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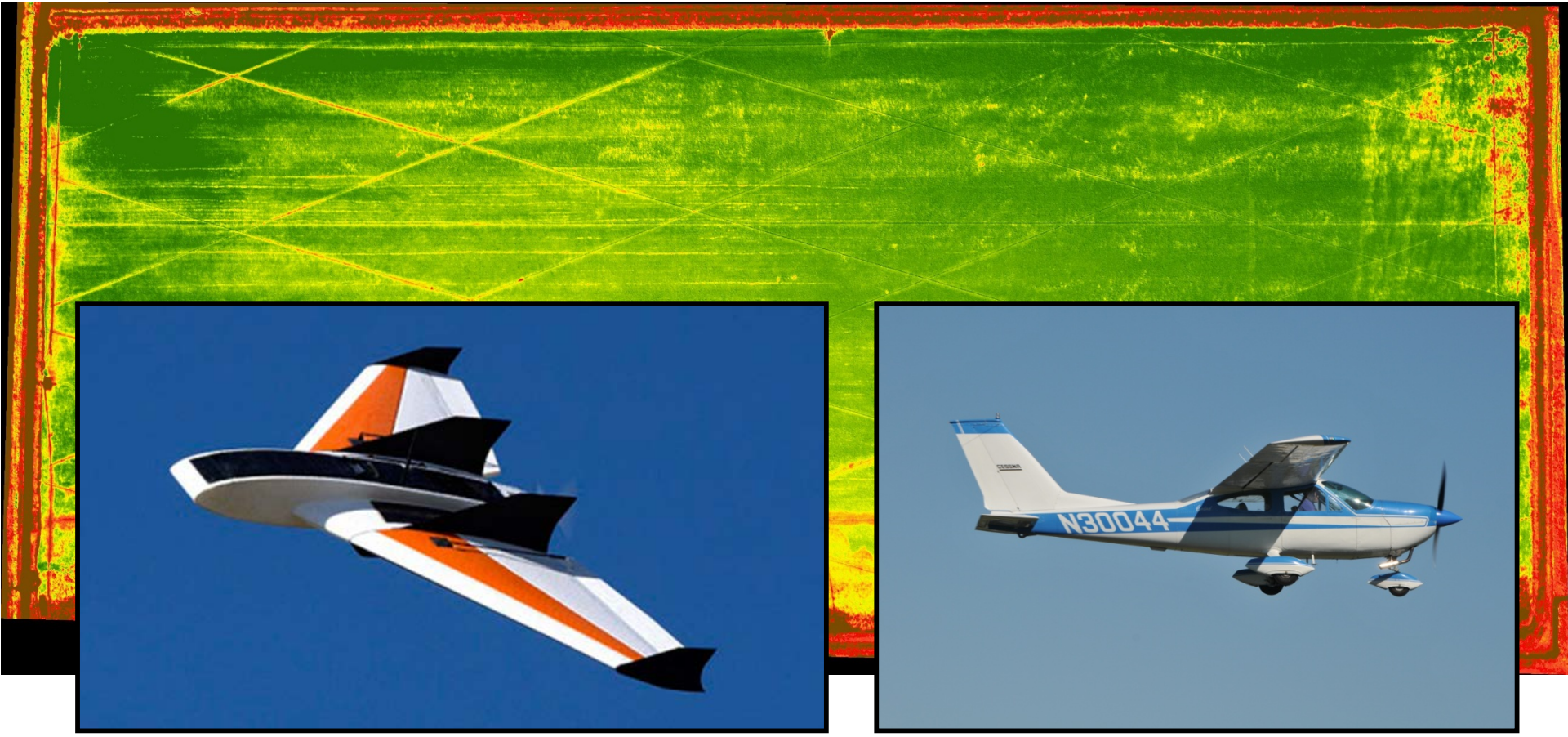
