COAL FIELDS OF THE UNITED STATES

SHEET 1

By

James Trumbull

(Coal fields of Alaska are shown on sheet 2)

SCALE 1:5 000 000
Approximately 1 inch to 80 miles

100 0 100 200 MILES

1960

Albers equal-area projection

EXPLANATION

Anthracite, semianthracite, and meta-anthracite

Subbituminous coal

Low-volatile bituminous coal

Lignite and brown coal

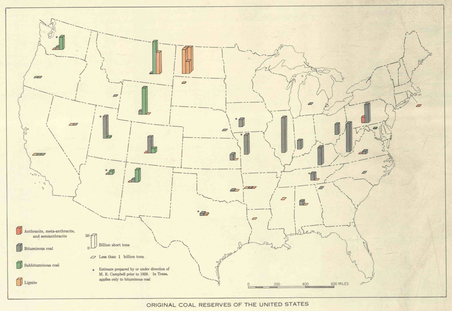
Medium- and high-volatile bituminous coal

Coking coal (coal coked at the present time, or coal that has been coked in the past)

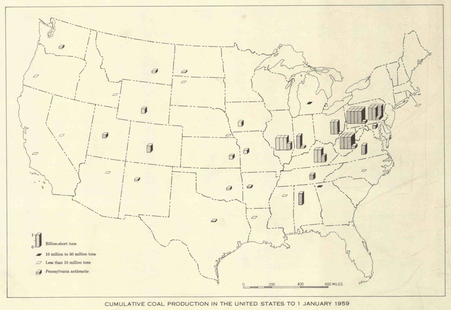
Deep color represents areas known to contain coal beds that are of commercial value at the present time or that may be of value in the future. In general the minimum thicknesses included are 14 inches for anthracite and bituminous coal, and 30 inches for subbituminous coal and lignite.

Light color represents areas of doubtful value for coal. These may be divided into three classes: (1) areas containing thin or irregular beds, which generally have little or no value, but which locally may be thick enough to mine, (2) areas in which the coal is poor in quality, and (3) areas where information on the thickness and quality of coal beds is meager or lacking.

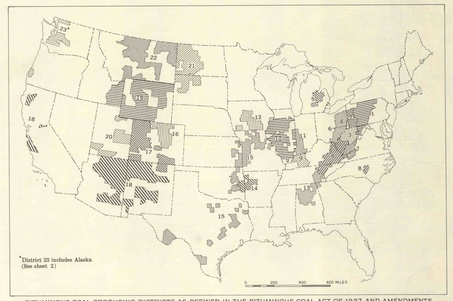
Light color and stippling denote that the coal-bearing formations are under cover which may range from a few hundred to several thousand feet.



ORIGINAL COAL RESERVES OF THE UNITED STATES

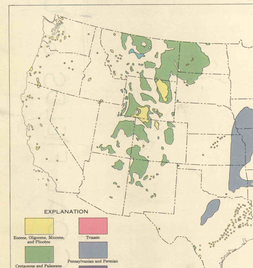


CUMULATIVE COAL PRODUCTION IN THE UNITED STATES TO 1 JANUARY 1959

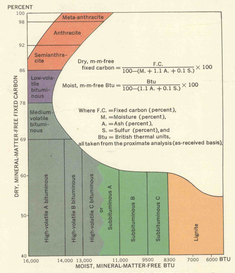


BITUMINOUS COAL PRODUCING DISTRICTS AS DEFINED IN THE BITUMINOUS COAL ACT OF 1937 AND AMENDMENTS

The districts were originally established to aid in formulating minimum prices of bituminous coal and lignite. Because much statistical information was compiled in terms of these districts, their use for statistical purposes has continued since the abandonment of that legislation in 1945.

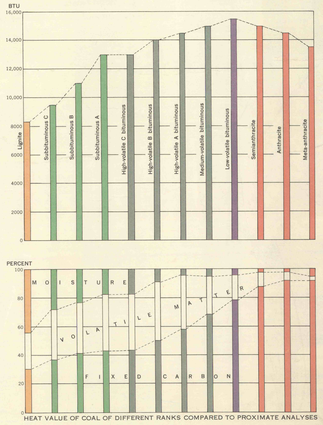


GEOLOGIC AGE OF COALS OF THE UNITED STATES



BASIS OF RANK CLASSIFICATION OF COALS IN THE UNITED STATES, AND THE FORMULAE USED IN MAKING APPROXIMATE RANK DETERMINATIONS

Determinations based on the above cannot be considered final or even adequate for any but the most general application. For further information, see the Standard Specifications for Classification of Coals by Rank of the American Society for Testing Materials, A.S.T.M. designation D388-38.



