

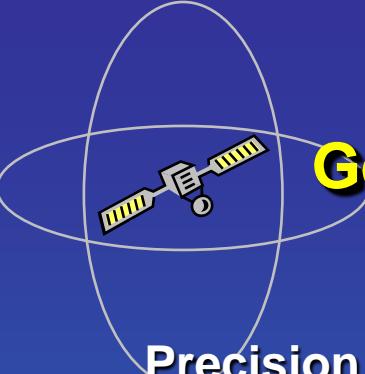
Delineating Management Zones for Variable Rate Fertilizer

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Precision Agriculture Specialist
University of Tennessee
Biosystems Engineering and Soil Science



 Precision Agriculture
University of Tennessee Extension





Geographic Information System Software

Precision Agriculture Software

Map Shots www.mapshots.com

EASi Suite Farm

EASi Suite Multi-Client

EASi Suite Professional

Farm Works www.farmworks.com

Farm Site

Site Pro

Site Mate

AgLeader www.agleader.com

SMS Basic

SMS Advanced

SMS Mobile

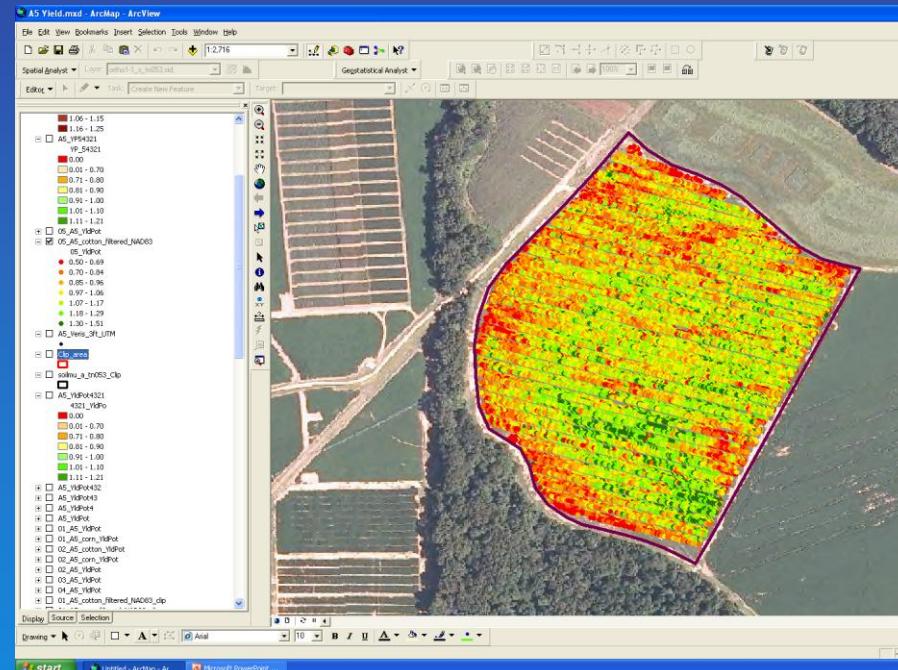
SST www.sstsoftware.com

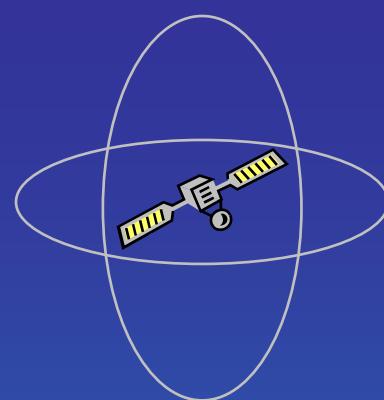
SSToolbox

SST Stratus

John Deere www.deere.com

Apex





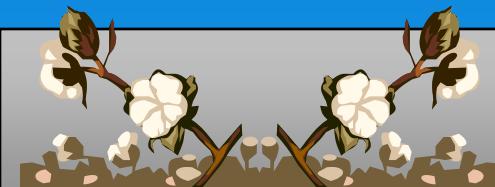
Spatial Data From the Internet

USDA NRCS

<http://datagateway.nrcc.usda.gov>

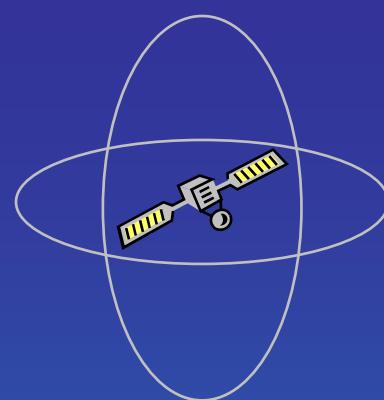
Hydrologic Units
Topographic Images
Aerial Imagery
Soils maps
Temperature Maps
Precipitation Maps

The screenshot shows the homepage of the USDA NRCS Geospatial Data Gateway. The page features a yellow sidebar on the left with the text "Geospatial" vertically oriented. The main content area includes the USDA logo, a map of the United States, and a central graphic showing a globe with various data layers. Text on the page describes the gateway as a "one stop source of natural resources data" and provides information about system status and minimum requirements. A warning at the bottom states that the system is for official government business only.

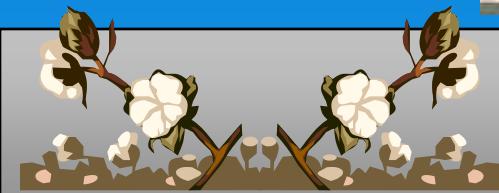


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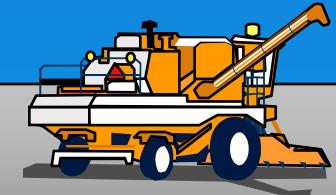