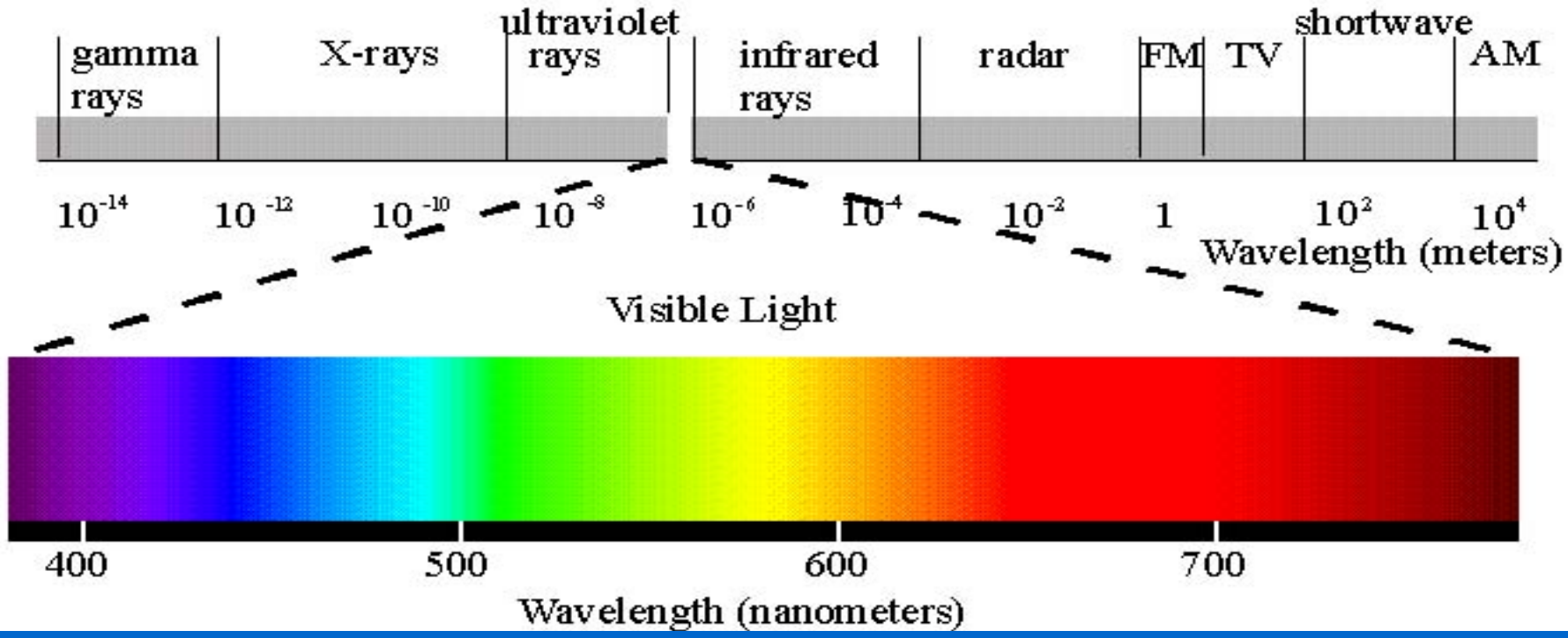
Crop Stress (NDVI) Mapping