HEAT VALUE OF COAL OF DIFFERENT RANKS COMPARED TO PROXIMATE ANALYSES

SELECTED REFERENCES

Most of the following reports are summaries of available information on the occurrence of coal in the various States, and contain numerous references to detailed reports on individual coal-bearing areas. For those States lacking adequate summary reports, several references to the detailed geologic literature are listed.

ALABAMA

Barksdale, Jelks, 1929, Lignite in Alabama: Alabama Geol. Survey Bull. 34, 64 p.

Culbertson, W. C., Coal resources of Alabama: U. S. Geol. Survey Bull. (in preparation).

Pallister, H. D., and Morgan, Charles, 1950, Preliminary investigation of the lignite deposits of south Alabama: Alabama Geol. Survey Bull. (unnumbered).

ARIZONA

GENERAL

Huddle, J. W., 1947, [The coal fields of] Arizona, *in* Analyses of Arizona, California, Idaho, Nevada, and Oregon coals: U. S. Bur. Mines Tech. Paper 686, p. 1-4.

BLACK MESA FIELD

Kiersch, G. A., 1955, Coal, *in* Mineral resources, Navajo-Hopi Indian Reservation, Arizona-Utah, *v.* 1, Metalliferous minerals and mineral fuels: Tucson, Arizona Univ., p. 56-63.

ARKANSAS

Haley, B. R., (in preparation), Coal resources of Arkansas: U. S. Geol. Survey Bull. 1072-F.

CALIFORNIA

Andrews, D. A., 1947, [The coal fields of] California, *in* Analyses of Arizona, California, Idaho, Nevada, and Oregon coals: U. S. Bur. Mines Tech. Paper 686, p. 4-6.

Boalich, E. S., 1922, Bibliography of coal in California: Calif. Mining Bur., Mining in California, *v.* 18, no. 4, p. 152-157.

Jennings, C. W., 1957, Coal, *in* Mineral commodities of California: Calif. Div. Mines Bull. 176, p. 153-164.

COLORADO

Landis, E. R., 1959, Coal resources of Colorado: U. S. Geol. Survey Bull. 1072-C, p. 101-232.

GEORGIA

Butts, Charles, and Gildersleeve, Benjamin, 1948, Geology and mineral resources of the Paleozoic area in northwest Georgia: Georgia Geol. Survey Bull. 54, 178 p.

Johnson, V. H., 1946, Coal deposits on Sand and Lookout Mountains, Dade and Walker Counties, Ga.: U. S. Geol. Survey Prelim. Map [unnumbered].

IDAHO

Andrews, D. A., 1947, [The coal fields of] Idaho, *in* Analyses of Arizona, California, Idaho, Nevada, and Oregon coals: U. S. Bur. Mines Tech. Paper 686, p. 6-8.

Kiligaard, T. H., 1951, The geology and coal of the Horseshoe Creek district, Teton County, Idaho: Idaho Bur. Mines and Geology Pamph. 92, 42 p.

Staley, W. W., 1945, Coal in Idaho: Idaho Bur. Mines and Geology Min. Res. Rept. No. 1, 4 p.

ILLINOIS

Cady, G. H., and others, 1952, Minable coal reserves of Illinois: Illinois Geol. Survey Bull. 78, 158 p.

Smith, W. H., 1957, Strippable coal reserves of Illinois, Part 1, Gallatin, Hardin, Johnson, Pope, Saline, and Williamson Counties: Illinois Geol. Survey Circ. 228, 39 p. (See also other reports in this series.)

INDIANA

Spencer, F. D., 1951, Coal resources of Indiana: U. S. Geol. Survey Circ. 206, 17 p.

IOWA

Averitt, Paul, 1949, Iowa coal fields, *in* Analyses of Iowa coals: U. S. Bur. Mines Tech. Paper 706, p. 1-5.

Hinds, Henry, 1909, The coal deposits of Iowa: Iowa Geol. Survey, *v.* 19, p. 19-396.

Lees, J. H., 1930, The geology of Iowa coals, *in* Studies of Iowa coals: Iowa Geol. Survey Tech. Paper No. 2, p. 54-63.

KANSAS

Abernathy, G. E., Jewett, J. M., and Schoewe, W. H., 1947, Coal reserves in Kansas: Kansas Geol. Survey Bull. 70, pt. 1, p. 1-39.

