504

# RESERVES AND RESOURCES OF SURFACE-MINABLE COAL IN ILLINOIS



Colin G. Treworgy, Lawrence E. Bengal, and Amy G. Dingwell

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ILLINOIS STATE GEOLOGICAL SURVEY
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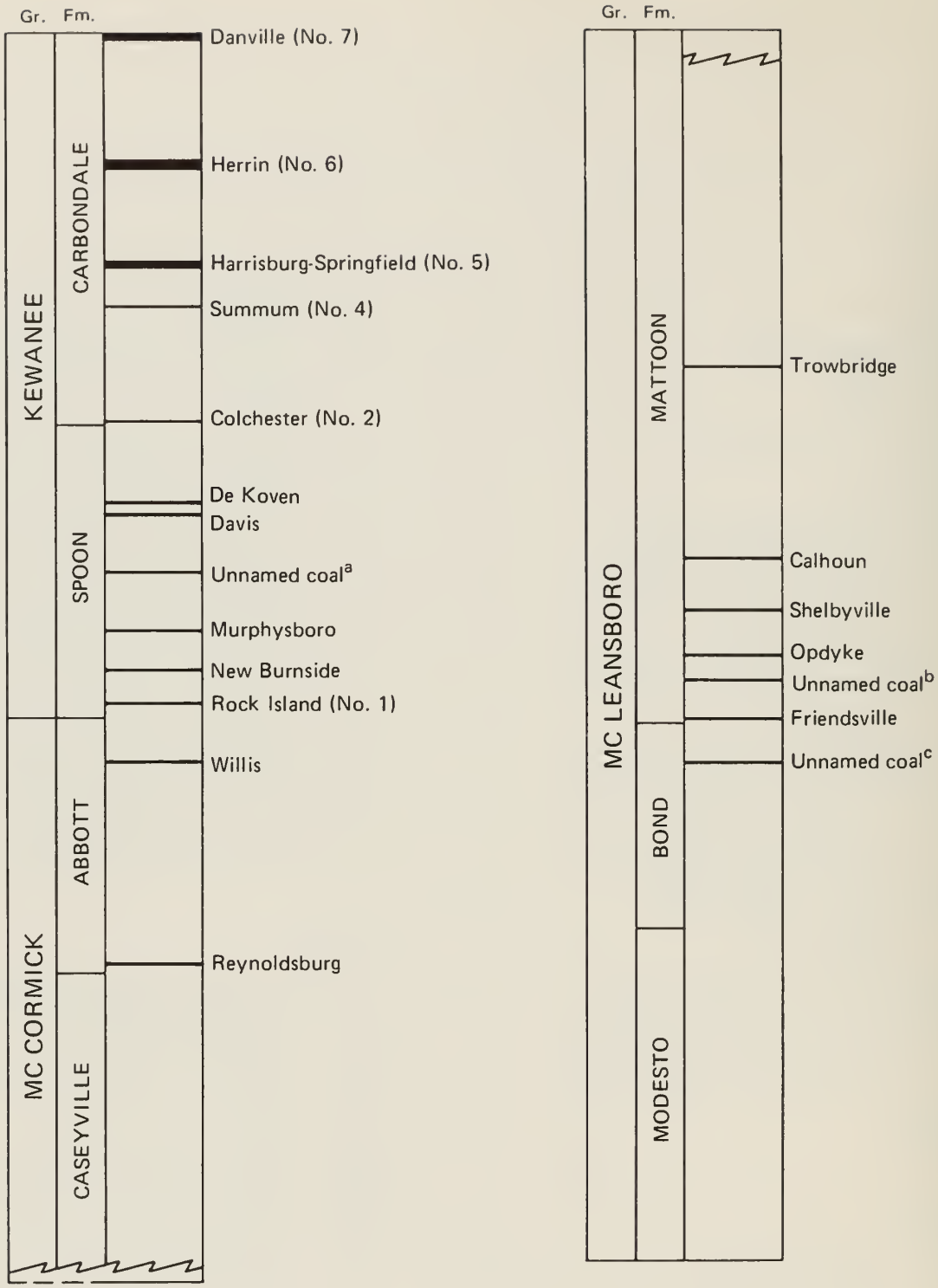


**Generalized stratigraphic section of selected coal members in Illinois**

[a]Found near Campbell Hill, Jackson County
[b]Found near Belle Rive in Jefferson County and in Louden Township, Fayette County
[c]Found near Bristol Hill, Crawford County

# RESERVES AND RESOURCES OF SURFACE-MINABLE COAL IN ILLINOIS

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## ABSTRACT

Surface mining accounts for nearly 50 percent of recent coal production in Illinois. In previous publications, the Illinois State Geological Survey reported that over 20 billion tons of coal in Illinois were potentially strippable; however, current economic and environmental issues associated with surface mining have created a need for estimates of the amount of strippable coal that can be recovered economically under present conditions. In estimating strippable reserves, the criteria used were (1) reliability of data, (2) overburden and coal thicknesses, (3) the size of the block of coal, and (4) proximity to man-made and natural obstacles.

On the basis of the criteria, Illinois was determined to have 6 billion tons of surface-minable coal in the ground. This reserve is made up of 185 blocks of 6 million tons or more. The amounts of strippable reserves are large in western Illinois and especially in southwestern and southern Illinois, which are more attractive for surface mining because land costs are lower, the heating value of the coal is higher, and the tonnage recoverable per acre is greater. The southwestern and southern Illinois deposits are and will continue to be the major sources of surface-mined coal in the state; however, in view of current rates of production, the remaining reserves in this area are relatively small, and opportunities for new acquisitions and long-term development are limited. Only 38 percent of the strippable reserves mapped exceed 4 feet in thickness, and most of those reserves have overburden in excess of 50 feet.

## ACKNOWLEDGMENTS

Ramesh Malhotra, former mineral economist at the Illinois State Geological Survey, inspired this project and gave valuable advice on the criteria used to judge minability. Roger B. Nance, former assistant geologist in the Coal Section of the Survey, also provided advice during the project.

## INTRODUCTION

The amount of Illinois coal that is potentially recoverable by surface mining (also called strip mining) was first estimated by Culver (1925) to be 1,407 million tons. Although Culver included coal as thin as 24 inches in his estimate, he reported that many mining companies considered 48 inches the minimum thickness for economical surface mining. As data became available, the potential for surface mining in southwestern, southern, western, northern, and central Illinois was reported (Cady, 1925 and 1937, and Henbest, 1932).

Cady (1952) established criteria for evaluating strippable coal deposits and summarized the general geologic features of the known surface-minable coals. Since 1955, the Illinois State Geological Survey has mapped over 20 billion tons of coal considered to be potentially strippable, i.e., all coal 18 or more inches thick and not more than 150 feet deep (Smith, 1957, 1958, 1961, and 1968; Smith and Berggren, 1963; Reinertsen, 1964; and Searight and Smith, 1969). These deposits constitute 13 percent of all coal in Illinois. The numbered areas shown in figure 1 correspond closely to those studied for the early reports.

In 1969, Risser suggested that surface mining had reached a peak and that increased thickness of overburden and scarcity of large blocks of coal were putting pressures on the industry's growth. After rising to more than 50 percent of the state's coal production in the early 1960s, the percentage of coal that is surface-mined has declined to about 47 percent.

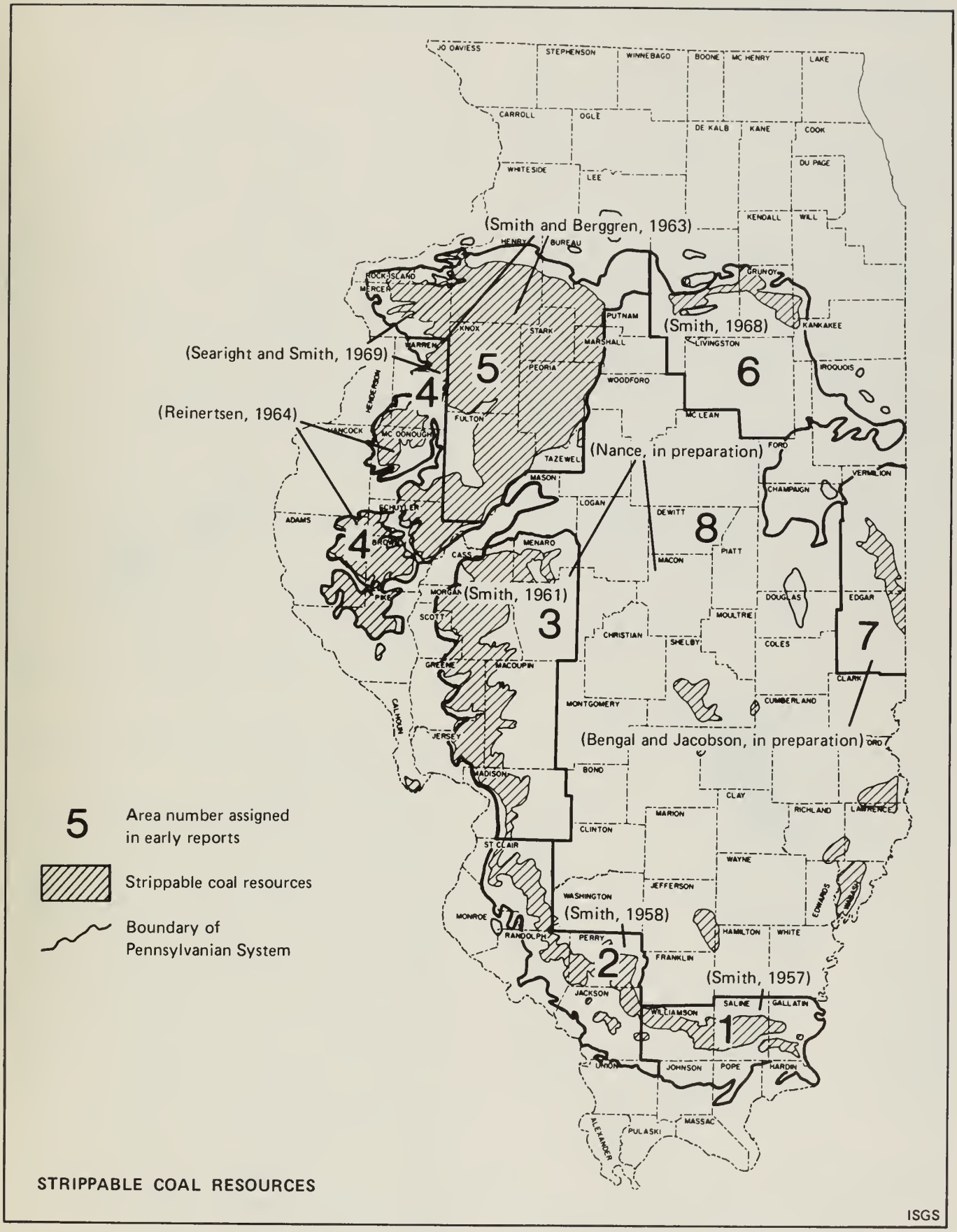
## ESTIMATE OF STRIPPABLE RESERVES

Although the technology exists to surface-mine all coal less than 150 feet deep, a large amount of the coal cannot be economically or legally recovered. Much of this coal is thinner and deeper than that currently surface-mined in the state, in deposits too small to justify development and rendered unminable by proximity to man-made and natural obstacles. Because of the current focus on environmental and energy issues involving surface mining, we have re-evaluated the original data on resources to estimate the amount of coal economically and legally surface minable. This study is not intended to replace earlier resource estimates, but to supplement them with an evaluation of the current minability of deposits.

