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Coal Fields and Federal Lands of the Conterminous United States

Digital Compilation by

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The map depicts the relationship of coal and public lands in the conterminous U. S. Multiple GIS layers are being created for the purpose of deriving estimates of how much coal is owned and administered by the Federal government. Federal coal areas have a profound effect on land-management decisions. Regulatory agencies attempt to balance energy development with alternative land-use and environmental concerns.

A GIS database of Federal lands used in energy resource assessments is being developed by the U. S. Geological Survey (USGS) in cooperation with the U.S. Bureau of Land Management (BLM) to integrate information on status of public land, and minerals owned by the Federal government with geologic information on coal resources, other spatial data, coal quality characteristics, and coal availability for development.

Using national-scale data we estimate that approximately 60 percent of the area underlain by coal-bearing rocks in the conterminous United States are under Federal surface. Coal produced from Federal leases has tripled from about 12 percent of the total U.S. production in 1976 to almost 34 percent in 1995 (Energy Information Administration website ftp://ftp.eia.doe.gov/pub/coal/cia_95_tables/t13p01.txt). The reason for this increase is demand for low-sulfur coal for use in power plants and the fact that large reserves of this low-sulfur coal are in the western interior U.S., where the Federal government owns the rights to most of the coal reserves.

The map was created using Arc/Info 7.0.3 on a UNIX system. The HPGL2 plot file for this map is available from the USGS Energy Resource Surveys Team from <http://energy.cr.usgs.gov:8080/energy/coal.html>.

Sources

A set of coverages depicting boundaries of State, county, and Federal lands is available for downloading at no cost from the USGS Eros Data Center (EDC) via the World-Wide Web at <http://edcwww.cr.usgs.gov/doc/edchome/ndcdb/ndcdb.html> or by anonymous ftp as described below. Information on the format and content of these files can be found at <http://edcwww.cr.usgs.gov/glis/hyper/guide>. Other data formats are available (at the cost of reproduction) through a semi-anonymous account at the EROS Data Center (for more information, point your web browser to http://edcwww.cr.usgs.gov/glis/hyper/order_info/prices).

Anonymous ftp Instructions for retrieving State/Territory boundary data in SDTS format.

To access the account:

ftp to edcftp.cr.usgs.gov

Enter "anonymous" at the Name prompt.

Enter your complete e-mail address at the Password prompt.

Change (cd) to the "pub/data/DLG/2M" subdirectory.

Change (cd) to either "100K", "2M" or "LARGE_SCALE" subdirectory.

Set the file transfer mode to binary by typing the word "binary".

Use the "get" or "mget" commands to download the README and data files.

The README file located in the "pub/data/DLG/" subdirectories contains an explanation of the directory structure.

Coverage of Federal Lands

The Federal lands data is a digital polygon Arc/Info coverage representing Federally controlled parcels of land. It was created for the map, "Federal Recreational Lands", a map-folder published jointly by the USGS and other Federal agencies and the Office of the Outdoor Recreation Initiative, U.S. Department of the Interior, 1992, available from USGS Earth Science Information Centers: Box 25046, Federal Center, Mail Stop 504, Denver, CO 80225-0046, (303) 236-5859. The date of the version that was downloaded through an anonymous ftp account is 05/92. The following information about that coverage is modified from the README files associated with the original data file by David P. Dee, USGS.

This data was scanned from the original stable-base scribed separate for the map of Federal lands in U.S. Geological Survey, 1970, The National Atlas of the United States of America, p. 272-273 (scale 1:7,500,000). The following sources were used to create the Federal lands coverage:

National Geographic Society, 1982, America's federal lands: Cartographic Division, supplement to the Nov. '82 issue, p. 630A, v. 162, no. 5, scale 1:5,889,000 and 1:4,650,000.

