Detection of Old Longwall Coal Mine Boundaries

1) 2007 Coal City Quadrangle Map showing the coal mine boundary (orange dashed outline) of the E Mine in Grundy County, Illinois. The boundary is drawn from the best available map of the underground mine.

2) 2008 LiDAR map of surface topography in the same area as Figure 1. The edge of the ground subsidence indicated on this map shows that the actual boundary of the mine covers a much larger area than shown in figure 1.

Grundy County, Illinois

The old longwall coal mining method started in Illinois in 1856 and was used into the 1950s. Mine maps for these hand-mined operations performed in the 1800s have, in most cases, been hard to find. The extent of these coal mines must be reconstructed from many sources if a coal mine map is not found. Some of these sources are mine maps, hand drawn at varying scales.

Illinois State Geological Survey scientists are using newly acquired LiDAR data to generate detailed surface topography maps for Grundy County. These maps show that, in some cases, the roughly 2 feet of ground subsidence, that typically occurred during this type of mining operation, can still be detected over 100 years later. The use of LiDAR elevation data in these longwall coal mine areas can be used to more closely define the extent of these underground mine operations.

For Additional information:
Illinois Height Modernization Program

crystal.isgs.uiuc.edu/nsdihome/webdocs/ilhmp/

ISGS Co-Principal Investigator
Sheena Beaverson
217-244-9306
sbeavers@illinois.edu

IDOT Co-Principal Investigator
Amy Eller
217-782-4748
amy.eller@illinois.gov

Illinois State Geological Survey -- www.isgs.illinois.edu
Illinois Natural Resources Geospatial Data Clearinghouse -- crystal.isgs.uiuc.edu/nsdihome/
Illinois Department of Transportation -- www.dot.state.il.us