

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?

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?

Things to think about...

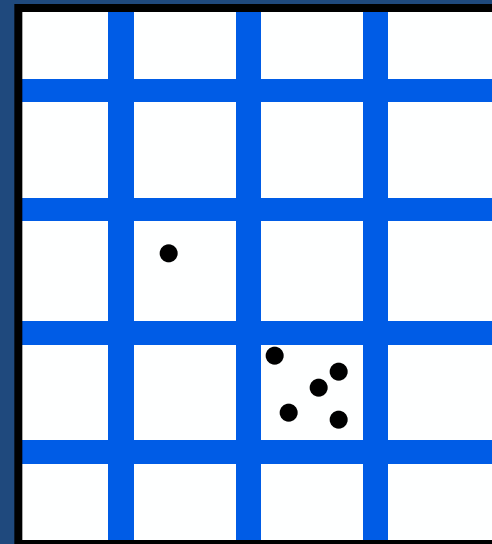
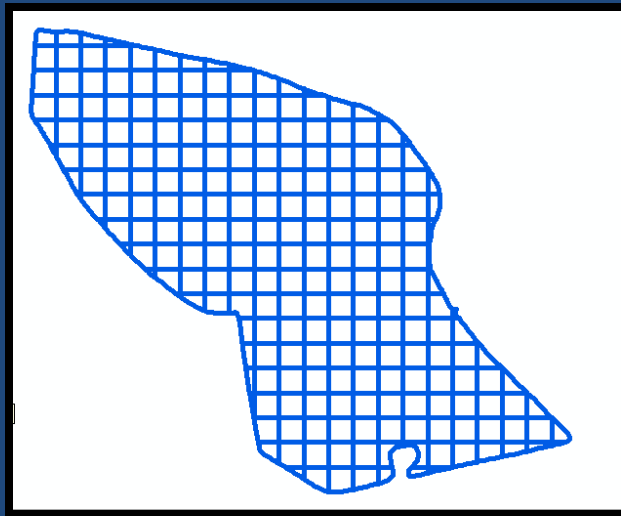
- Will the basis for VRA be a grid, zone, sensor, or some combination of data?
 - Grids are arbitrary
 - Zones require a little set-up time
 - Basis for zones: field knowledge, yield data, imagery, Veris (electrical conductivity)
 - Sensors can be used for real-time VRA
- Who will collect soil samples?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

Soil Sampling



Delineating Management Zones

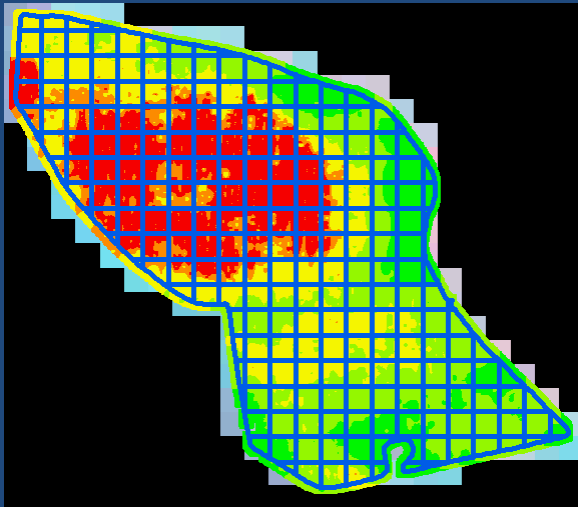
- Grid Sampling
 - Grid Cell Vs. Grid Center



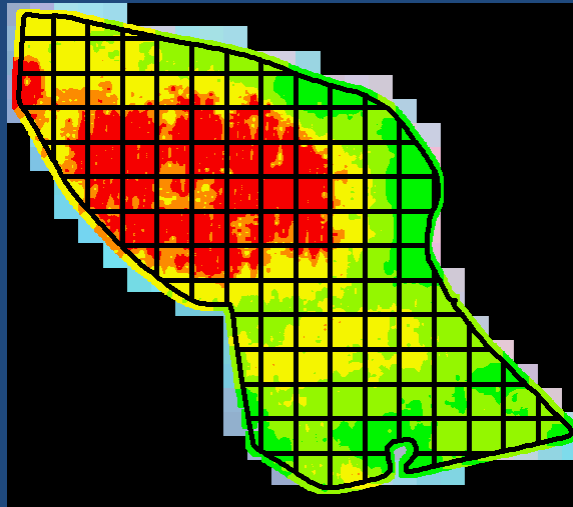
Slide courtesy of Dr. Dana Sullivan, USDA-ARS