What is NDVI Mapping?

The Human Eye only senses energy in what we call the VISIBLE portion of the electromagnetic spectrum



Soybean Leaf Phenology States

Leaf 1.mn
Leaf 2.mn
Leaf 3.mn
Leaf 4.mn
Leaf 5.mn
Leaf 6.mn
Leaf 7.mn
Leaf 8.mn

VISIBLE
NEAR INFRARED (NIR)
MIDDLE INFRARED (MIR)
Pigmentation
Cell or Canopy Structure
Water Content

Reflectance
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1

400 600 800 1000 1200 1400 1600 1800 2000 2200 2400
Wavelength

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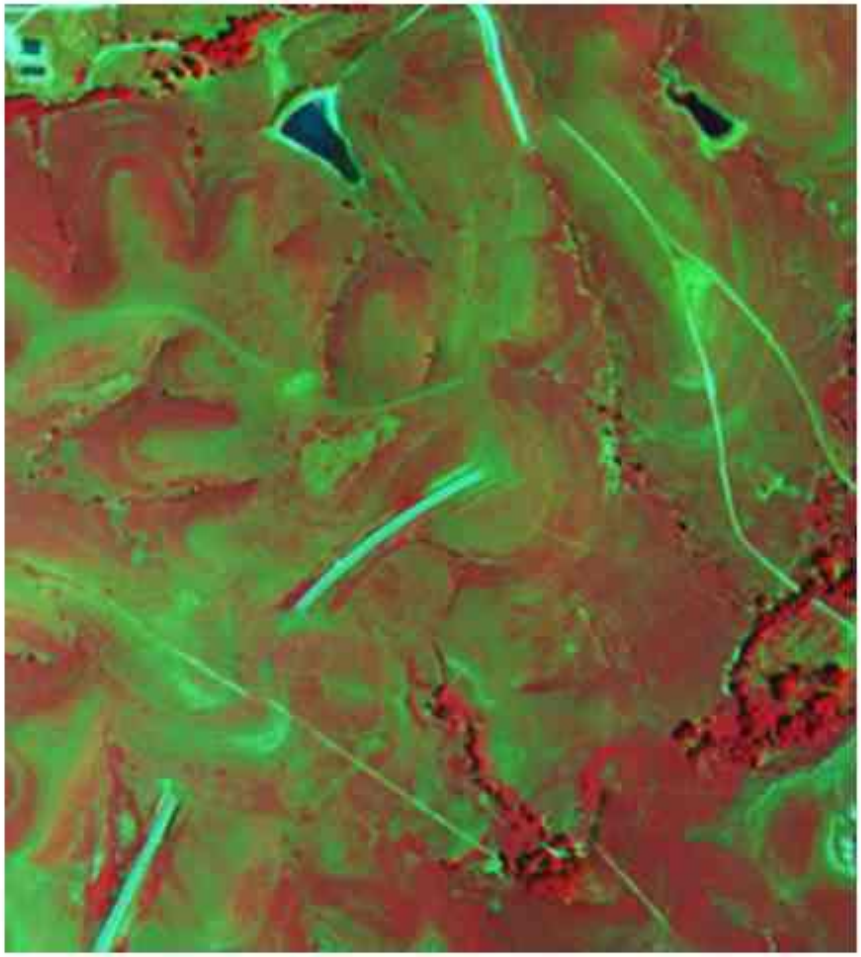
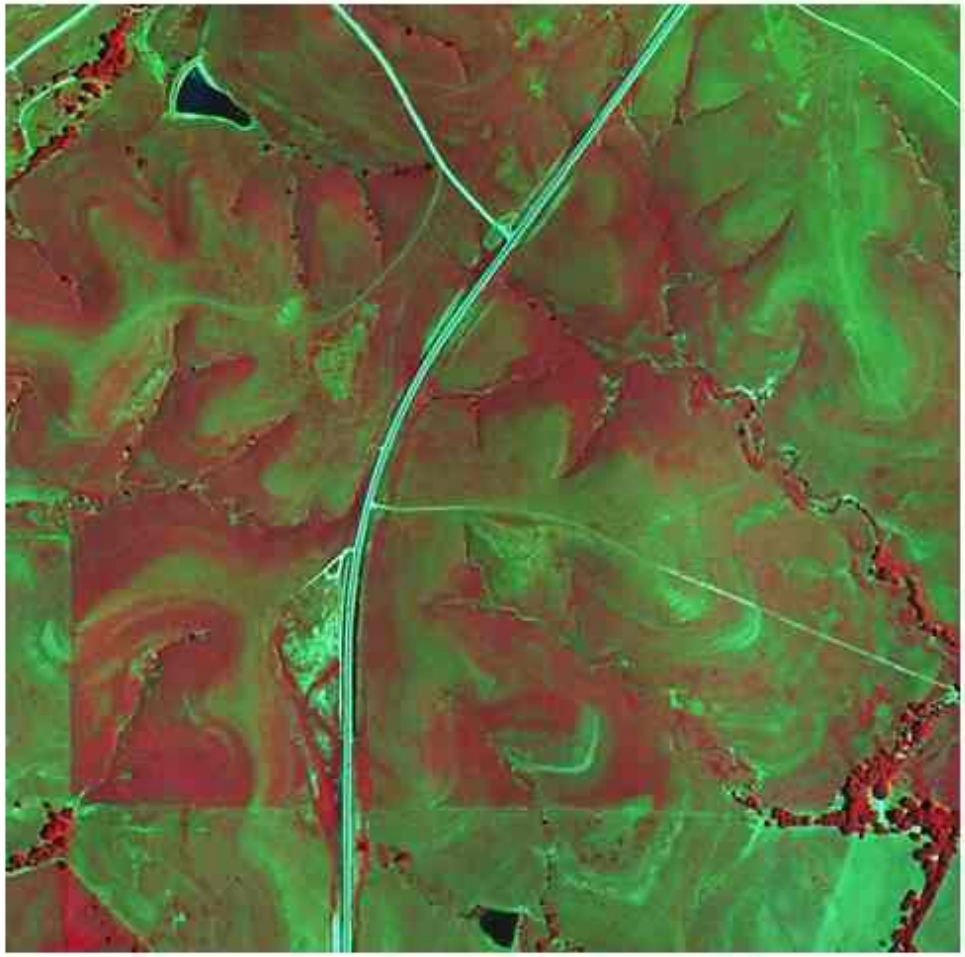
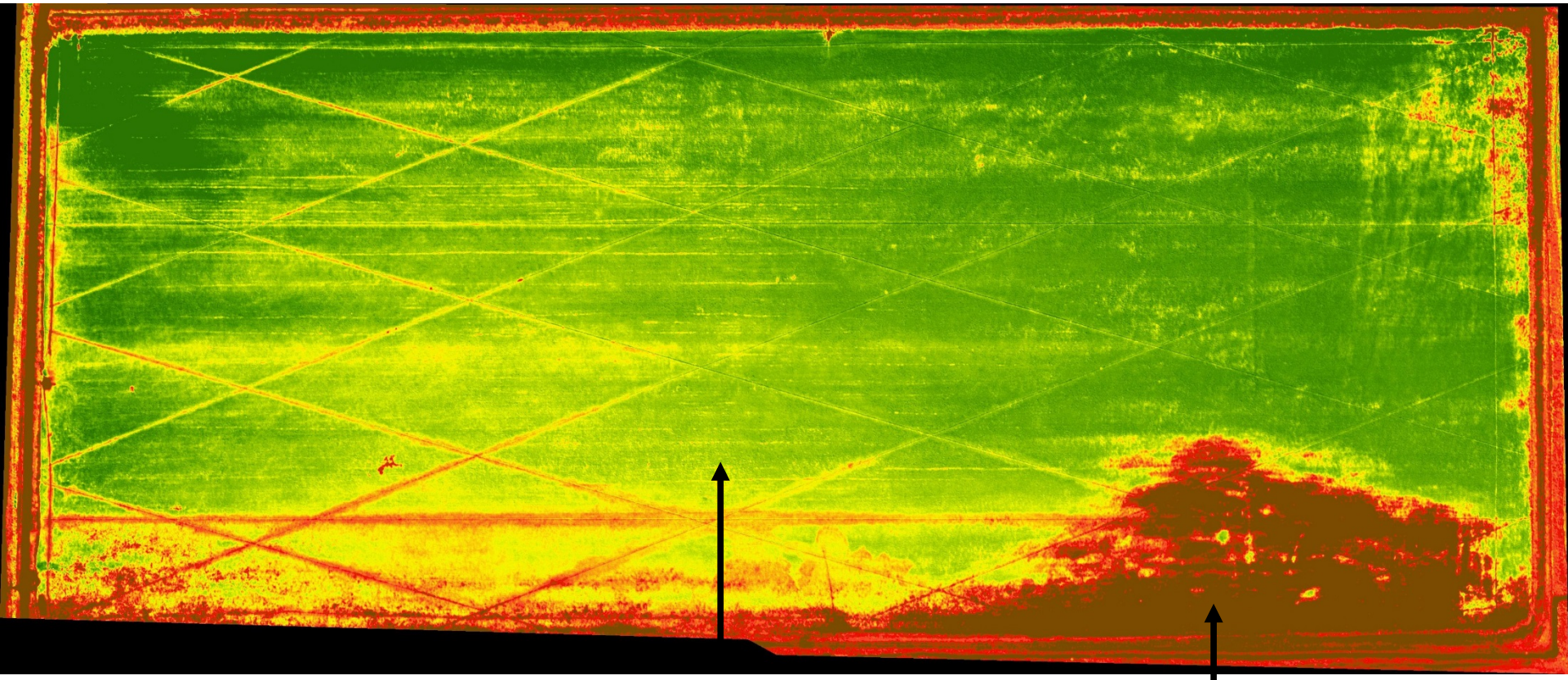
STITCHING (LEFT) VS. ORTHOMOSAIC (RIGHT) OF 388 IMAGES

