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Soil Darkness Mapping Examples

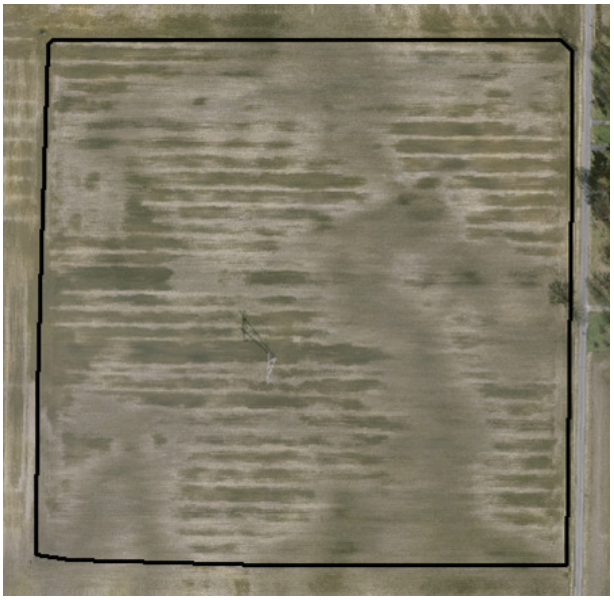


Image is not good enough to use for a soil darkness map (0.5 foot resolution imagery, black line delineates extent of field based on yield monitor data).

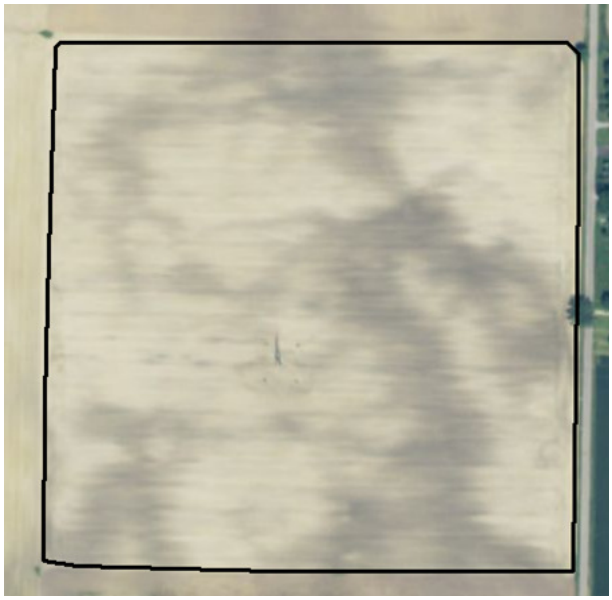
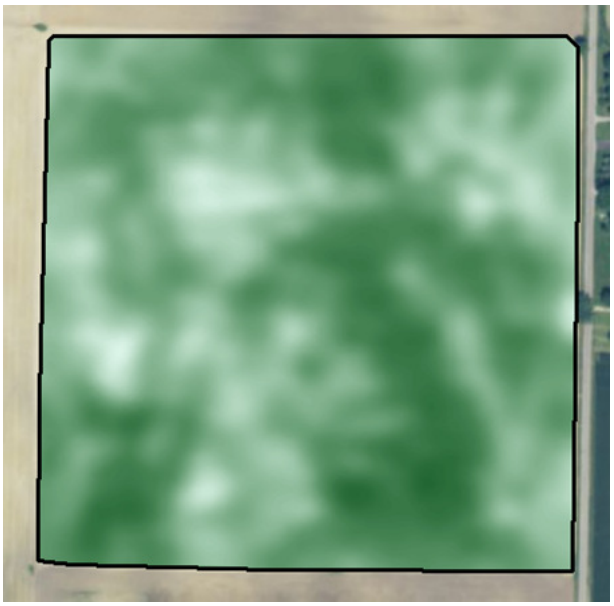
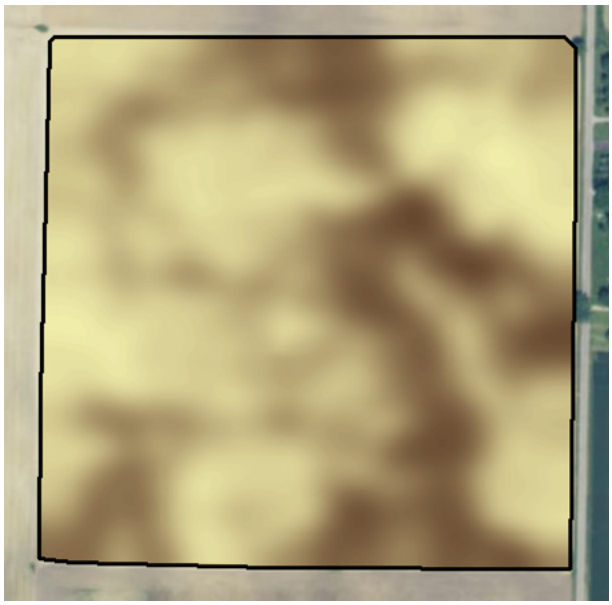


