Remotely Sensed Imagery

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Images of Fields

- Sources
  - Satellite
  - Aerial
  - Ground
- Soils – simple color images
- Crops – different vegetative indices

Bare soil color and texture

Sand 46
Silt 40
Clay 14

Sand 90
Silt 6
Clay 4

Sand 68
Silt 22
Clay 10

Sand 80
Silt 16
Clay 4

Sand 10
Silt 52
Clay 38

Image taken April 21, 1998
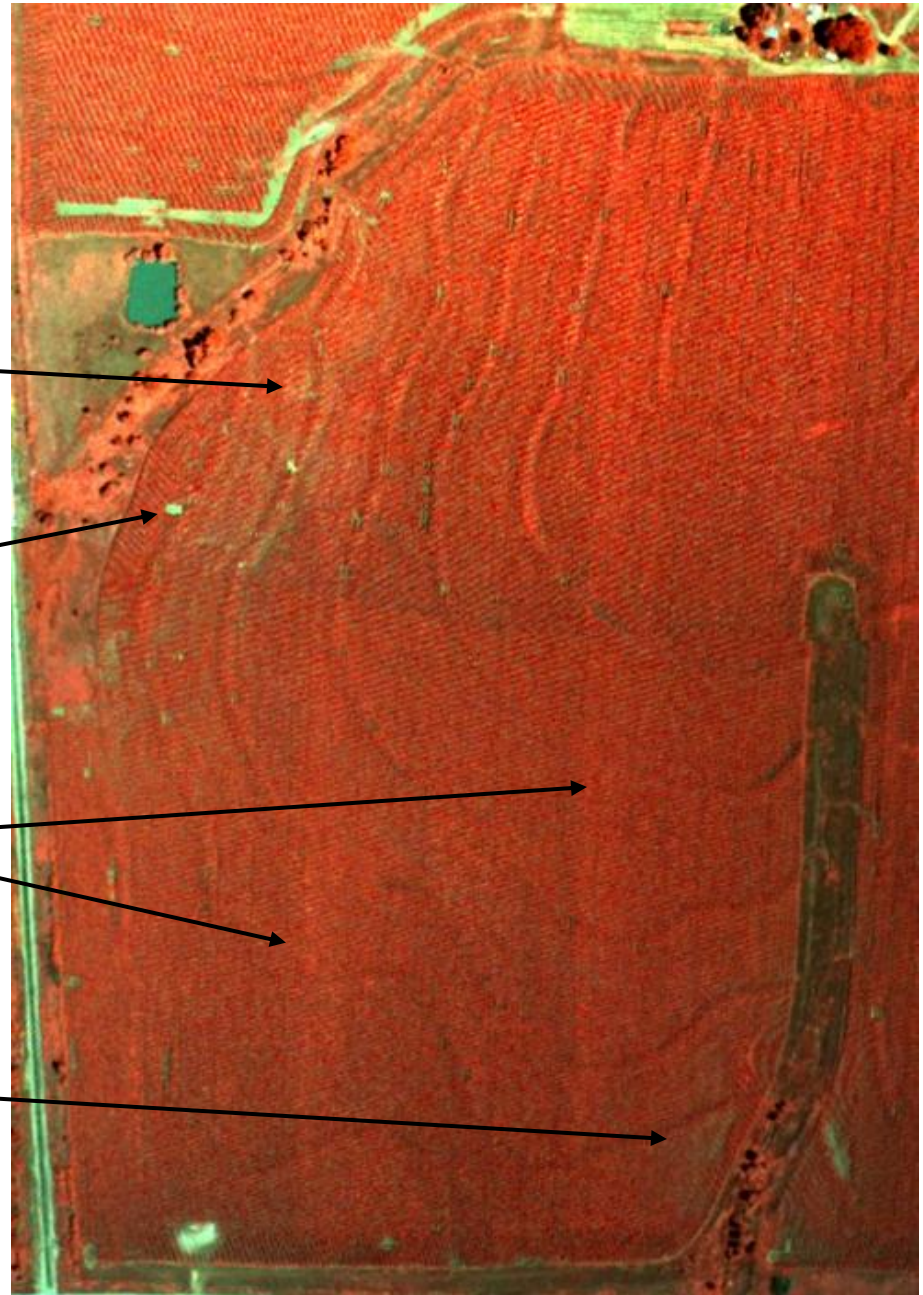
Soil Color and OM