In this report, *strippable coal resources* refers to the coal classified in earlier reports to be potentially strippable. *Strippable coal reserves* refers to that portion of the strippable coal resources which is economically and legally minable according to the criteria used for this study: (1) reliability of data, (2) overburden and coal thicknesses, (3) the size of the block of coal, and (4) proximity to man-made and natural obstacles. We have determined the amount of coal reserves in Illinois to be 6 billion tons, or about 30 percent of strippable coal resources. In this study we report the location, extent, and thickness of the coals and the characteristics and thickness of overburden. No attempt has been made to assess impact of laws controlling surface mining of prime agricultural land, and no recovery factor has been applied to the reserves.

This report is an overview and should be used only as a guide to more detailed investigation for specific areas. Because the scope of the study is broad, the criteria we have used to classify reserves are generalized, and we did not take into account local factors such as composition of the overburden, quality of the coal, transportation facilities, local ordinances, and land ownership, which would have eliminated some areas classified as reserves and would have included some areas that have been eliminated. Nevertheless, we believe our criteria provide a reasonable overall estimate of the magnitude, characteristics, and locations of strippable coal reserves in Illinois.

The criteria used to classify reserves were applied on the basis of the economic conditions and mining practices prevailing during the study. A sharp rise in coal prices, a technological breakthrough in development of equipment, or the passage of new, more restrictive mining laws could significantly change the criteria used for judging economical minability. It should be noted that companies anticipate future conditions when they buy coal lands; exploration and leasing activities in areas classified as unminable by this report are not unusual.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(Smith, 1968)
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(Smith, 1958)
(Smith, 1957)
(Bengal and Jacobson, in preparation)
5
Area number assigned in early reports
Strippable coal resources
Boundary of Pennsylvanian System
STRIPPABLE COAL RESOURCES
ISGS

Figure 1

## LOCATIONS OF RESERVES

Coal resources farther than 4 miles from an outcrop, mine, or drill-hole datum point have been considered insufficiently proven to constitute a reserve and have been excluded from our estimates. For some parts of the state which are believed to contain strippable coal, no data are available. Coal in these areas may be of local significance, but probably would not change the statewide coal-reserve picture to any great extent.

Coal in small or irregularly shaped blocks, or underlying topographic features that would make mining difficult or illegal, has been excluded from our estimates. Primarily involved are small areas in steep-walled, narrow stream valleys or sandwiched between abandoned mines, areas of thick overburden, or areas of cultural development.

Coal underlying densely populated areas, interstate highways, parks, reservoirs, lakes, and large cemeteries is considered to be impractical or is illegal to mine and has been excluded from estimates of reserves. State and county highways, railroads, pipelines, high-voltage transmission lines, and widely scattered buildings are hindrances to surface mining, but are not always serious barriers. Because the impact of these features must be judged on a site-by-site basis, it has not been considered in this report. Appendix 2 includes indication of areas where these features may be a serious problem.

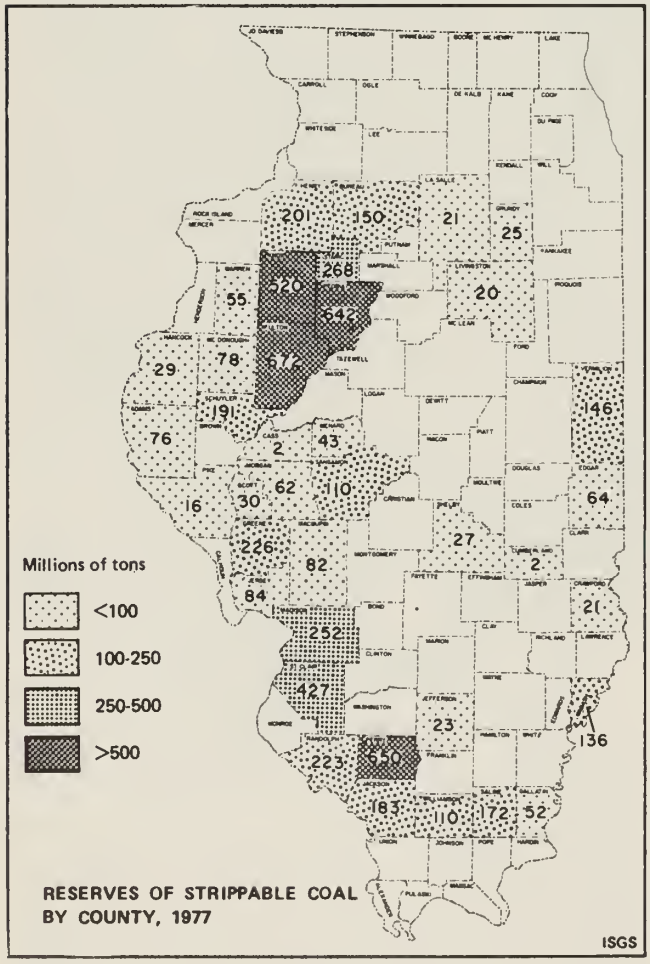



Figure 2

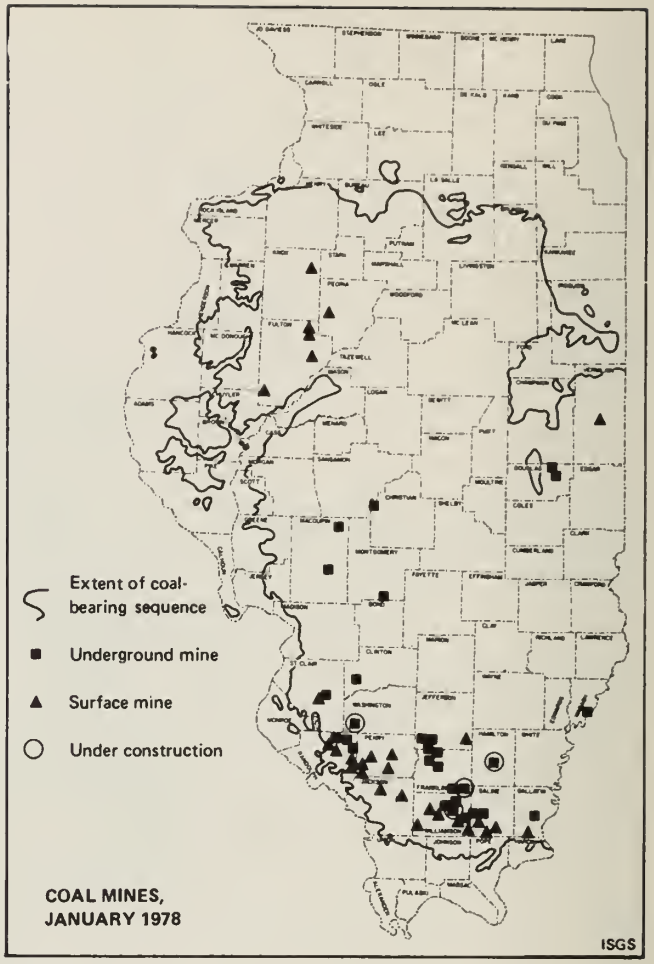



Figure 3

Strippable coal reserves are found in 38 counties. Fulton, Perry, Peoria, Knox, and St. Clair Counties have the largest reserves (fig. 2 and table 1). Large reserves are also found in Stark, Madison, and Randolph Counties. Twenty of these counties have never been surface-mined on a large scale, and, in 1978, only 12 counties had active surface mines (fig. 3). The reserves in those counties that do not have active surface mines are generally thinner than average of the coals now being mined. About 75 percent of the state's surface-mine production currently comes from southwestern and southern Illinois; the other 25 percent comes from Fulton, Peoria, and Knox Counties in western Illinois. In general, southwestern and southern Illinois are more suited for surface mining than other areas because land values are lower, coal heating value is higher, and the number of tons recoverable per acre is greater. These southern reserves will probably continue to be the major sources for surface-mined coal in the state in the near future; however, large parts of the remaining strippable reserves in these counties are probably committed to existing or planned mines. Therefore, oppor-

TABLE 1. Reserves of strippable coal in counties of Illinois, by coal member, in millions of tons[a]

