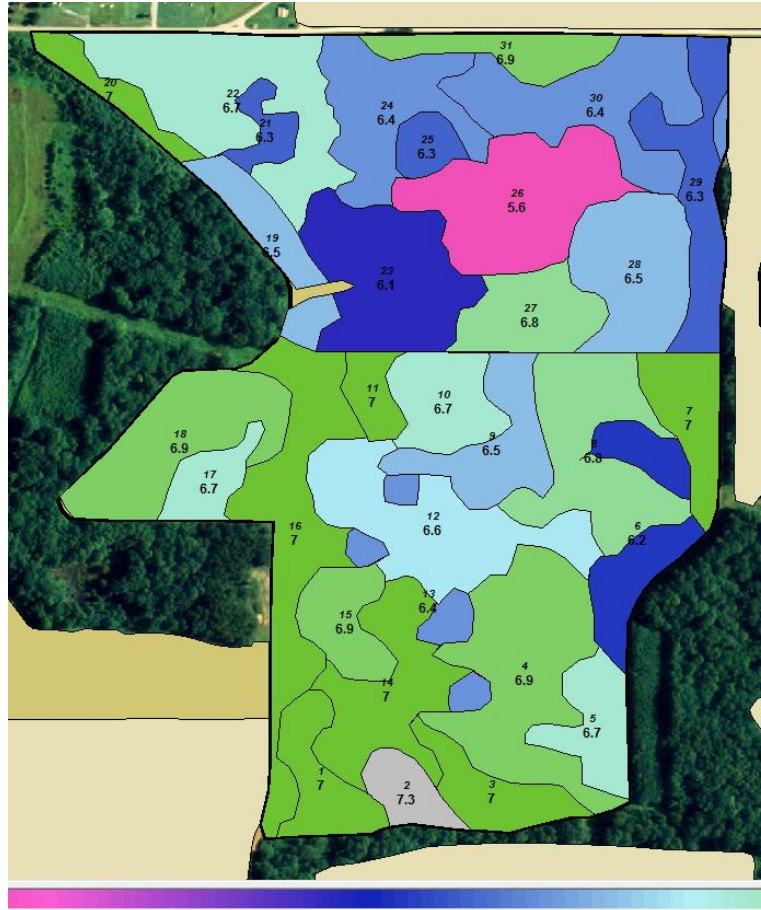


2013-2015



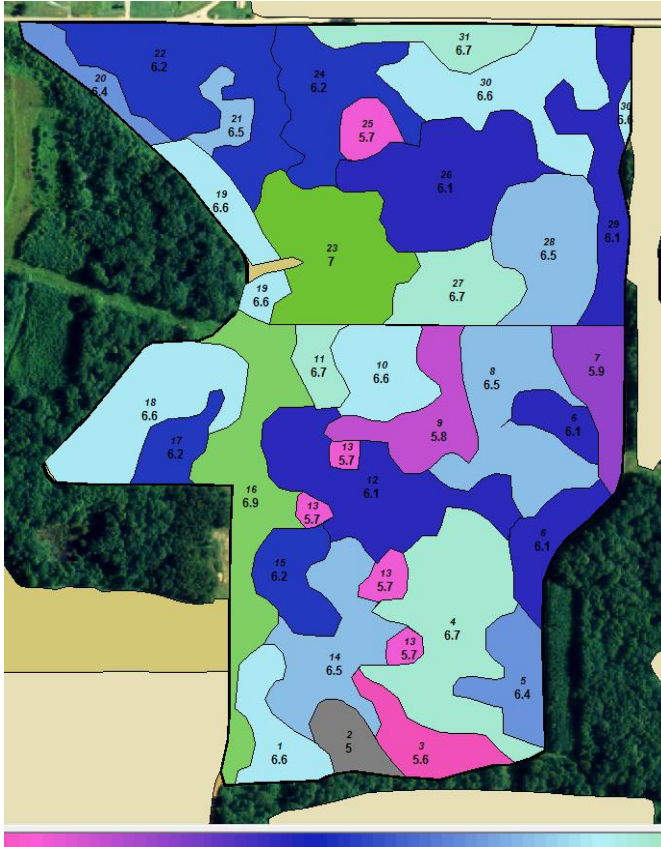
Soil Map

pH – Still not perfect, but getting much better



After 2014 Crop

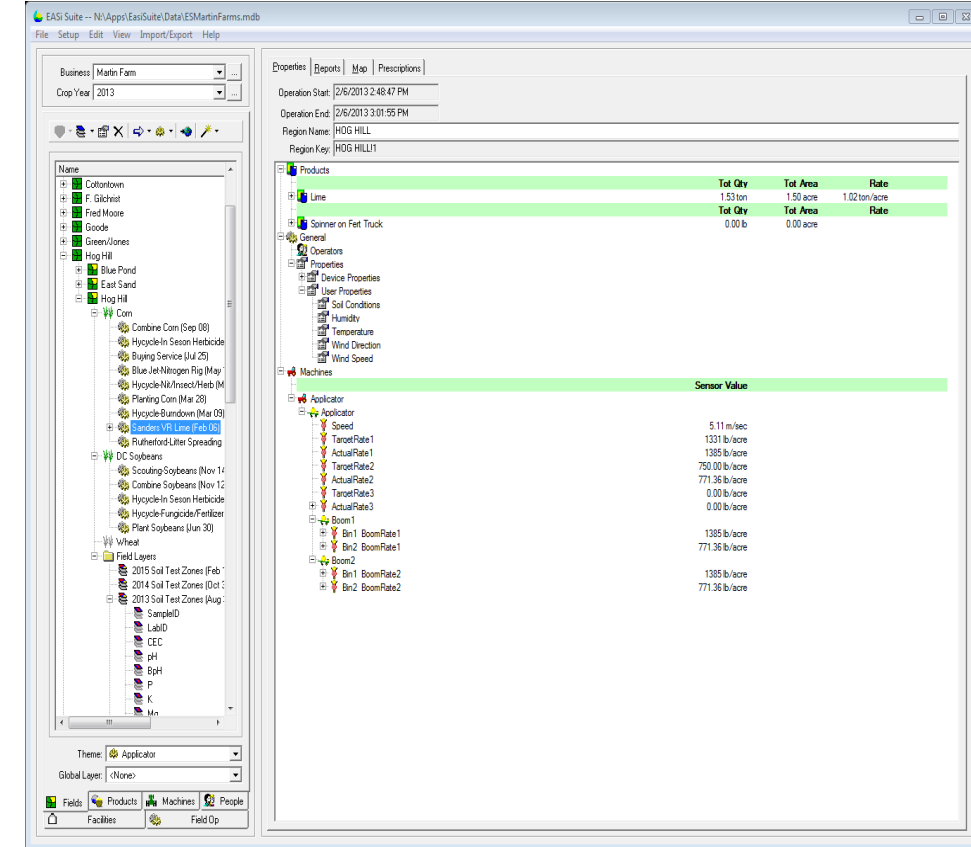
Variable Rate Applications & As Applied Records



pH Results prior to 2013 Crop



As Applied Results – Custom
Applicator Data



Business record of the cost of the material
created when record is created.