Stitched Image (Not Orthomosaic) **Orthomosaic**





Late Rice – August
Aerial Variable Rate Nitrogen Application



Late Season Yellowing (Low Fertility)

Pump Water

Late Rice – August
Aerial Variable Rate Nitrogen Application

Low Soil pH releases aluminum that ties up (chelates) phosphorus
And creates a nutrient deficiency resulting in underdeveloped roots.

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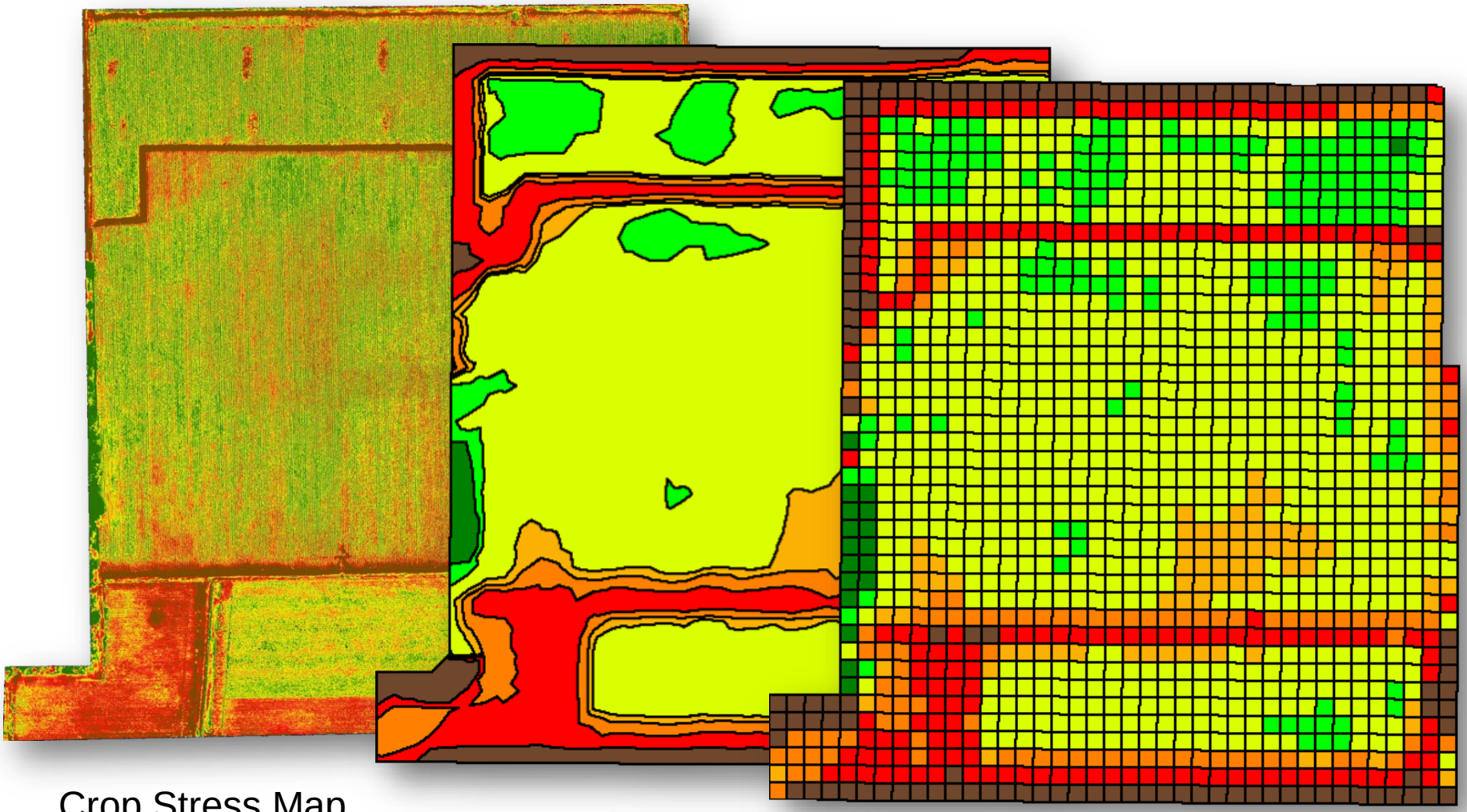
Variable Rate Aerial Applications