| County | Trowbridge | Shelbyville | Opdyke | Friendsville | Unnamed coal near Bristol Hill | Danville (No. 7) | Herrin (No. 6) | Harrisburg (No. 5) | Summum (No. 4) | Colchester (No. 2) | De Koven | Davis | Unnamed coal near Campbell Hill | Murphysboro | County Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adams | | | | | | | | | | 75.733 | | | | | 75.733 |
| Bureau | | | | | | 55.062 | 94.453 | | | | | | | | 149.515 |
| Cass | | | | | | | | | | 2.243 | | | | | 2.243 |
| Crawford | | | | | 21.305 | | | | | | | | | | 21.305 |
| Cumberland | 2.478 | | | | | | | | | | | | | | 2.478 |
| Edgar | | | | | | 64.051 | | | | | | | | | 64.051 |
| Fulton | | | | | | .389 | 133.986 | 268.267 | | 269.370 | | | | | 672.011 |
| Gallatin | | | | | | | 45.811 | 5.742 | | | | | | | 51.533 |
| Greene | | | | | | | 52.339 | | | 173.894 | | | | | 226.233 |
| Grundy | | | | | | | | | 7.408 | 17.458 | | | | | 24.865 |
| Hancock | | | | | | | | | | 28.511 | | | | | 28.511 |
| Henry | | | | | | 39.848 | 141.656 | | | 19.742 | | | | | 201.246 |
| Jackson | | | | | | | 70.643 | 41.166 | | | | | 9.801 | 61.464 | 183.075 |
| Jefferson | | | 22.616 | | | | | | | | | | | | 22.616 |
| Jersey | | | | | | | 30.765 | | | 53.264 | | | | | 84.029 |
| Knox | | | | | | 2.060 | 167.076 | 221.567 | | 129.124 | | | | | 519.827 |
| La Salle | | | | | | | 20.592 | | | | | | | | 20.592 |
| Livingston | | | | | | | 19.965 | | | | | | | | 19.965 |
| McDonough | | | | | | | | | | 78.183 | | | | | 78.183 |
| Macoupin | | | | | | | 82.346 | | | | | | | | 82.346 |
| Madison | | | | | | | 218.061 | | | 34.337 | | | | | 252.398 |
| Menard | | | | | | | | 43.023 | | | | | | | 43.023 |
| Morgan | | | | | | | 11.190 | | | 51.011 | | | | | 62.201 |
| Peoria | | | | | | 40.423 | 455.733 | 146.083 | | | | | | | 642.240 |
| Perry | | | | | | | 530.997 | 119.142 | | | | | | | 650.138 |
| Pike | | | | | | | | | | 15.759 | | | | | 15.759 |
| Randolph | | | | | | | 143.613 | 79.355 | | | | | | | 222.968 |
| St. Clair | | | | | | | 427.132 | | | | | | | | 427.132 |
| Saline | | | | | | 8.471 | 125.730 | 19.718 | | | 7.707 | 10.120 | | | 171.746 |
| Sangamon | | | | | | | | 109.589 | | | | | | | 109.589 |
| Schuyler | | | | | | | | 84.663 | | 106.798 | | | | | 191.460 |
| Scott | | | | | | | | | | 29.619 | | | | | 29.619 |
| Shelby | 13.891 | 13.539 | | | | | | | | | | | | | 27.430 |
| Stark | | | | | | 3.119 | 264.872 | | | | | | | | 267.990 |
| Vermilion | | | | | | 100.332 | 46.167 | | | | | | | | 146.499 |
| Wabash | | | | 136.306 | | | | | | | | | | | 136.306 |
| Warren | | | | | | | | | | 54.563 | | | | | 54.563 |
| Williamson | | | | | | | 66.689 | 29.427 | | | 5.042 | 4.345 | | 4.641 | 110.144 |
| Total | 16.369 | 13.539 | 22.616 | 136.306 | 21.305 | 313.754 | 3,149.816 | 1,167.742 | 7.408 | 1,139.608 | 12.749 | 14.465 | 9.801 | 66.105 | 6,091.583 |

NOTE: Columns do not total because of rounding.
[a]Data collected July 1975.

tunities for developing new reserves may be more favorable in other parts of the state.

## SIZE OF RESERVE BLOCKS

Contiguous areas of coal or noncontiguous but nearly adjacent areas that are not separated by obstructions such as rivers, towns, or interstate highways are termed *blocks*. In order to be considered economically minable, coal must be in blocks of sufficient tonnage to justify an investment in mining equipment. In 1975, the production of the 36 surface mines in Illinois ranged from 1,100 to 4,532,466 tons per year. Although only 47 percent of these mines produced more than 500,000 tons per year, they accounted for 97 percent of that year's strip-mine production. On the basis of these data, 500,000 tons per year has been defined in this study as the minimum size for a mine in Illinois. Assuming a minimum mine life of 10 years at 80 percent recovery, the minimum block of coal required to support such a mine is 6 million tons in place.

Effort was made in this study to group all areas of minable coal within blocks of at least 6 million tons (fig. 4); however, no effort was made to combine larger blocks together into a single mine block. Depending on its size, a block can supply one or more mines, or several nearby blocks could be combined to support one mine. Coal that could not be reasonably combined into a block of 6 million tons was excluded from the estimate of reserves. This coal and some of the coal excluded because of natural barriers may be economically mined by small operators and thus may represent a valuable local resource

The 6 billion tons of strippable reserves are composed of 185 reserve blocks in 38 counties. Figure 5 shows the distribution of tonnage by block size. The average block size is 33 million tons; however, if the 10 largest blocks are excluded, the average size is reduced to 22 million tons. Because many small blocks are near one another and could easily be mined by one operation, block size is not necessarily an indication of the potential size of future strip mines.

## THICKNESSES OF COAL AND OVERBURDEN

An important determinant of the amount of overburden that can be removed economically is the thickness of the overburden as compared to the thickness of the coal to be mined. A stripping ratio of the thickness of overburden to thickness of coal is often used as a means of determining the economic limit of mining. Removing 50 feet of overburden to mine 2 feet of coal is different from removing 150 feet of overburden to mine 6 feet of coal, however, even though the stripping ratio (25:1) is the same in each case. Mining greater thicknesses of overburden requires large, expensive machinery that may not be more efficient to operate than smaller, less expensive machinery (Malhotra, 1975). As the depth of mining increases, the percentage of consolidated material requiring blasting in the highwall is likely to increase, and highwall instability and ground water may be encountered. For these reasons, we have not used a constant stripping ratio to determine the economic limits of mining. All coal that did not fall within the overburden limits shown in table 2 has been excluded from our estimate of reserves. Although there may be many exceptions to these overburden limits because of local conditions, we believe the tonnages and acreages involved in the exceptions would not significantly change our estimate of reserves.

In general, we have not considered the effect of consolidation of overburden on the expense of removing it. Exceptions were made for the Colchester (No. 2) Coal Member in western Illinois, where several large areas of coal are less than 30 inches thick and have 50 to 60 feet of overburden. Because much of the overburden in this area is soft and unconsolidated, the limit of maximum overburden was raised to 60 feet. Other exceptions have been noted in appendix 2.

Most of the areas of thick shallow coal have been mined out. Only 38 percent of the coal classified as reserves is greater than 4 feet thick (fig. 6 and tables 3 and 4); however, in 1975, 69 percent of surface-mined coal came from seams greater than 4 feet thick. If surface-mining production continues at the present level or expands, companies will eventually mine the thinner reserves or mine thick coal at depths exceeding those used to define surface-minable reserves. A substantial amount of coal has less than 50 feet of overburden (fig. 7 and tables 3 and 4); however, 80 percent of this coal is less than 5 feet thick and 56 percent is less than 4 feet thick.

## COAL MEMBERS

On a seam-by-seam basis, the percentage of total resources that is included in the estimate of reserves ranges from none for the Rock Island (No. 1) Coal Member and some miscellaneous coals to 92 percent for the Opdyke Coal Member (table 5). The largest tonnages of reserves are in the Herrin (No. 6), Harrisburg-Springfield (No. 5), and Colchester (No. 2) Coals (fig. 8).

The relationship between coal thickness and depth of the reserves in each seam is shown in figures 9 through 13. The No. 6 and No. 5 Coals have the most favorable conditions of thickness and depth. No other coals have significant tonnages of coal 4 feet or greater in thickness. About 90 percent of the strippable coal produced in 1975 came from the No. 6 and No. 5 Coals, and, barring other factors, these two coals will probably continue to be most favored for strip mining. As the best blocks of these coals become mined out or unavailable, there will be an increasing shift to surface mining other coals, which in general are thinner.

