VRA Checklist

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Start with the end product…

How is the fertilizer (or any product to be applied variable rate) actually going to be put on the field?

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Things to think about…

- Who will apply fertilizer?
  - Farmer
  - Industry
  - Custom applicator
- Is equipment currently set-up?
  - Are there components from the farm that could be used in spreader truck ?
    - Yield monitors, old sprayer set-ups (InTime), etc
  - Where to purchase equipment?
  - CUSTOMER SUPPORT & SERVICE!!!

Things to think about…

- Need to know what equipment will apply product
  - What controller will be used
    - To write a prescription map in appropriate file format
  - Swath width

- What software will be used to generate prescription maps?

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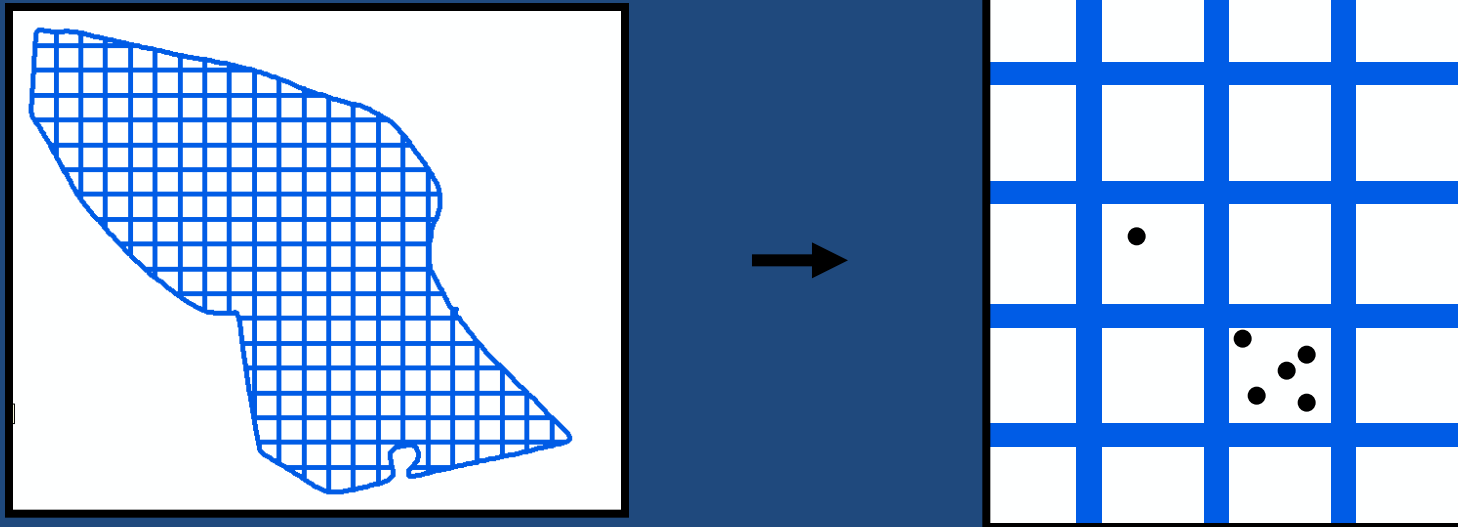AUBURN
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Things to think about…

- Will the basis for VRA be a grid, zone, sensor, or some combination of data?
  - Grids are arbitrary
  - Zones require a little set-up time
    - Basis for zones: field knowledge, yield data, imagery, Veris (electrical conductivity)
  - Sensors can be used for real-time VRA

- Who will collect soil samples?
  - ATV or other sampling set-up

Soil Sampling

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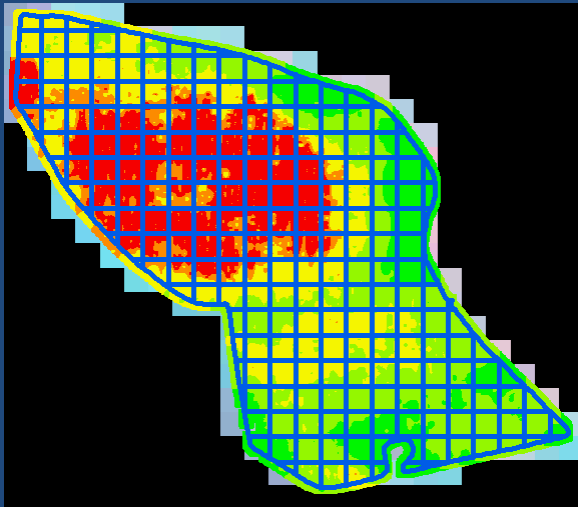# Delineating Management Zones
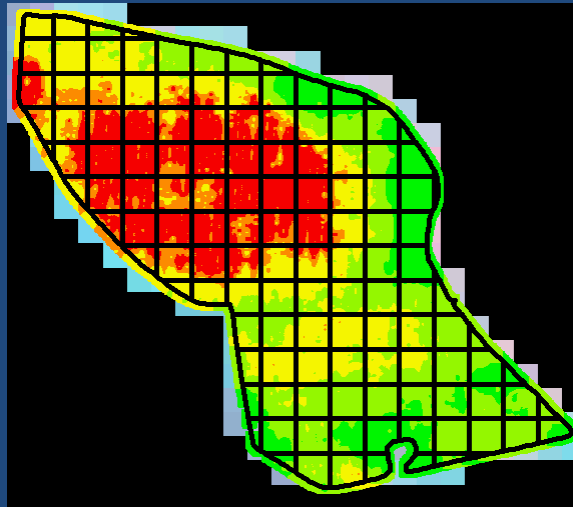
- Grid Sampling
  - Grid Cell Vs. Grid Center