Example Field



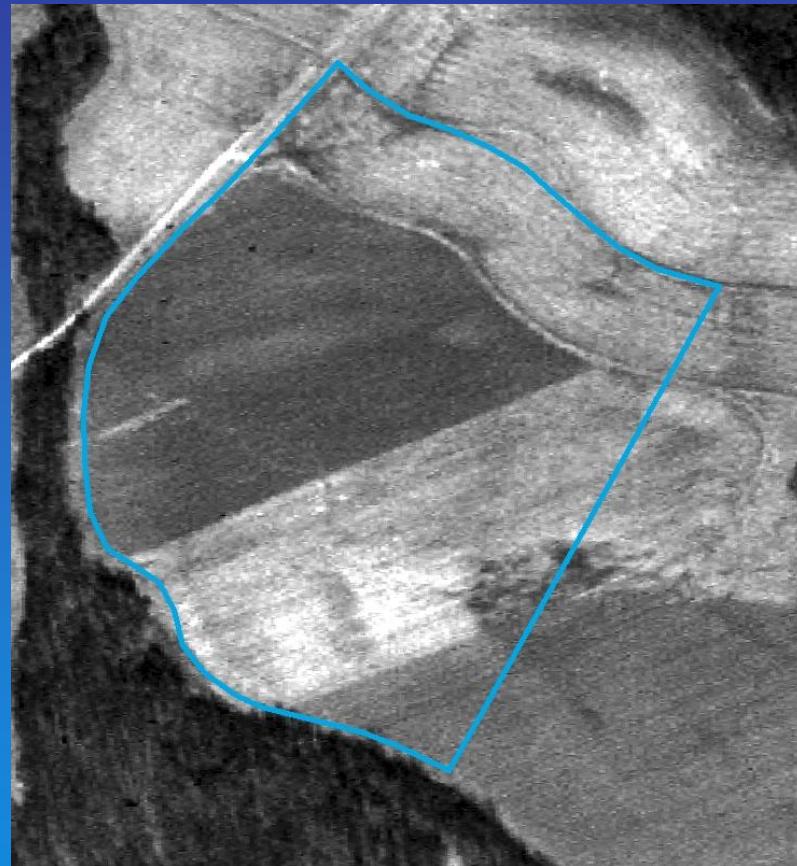
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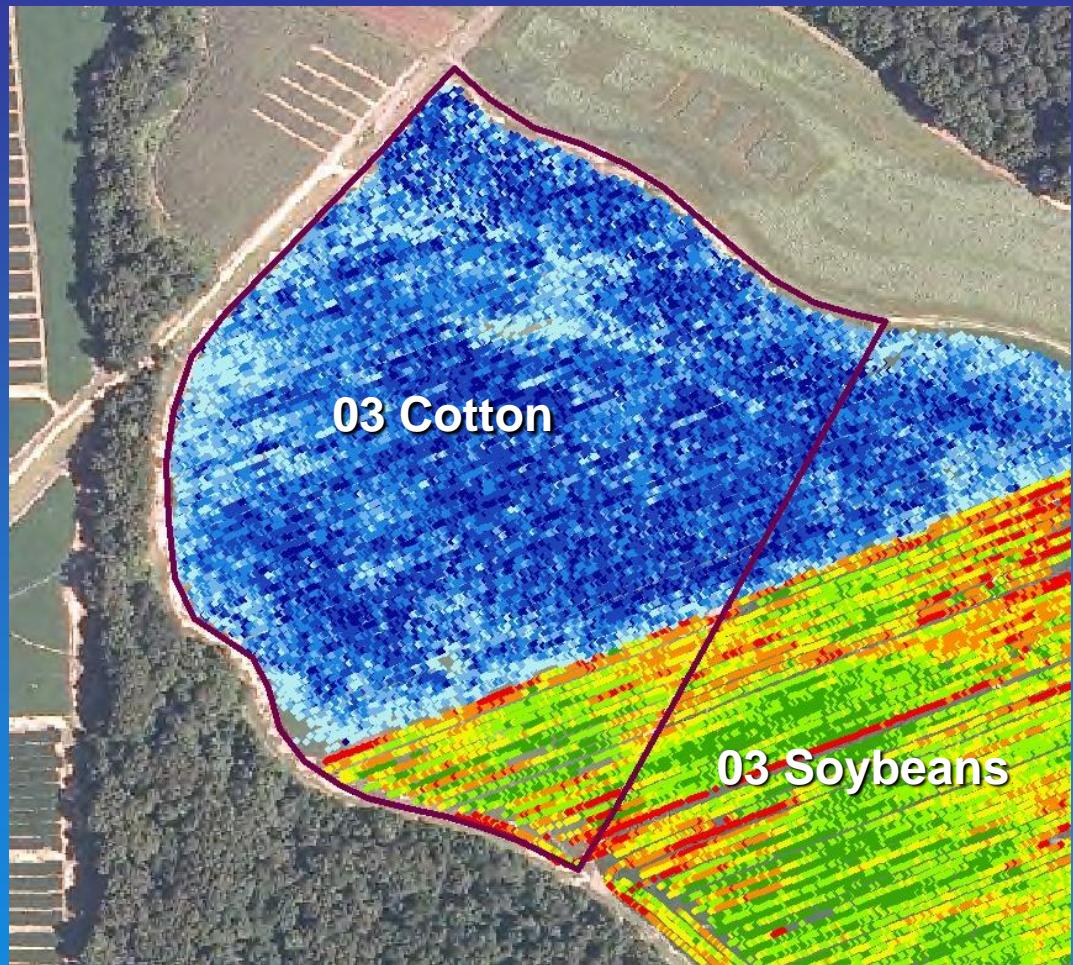
Delineating Management Zones

- Old Field Boundaries



- Past Cropping History

Historical Information





- Past Cropping History

Historical Information

Year	Crop	Avg. Yield
01	Corn	153 bu/ac
	Cotton	2 ba/ac
02	Corn	117 bu/ac
	Cotton	2.25 ba/ac
03	Wheat	57 bu/ac
	Beans	49 bu/ac
	Cotton	2.1 ba/ac
04	Corn	178 bu/ac
05	Cotton	2.3 ba/ac





Historical Information

- **Fertilization History**

Good Years:

80 lbs/ac K

80 lbs/ac P

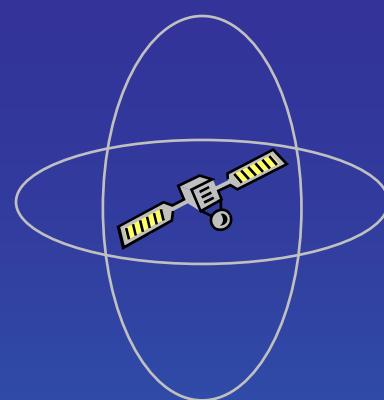
Lean Years:

60 lbs/ac K

60 lbs/ac P

I Don't Skimp on Nitrogen



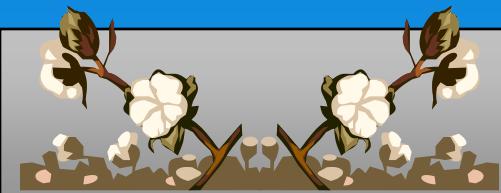


Delineating Management Zones

- Aerial Imagery



<http://datagateway.nrccs.usda.gov>



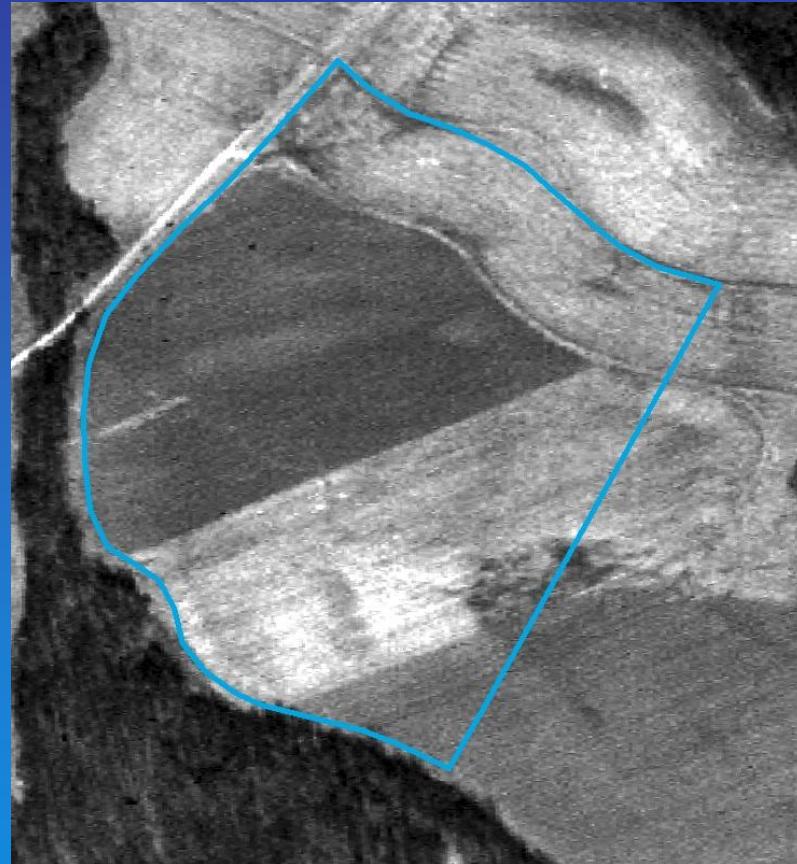
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Delineating Management Zones

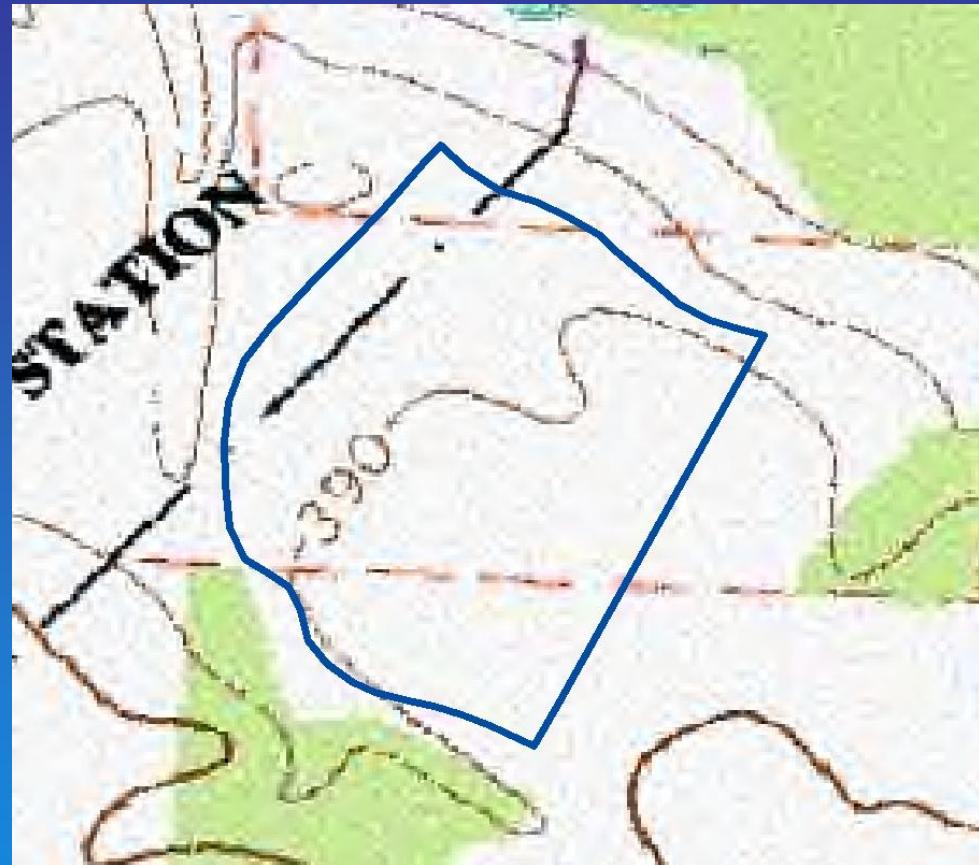
- Bare Soil Aerial Photo





Delineating Management Zones

- Topo Map



<http://datagateway.nrcc.usda.gov>





Delineating Management Zones

- Digital Soil Map



<http://datagateway.nrcs.usda.gov>



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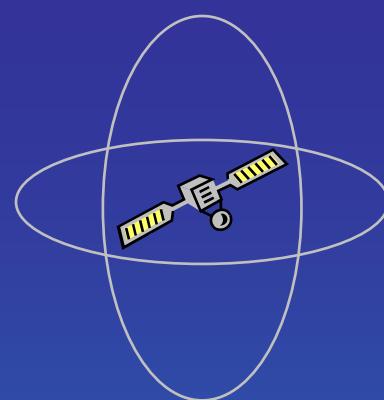
• Soil Electrical Conductivity