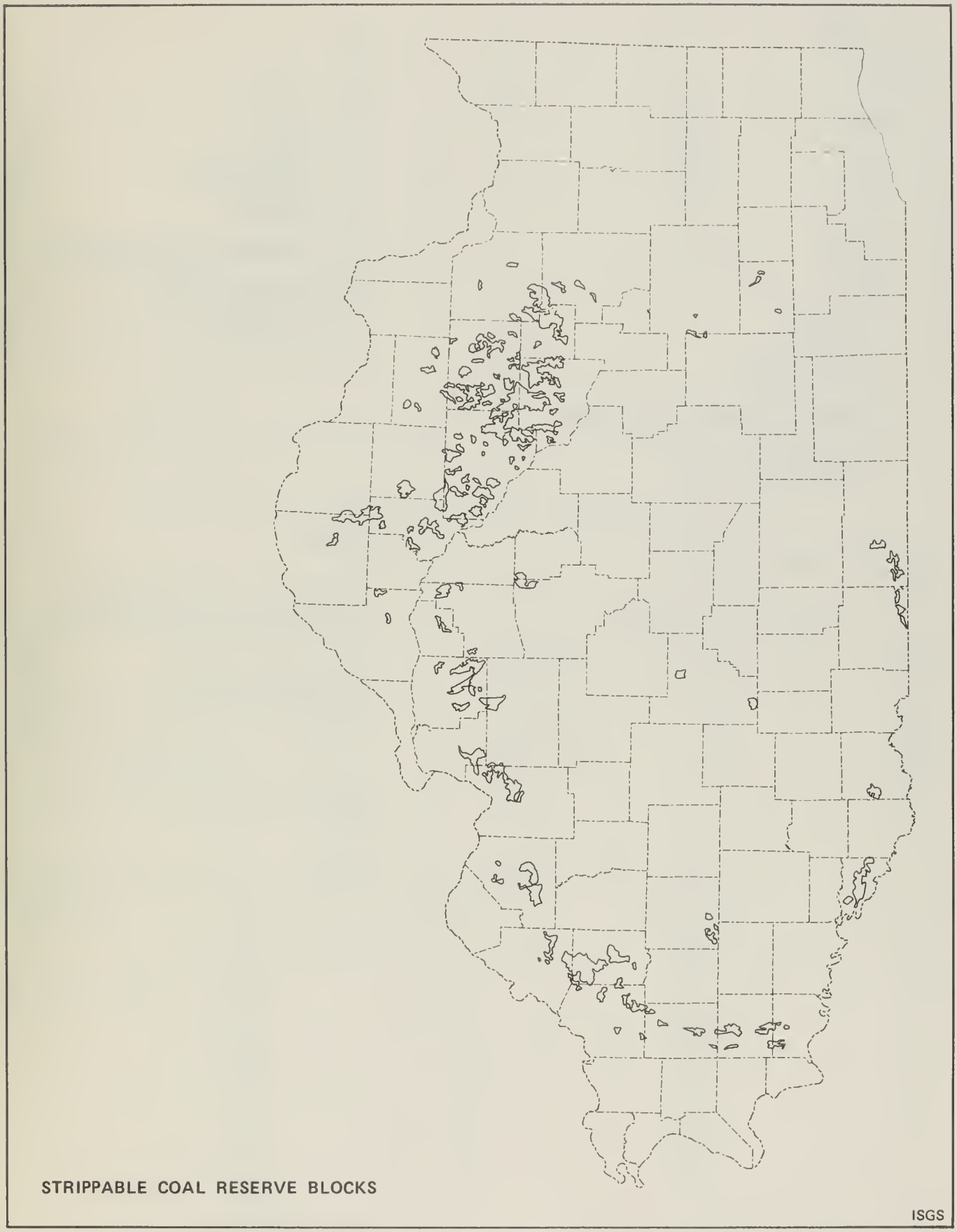



Figure 4

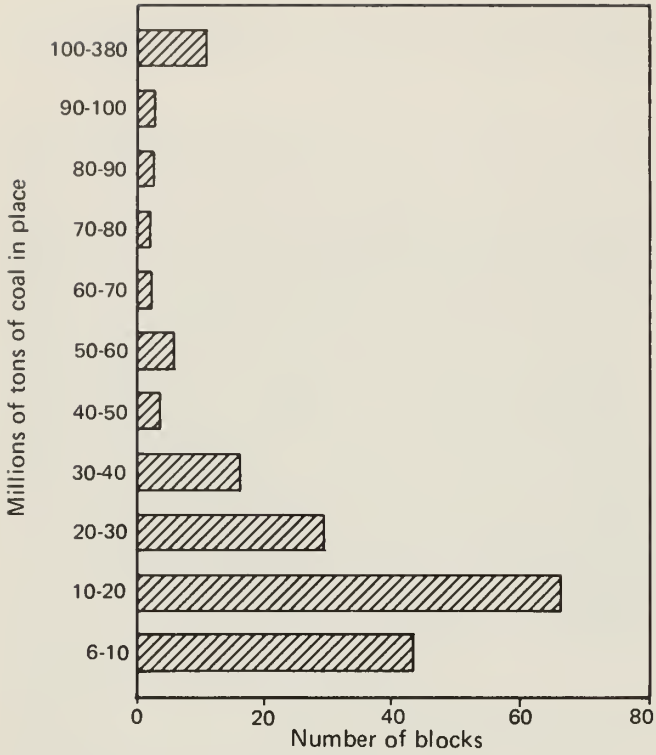



Figure 5. Sizes of strippable reserve blocks.

TABLE 2. Maximum thickness of overburden for strippable coal reserves

| Coal thickness (in.) | Maximum overburden limit (ft) | Stripping ratio |
|---|---|---|
| 18 to 29 | 50 | 33:1 to 20:1 |
| 30 to 47 | 75 | 30:1 to 19:1 |
| 48 to 71 | 100 | 25:1 to 17:1 |
| 72 or more | 125 | <21:1 |

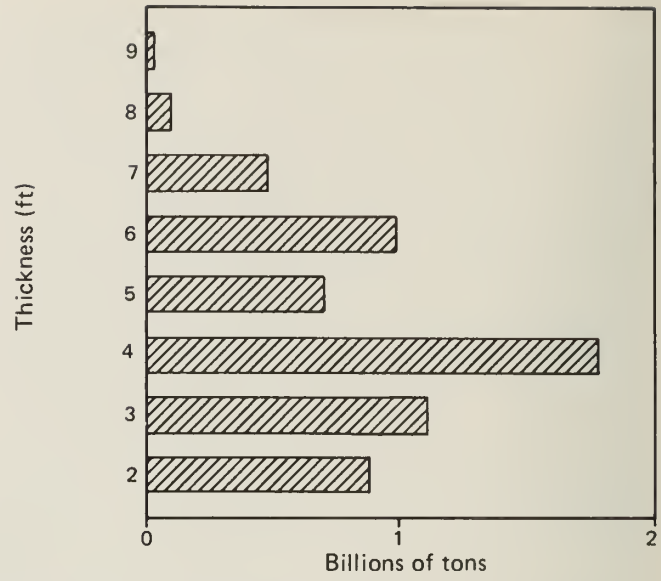



Figure 6. Average thickness of strippable coal reserves in Illinois.

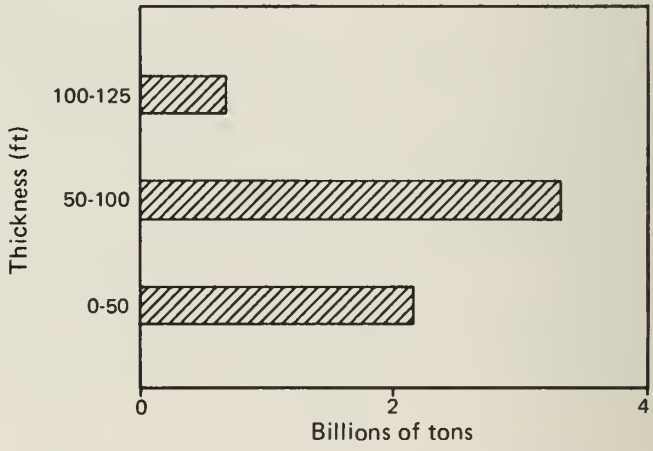



Figure 7. Thickness of overburden of strippable coal reserves in Illinois.

TABLE 3. Distribution of reserves by thickness

| Thickness (in.) | Number of tons (millions) | Percentage of total reserves | Acreage | Percentage of total acreage |
|---|---|---|---|---|
| 18 | 107.858 | 2 | 39,170 | 4 |
| 24 | 319.011 | 5 | 85,490 | 9 |
| 30 | 1,134.646 | 19 | 252,110 | 27 |
| 36 | 247.675 | 4 | 45,700 | 5 |
| 42 | 409.234 | 7 | 64,820 | 7 |
| 48 | 1,290.698 | 21 | 179,270 | 19 |
| 54 | 553.366 | 9 | 68,320 | 7 |
| 60 | 417.195 | 7 | 46,360 | 5 |
| 66 | 21.087 | 0 | 2,130 | 0 |
| 72 | 985.553 | 16 | 91,250 | 10 |
| 84 | 485.208 | 8 | 38,510 | 4 |
| 96 | 105.096 | 2 | 7,300 | 1 |
| 108 | 14.956 | 0 | 920 | 0 |
| Total | 6,091.583 | | 882,770[a] | |

NOTE: Column does not equal total because of rounding.
[a]Excludes overlapped acreage of 38,580.

TABLE 4. Distribution of reserves by thickness of overburden

| Overburden thickness (ft) | Number of tons (millions) | Percentage of total | Acreage | Percentage of total acreage |
|---|---|---|---|---|
| 0-50 | 2,123.654 | 35 | 396,590 | 43 |
| 50-60 | 49.013 | 1 | 13,000 | 1 |
| 50-75 | 872.887 | 14 | 175,730 | 19 |
| 50-100 | 2,388.366 | 39 | 279,090 | 30 |
| 100-125 | 657.662 | 11 | 56,920 | 6 |
| Total | 6,091.583 | | 882,770[a] | |

NOTE: Column does not equal total because of rounding.
[a]Excludes overlapped acreage of 38,580.

TABLE 5. Resources and reserves of strippable coal in Illinois, by coal member, in thousands of tons

| Coal member | Resources[a] | Reserves[b] | Reserves as a percentage of resources | Production in 1975 |
|---|---|---|---|---|
| Trowbridge | 19,138 | 16,369 | 85.5 | 0 |
| Shelbyville | 70,370 | 13,539 | 19.2 | 0 |
| Opdyke | 24,609 | 22,616 | 91.9 | 614 |
| Friendsville | 167,232 | 136,306 | 81.5 | 0 |
| Coal near Bristol Hill | 43,161 | 21,305 | 49.4 | 0 |
| Danville (No. 7) | 1,446,766 | 313,754 | 21.7 | 15 |
| Herrin (No. 6) | 6,935,819 | 3,149,816 | 45.4 | 18,376 |
| Harrisburg-Springfield (No. 5) | 3,987,305 | 1,167,742 | 29.3 | 7,097 |
| Summum (No. 4) | 62,222 | 7,408 | 11.9 | 0 |
| Colchester (No. 2) | 7,164,105 | 1,139,608 | 15.9 | 687 |
| De Koven | 72,459 | 12,749 | 17.6 | 407 |
| Davis | 49,699 | 14,465 | 29.1 | 458 |
| Rock Island (No. 1) | 204,756 | 0 | 0 | 0 |
| Coal near Campbell Hill | 11,882 | 9,801 | 82.5 | 0 |
| Murphysboro | 165,866 | 66,105 | 39.9 | 0 |
| Miscellaneous coals | 18,548 | 0 | 0 | 3 |
| Total | 20,443,937 | 6,091,583 | 29.8 | 27.657 |

[a]As of January 1, 1976.
[b]As of July 1, 1975.

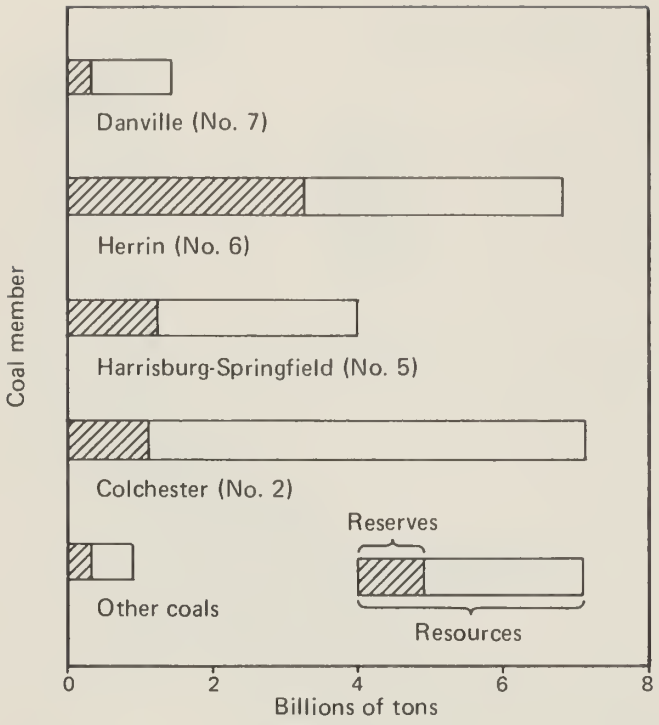



Figure 8. Reserves and resources of strippable coal in Illinois.

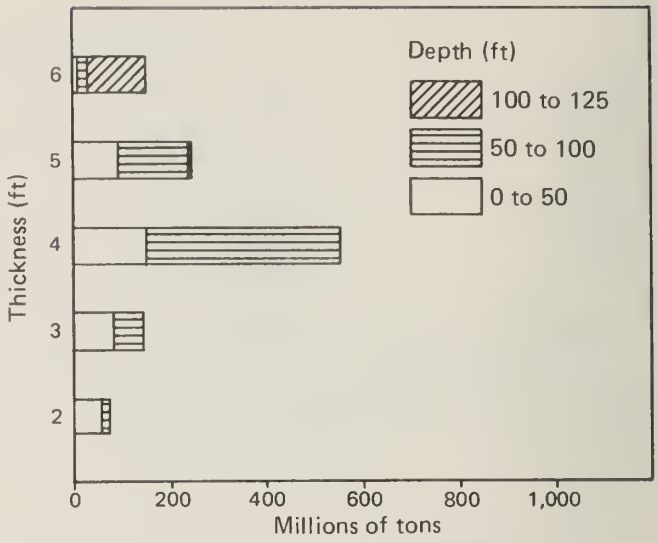
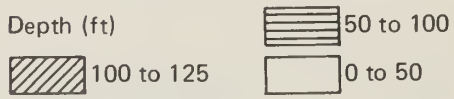



Figure 10. Strippable reserves of Harrisburg-Springfield (No. 5) Coal.