Slide courtesy of Dr. Dana Sullivan, USDA-ARS
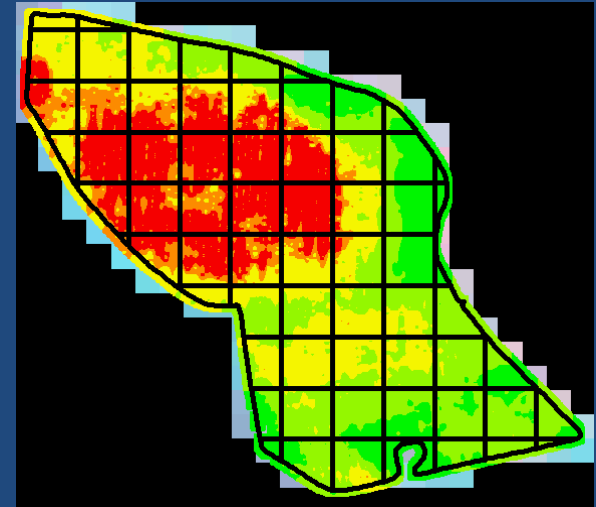
Delineating Management Zones

- Grid Considerations!

  -Number of Samples – Time and Expense

0.25 ac grid   0.50 ac grid   1 ac grid

Delineating Management Zones

- Letting Data Drive Zones
  - Kinds of Data
    - Yield Maps
    - Aerial or Satellite imagery
    - Soil and Topo Maps
    - Site History

Slide courtesy of Dr. Dana Sullivan, USDA-ARS

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Delineating Management Zones

Slide courtesy of Dr. Dana Sullivan, USDA-ARS

Software

- FarmWorks FarmSite/SitePro
- SMS Basic/Advanced
- MapShots EasiSuite
- SST Toolbox/Toolbox Lite/Toolkit
- John Deere Apex

- Most programs have companion program for PDA.

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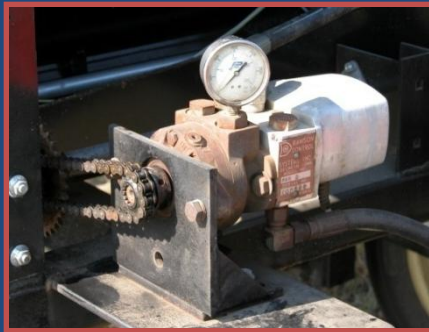
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VR Control System

Computer, Controller and Software

DGPS Receiver

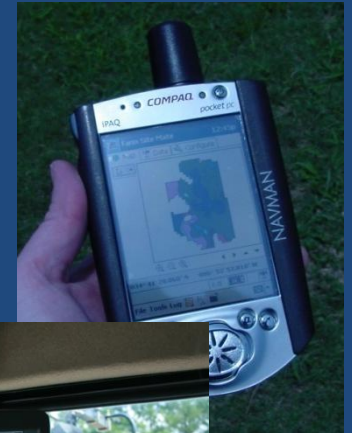Hydraulic Valve and Motor

Metering Device

Slide courtesy Dr John Fulton, AU

Computer, Controller, Software

- Computer
  - Tells the controller how much is going out
  - Where the Rx map goes
  - Connects to GPS

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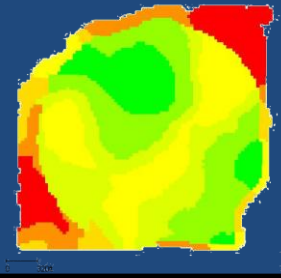
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Computer, Controller, Software

- Controller
  - Tells the valve to change rates
  - Can control different boom sections
  - Can be integrated with computer

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Computer, Controller, Software

- Software
  - What formats will the computer accept for Rx maps?
  - Do you need product specific software for Rx generation?
  - What format is your as applied map generated in?
  - Rx maps must be grid or contour

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GPS

- Accuracy
  - WAAS 8-12"
  - Subscription 2-4"
  - RTK <1"
- Update Rate
  - Static vs. Dynamic
- Multi-function
  - Can output GPS to lightbar as well as computer

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Hydraulic Valve

- What does the actual work of changing the rate

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Equipment Examples

TVREC 6700 VR Setup

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Rawson VR Set-up

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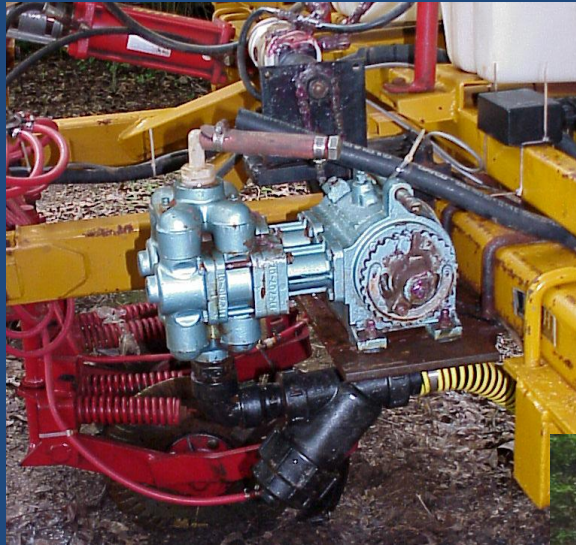
Greenstar 2600/Raven 660

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Greenseeker

On-the-go VRA

Variable rate components are still required (DPGS, valve, hydraulics)

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Questions & Discussion

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