Delineating Management Zones

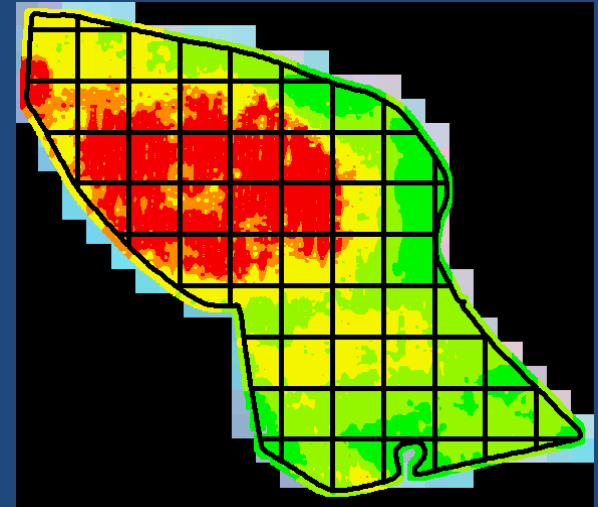
- Grid Considerations!
 - Number of Samples - Time and Expense



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

Delineating Management Zones



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Software

- FarmWorks FarmSite/SitePro
 - SMS Basic/Advanced
 - MapShots EasiSuite
 - SST Toolbox/Toolbox Lite/Toolkit
 - John Deere Apex
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- Most programs have companion program for PDA.

VR Control System



Computer, Controller and Software



DGPS Receiver



Hydraulic Valve and Motor

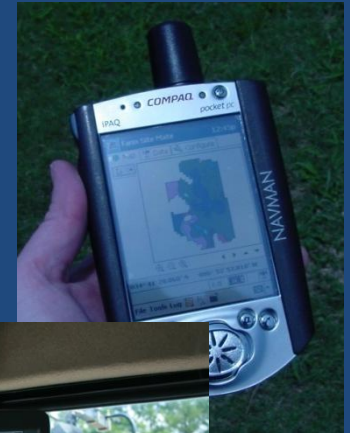


Metering Device

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



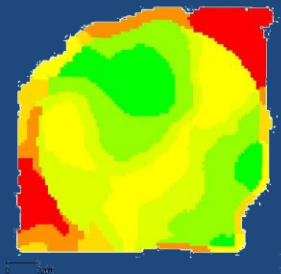
Computer, Controller, Software

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



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



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

Hydraulic Valve

- What does the actual work of changing the rate

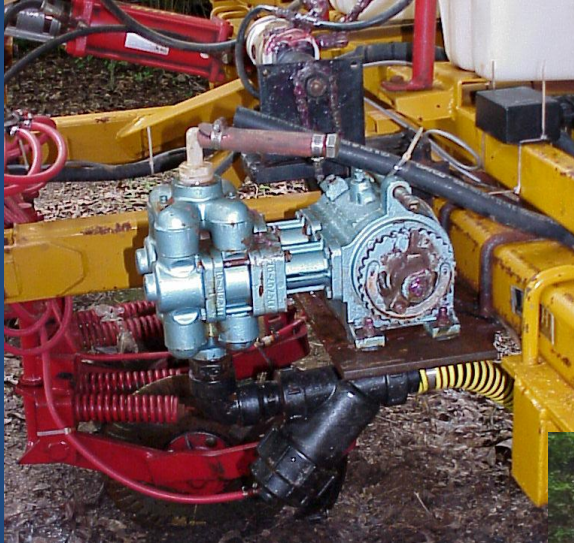


Equipment Examples

TVREC 6700 VR Setup



Rawson VR Set-up



Greenstar 2600/Raven 660



Greenseeker

On-the-go VRA



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

Questions & Discussion

