

# Delaware and Lehigh National Heritage Corridor

Where America was Built™

## Fact Sheet: The Formation of Coal

### GEOLOGIC TIME SCALE

YEARS AGO	ERA	PERIOD	MAIN ROCK TYPES OR DEPOSITS	LIFE FORMS
0 TO 1.8 M	CENOZOIC ERA	QUATERNARY	SAND, SILT CLAY, GRAVEL	MAMMALS, INCLUDING HUMANS
1.8 TO 65 M		TERTIARY	SAND, SILT GRAVEL	MAMMALS, GRASSES
65 TO 144 M	MESOZOIC ERA	CRETACEOUS	CLAY, SAND	DINOSAURS, MAMMALS, BIRDS
144 TO 206 M		JURASSIC	DIABASE	DINOSAURS, MAMMALS, BIRDS
206 TO 248 M		TRIASSIC	SHALE, SANDSTONE, DIABASE	DINOSAURS, EARLY MAMMALS AND BIRDS
248 TO 290 M	PALEOZOIC	PERMIAN	SANDSTONE, SHALE	INSECTS, AMPHIBIANS, REPTILES
290 TO 354 M		PENNSYLVANIAN AND MISSISSIPPIAN (CARBONIFEROUS)	SANDSTONE, SHALE, COAL, LIMESTONE	TREES, FERNS, AMPHIBIANS, INSECTS
354 TO 417 M		DEVONIAN	CONGLOMERATE, SANDSTONE, SHALE	FISH, INSECTS, AMPHIBIANS, LAND PLANTS
417 TO 443 M		SILURIAN	CONGLOMERATE, SANDSTONE, LIMESTONE	CORALS, FISH
443 TO 490 M		ORDOVICIAN	SHALE, LIMESTONE, DOLOMITE	MOLLUSCS, BRYOZOA, GRAPTOLITES
490 TO 570 M	CAMBRIAN	LIMESTONE, DOLOMITE, QUARTZITE	TRILOBITES, BRACHIOPODS	
570 M TO 4.5 B	PRE-CAMBRIAN		SCHIST, SLATE, MARBLE	ALGAE, WORMS, JELLYFISH, BACTERIA



### COAL'S STORY BEGAN LONG AGO

Three hundred and twenty million years ago, Pennsylvania was part of a supercontinent called **Pangea**, made of tectonic plates that had collided and merged with one another over millions of years.

Pennsylvania's location in Pangea was near the equator, where the climate was conducive to the growth

of great swamps and lush fern and tree forests. Dead vegetation collected in the swamps in thick masses. Because it was submerged, the vegetation was not exposed to oxidation and, as a result, did not rot, but accumulated into layers of wood debris called **peat**.

From time to time, the swamps were covered by great rivers and seas. Sediments carried in the water settled in thick layers on top of the peat and compressed it, squeezing out moisture and volatile compounds. As the peat layers sank even deeper under more layers of sediment, additional



pressure and heat changed the peat's chemical nature and hardness. This process concentrated the carbon in the peat and eventually turned it into coal. The greater the

pressure from the sediments, the more the amount of volatile compounds that were forced out, making the coal richer in carbon, the chief element in coal that burns.

### ANTHRACITE IN THE CORRIDOR

Anthracite is the hardest type of coal, and the cleanest-burning. It is found near the surface and in seams deep underground, mixed with layers of shale, sandstone and



limestone to depths of 4,000 feet in some locations. Estimates of the amount of anthracite remaining in Pennsylvania range from 12 to 23 billion tons.

There are four large anthracite deposits in eastern Pennsylvania that cover parts of Carbon, Luzerne, Lackawanna, Schuylkill, Columbia, Northumberland and Dauphin counties. Coal from the No.9 Mine in Lansford is part of the 60-mile long Southern Field that ends just west of the Daupin County border. The canoe-shaped Northern Field runs the length of the Wyoming Valley. Hazelton is in the center of the Eastern Field that straddles Carbon and Luzerne counties. The Western Middle field is outside the Corridor's boundaries.



For more information, contact:  
Dennis Scholl, Outreach Coordinator  
1 South Third Street, 8th Floor  
Easton, PA 18042  
610-923-3548  
dennis@delawareandlehigh.org  
www.delawareandlehigh.org