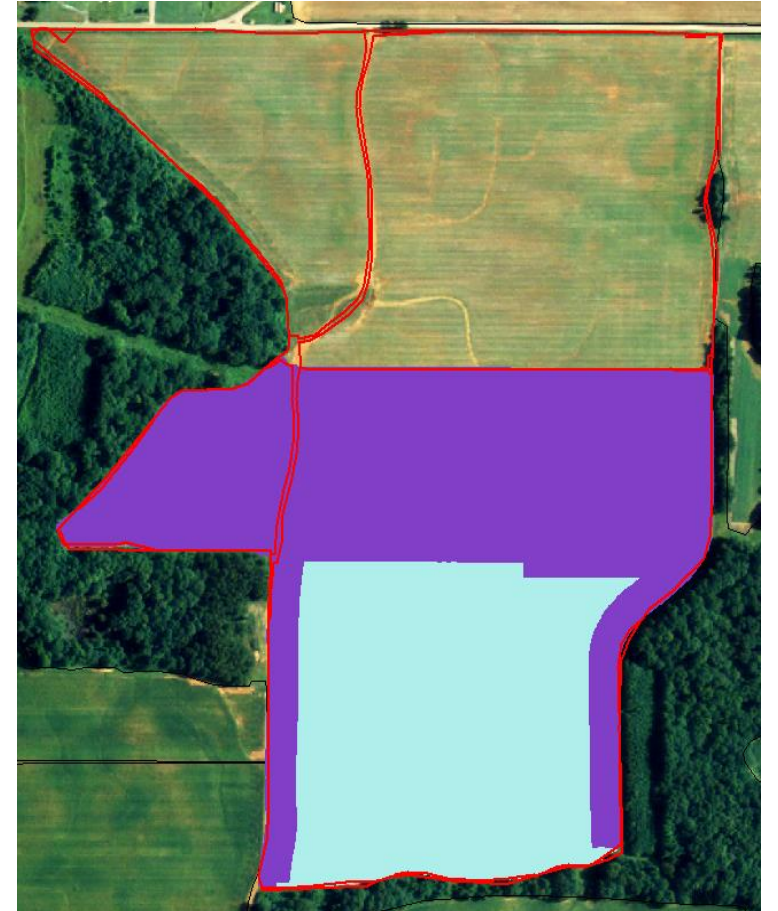
Same Field – Different Acres



166.57 acres

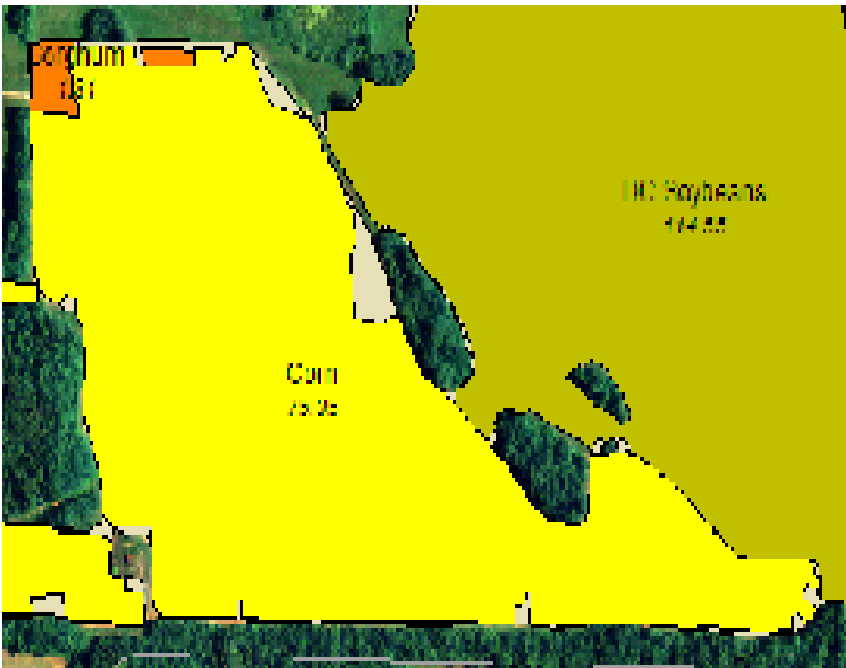
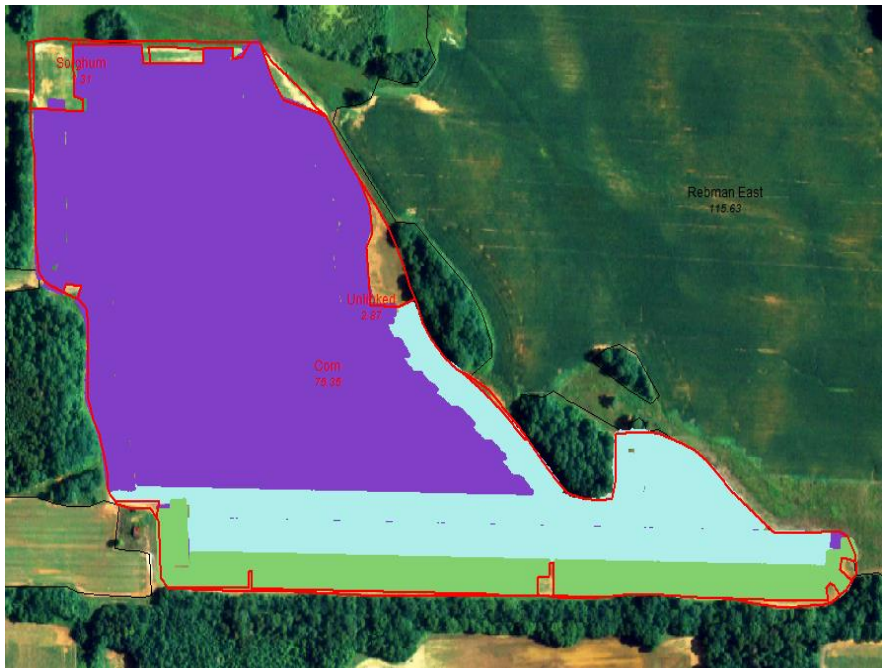


Planter Record – 166.61 acres
Double Crop Soybeans – 93.61 acres
Corn – 73.00 acres