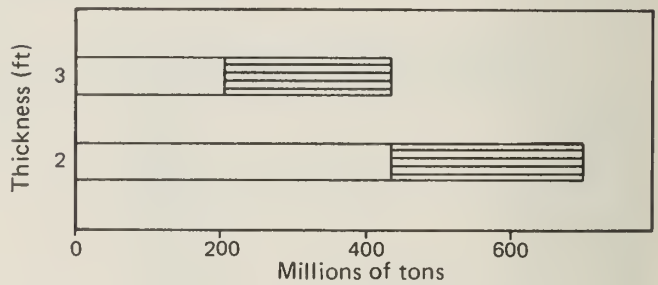




Figure 11. Strippable reserves of Colchester (No. 2) Coal.

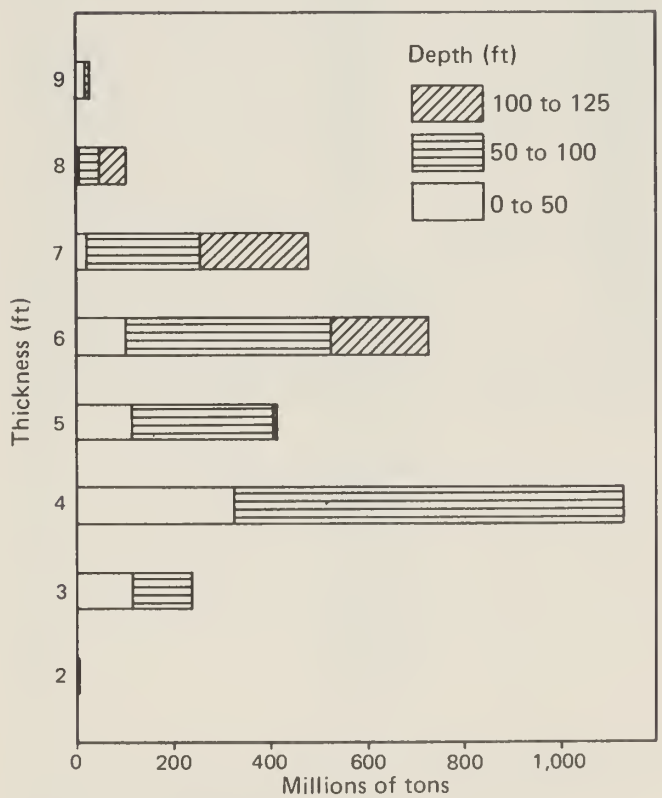



Figure 9. Strippable reserves of Herrin (No. 6) Coal.

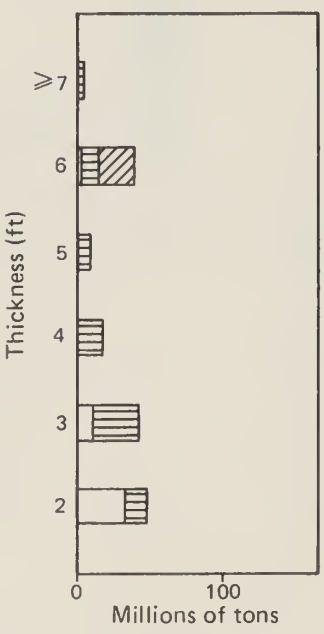



Figure 12. Strippable reserves of Danville (No. 7) Coal.

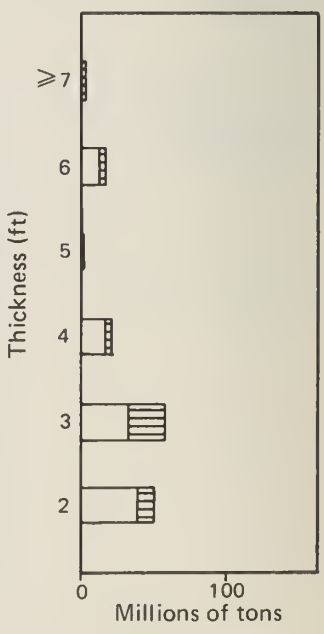



Figure 13. Strippable reserves of other coals.

## ADDITIONS TO RESERVES

In the future, additional surface-minable reserves will come from two sources—new discoveries of coal and coal that is now considered uneconomical to mine. The amount of additional strippable coal that will be discovered is probably not very great and will be of only local significance. The outcrops of all the major seams have been mapped, and the areas along the outcrops for which we have no data are not large.

Of the 14 billion tons of strippable coal resources that was not included in the estimate of reserves, about 7 percent (1 billion tons) were overlain by man-made obstacles and will probably never be mined. The remaining 13 billion tons are mostly coals that have been considered too deep to be economically minable. Some of this coal will undoubtedly be mined as new technology and increased demand for coal improves the economics of surface mining. How much of this 13 billion tons will be mined by surface methods is difficult to predict and depends on many interrelated variables, including availability of western coal, development of alternate forms of energy, restrictive legislation, and the economics of underground mining.

## DESCRIPTIONS OF AREAS CONTAINING RESERVES

For earlier studies of strippable coal resources, Illinois was divided into eight areas. This classification, with slight modification (fig. 1) is used here to summarize the nature of strippable reserves and resources throughout the state. More detailed information on the distribution, stratigraphy, and chemical quality of strippable coals in a particular area can be found in the original studies. For each area, we have included a table showing (1) the coal seams for which strippable resources have been mapped, (2) the estimated 1976 strippable resources for each seam, (3) the strippable reserves for each seam, (4) the percentage of strippable resources that have been classified as reserves, and (5) the number of mines that were operating in 1975 and produced more than 500,000 tons per year. Smaller mines are mentioned in the text, but are not indicated in the table. Because they usually have short-term contracts or sell their coal on the spot market, the number, location, production, and ownership of these small mines change frequently. Their contribution to the percentage of the state's total coal production is too small to have been considered within the scope of this study.

With the exception of the Rock Island (No. 1) Coal, the coals of the Abbott and Spoon Formations are strippable only in areas 1 and 2. The coals of the Bond and Mattoon Formations are strippable only in area 8. One or more of the coals in the Carbondale Formation are strippable in all areas except area 8.

### Area 1. (Gallatin, Hardin, Johnson, Pope, Saline, and Williamson Counties)

The strippable reserves in area 1 comprise 22 blocks in 6 seams. Because a large percentage of the overburden in this area is greater than 100 feet thick, excessive thickness of overburden is the primary reason for excluding resources from strippable reserves (table 6). Total production in 1975 from the 4 operating mines in the area was 2,823,968 tons, or about 10 percent of the total production of surface-mined coal in Illinois.

The area has long contained a number of small strip mines, i.e., those producing less than 500,000 tons per year. In 1975 ten small mines in area 1 produced a combined total of 426,392 tons, or about 1.5 percent of the state's total strip-mine production.

The Danville (No. 7) Coal (formerly called the "Cutler Coal") averages 18 to 24 inches thick throughout area 1 and is generally greater than 50 feet deep. Only one block

TABLE 6. Resources and reserves of strippable coal in area 1, in thousands of tons

| Coal member | Resources[a] | Reserves | Percentage of resources | Number of large mines operating in 1975 |
|---|---|---|---|---|
| Danville (No. 7)[b] | 135,444 | 8,471 | 6.3 | 0 |
| Herrin (No. 6) | 629,362 | 238,230 | 37.9 | 3 |
| Harrisburg (No. 5) | 401,479 | 54,887 | 13.7 | 0 |
| De Koven | 72,459 | 12,749 | 17.6 | 1 |
| Davis | 49,699 | 14,465 | 29.1 | |
| Murphysboro | 36,412 | 4,641[c] | 12.7 | 0 |
| Total | 1,324,855 | 333,443 | 25.2 | 4 |

[a]Data from Smith, 1957.
[b]Formerly "Cutler Coal" (Smith, 1957).
[c]The remainder of this block is in area 2.

of Danville Coal has been classified as a reserve. No strippable resources of reserves of Danville Coal have been mapped in Gallatin County, even though that county may contain coal, because of insufficient data.

The thickness of the Herrin (No. 6) Coal in this area ranges from 36 to 108 inches, but is generally 48 to 60 inches. About 38 percent of the strippable resources of the Herrin (No. 6) Coal has been classified as strippable reserves and comprises12 blocks ranging from 9 million to 93 million tons in place. In some parts of area 1, the Herrin Coal has a relatively low sulfur content.

The thickness of the Harrisburg (No. 5) Coal averages 48 to 60 inches throughout this area. The Harrisburg Coal is in four reserve blocks, which range from 6 million to 18 million tons. The Harrisburg Coal is low in sulfur in some parts of area 1.

The De Koven Coal is generally 36 inches thick; the Davis Coal ranges in thickness from 36 to 48 inches. The Davis Coal is 15 to 25 feet beneath the De Koven and has usually been mined with the De Koven in a single operation. The two reserve blocks mapped in the De Koven Coal completely overlap the two reserve blocks mapped in the Davis Coal. Since both coals would undoubtedly be mined together in these blocks, the overburden limit for the Davis Coal has been extended somewhat in order to match that of the overlying De Koven block, and their tonnage combined to meet the minimum block size. For large parts of Gallatin, Williamson, and Saline Counties, available data are insufficient to map the De Koven and Davis Coals. Future exploration may disclose significant reserves in these places. A large strip mine in one such place in Gallatin County has mined the Davis and De Koven Coals for several years.

The Murphysboro Coal has been mapped only in extreme western Williamson County, where its thickness ranges from 36 to 96 inches. Much of the mapped resources of this coal lie within the Crab Orchard Lake Wildlife Refuge and cannot be mined.

Because of a lack of data, no resources or reserves of the New Burnside, Reynoldsburg, or Willis Coals have been mapped. These coals are mined locally, and further exploration may reveal additional reserve blocks.