Canopy Development

Shallow topsoil depth - short corn

Planter skip

High plant population strips

Shallow topsoil depth - short corn

Image take June 27, 1998

Precision AG Site

7/19/99 IR Layer

| Point ID	Description
2	Beans 3" shorter than beans up the hill 50'
3	Good beans, wider canopy development
5	Good beans
6	beans 8-10" shorter than at wpt 5 & 7, thin stands
7	Good beans
8	beans 8-10" shorter than at wpt 5& 7, thin stands
9	Poor stand 2' skips and weed pressure
10	smaller compared to #9
11	change in plant height to wpt 24
13	thin stand, but good plants
14	plants ok, but the corn is thin
15	good corn, better stand than wpt 14
17	best corn in PA site
19	thin stand, but good plants
20	grassy area (extends to the east side of field)
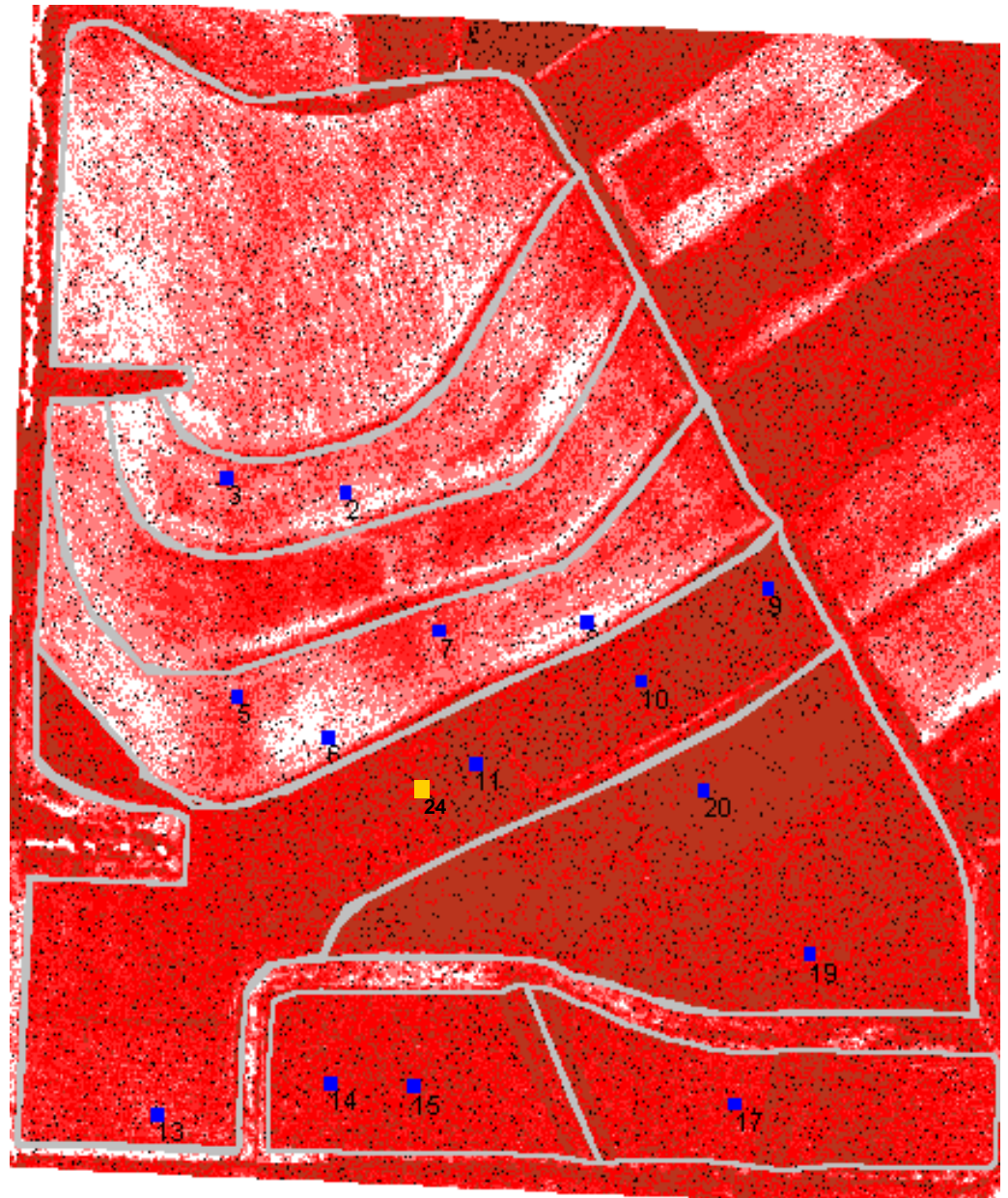
Normalized Difference Vegetation Index
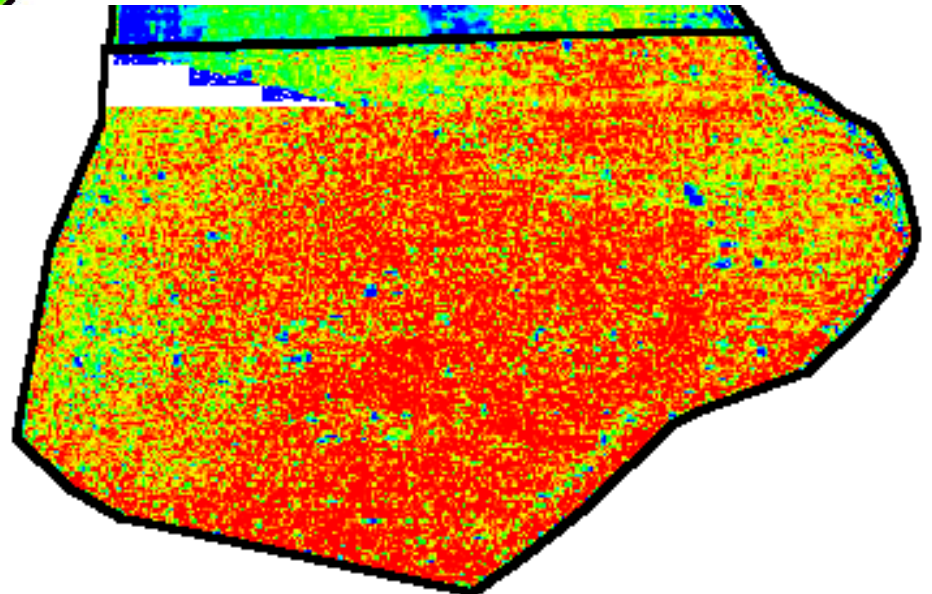
$$NDVI = (NIR - Red) / (NIR + Red)$$

