

Total Coal Thickness of the Lower Elkhorn Coal in Eastern Kentucky

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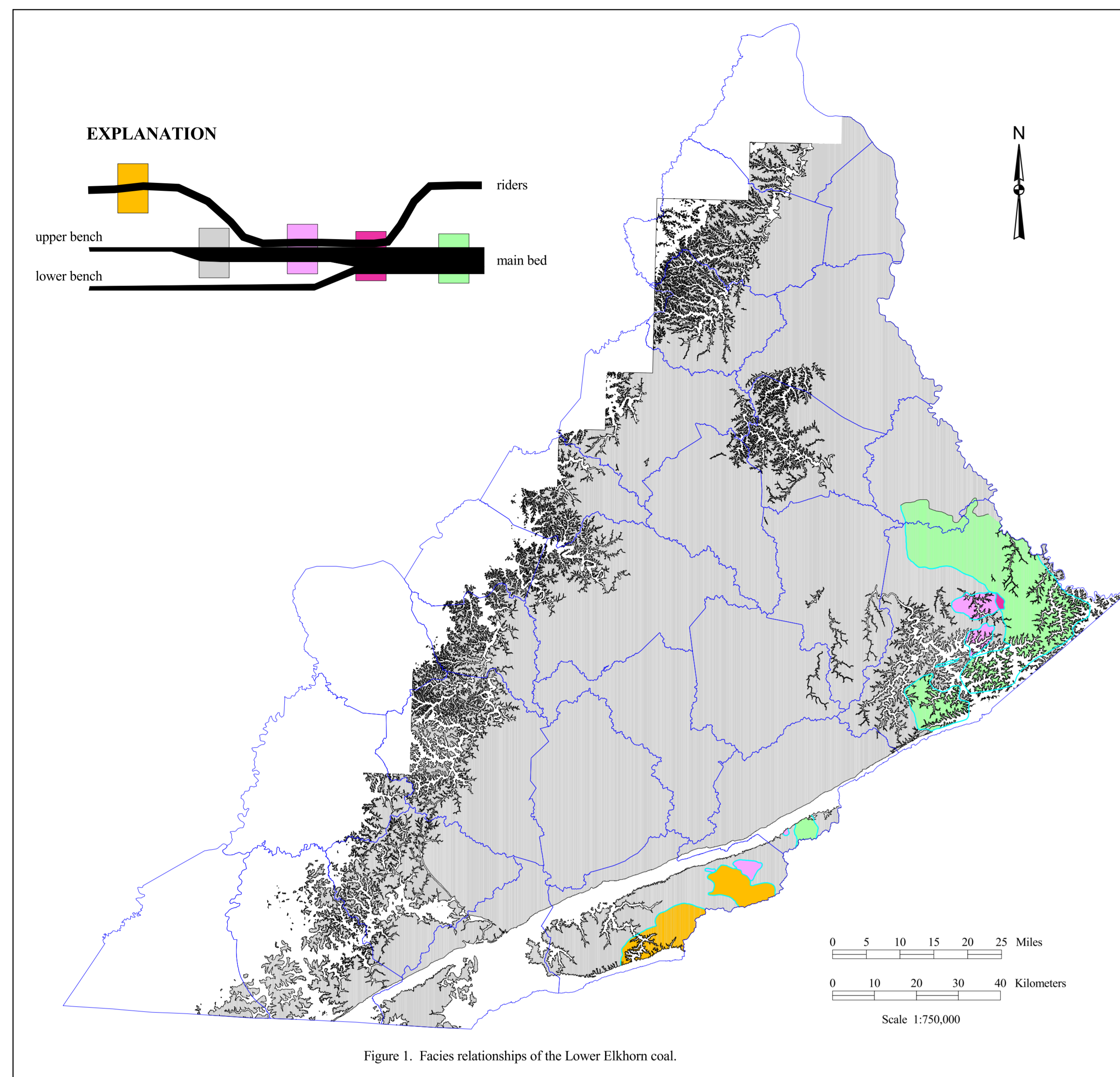


Figure 1. Facies relationships of the Lower Elkhorn coal.

Overview

This map is one of a series that shows the regional characteristics of the Lower Elkhorn coal. The maps were prepared as part of the U.S. Geological Survey's National Coal Assessment Program, which compiles regional maps and databases that provide a comprehensive assessment of the most important coal beds in the nation. The Lower Elkhorn coal is one of the leading producers in the state of Kentucky and has, in some areas, a reputation as an excellent metallurgical-grade coal. It is known locally as the Pond Creek, Imboden, Path Fork, Blue Gem, Straight Creek, Bruin, or Vires coal bed. This map represents the total coal thickness, minus partings, of the bed for the eastern Kentucky region. It is not a traditional isopach map, because the mineable bed is not composed of the same benches in all areas (Fig. 1). Discontinuities, delineated by facies boundaries on the map, indicate abrupt changes in thickness caused by splitting; discontinuities also occur between areas where entirely different beds in the Lower Elkhorn zone are favored for mining.

Point Data

Coal thickness measurements were derived from two different databases. The Kentucky Coal Resources Information System (KCRIS) contains field descriptions of coal beds that were made at natural outcrops, roadcuts, and surface and underground mines. Data collected at these localities were total coal thickness, bottom elevation, and, in some cases, total parting thickness. The second database contains records of borehole information obtained from coal companies and government agencies. This database also contains measurements of rock strata above and below the target coal bed. Data from 1,134 localities cited in the KCRIS database and 1,255 boreholes were used to prepare this map.

Map Preparation

The outcrop area of the Lower Elkhorn coal was compiled from individually digitized 7.5-minute geologic quadrangle maps. Personnel of the Kentucky Revenue Cabinet, the Kentucky Geological Survey, and the U.S. Geological Survey digitized the maps. For quadrangles where the coal had not been geologically mapped, the position of the coal outcrop was inferred, where possible, based on underlying or overlying beds. For a number of maps along the western boundary of the coal outcrop, this procedure was not feasible; therefore, the limit of the coal is bounded by the edge of the adjoining quadrangles and is indicated as bold red lines.

Thickness data were plotted on 1:100,000-scale base maps. Standard U.S. Geological Survey 14-inch categories, beginning at 28 inches, were manually drawn and digitized. Contour lines do not cross lines of discontinuity, such as coal bed split lines. Also, some anomalous data points were not used in order to avoid overly complex contouring. The areas interpreted as 0 to 28 inches contain many fewer data than those with thicker coal; hence, the certainty of the interpolated thickness is less for thin-coal areas. However, most of the coal measurements in these areas are less than 14 inches thick.

More Information

A complete list of publications that relate to the Lower Elkhorn coal can be found on the Web at www.uky.edu/KGS/pondcreekreferences.html. A summary report for the Lower Elkhorn assessment can be found at www.uky.edu/KGS/coal/webcoal/pages/coal/coalatlas.html.

Acknowledgments

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In this area of the Eastern Kentucky Coal Field, the high quality of the Blue Gem coal allows economic underground mining for beds as thin as 24 inches. For this reason, an additional contour interval of 24 to 28 inches was added to this part of the map.

EXPLANATION

- Eroded areas
- 0 to 14 inches
- 14 to 24 inches
- 24 to 28 inches
- 28 to 42 inches
- 42 to 56 inches

EXPLANATION

- Coal eroded
- 0 to 14 inches
- 14 to 28 inches
- 28 to 42 inches
- 42 to 56 inches
- 56 to 70 inches
- 70 to 84 inches
- Greater than 84 inches

— Facies boundary