### Area 2. (Jackson, Monroe, Perry, Randolph, and St. Clair Counties)

The thick, relatively flat-lying coals in area 2 represent some of the best surface-mining conditions in the state. Of the coal resources in area 2, 21 blocks of coal ranging from 9 million to 374 million tons have been classified as reserves (table 7). Heavy urban development in the Belleville area and excessive overburden thickness of some resources have excluded them from reserves. Many small blocks of coal below the minimum size, sandwiched between abandoned mines and other obstacles, have also been excluded. Area 2 contains the largest surface mines in the state. Each of seven mines produces more than 1 million tons per year, and three of these produce more than 3 million tons per year each. The combined production of the seven mines represents 67 percent of the total strippable coal production in the state. In 1975 three small surface mines operated in this area, but their combined production amounted to just over 100,000 tons.

With the development of large stripping equipment in the last 15 years, several companies have been mining the Herrin (No. 6) together with the Harrisburg (No. 5), which are well-suited for multi-seam mining because the interval between them is only 20 to 30 feet in this area. Multi-seam mining may permit economic recovery of coal with overburden thicknesses greater than the maximums set for this study.

The thickness of the Herrin (No. 6) Coal ranges from 42 to 96 inches, but averages between 72 and 84 inches over most of the area. The 12 reserve blocks in the Herrin Coal, among the largest in the state, are currently being mined, and reserves are sufficient to support production

TABLE 7. Resources and reserves of strippable coal in area 2, in thousands of tons

| Coal member | Resources[a] | Reserves | Percentage of resources | Number of large mines operating in 1975 |
|---|---|---|---|---|
| Herrin (No. 6) | 2,118,877 | 1,172,385 | 55.3 | 4 |
| Harrisburg (No. 5) | 433,711 | 239,663 | 55.3 | 4 |
| Unnamed coal near Campbell Hill, Jackson County | 11,882 | 9,801 | 82.5 | 0 |
| Murphysboro | 129,454 | 61,464 | 47.5 | 0 |
| Total | 2,693,924 | 1,483,313 | 55.1 | 8 |

[a]Data from Smith, 1958.

for many years. Because the roof sequence of the Herrin Coal in Randolph and St. Clair Counties contains several thick limestones, several companies have developed underground mines in what has been mapped in this area as strippable coal. The Herrin Coal is low in sulfur in a small part of area 2.

The Harrisburg (No. 5) Coal, which ranges from 28 to 54 inches thick, is currently being mined in conjunction with the Herrin Coal, which lies about 20 feet above. The Harrisburg Coal has not been mapped in large parts of Jackson, Randolph, Perry, and St. Clair Counties, where the Harrisburg Coal is believed to be thin or absent.

A coal near Campbell Hill (Cady, 1952) averaging 48 inches thick has been mapped in a small part of Jackson County. W. H. Smith (1958) referred to it as the "Seahorne Coal," which may be correlative with the Wise Ridge Coal further to the southeast (Nance, personal communication). This coal has not been extensively mapped because of a lack of sufficient data.

The Murphysboro Coal, which has been mapped in scattered places in Jackson County, ranges from 24 to 96 inches thick. In some places the Murphysboro Coal has been reported to have a relatively low sulfur content. Exploration may reveal additional reserve blocks.

### Area 3. (Madison, Macoupin, Jersey, Greene, Scott, Morgan, Sangamon, Menard, and Cass Counties)

The strippable coal reserves mapped in area 3 comprise 18 blocks ranging in size from 10 million to 137 million tons. Cultural development in the Collinsville-Edwardsville-Alton urban belt is responsible for the exclusion of much of the coal in Madison County from reserves (table 8). Several large industrial pipelines pass through the reserve blocks in this area, and a detailed evaluation of these blocks may prove them uneconomical to surface-mine. North of Madison County, the primary factors causing exclusion of coal are excessive thickness of overburden or insufficient data. No strip mining has taken place in area 3.

The thickness of the Herrin (No. 6) Coal averages 60 to 72 inches in central and southern Madison County, where it lies at strippable depths, but thins northward. No data are available for large parts of Jersey, Macoupin, Morgan, and Cass Counties, where the Herrin Coal may lie at strippable depths. Where data are available, the Herrin Coal varies in thickness from 24 to 84 inches, but generally it is 30 to 36 inches. The overburden appears to be fairly thick (75 to 150 feet) over most of the area, so any coal discovered would have to be proportionally thick to be classified as a strippable reserve.

One reserve block is delineated in the Springfield (No. 5) Coal in northwestern Sangamon and southwestern Menard Counties. Here the Springfield Coal averages 72 inches thick at depths from 50 to 125 feet below the surface. The overburden is greater than 100 feet thick over 81 percent of the block. The Springfield Coal has not been mapped west or north of this block because of a lack of data; significant reserves may exist there.

The Colchester (No. 2) Coal ranges from 24 to 36 inches throughout the area. A large part of Jersey and Greene Counties has been mapped as having 50 or less feet of overburden, but data on thickness is insufficient. Most of the Colchester Coal has been excluded from reserve estimates because the thickness of overburden is excessive. The overburden is generally greater than 50 feet thick, and over large areas it is more than 100 feet thick.

### Area 4. (Adams, Brown, Calhoun, Hancock, McDonough, Pike, Schuyler, Warren, and Henderson Counties)

With the exception of the Peabody Key Mine, which operated in Schuyler County from 1958 to 1966, mining activity in area 4 has consisted entirely of small local operations (table 9). In recent years the Colchester (No. 2) Coal has been actively prospected by several companies.

The Springfield (No. 5) Coal is found only in a very small part of Warren County and in a large outlier in Schuyler County. In Schuyler County, the thickness of coal ranges from 18 to 60 inches and averages 60 inches over a large area.

The Colchester (No. 2) Coal covers a large part of area 4. It ranges in thickness from 18 to 36 inches, but is generally less than 30 inches thick. Of the 19 reserve blocks of

TABLE 8. Resources and reserves of strippable coal in area 3, in thousands of tons

| Coal member | Resources[a] | Reserves | Percentage of resources | Number of large mines operating in 1975 |
|---|---|---|---|---|
| Herrin (No. 6) | 1,346,703 | 394,701 | 29.3 | 0 |
| Springfield (No. 5) | 1,064,679 | 152,612 | 14.3 | 0 |
| Colchester (No. 2) | 1,605,781 | 344,368 | 21.4 | 0 |
| Total | 4,017,163 | 891,681 | 22.2 | 0 |

[a]Data from Smith, 1961, and Nance, in preparation.

this coal. one has 118 million tons, but the rest have less than 40 million tons. Blocks in several parts of the area are less than the minimum size required to be classified as reserves; nevertheless, these blocks may be of interest to small operators or to large operators with equipment already in the area.

Excessive thickness of overburden is the reason for classifying only a small amount of Colchester Coal as a reserve. Because most of the coal is less than 30 inches thick, 50 feet is the maximum overburden thickness for the reserves, according to our criteria; however, some exceptions to this limit were made where large blocks of coal less than 30 inches thick lie at depths of 50 to 60 feet. The overburden in this area is relatively unconsolidated and contains little or no limestone; even greater stripping depths may prove economical.

The Rock Island (No. 1) Coal ranges in thickness from 0 to 52 inches over a short distance. Data are insufficient to map strippable reserves for this coal.

### Area 5. (Fulton, Henry, Knox, Peoria, Stark, Tazewell, Bureau, Marshall, Mercer, and Rock Island Counties)

Area 5 has the largest strippable resources (7,644 million tons) and the largest strippable reserves (2,453 million tons) of any area in Illinois (table 10). Strip mines have been active in this area since 1924; however, in 1975 there were only seven mines producing a total of 5 million tons, 18 percent of the state's total coal production. Only one small (less than 500,000 tons per year) mine operated in this area in 1975. In addition to excessive thickness of overburden, urban developments around Peoria, Galesburg, and along I-74, which either overlie the coal or divide it into small blocks, led to exclusion of large amounts of resources from reserves.

Clay-filled intrusions, called horsebacks or clay dikes, have been found in all coals in this area. In some cases, these features are so abundant that they reduce the quality of coal significantly and make the coal less desirable for mining.

The Danville (No. 7) Coal is present in the eastern half of area 5. It ranges in thickness from 18 to 30 inches and in most cases is too deep to be a strippable reserve. Data on thickness are insufficient to assess reserves in several large parts of the Danville Coal in Henry, Stark, and Peoria Counties, where additional small reserve blocks may be found. The eight reserve blocks mapped range in size from 6 to 68 million tons, but are generally less than 10 million tons. Several blocks are too small to constitute a reserve, but could be mined in conjunction with the underlying Herrin (No. 6) Coal or by a small, mobile operation.

There are several large outliers of Herrin Coal in this area. This coal ranges in thickness from 18 to 54 inches (averaging 48 inches) and is the most extensively mined coal in the area. There is a large area of Herrin Coal in Stark, Marshall, and northeastern Peoria Counties which has not been mapped because of insufficient data.

TABLE 9. Resources and reserves of strippable coal in area 4, in thousands of tons

| Coal member | Resources[a] | Reserves | Percentage of resources | Number of large mines operating in 1975 |
|---|---|---|---|---|
| Springfield (No. 5) | 107,895 | 84,663 | 78.5 | 0 |
| Colchester (No. 2) | 2,801,058 | 359,547 | 12.8 | 0 |
| Rock Island (No. 1) | 39,000 | 0 | 0 | 0 |
| Total | 2,947,953 | 444,210 | 15.0 | 0 |

[a]Data from Smith and Berggren, 1963; Reinertsen, 1964; and Searight and Smith, 1969.

TABLE 10. Resources and reserves of strippable coal in area 5, in thousands of tons

| Coal member | Resources[a] | Reserves | Percentage of resources | Number of large mines operating in 1975 |
|---|---|---|---|---|
| Danville (No. 7) | 763,921 | 140,901 | 18.4 | 0 |
| Herrin (No. 6) | 2,520,811 | 1,257,776 | 50.4 | 4 |
| Springfield (No. 5) | 1,979,541 | 635,917 | 32.1 | 2 |
| Colchester (No. 2) | 2,213,782 | 418,236 | 18.9 | 1 |
| Rock Island (No. 1) | 165,756 | 0 | 0 | 0 |
| Total | 7,643,811 | 2,452,830 | 32.1 | 7 |

[a]Data from Smith and Berggren, 1963, and Searight and Smith, 1969.

The 34 reserve blocks of Herrin Coal range from 6 million to 228 million tons. Although many of the blocks contain less than 35 million tons, they are close to each other and could be mined in a single operation.