3 ft. Depth

Range
5.6 – 27.8 (mSiem/m)

Delineating Management Zones



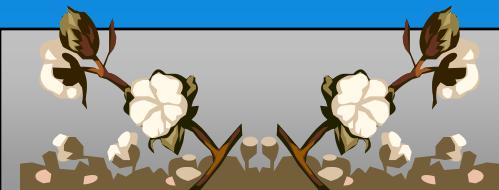


Delineating Management Zones

- Soil Electrical Conductivity

3 ft. Depth

Range
5.6 – 27.8 (mSiem/m)

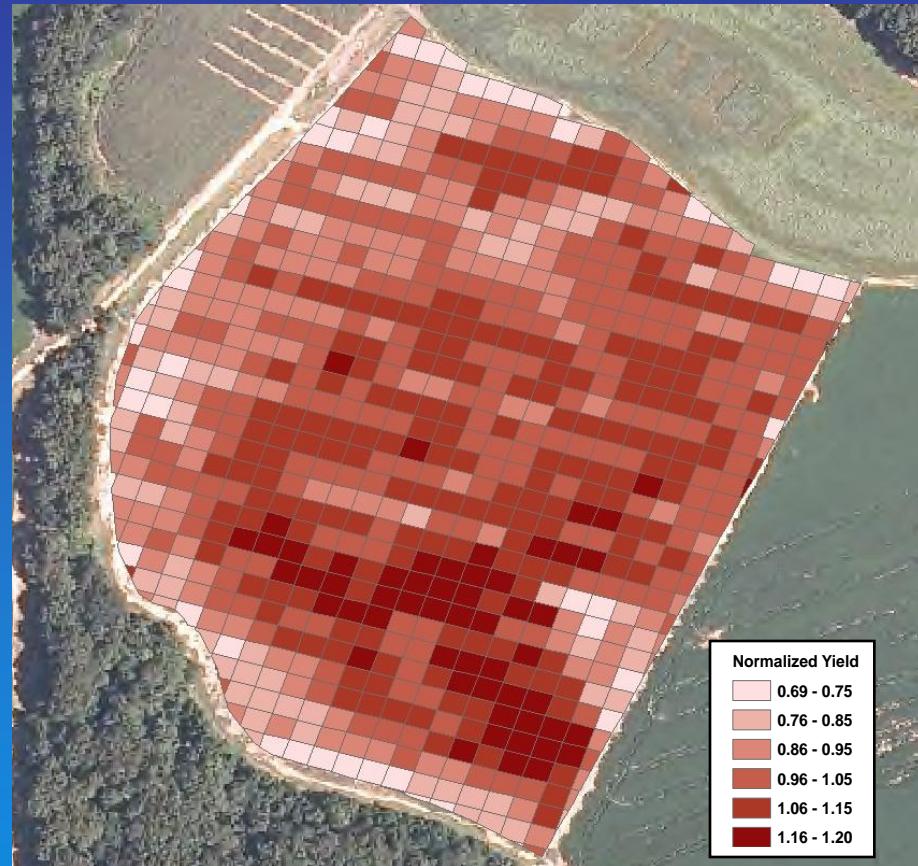




Delineating Management Zones

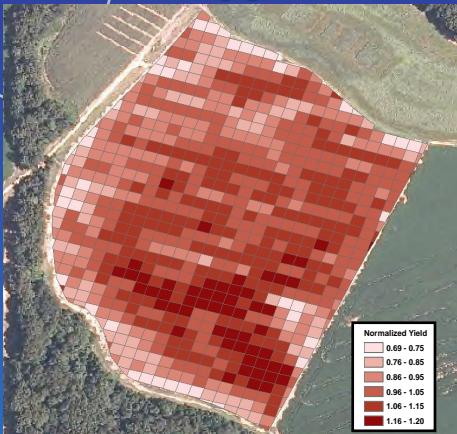
- Yield Stability

Normalized Yield





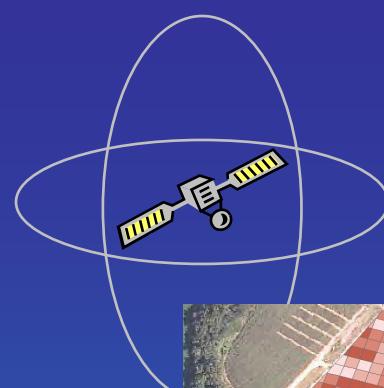
05



Delineating Management Zones

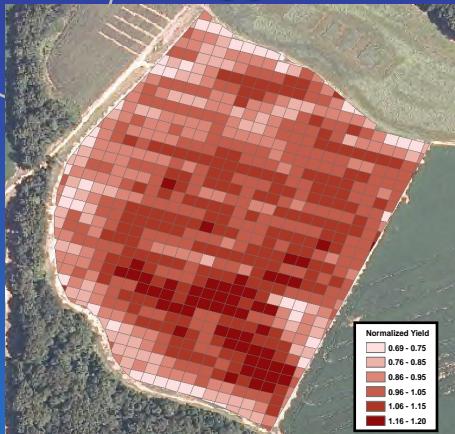
Yield Stability





Delineating Management Zones

05



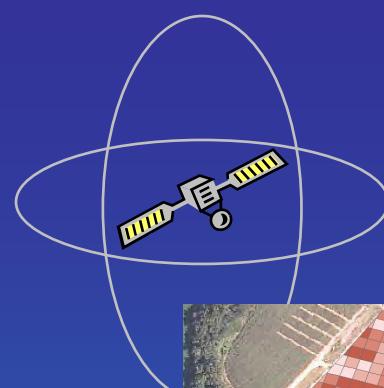
Yield Stability

05 - 04



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Delineating Management Zones

05



Yield Stability

05 - 03



05 - 04



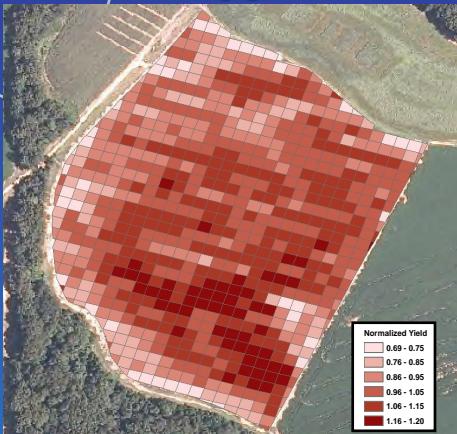
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Delineating Management Zones