Certified Acres – 163.88 - 98.3%
Soybeans - 92.28 acres
Corn – 71.60 acres

Odd Field Shapes and Sizes – This Field: 79.53 Acres

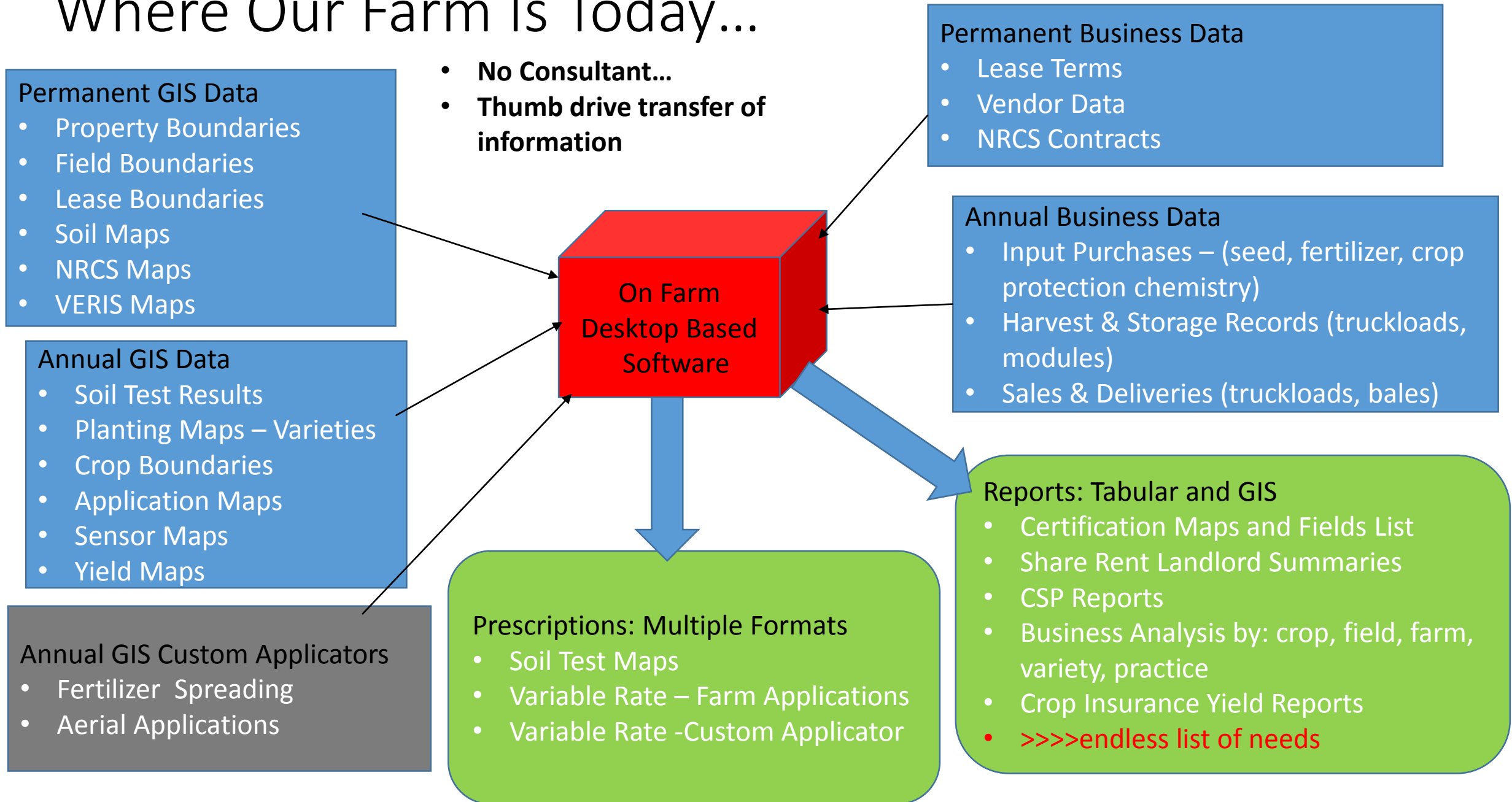


Products			
	Tot Qty	Tot Area	Rate
Com P 2089 Y...	6.25 bag	19.47 acre	25698 seed/acre
	Tot Qty	Tot Area	Rate
Com DK 62-55	17.37 bag	53.81 acre	25830 seed/acre
	Tot Qty	Tot Area	Rate
Com P 1498 Y...	2.67 bag	8.23 acre	25935 seed/acre
General			
Operator			