The Springfield (No. 5) Coal is present over the eastern two-thirds of this area. The Springfield Coal is not mapped in Marshall, Bureau, Henry, and northern Stark Counties because of a lack of data, but is believed to be thin. What little data are available in northern Knox and southern Stark Counties indicate that the coal is less than 18 inches thick. In the rest of this area, the Springfield Coal ranges in thickness from 18 inches in Knox County to 72 inches in southern Fulton County.

Most of the 23 reserve blocks of Springfield Coal contain less than 20 million tons of coal. As with the Herrin Coal, the reasons for exclusions are primarily excessive thickness of overburden and the obstacles caused by cultural development. The Springfield Coal is 50 to 80 feet below the Herrin Coal. Although it represents an uncommon practice in this area, at least one mine has produced both coals in a dual-seam operation.

The Colchester (No. 2) Coal averages 24 to 30 inches thick and underlies most of area 5, but is shallow enough for stripping only in the western part. The primary reason for exclusion of Colchester Coal resources from strippable reserves is excessive thickness of overburden; however, as was noted for area 4, the composition of the overburden may permit economical strip mining at greater depths. For some parts of Henry County which may contain potential reserve blocks of Colchester Coal, data are insufficient.

Although the largest reserve block of Colchester Coal has reserves of 52 million tons, most blocks contain 20 million tons or less. Many of these blocks are sufficiently close together to permit the mining of several blocks in one operation.

The Rock Island (No. 1) Coal crops out in the western part of this area. The coal is highly variable in thickness and is not identified in any area in sufficient quantity to constitute a strippable reserve block.

### Area 6. (La Salle, Livingston, Grundy, Kankakee, and Will Counties)

Some of the earliest mining in the state took place in area 6. Strip mining has been generally restricted to the eastern part of the area where the overburden is thinnest. The best sites for strip mining have been mined out and no mines currently operate in the area (table 11).

The Danville (No. 7) Coal, although probably present over a large part of the area, is mapped only in a small part of the area south of Streator in Livingston County, where the coal ranges in thickness from 18 to 30 inches. Tonnage of Danville Coal is insufficient to be classified as reserves.

The Herrin (No. 6) Coal has been mapped only in a small part of area 6 near Streator. Although fairly shallow and only 48 to 60 inches thick, much of the Herrin Coal is rendered unminable by cultural features near Streator and terrain associated with the Vermilion River. Further exploration in this area could reveal additional strippable coal.

The Summum (No. 4) Coal is found in Grundy, Livingston, and Kankakee Counties in several small deposits, some of which were mined during the 1960s and early 1970s. The coal ranges in thickness from 18 to 60 inches, but in most of the area it is generally not of minable thickness. Only one block is of sufficient size to be classified as a reserve.

The Colchester (No. 2) Coal outcrops in an eastward-trending belt along the Illinois River. Most of this coal, which ranges from 18 to 36 inches thick, is too deep to be classified as a reserve. Cultural development and terrain limitations associated with the Illinois River also make this coal unattractive for strip mining.

### Area 7. (Vermilion and Edgar Counties)

Area 7 has been the site of strip-mining activity since the mid-1800s. Since 1970, only an occasional small strip-

TABLE 11. Resources and reserves of strippable coal in area 6, in thousands of tons

| Coal member | Resources[a] | Reserves | Percentage of resources | Number of large mines operating in 1975 |
|---|---|---|---|---|
| Danville (No. 7) | 10,362 | 0 | 0 | 0 |
| Herrin (No. 6) | 99,248 | 40,557 | 40.9 | 0 |
| Summum (No. 4) | 62,222 | 7,408 | 11.9 | 0 |
| Colchester (No. 2) | 543,484 | 17,458 | 3.2 | 0 |
| Total | 715,316 | 65,423 | 9.1 | 0 |

[a]Data from Smith, 1968.

mining operation has produced coal. Danville and surrounding suburbs render some of the best remaining coal in the area unminable. Excessive thickness of overburden is also a major factor in eliminating resources from classification as reserves (table 12).

The Danville (No. 7) Coal varies greatly in thickness in the area. Its thickness averages 72 inches in the northern one-third of the area, 30 to 42 inches in the central portion, and 48 to 60 inches in the southern one-third. Nearly all of the blocks of strippable reserves are smaller than 25 million tons.

The Herrin (No. 6) Coal is classified here as a strippable reserve only in the central part of area 7 where the coal ranges from 36 to 84 inches thick at depths generally greater than 100 feet. Herrin Coal, which is relatively low in sulfur, has been mined northwest of these reserves; however, no data on the sulfur content of the coal in the reserve block are available. A few blocks northwest of Danville are too small to be classified as strippable reserves as defined in this study. Throughout the rest of the area, the Herrin Coal is too thin or too deep for strip mining. An area of several square miles in northern Edgar County has not been mapped because data are insufficient.

### Area 8. (Crawford, Cumberland, Effingham, Fayette, Franklin, Jefferson, Richland, Shelby, and Wabash Counties)

Area 8 includes central and eastern portions of Illinois where thick coal seams of the Carbondale Formation are generally several hundred or more feet deep. The only strippable coals in this area are coals from the Bond and Mattoon Formations. These coals are characteristically thin, and limited data has prohibited extensive mapping. Most of the northern portion of area 8 contains unconsolidated surficial sediments (drift) in excess of 100 feet and has therefore been eliminated from study. Only small mining operations have produced coal in this area; however, a large strip mine, operated by Eads Coal Company, has been stripping the Opdyke Coal in Jefferson County since 1971. Because cultural development in this area is not extensive and most of the coal mapped is less than 50 feet deep, a large percentage of the resources have been classified as reserves (table 13).

The Trowbridge Coal has been mapped only in a small area of southeastern Shelby and northwestern Cumberland Counties where the coal averages 28 inches thick and is generally less than 50 feet deep. One block of this coal has been classed as a strippable reserve. Additional reserves may exist north and south of the area.

The Calhoun Coal ranges from 12 to 30 inches in thickness where it is mapped in Richland County. The tonnage of resources mapped is insufficient to constitute a strippable reserve.

The Shelbyville Coal has been mapped in small areas of Effingham, Fayette, and Shelby Counties. The only block that met the criteria for strippable reserves is located in Shelby County, where the coal averages 18 inches thick.

The Opdyke Coal is the only seam in area 8 currently being strip-mined on a large scale. The mine and the reserve blocks are in eastern Jefferson County. The Opdyke Coal there averages 18 to 20 inches thick.

Near Belle Rive, an unnamed coal lies about 30 to 40 feet below the Opdyke Coal. Where it has been mined in the vicinity of Belle Rive in Jefferson County, it averages 18 inches thick. Resources are insufficient to constitute a strippable reserve.

An unnamed coal has been mapped in a very small part of Louden Township, Fayette County. The coal averages 18 inches in thickness. Tonnages of this coal are insufficient to constitute a strippable reserve.

The Friendsville Coal has been mapped in Wabash County, where the coal ranges from 30 to 48 inches thick. Three reserve blocks have been mapped, and several other places in Wabash County may contain additional reserves of strippable coal. Some reserves may be found to the north in Lawrence County; however, the coal is thought to thin northward and may be too thin outside of Wabash County to mine.

The Friendsville Coal is believed to lie near the base of the Mattoon Formation (see frontispiece); however, the coal may correlate with the coal near Bristol Hill in the Bond Formation (Nance, 1977, personal communication).

TABLE 12. Resources and reserves of strippable coal in area 7, in thousands of tons

| Coal member | Resources[a] | Reserves | Percentage of resources | Number of large mines operating in 1975 |
|---|---|---|---|---|
| Danville (No. 7) | 537,039 | 164,383 | 30.6 | 0 |
| Herrin (No. 6) | 220,818 | 46,167 | 20.9 | 0 |
| Total | 757,857 | 210,550 | 27.8 | 0 |

[a]Data from Bengal and Jacobson, in preparation.

TABLE 13. Resources and reserves of strippable coal in area 8, in thousands of tons

| Coal member | Resources[a] | Reserves | Percentage of resources | Number of large mines operating in 1975 |
|---|---|---|---|---|
| Trowbridge | 19,138 | 16,369 | 88.5 | 0 |
| Calhoun | 7,401 | 0 | 0 | 0 |
| Shelbyville | 70,370 | 13,539 | 19.2 | 0 |
| Opdyke | 24,609 | 22,616 | 91.9 | 1 |
| Unnamed coal near Belle Rive, Jefferson County | 9,747 | 0 | 0 | 0 |
| Unnamed coal in Louden Township, Fayette County | 1,400 | 0 | 0 | 0 |
| Friendsville | 167,232 | 136,306 | 81.5 | 0 |
| Unnamed coal near Bristol Hill, Crawford County | 43,161 | 21,305 | 49.4 | 0 |
| Total | 343,058 | 210,135 | 61.3 | 1 |

[a]Data from Nance, in preparation.

The coal mapped in the vicinity of Bristol Hill in southern Crawford County varies from 12 to 36 inches thick. East of Flat Rock, a block of strippable reserves in which this coal is estimated to average 18 to 20 inches thick has been mapped. Additional strippable reserves may exist there.

## CONCLUSION

Six billion tons of coal in the ground in Illinois have been classified as strippable reserves, i.e., coal considered to be economically and legally minable at the present time according to the criteria used in this report. This reserve represents about 30 percent of the 20 billion tons of potentially strippable coal in Illinois mapped by previous studies of the Illinois State Geological Survey.

Large strippable reserves have been found in western, southwestern, and southern Illinois. The reserves in southwestern and southern Illinois are generally more suited for surface mining than other regions because land costs are lower, the heating value of coal is greater, and coal tonnage recoverable per acre is higher. These reserves are and will continue to be the major source of surface-mined coal in the state throughout the near future. Because a large part of these reserves are probably committed to existing or planned mines, opportunities for new acquisition of strippable reserves are limited and are more likely to be available in other parts of the state.

Seventy-one percent of the state's surface-minable reserves are in the No. 6 and No. 5 Coals, which are currently the largest sources of the state's production of coal by strip mining (90 percent in 1975). Because these two coals constitute large reserves of strippable coal that is of favorable depth and thickness, they will probably continue to be the major surface-mined coals. As the best blocks of No. 6 and No. 5 Coal become unavailable or mined out, mining will ultimately shift to other coals that are generally thinner and have larger stripping ratios.

Thirty-eight percent of the strippable reserves are coals greater than 4 feet thick. This reserve contrasts sharply with production of coal by strip mining in 1975, when 69 percent of the tonnage came from coals greater than 4 feet thick. In the future, limited availability of reserves may force surface mining of the thinner coal reserves or of thicker seams at greater depths than projected in this report.