05



Yield Stability

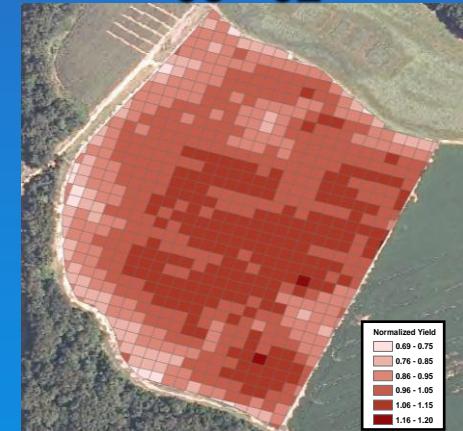
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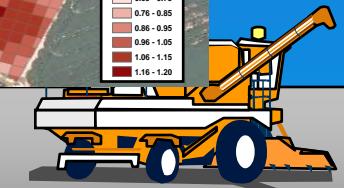
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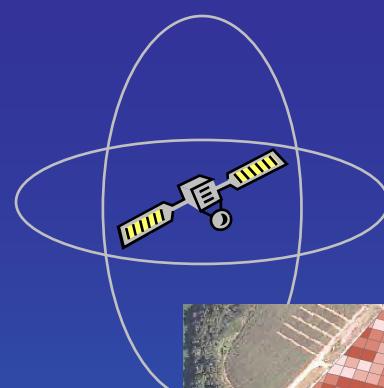


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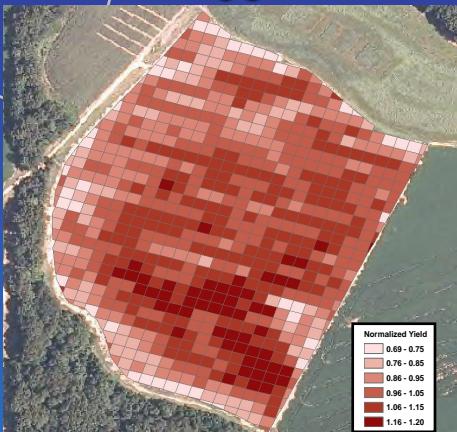
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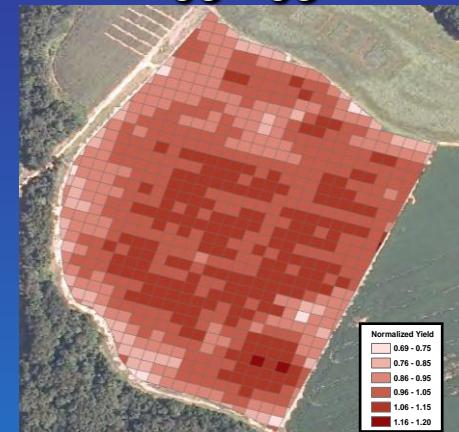
Delineating Management Zones

05

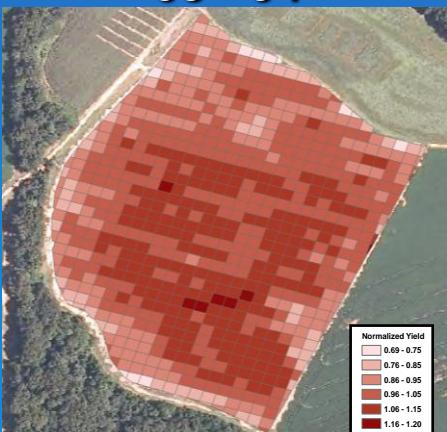


Yield Stability

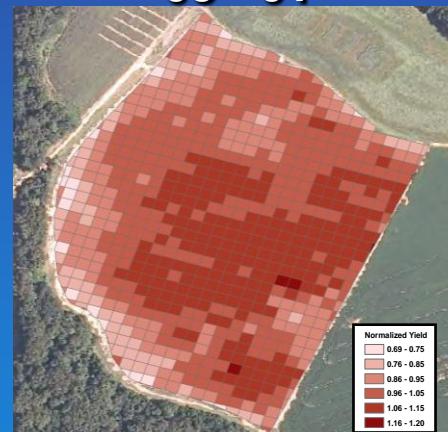
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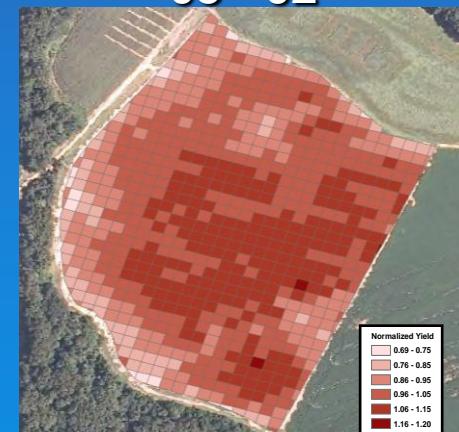
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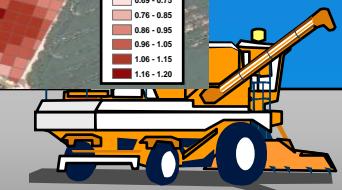
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05 - 02



