Integrating Spatial Educational Experiences (Isee) into Soils Teaching

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&
The Isee Network
Integrating Spatial Educational Experiences (Isee)

• **Teaching with Maps** - Integrating detailed maps of soil properties into our teaching programs

• **Students learn**
  – how and why soils and landscapes vary at different scales
  – why it matters
Digital Maps of Soil Properties in the Classroom and in the Field
Project Extent

- Indiana
- Wisconsin
- Illinois
- Kentucky
- Ohio
- West Virginia
- Texas
Components of the Isee Project

Creating the maps
Delivering the maps
Incorporating Isee into the learning environment
Assessing effectiveness
Creating the Maps

• All data is publically available
  – gSSURGO soils data from USDA NRCS
  – National Elevation Dataset (NED) or best available
    • i.e. IndianaMap
  – Other maps
    • Library of Congress, scanned paper maps, David Rumsey Map Collection

• Maps are designed to support teaching and learning
  – Dominant Soil Parent Material is most complex
  – Natural Soil Drainage Class, Surface Color, Fragipans, Soil Orders, other soil properties as needed
  – Factors of Soil Formation

• Participants create the maps for their state
Delivering the Maps

• ArcGIS 10.2.2 Desktop
  – Map creation

• ArcGIS 10.2 Server
  – Purdue University Libraries

• Via tablet
  – Xcode, ArcGIS SDK for iOS, Apple iPad at this time
  – Online maps
    • REST services
    • Hillshade: ~850 GB primary elevation data, ~91.5 GB cache
  – Offline maps
    • ESRI Tile Package (tpk) format
Free in the Apple App Store

Isee – Integrating Spatial Educational Experiences
Purdue University

Search for “Isee soils” (iPad only at this time)

Description
Explore detailed maps of soil properties and landscapes for 7 U.S. states, as well as small-scale maps of soil distributions for the world. Examine the details for a specific area, but also see the overview for a large area. Learn how features shown on the maps correspond to what you observe in the field.

The Integrating Spatial Educational Experiences project utilizes detailed soil survey data from the…more
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