U. S. Army Corps of Engineers, 1987 to 1992, Lakeside recreation series: scales vary.

U. S. Bureau of Land Management, 1979 through 1984, Land Status Maps: AZ, NM, CO, UT, NV, OR, ID, MT, WY; scale 1:1,000,000.

U. S. Bureau of Land Management, 1982, State of New Mexico land status map: New Mexico State Office, scale 1:1,000,000.

U. S. Bureau of Land Management, 1982, Surface management responsibility, state of Idaho: Idaho State Office, scale 1:1,000,000.

U. S. Bureau of Land Management, 1984, Land status, state of Montana: Montana State Office, scale 1:1,000,000.

U. S. Bureau of Land Management, 1984, State of Wyoming land status: Wyoming State Office, scale 1:1,000,000.

U. S. Bureau of Land Management, 1988, Public lands, field offices and administrative jurisdictions: Denver Service Center, Branch of Cartography, scale 1:9,500,000.

U. S. Bureau of Land Management, 1990, State of Nevada: Nevada State Office and Publication Office, Nevada Bureau of Mines and Geology, scale 1:1,000,000.

U. S. Bureau of Land Management, 1993, Areas of responsibility and land status, state of Utah: Utah State Office in cooperation with the U. S. Geological Survey and the state of Utah, scale 1:995,000.

U. S. Department of the Interior, 1989 (and earlier editions through 1982), The National Parks, index: Office of Public Affairs, and the Division of Publications.

U. S. Fish and Wildlife Service, 1988, National Wildlife Refuges, a visitor's guide: scale 1:7,500,000.

U. S. Fish and Wildlife Service, 1990, Annual Report of Lands Under Control of U.S. Fish and Wildlife Service.

U. S. Fish and Wildlife Service, 1990, The National Wildlife Refuge system: scale 1:9,800,000.

U. S. Fish and Wildlife Service, miscellaneous page-size Refuge maps.

U. S. Forest Service, 1988, Guide to your national forests and other lands administered by the Forest Service: Geometronics Service Center, Salt Lake City, Utah, scale 1:8,500,000.

U. S. Geological Survey, 1981, Federal Lands Subject to Mineral Restrictions, scale 1:7,500,000.

U. S. National Park Service, 1990, National Park system map and guide: scale 1:7,000,000.

“Various newspaper and magazine clippings relative to establishing new Federal lands”

When this data was transformed into an Arc/Info coverage it was registered to the 1 : 2,000,000 DLG (digital line graph) political and hydrographic files of the USGS. The data should possess enough quality to be reasonably accurate for graphic production at scales of 1:5,000,000, or less.

Coverage of Counties

This is a coverage of the county boundaries of the conterminous United States. The lines were extracted from U.S. Census TIGER/line files using an AML program written by Doug Nebert and Mark Negri, USGS.

This coverage is intended as a basemap for any desired GIS application. The resolution of the data is + or - 10 meters; it should be reasonably accurate at scales of 1:100,000 or less. Slight discrepancies between land status and county lines on this map are due to the difference in scale of the digital data (the Federal lands coverage scale is 1:5,000,000; the county coverage scale is 1:100,000).

There are no shorelines in the original U.S. Census coverage. Coastal counties by law have their boundaries extended approximately 3 miles into the ocean. Counties that bound the Great Lakes and other large inland waterbodies also have their boundaries extended into the waterbody. The coverage used was created by clipping the original county coverage with a coverage that contains the coastline.

Coverage of State boundaries

The coverage of State boundaries was created from the county coverage (see description for Coverage of Counties above). All State attributes were checked for accuracy and corrected or added where necessary, such as for islands around the Great Lakes.

Coverage of coal fields

The outlines of coal fields are from Tully, 1996, Coal Fields of the Conterminous United States (USGS Open-File Report 96-92 – available via the internet at <http://lignite.er.usgs.gov/products/openfile/OF96-92/index.htm>). The original coverage is available via anonymous ftp from ftp://ncrds.er.usgs.gov/pub/OPEN_FILES/OF_96_92.

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