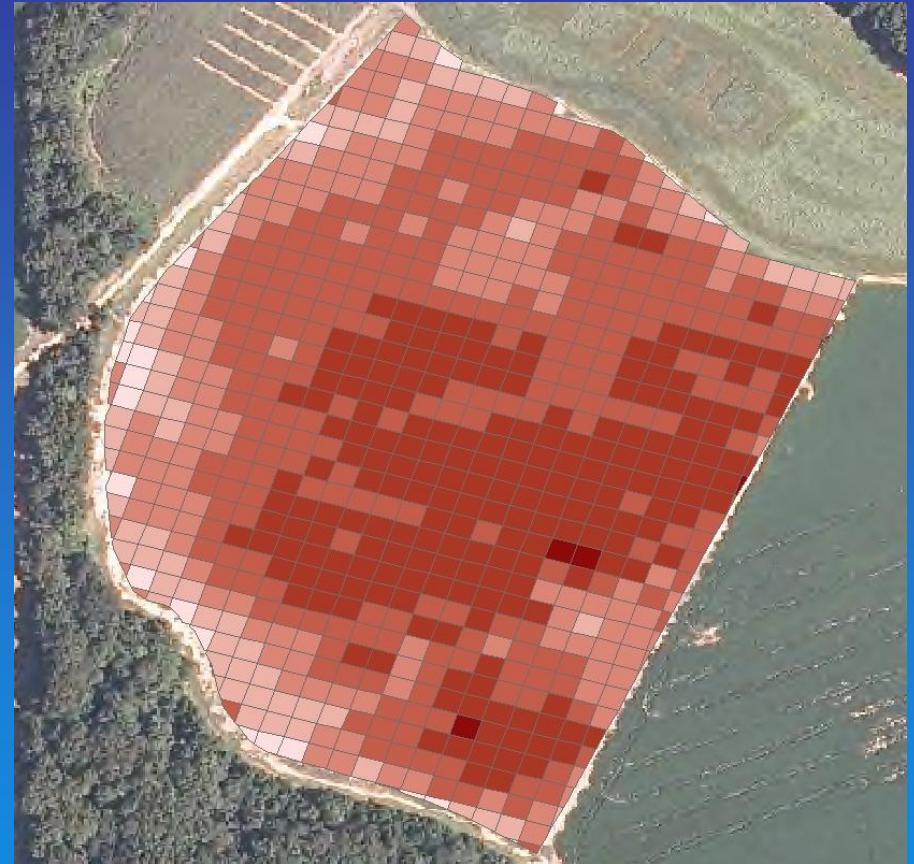
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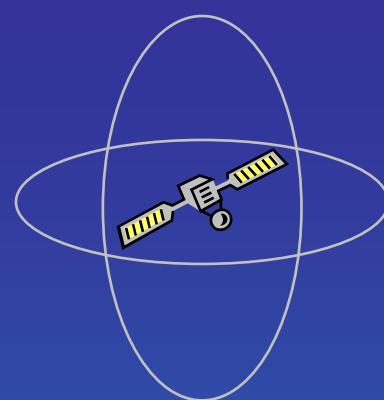




Delineating Management Zones

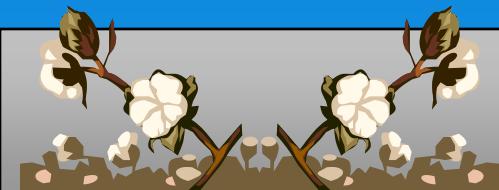
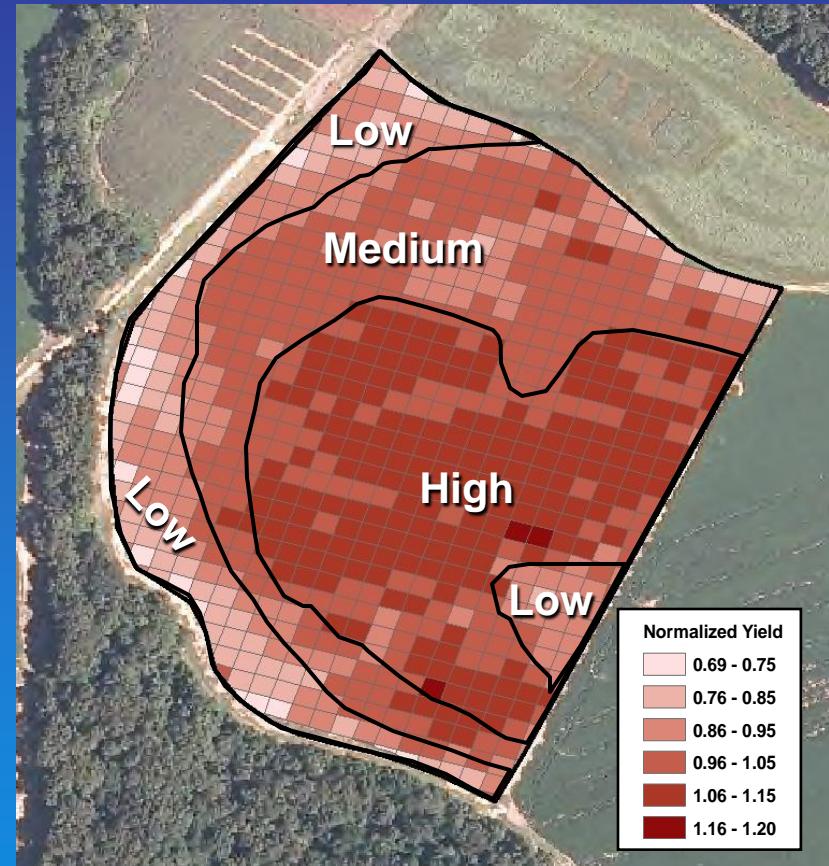
- Management Zones Based on Yield Stability