Schoewe, W. H., 1951, Coal resources of the Permian system in Kansas: Kansas Geol. Survey Bull. 90, pt. 3, p. 53-68.

Schoewe, W. H., 1952, Coal resources of the Cretaceous system (Dakota formation) in central Kansas: Kansas Geol. Survey Bull. 96, pt. 2 p. 69-156.

KENTUCKY

Huddle, J. W., Lyons, E. J., Smith, H. L., and Fiero, J. C., Coal reserves of eastern Kentucky: U. S. Geol. Survey Bull. (in preparation).

Matson, G. C., 1943, Coal, *in* Geology of Kentucky: Lexington, Kentucky Univ., p. 230-236 (reprinted 1956).

McFarlan, A. C., 1944, Kentucky coal fields, *in* Analyses of Kentucky coals: U. S. Bur. Mines Tech. Paper 652, p. 1-12.

LOUISIANA

Meagher, D. P., and Ayrock, L. C., 1942, Louisiana lignite: Louisiana Geol. Survey Pamph. No. 5, 56 p.

MARYLAND

Clark, W. B., and others, 1905, Report on the coals of Maryland: Maryland Dept. Geology, Mines, and Water Resources, *v.* 5, pt. 4, p. 219-451.

Swartz, C. K., and Baker, W. A., Jr., 1922, Second report on the coals of Maryland: Maryland Dept. Geology, Mines, and Water Resources, *v.* 11, pt. 5, p. 11-288.

Toenges, A. L., and others, 1949, Investigations of the lower coal beds in Georges Creek and north part of Upper Potomac basins, Allegany and Garrett Counties, Md.: U. S. Bur. Mines Tech. Paper 725, p. 3-14.

Toenges, A. L., and others, 1952, Castleman Basin, Garrett County, Md.: U. S. Bur. Mines Bull. 507, 122 p.

MICHIGAN

Cohee, G. V., Burns, R. N., Brown, Andrew, Brant, R. A., and Wright, Dorothy, 1950, Coal resources of Michigan: U. S. Geol. Survey Circ. 77, 56 p.

MISSISSIPPI

Brown, C. S., 1907, The lignite of Mississippi: Mississippi Geol. Survey Bull. 3, 71 p.

MISSOURI

Hinds, Henry, 1913, The coal deposits of Missouri: Missouri Bur. Geology and Mines, 2d ser., *v.* 11, 560 p.

Searight, W. V., 1945, Coal production, distribution, and consumption in Missouri: Missouri Div. of Geol. Survey and Water Resources Inf. Circ. no. 5, 52 p.

MONTANA

Combo, J. X., Brown, D. M., Palmer, H. F., and Taylor, D. A., 1949, Coal resources of Montana: U. S. Geol. Survey Circ. 53, 28 p.

Combo, J. X., Holmes, C. N., and Christner, H. R., 1950, Map showing coal resources of Montana: U. S. Geol. Survey Coal Inv. Map C-2.

NEBRASKA

Pepperberg, R. V., 1919, Coal in Nebraska: Nebraska Geol. Survey, *v.* 3, pt. 10, p. 275-307.

NEVADA

Hendricks, T. A., 1947, [The coal fields of] Nevada, *in* Analyses of Arizona, California, Idaho, Nevada, and Oregon coals: U. S. Bur. Mines Tech. Paper 686, p. 9.

NEW MEXICO

Read, C. B., Duffner, R. T., Wood, G. H., Jr., and Zapp, A. D., 1950, Coal resources of New Mexico: U. S. Geol. Survey Circ. 99, 24 p.

NORTH CAROLINA

Reinemund, J. A., 1955, Geology of the Deep River coal field, North Carolina: U. S. Geol. Survey Prof. Paper 246, 159 p.

NORTH DAKOTA

Brant, R. A., 1953, Lignite resources of North Dakota: U. S. Geol. Survey Circ. 226, 78 p.

OHIO

Brownscombe, J. A., 1918, The coal fields of Ohio: U. S. Geol. Survey Prof. Paper 100-B, p. 15-36.

Brant, R. A., and DeLong, D. M., (in press), Coal resources in Ohio: Ohio Div. Geol. Survey Bull. 58.

OKLAHOMA

Trumbull, James, 1957, Coal resources of Oklahoma: U. S. Geol. Survey Bull. 1042-J, p. 307-382.

OREGON

Mason, R. S., and Erwin, M. L., 1955, Coal resources of Oregon: U. S. Geol. Survey Circ. 362, 7 p.