- Has been used to successfully predict grain yields in fields of grain sorghum, corn, cotton, and soybeans (Yang and Anderson, 1996). NDVI has been shown to be an excellent predictor of LAI and biomass production

Timing dictates what you see.

Early Season
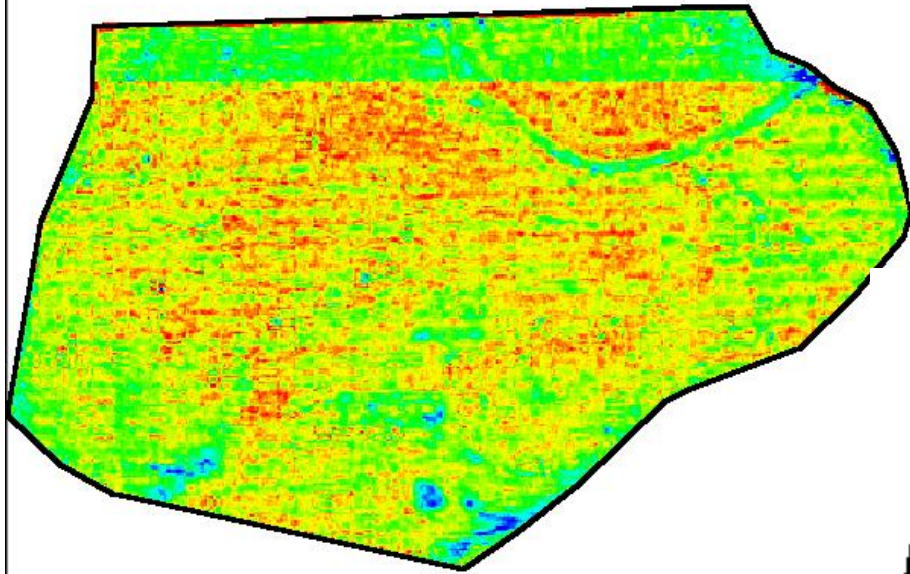
Late Season

Interpreting Patterns

- Straight lines are manmade
    - Parallel with travel
    - At an angle with travel patterns
- Irregular patterns are generally naturally oc...
    - Lines
    - Areas/patc...

This is visual analysis. Determine what capabilities you have in your software.

Creating Zones

- What's the Same?
- What's Different?

- Ground truth everything