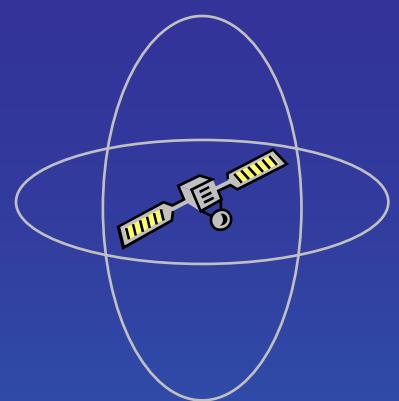




Delineating Management Zones

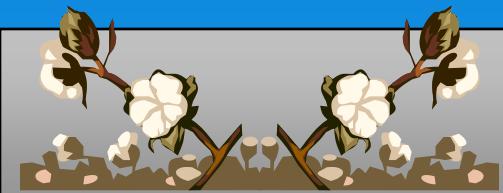
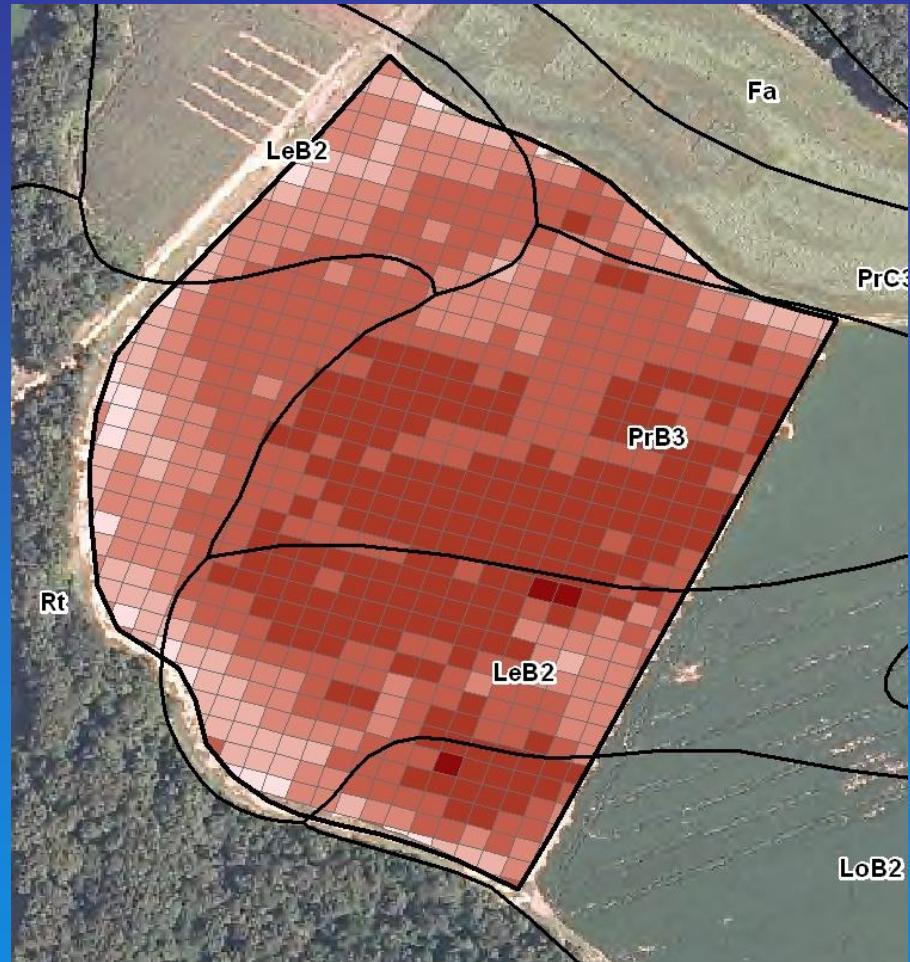
- Management Zones Based on Yield Stability

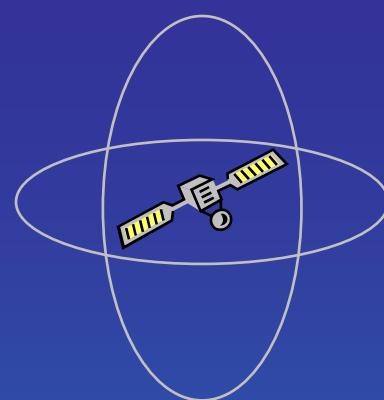




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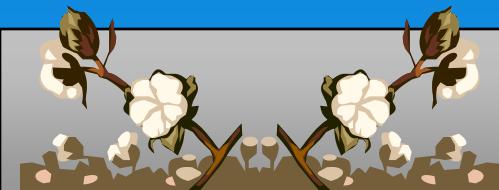
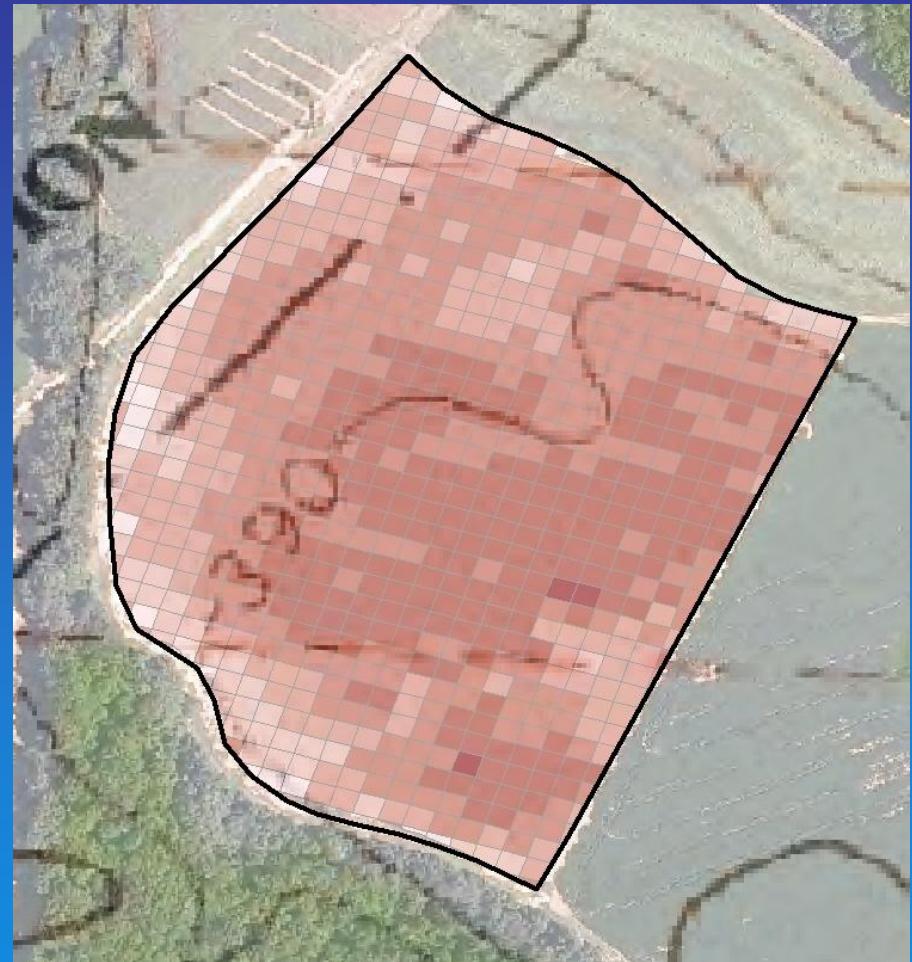
- Digital Soil Map