Image is good enough to use to produce a useful soil darkness map (1 meter resolution imagery; black line delineates yield monitor data); correlation between raw soil darkness and yield (below and to the left) is $R^2 = 0.61$.



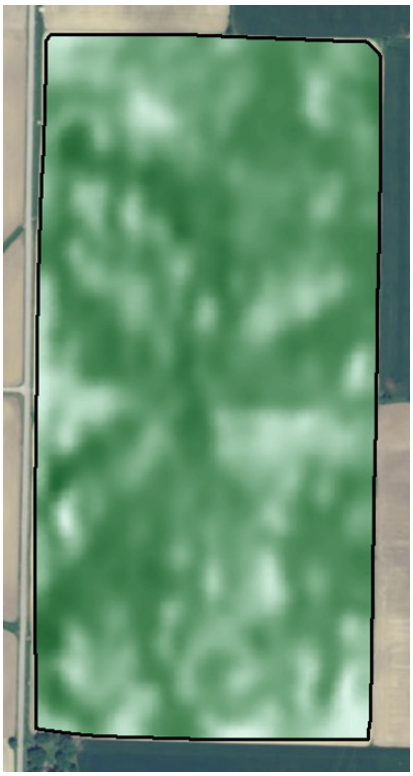
Corresponding average normalized clean yield monitor data for 2004, 2005, 2006, and 2007 (corn-soy rotation for data shown in yield monitor data cleaning section). Map is scaled from minimum to maximum value with darker green representing higher yield.



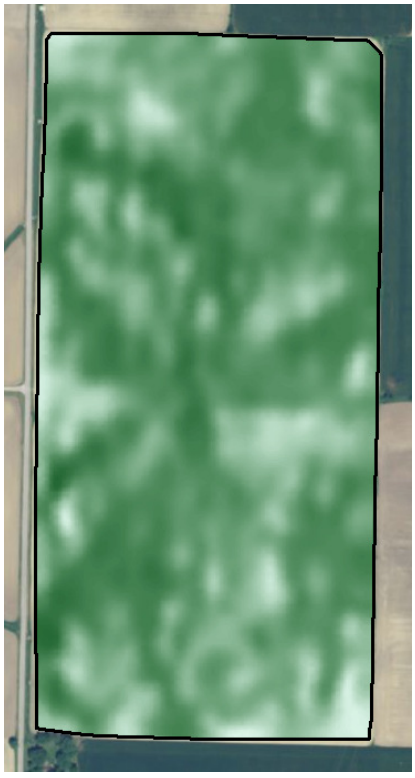
Soil darkness map based on image above; correlation between soil darkness and yield to left is $R^2 = 0.68$. Map is scaled from minimum (darkest) to maximum (lightest) value.

Soil with crop residue used for soil darkness map (1 meter resolution imagery; black line delineates yield monitor data)

Soil darkness map



Corresponding clean 2007 soy yield monitor data. Correlation between raw soil darkness at far left and yield (above) is $R^2 = 0.42$; correlation between soil darkness map and yield is $R^2 = 0.45$. Map is scaled from minimum to maximum value with darker green representing higher yield.



To the left is a soil darkness map from Landsat (30 meter resolution); the correlation (R^2) with yield is 0.37. Field is 390 meters (e-w) x 802 meters (n-s) near center.