

Coal Basin, Pitkin County, Colorado – An Example of NGMDB Data Capture, Conversion, and 3D Editing in ArcGIS 10

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Coal Basin is located in the Carbondale Coal Field near Redstone, Pitkin County, Colorado, and is perhaps best known for the April 15, 1981, coal mine disaster in the Dutch Creek Mine, which killed 15 miners. Geologic mapping and coal resource assessments were completed in the area in late 1970s by the USGS and were published as black and white open file maps (Kent and Arndt, 1980). These maps are cataloged and made available by the National Geologic Map Database (NGMDB) as scanned images and .djvu files. As a case study of new 3D functionality and digital mapping tools in ArcGIS10, the original map files were exported as .jpg images (multi-page), georeferenced, and digitized to capture the geologic data. The data were loaded into ESRI file geodatabase format using a field-oriented geologic data model, and 2D and 3D maps were created. Using newly available high resolution ESRI basemap maps and images (<http://www.arcgis.com/home/>), the digital data are now available to be easily edited and updated to better document coal seam outcrops and regional geology. At the DMT meeting, this information was presented as a poster (fig. 1) and as a live demo of the data.

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References

Kent, B.H., and Arndt, H.H., 1980, Geology of the Carbondale coal mining area, Garfield and Pitkin Counties, Colorado: U.S. Geological Survey Open-File Report 80-709, scale 1:24,000, http://ngmdb.usgs.gov/ProdDesc/proddesc_11742.htm.

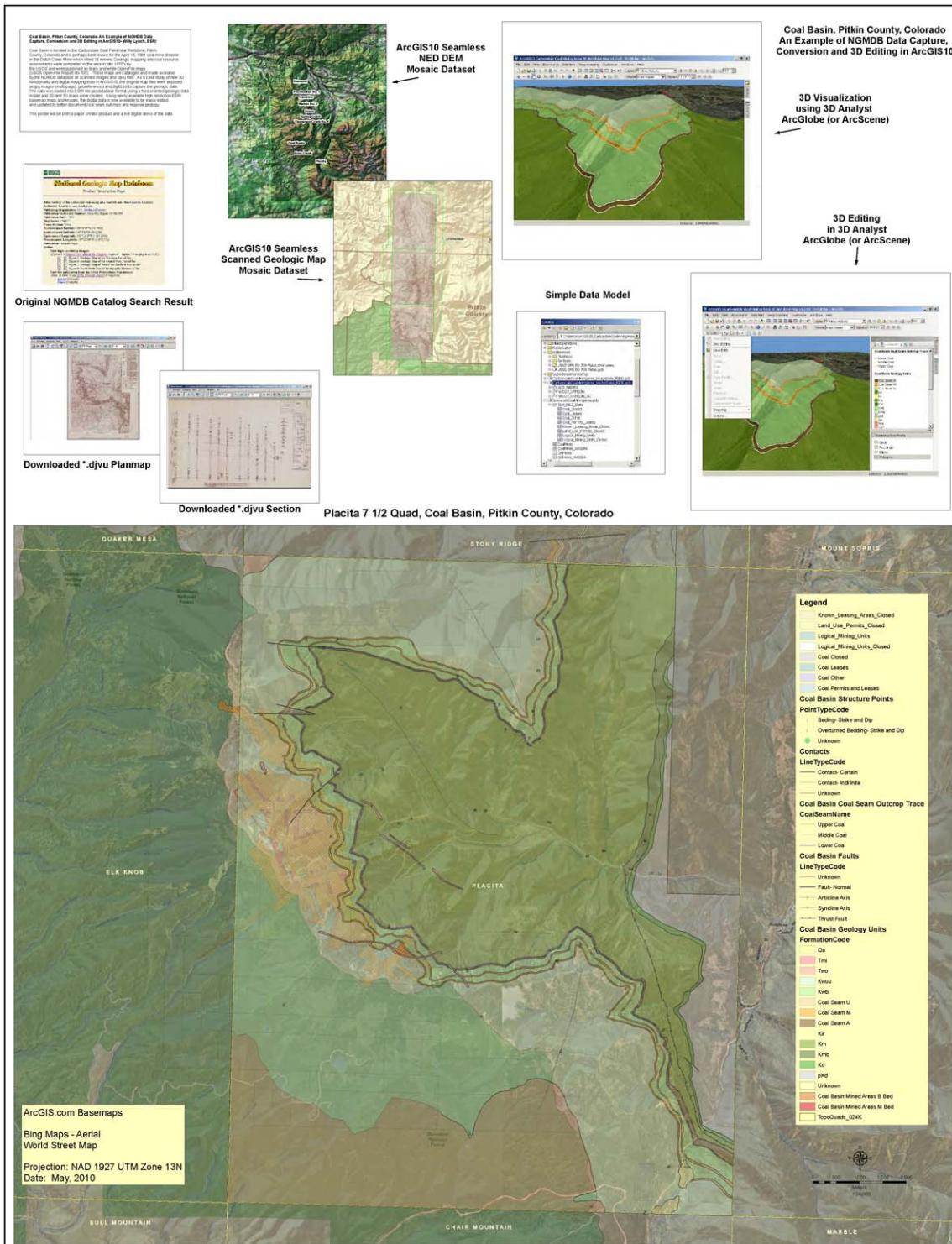


Figure 1. Using ArcGIS 10 and the 3D Analyst Extension for data capture, conversion, and 3D editing at Coal Basin, Pitkin County, Colorado (presented as a poster; see full-resolution image at http://ngmdb.usgs.gov/Info/dmt/docs/DMT10_Lynch2.pdf).