Variable Rate



Crop Stress Map

Zone Map (SMS)

Prescription Map (SMS)

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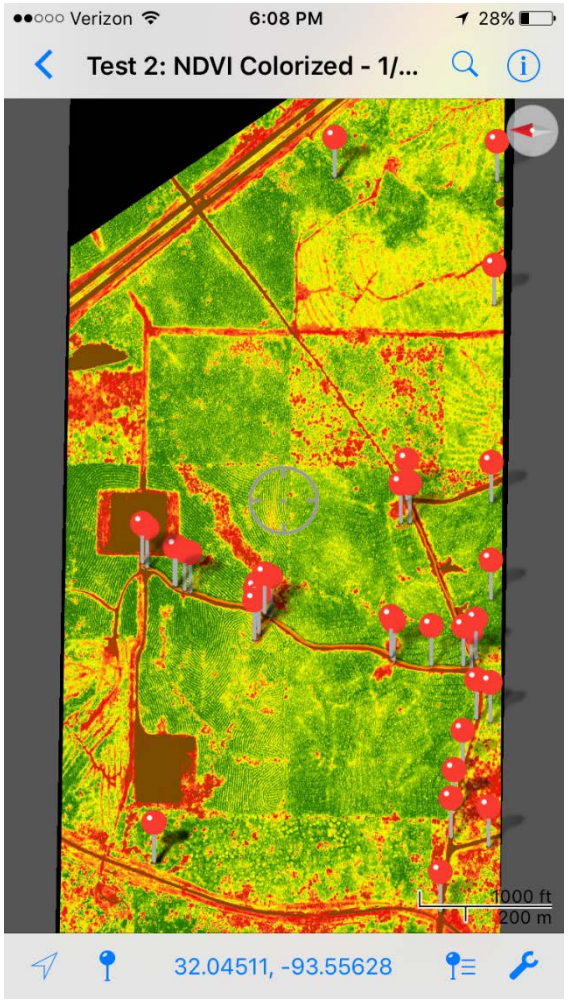
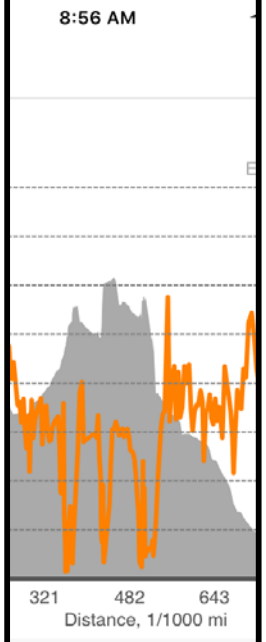
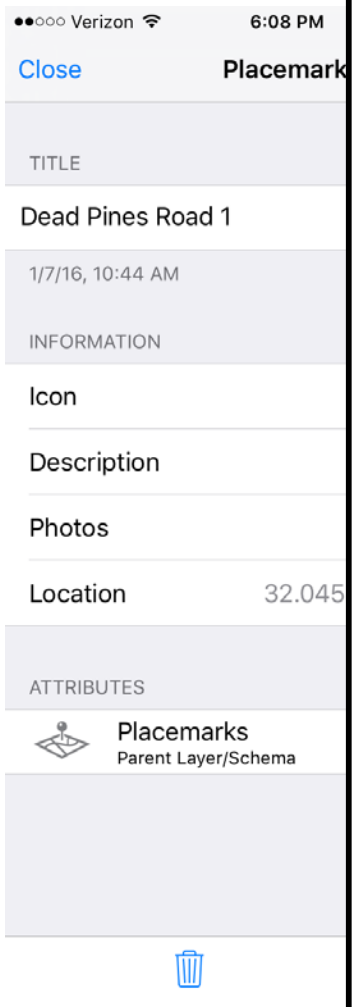