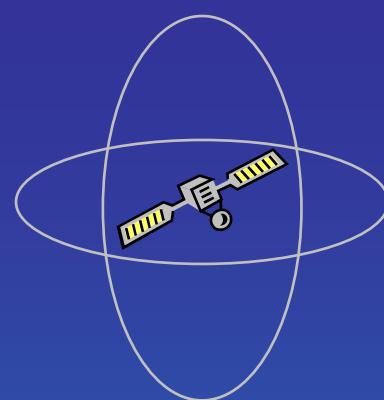
- Topo Map

Delineating Management Zones



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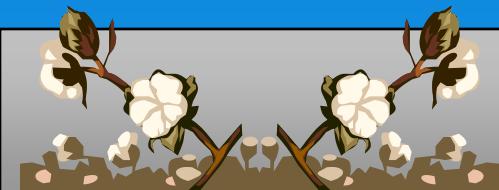
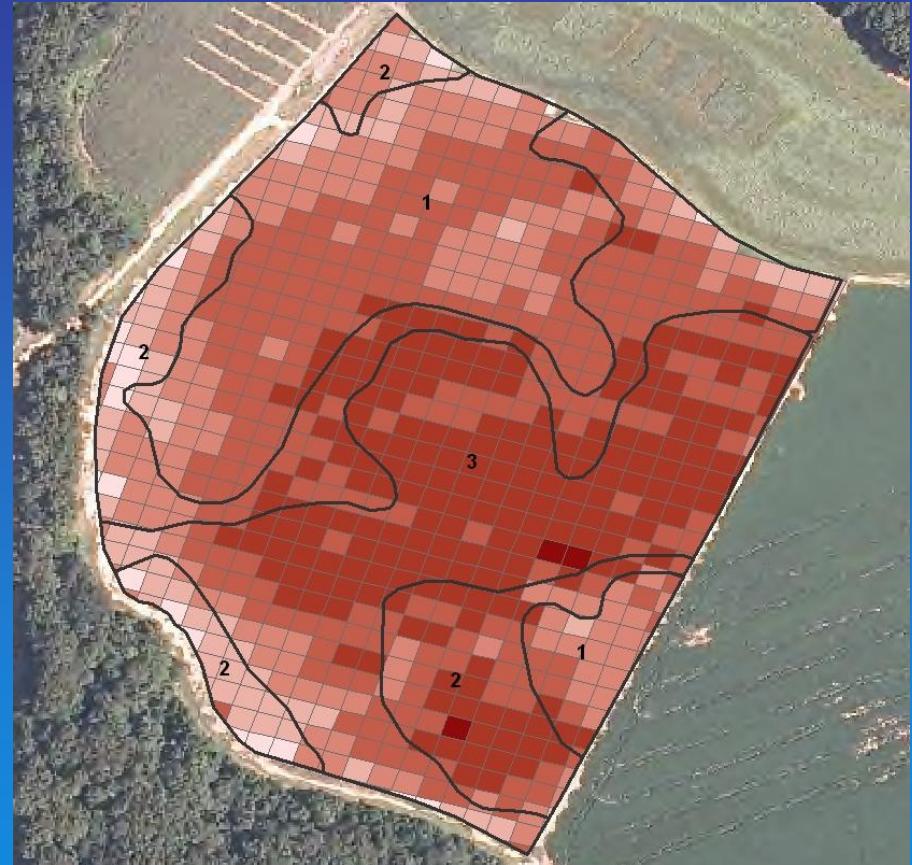


Delineating Management Zones

- Soil Electrical Conductivity

3 ft. Depth

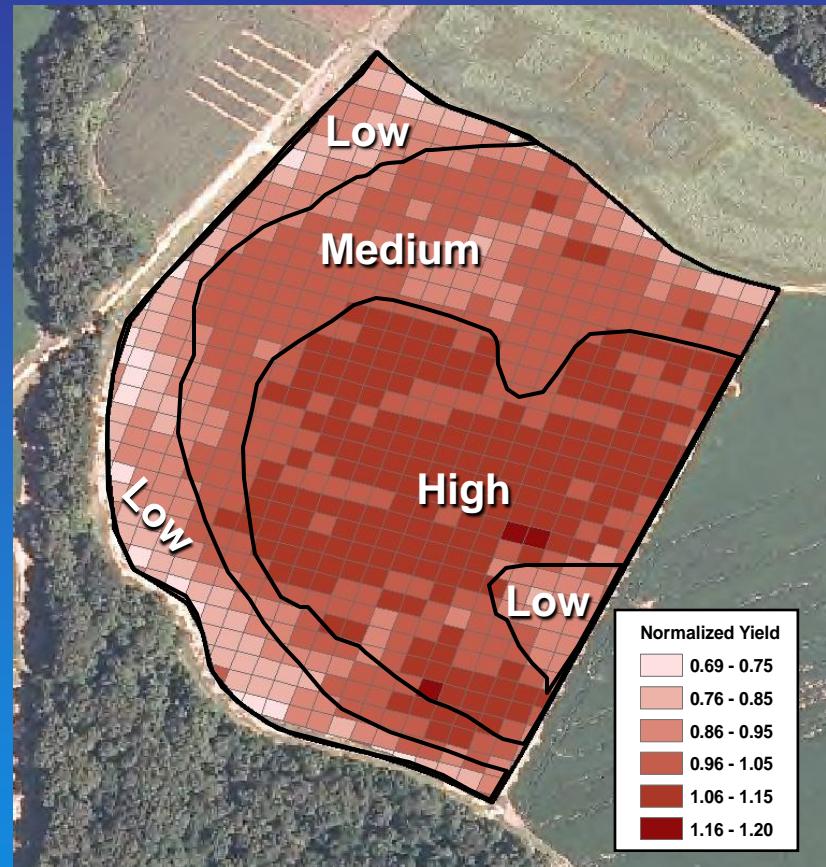
Range
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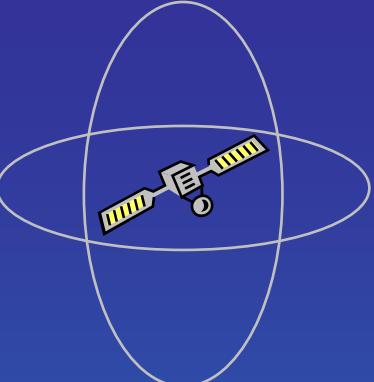




Delineating Management Zones

- What's the Next Step





Questions



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