PENNSYLVANIA

GENERAL

Ashley, G. H., 1944, Pennsylvania's mineral heritage, Pt. 2, Mineral resources: Pennsylvania State Dept. Internal Affairs, Harrisburg, p. 73-83.

Pennsylvania Topographic and Geologic Survey, 1929, Map of coal fields of Pennsylvania.

ANTHRACITE

Ashley, G. H., 1945, Anthracite reserves: Pennsylvania Topog. and Geol. Survey Prog. Rept. 130, 13 p.

Darton, N. H., 1940, Some structural features of the northern anthracite coal basin: U. S. Geol. Survey Prof. Paper 193-D, p. 69-81.

Kehn, T. M., and Wagner, H. C., 1956, Geology of anthracite in the eastern part of the Shenandoah quadrangle, Pennsylvania: U. S. Geol. Survey Coal Inv. Map C-19. (See also other maps in this series.)

BITUMINOUS COAL

Pennsylvania Topographic and Geologic Survey, 1925-32, Bituminous coal fields of Pennsylvania: Pennsylvania Topog. and Geol. Survey Bull. M6; pt. 1, General information on coal, by G. H. Ashley, 241 p.; pt. 2, Detailed description of coal fields, by J. D. Sisler, 351 p.; pt. 3, Bituminous coal resources, by J. F. Reese and J. D. Sisler, 155 p.; pt. 4, Analyses of bituminous coal, 258 p.

RHODE ISLAND

Ashley, G. H., 1915, Rhode Island coal: U. S. Geol. Survey Bull. 615, 62 p.

Toenges, A. L., Turnbull, L. A., Neale, Arthur, Schopf, J. M., Abernethy, R. F., and Quinn, A. W., 1948, Investigation of meta-anthracite in Newport and Providence Counties, R. I.; petrography, chemical characteristics, and geology of deposits: U. S. Bur. Mines Rept. Inv. 4276, 37 p.

SOUTH DAKOTA

Brown, D. M., 1952, Lignite resources of South Dakota: U. S. Geol. Survey Circ. 159, 18 p.

TENNESSEE

GENERAL

Luther, E. T., 1959, The coal reserves of Tennessee: Tennessee Div. Geology Bull. 63.

BITUMINOUS COAL

Glenn, L. C., 1925, The northern Tennessee coal field: Tennessee Div. Geology Bull. 33-B, 478 p.

Nelson, W. A., 1955, The southern Tennessee coal field: Tennessee Div. Geology Bull. 33-A, 219 p.

Wilson, C. W., Jr., Jewett, J. M., and Luther, E. T., 1956, Pennsylvanian geology of the Cumberland Plateau: Tennessee Div. Geology folio.

LIGNITE

Born, K. E., 1956, Summary of the mineral resources of Tennessee: Tennessee Div. Geology, Resources of Tenn., 2d ser., p. 68.

Tennessee State Planning Commission, 1948, Industrial resources of Tennessee, revised ed.; *v.* 2, Forests, agriculture, minerals: Tennessee State Planning Comm. Pub. No. 195, 100 p.

TEXAS

GENERAL

Sellards, E. H., and Baker, C. L., 1934, The geology of Texas, *v.* 2, Structural and economic geology: Bur. Econ. Geology, Texas Univ. Bull. 3401, p. 301-352.

Sellards, E. H., Evans, G. L., and Hendricks, Leo, 1943, Mineral locality map of Texas: Bur. Econ. Geology, Texas Univ. Pub. 4301, pl. 1 (1944).

Stenzel, H. B., 1943, Review of coal production in Texas, *in* Texas State mineral resources: Bur. Econ. Geology, Texas Univ. Pub. 4301, p. 187-206 (1946).

LIGNITE

Perkins, J. M., and Lonsdale, J. T., 1935, Mineral resources of Texas coastal plain, preliminary report: Bur. Econ. Geology, Texas Univ. (report for Bur. of Reclamation), U. S. Dept. of the Interior, June 30, 1935).

UTAH

GENERAL

Spieker, E. M., 1925, Geology of the coal fields, *in* Analyses of Utah coals: U. S. Bur. Mines Tech. Paper 345, p. 13-22.

COALVILLE FIELD

Wegemann, C. H., 1913, The Coalville coal field, Utah: U. S. Geol. Survey Bull. 581-E, p. 161-187 (1915).

KENNY MOUNTAINS FIELD

Hunt, C. B., assisted by Averitt, Paul, and Miller, R. L., 1953, Geology and geography of the Henry Mountains region, Utah: U. S. Geol. Survey Prof. Paper 228, p. 214-217, pl. 32.

