

Soil Fertility, Management and Precision Agriculture

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What Are Soil Management Zones?

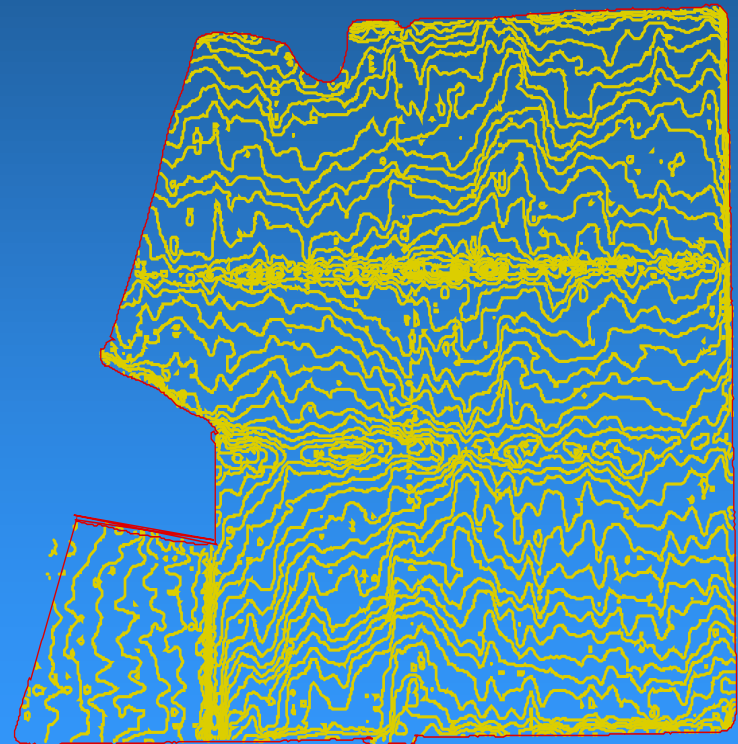
- **Areas of the field a relatively homogeneous combination of yield limiting factors**
 - Factors may be manageable (fertility, compaction)
 - Factors may not be manageable (soil texture)
- **Areas of the field where management changes due to other factors**
 - Environmental concerns
 - Aesthetic concerns

What Are Manageable Soil Properties?

- Soil properties that we can directly affect
 - Fertility
 - pH
 - Bulk Density (Compaction)
 - Surface Drainage
 - Erosion
 - Etc.

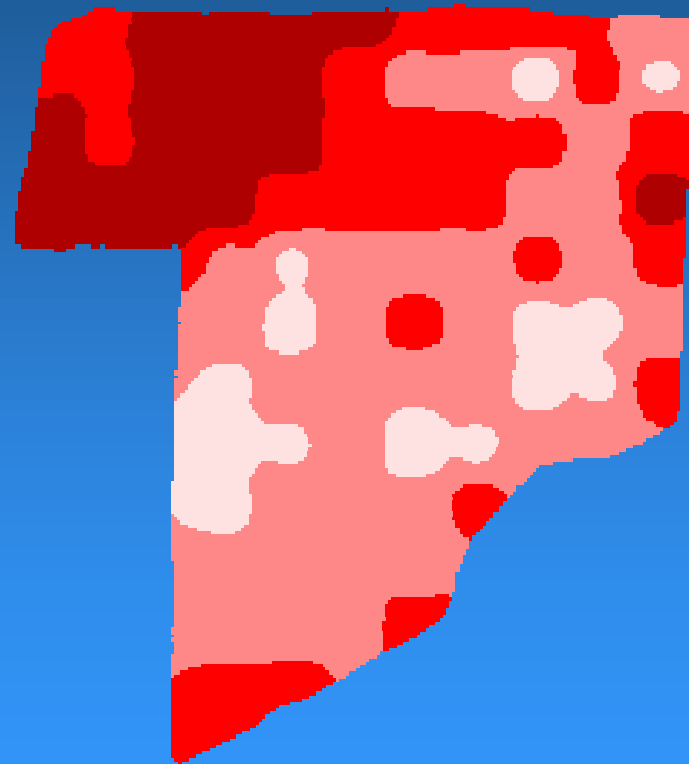
Non-Manageable Soil Properties

- Soil properties that we have to work around
 - Soil Texture
 - Topography
 - Subsurface Drainage
 - CEC
 - Previous History
 - Etc.



Ways To Use Soil Management Zones

- **Manage for limiting factors**
 - Variable tillage (compaction)
 - Variable fertility
 - Variable drainage
 - Etc.



Ways To Use Soil Management Zones

- **Manage around non-changeable factors**
 - Texture (fertility, variety choice, etc)
 - Drainage (irrigation, variety choice, etc)
 - Topography (field operations, irrigation, etc.)
 - Etc.

Why Would Soil Management Zones Be Useful?

- Save time in the field by only treating the areas that need treating
 - Save money by reducing inputs
 - Increase yield in problem areas???
 - Increase Maximum Economic Yield.
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- **Caution: Soil Management Zones are not the “Silver Bullet”. They must figure into an overall management plan.**