Verizon 6:08 PM 28%
Test 2: NDVI Colorized - 1/...
1000 ft
200 m
32.04511, -93.55628


8:56 AM
321
482
643
Distance, 1/1000 mi

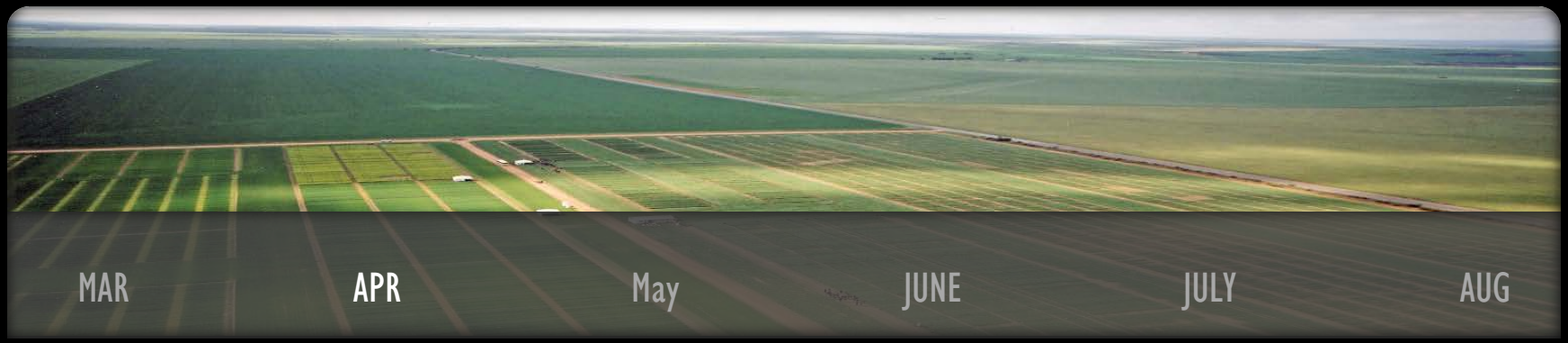

Verizon 6:08 PM
Close
Placemark
TITLE
Dead Pines Road 1
1/7/16, 10:44 AM
INFORMATION
Icon
Description
Photos
Location
32.045
ATTRIBUTES
Placemarks
Parent Layer/Schema

photos.

Benefits:

1. Feed the crop when it needs it.
2. Push the potential
3. Reduce inputs in low production areas
4. Spot disease, pests, and stress early
5. Locate source of problem
6. Forecast yield potential

Recommendations



Flight 1

1. Early after emergence (Mar-Apr)
   A. Plant density and replants
   B. Use as scouting map for tissue and soil sampling
   C. Determine 2nd application of variable rate nitrogen

Flight 2

2. Mid-Season (May-July)
   A. Determine effectiveness of applications
   B. Use as scouting map for pest and weed infestations
   C. Variable rate PGR for cotton, or pesticide and herbicide applications
   D. Forecast yield potential

Flight 3

3. Late Season (July-Aug)
   A. Monitor irrigation effectiveness
   B. Use as scouting map for pest and weed infestations
   C. Burn down variable rate applications
   D. Forecast yield potential
   E. Insurance Claims, accurate zoning of affected acres

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