SAN JUAN RIVER REGION

Gregory, H. E., 1938, The San Juan Country, a geographic and geologic reconnaissance of southeastern Utah: U. S. Geol. Survey Prof. Paper 188, 123 p.

SOUTHWESTERN UTAH REGION

Gregory, H. E., and Moore, R. C., 1931, The Kaiparowits region, a geographic and geologic reconnaissance of parts of Utah and Arizona: U. S. Geol. Survey Prof. Paper 164, 161 p.

Richardson, G. B., 1907, The Harmony, Cobob, and Kanab coal fields, southern Utah, *in* Coal fields of Colorado, New Mexico, Utah, Oregon, and Virginia: U. S. Geol. Survey Bull. 341-C, p. 379-400 (1909).

UINTA REGION

Clark, F. R., 1928, Economic geology of the Castlegate, Wellington, and Sunnyside quadrangles, Carbon County, Utah: U. S. Geol. Survey Bull. 793, 165 p.

Duncan, D. C., 1944, The Mount Pleasant coal field, Sanpete County, Utah: U. S. Geol. Survey Prelim. Map [unnumbered].

Fisher, D. J., 1936, The Book Cliffs coal field in Emery and Grand Counties, Utah: U. S. Geol. Survey Bull. 852, 104 p.

Kinney, D. M., 1955, Geology of the Uinta River-Brush Creek area, Duchesne and Uintah Counties, Utah: U. S. Geol. Survey Bull. 1007, 185 p.

Spieker, E. M., 1931, The Wasatch Plateau coal field, Utah: U. S. Geol. Survey Bull. 819, 210 p.

Spieker, E. M., and Baker, A. A., 1927, Geology and coal resources of the Salina Canyon district, Sevier County, Utah: U. S. Geol. Survey Bull. 796-C, p. 171-197 (1928).

VIRGINIA

Brown, Andrew, Berryhill, H. L., Jr., Taylor, D. A., and Trumbull, J. V. A., 1952, Coal resources of Virginia: U. S. Geol. Survey Circ. 171, 27 p.

WASHINGTON

Ash, S. H., 1931, The coal fields of Washington, *in* Analyses of Washington coals: U. S. Bur. Mines Tech. Paper 491, p. 1-11.

Green, S. H., 1947, Coal and coal mining in Washington: Washington Div. Mines and Geology Rept. Inv. No. 4B, 41 p.

Valentine, G. M., 1949, Inventory of Washington minerals, Pt. 1, Nonmetallic minerals: Washington Div. Mines and Geology Bull. 37, p. 25-27, pl. 9.

WEST VIRGINIA

Nolting, J. P., Jr., 1940, Description of the minable coal seams, Pt. 1 of Headlee, A. J. W., and Nolting, J. P., Jr., Characteristics of minable coals of West Virginia: West Virginia Geol. Survey, *v.* 14. (See also West Virginia Geol. Survey reports on individual counties.)

WYOMING

Berryhill, H. L., Jr., Brown, D. M., Brown, Andrew, and Taylor, D. A., 1950, Coal resources of Wyoming: U. S. Geol. Survey Circ. 81, 79 p.

Berryhill, H. L., Jr., Brown, D. M., Burns, R. N., and Combo, J. X., 1951, Coal resources map of Wyoming: U. S. Geol. Survey Coal Inv. Map C-6.

GENERAL

American Society for Testing Materials, 1939, Standard specifications for classification of coals by rank (A.S.T.M. Designation: D388-38): 1939 Book of A.S.T.M. Standards, pt. 3, p. 1-6.

Averitt, Paul, Berryhill, L. R., and Taylor, D. A., 1953, Coal resources of the United States (A progress report, October 1, 1950): U. S. Geol. Survey Circ. 293, 49 p.

Berryhill, L. R., 1951, Bibliography of U. S. Geological Survey publications relating to coal, 1882-1949 (with current supplement): U. S. Geol. Survey Circ. 86, 52 p.

Berryhill, L. R., and Averitt, Paul, 1951, Coking-coal deposits of the western United States: U. S. Geol. Survey Circ. 90, 20 p.

Fieldner, A. C., and Selvig, W. A., 1951, Methods of analyzing coal and coke: U. S. Bur. Mines Bull. 492, 61 p.

Selvig, W. A., Ode, W. H., Parks, B. C., and O'Donnell, H. J., 1950, American lignites: Geological occurrence, petrographic composition, and extractable waxes: U. S. Bur. Mines Bull. 482, 62 p.

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—W9-2681