

Interpolation

Visiting every location in a field to measure samples is usually difficult or expensive. So samples are measured at strategically dispersed sample locations, and predicted values are assigned to all other locations. Input points can be either randomly or regularly spaced or based on some sampling scheme. Surface interpolation functions create a continuous (or prediction) surface from sampled point values. In this activity an interpolated surface is created to visualize the impact of Phosphorous (P value) in Soybean yield.

Helper's Guide

How to Prepare

Each instructor must complete this activity prior to his/her work with explorers. The data for this activity should be copied in your C directory. Browse to 4H-GISyear2\Data to view Boundary.shp, and all the data needed to complete this activity. The final map of this activity is located in C:\4H-GISyear2\Map_interpolation

ArcToolbox software is introduced in this activity to change the projection of the layer before doing interpolation.

Need to Emphasize

- Interpolation is estimating an unknown value that falls between known values.
- Surface interpolation functions create a continuous surface from sampled point values.
- Spatial data analysis is one of the main advantages of GIS versus paper maps.

Related Links

- The Precision Farming Guide for Agriculturists by Dan Ess , Mark Morgan , Ralph Reynolds (John Deere)
 - <http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?TopicName=Understanding%20interpolation%20analysis>
 - <http://www.esri.com/news/arcuser/0704/files/interpolating.pdf>
 - http://www.esri.com/library/whitepapers/pdfs/arcgis_spatial_analyst.pdf
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*Viacheslav Adamchuk and Shana Thomas
Phone: 402-472-8431
E-mail: vadamchuk2@unl.edu
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