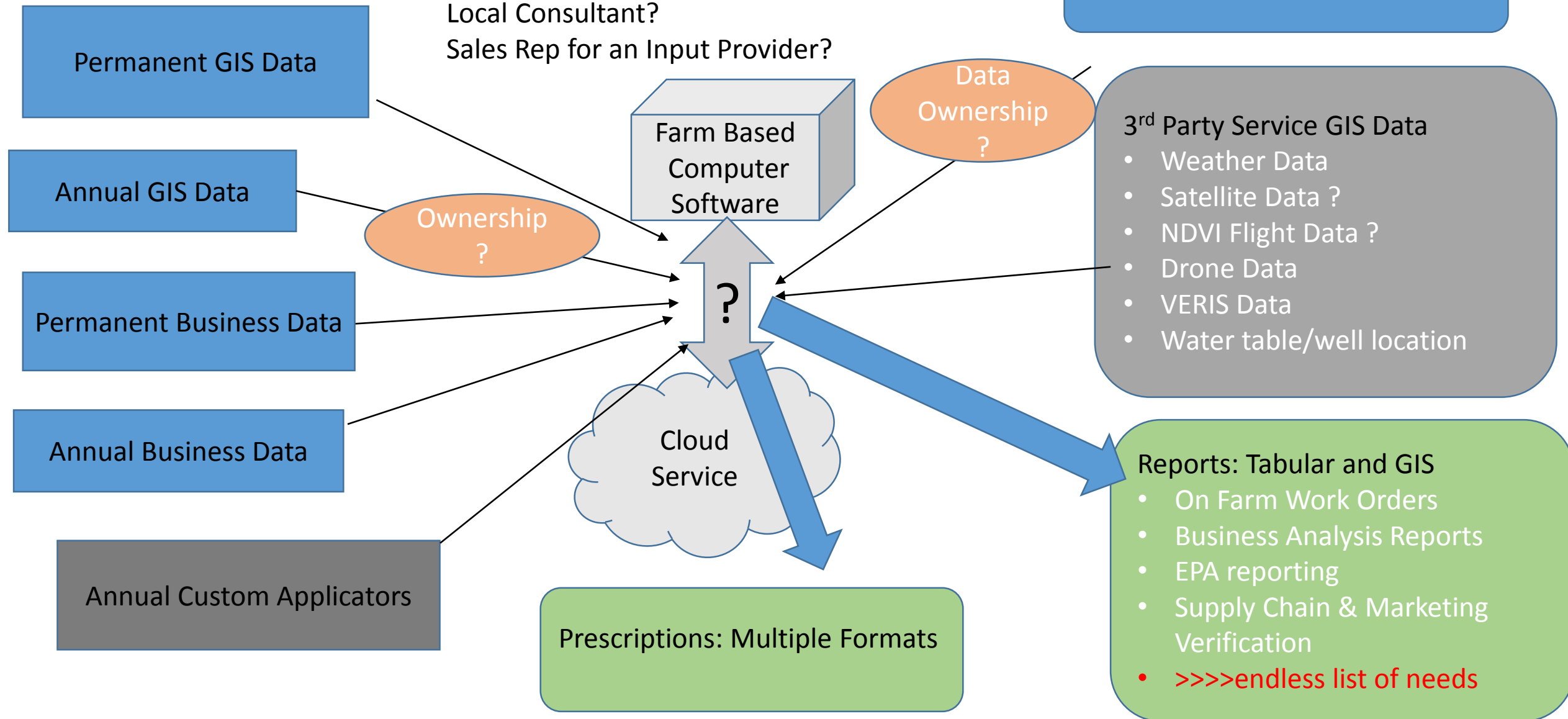
Planter Says: 81.51 corn acres planted
GIS Map Says: 75.35 acres planted – 92%

- Certification Maps to FSA:**
- Show all crops in a field
 - Show turn row or unplanted wet areas

Where Our Farm Is Today...



Where Are We Going....



Hopes

- Can produce significant productivity gains
- Creates opportunity for informed business analysis and decisions
- Allows for sustainable intensification of production in an increasingly resource limited environment
- For software that combines the tools, via modules, into one integrated package for farm decision making.
- Farm organizations will be proactive, powerful advocates for farmers as the rules of data privacy are debated and written.
- An economic model will evolve to support a robust network of objective, 3rd party advisors helping farmers on the best uses of these tools.

Frustrations

- Farmer complacency/lack of awareness of the power and value of these tools as a business decision aid
- Lack of “standardization” in data file formats
- Lack of focus on business decision making tools (except selling seed and fertilizer) and crops outside of the corn and soybean belt

Concerns

- Data ownership:
 1. Who captures the value and how is it used...
 2. Where and how long is it stored and who has access
- Non Alignment of Interest - Input Providers as Advisors
- The lack of well funded, robust, public research and extension to test and rate claims of efficacy.
- Relevance of aggregated data applying to very local circumstances
- Retail supply chain demands for impractical practices