How future political, economic, and technical developments will affect the conclusions of this report is difficult to assess. New reclamation laws and high land values may cause areas of strippable reserves in western and central Illinois to be less desirable than reserves in southern Illinois. New technical developments and increasing demands for sources of energy may make strip mining of thinner or deeper coal profitable. As major developments take place, new evaluations of strippable coal reserves in Illinois will be necessary.

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# APPENDIXES

## APPENDIX 1. Mapping procedure

Reserves of strippable coal were delineated by using the base maps constructed by previous resource studies. The mined-out areas on these maps were updated to July 1, 1975, and some minor corrections of subcrop lines were made. The original base maps showed only 50-foot, 100-foot, and 150-foot overburden thickness lines; 75-foot and 125-foot thickness lines were added where needed. The criteria determined for this study were then used to outline reserve blocks.

The accuracy of the coal outcrop lines and overburden lines and the coal thicknesses indicated on these maps depends on the number and distribution of drill holes, mines, and outcrops; the local topography; and the degree of glaciation the area has undergone. In some areas these lines are generalized and outcrop lines may be inaccurate by several hundred feet, or even a mile or more in extreme cases. These inaccuracies will not alter the regional picture of surface-minable coal, but are important considerations for evaluating individual blocks.

An example of one of the work maps used is shown in figure A. The coal in the lower right is not reliably substantiated by data and so is excluded from the estimate of reserves. Boundaries of excluded cultural areas, in this case the town of Atkinson and Interstate 80, were taken from plat books. No coal was excluded where the railroad might be an obstacle, because the line is not an insurmountable barrier to surface mining and the amount of coal directly beneath it cannot be accurately calculated at the scale of this study. In this example, the coal is 30 inches thick, so the maximum thickness of overburden allowed by the reserve criteria is 75 feet. The areas of limiting terrain are too small and irregular for recovery of coal by large mining operations and have been excluded from our estimate of reserves.

All 185 blocks classified as strippable reserves by this study are shown on work maps similar to figure A and are available on open file for reference at the Illinois State Geological Survey in Urbana.

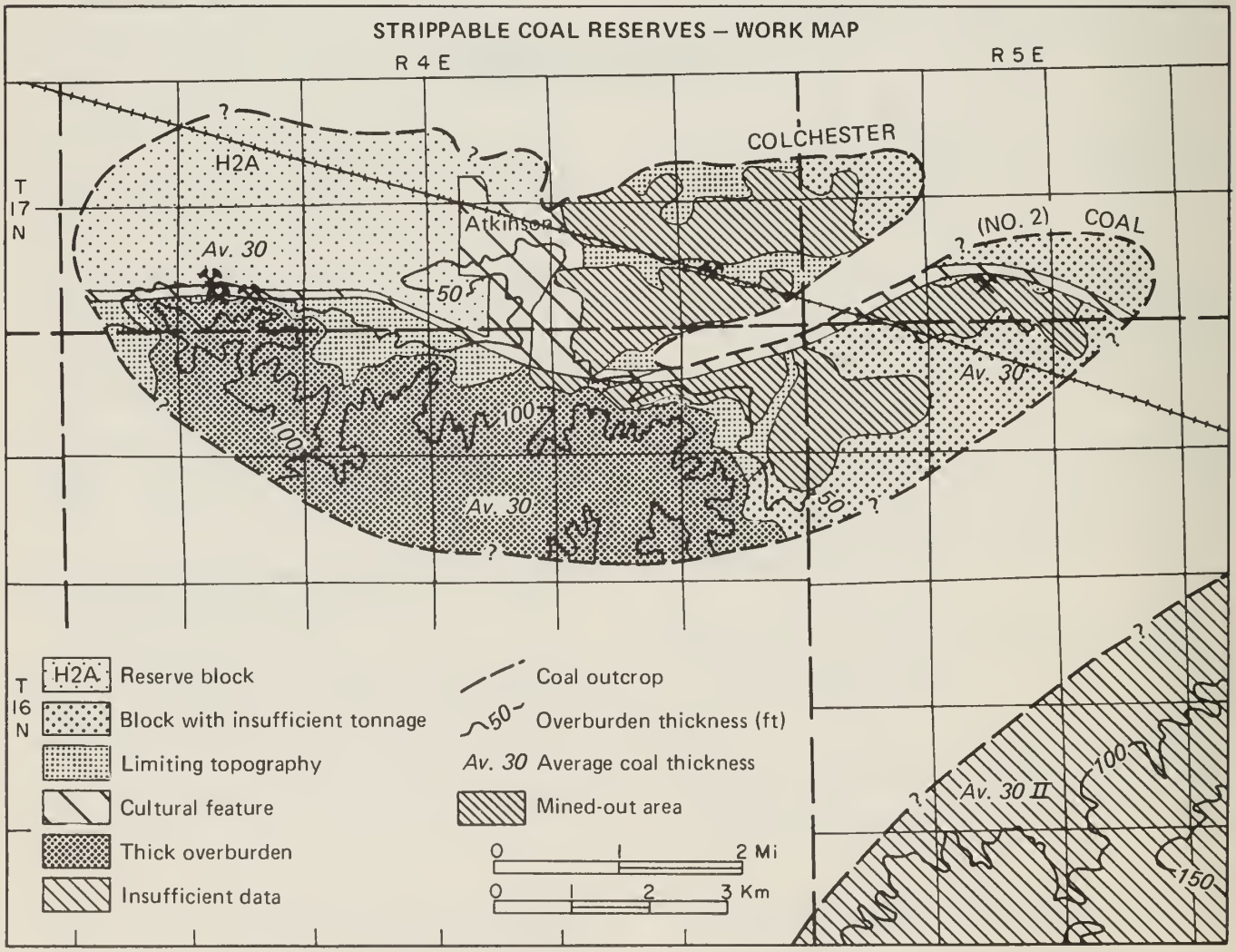



Figure A

## APPENDIX 2. Descriptions of reserve blocks by county

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Adams County** | | | | | | | | | | | | | | |
| 66 | No. 2 | 118.782 | 26,250 | 24 | 5 | 0-50 | 31 | Adams | 55 | | | | 38 | About 7 mi$^2$ of 30-in. No. 2 coal beneath 75 to 85 ft of overburden lies south of block 66. |
| | | | | 30 | 90 | 50-75 | 69 | Hancock | 17 | | | | | |
| | | | | 36 | 5 | | | Schuyler | 28 | | | | | |
| 67 | No. 2 | 10.042 | 2,790 | 24 | 100 | 0-50 | 99 | | | | | | 38 | Sugar Creek runs through block 67. |
| | | | | | | 50-60 | 1 | | | | | | | |
| **Bureau County** | | | | | | | | | | | | | | |
| 4 | No. 7 | 6.660 | 1,480 | 30 | 100 | 0-50 | 52 | | | 108 | No. 6 | 630 | 37 | |
| | | | | | | 50-75 | 48 | | | | | | | |
| 5 | No. 7 | 10.103 | 2,250 | 30 | 100 | 0-50 | 53 | | | 109 | No. 6 | 1,070 | 37 | |
| | | | | | | 50-75 | 47 | | | | | | | |
| 6 | No. 7 | 9.489 | 2,640 | 24 | 100 | 0-50 | 99 | | | 110 | No. 6 | 2,310 | 37, 39 | |
| | | | | | | 50-60 | 1 | | | | | | | |
| 7 | No. 7 | See Henry County. | | | | | | | | | | | | |
| 108 | No. 6 | 5.956 | 830 | 48 | 100 | 0-50 | 12 | | | 4 | No. 7 | 630 | 40 | |
| | | | | | | 50-100 | 88 | | | | | | | |
| 109 | No. 6 | 18.163 | 2,240 | 54 | 100 | 0-50 | 46 | | | 5 | No. 7 | 1,070 | 40 | |
| | | | | | | 50-100 | 54 | | | | | | | |
| 110 | No. 6 | 35.585 | 4,430 | 48 | 7 | 0-50 | 36 | | | 6 | No. 7 | 2,310 | 40 | |
| | | | | 54 | 93 | 50-100 | 63 | | | | | | | |
| | | | | | | 100-125 | 1 | | | | | | | |
| 111 | No. 6 | See Henry County. | | | | | | | | | | | | |
| 113 | No. 6 | 9.987 | 1,310 | 48 | 49 | 0-50 | 27 | Bureau | 51 | 7 | No. 7 | 970 | 40 | |
| | | | | 54 | 51 | 50-100 | 73 | Henry | 49 | | | | | |
| 114 | No. 6 | 64.872 | 8,890 | 48 | 88 | 0-50 | 2 | Bureau | 44 | 7 | No. 7 | 5,470 | 40 | |
| | | | | 54 | 12 | 50-100 | 98 | Henry | 31 | | | | | |
| **Cass County** | | | | | | | | Stark | 25 | | | | | |
| 74 | No. 2 | See Morgan County. | | | | | | | | | | | | |
| **Crawford County** | | | | | | | | | | | | | | |
| 182 | Unnamed coal near Bristol Hill | 21.305 | 7,420 | 18 | 100 | 0-50 | 100 | | | | | | 44 | Areas of untested coal lie north and south of block 182. |
| **Cumberland County** | | | | | | | | | | | | | | |
| 185 | Trowbridge | See Shelby County. | | | | | | | | | | | | |
| **Edgar County** | | | | | | | | | | | | | | |
| 99 | No. 7 | 19.336 | 1,970 | 48 | 15 | 0-50 | 33 | | | | | | 37 | |
| | | | | 60 | 18 | 50-100 | 61 | | | | | | | |
| | | | | 72 | 58 | 100-125 | 6 | | | | | | | |
| | | | | 84 | 9 | | | | | | | | | |
| 100 | No. 7 | 24.446 | 3,370 | 36 | 3 | 0-50 | 14 | | | | | | 37 | |
| | | | | 48 | 87 | 50-100 | 86 | | | | | | | |
| | | | | 60 | 10 | | | | | | | | | |

APPENDIX 2—*Continued*

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Edgar County—Continued | | | | | | | | | | | | | | |
| 101 | No. 7 | 20.269 | 3,570 | 36 | 81 | 0-50 | 4 | | | | | | 37 | A small area of untested No. 7 coal lies on the north side of block 101. |
| | | | | 48 | 19 | 50-100 | 96 | | | | | | | |
| Fulton County | | | | | | | | | | | | | | |
| 14 | No. 7 | See Peoria County. | | | | | | | | | | | | |
| 133 | No. 6 | See Knox County. | | | | | | | | | | | | |
| 134 | No. 6 | 126.266 | 16,840 | 36 | 1 | 0-50 | 26 | Fulton | 99 | 37 | No. 5 | 1,390 | 40 | Block 134 contains about 3 $mi^2$ of 18-in. No. 7 coal that has not been classified as a reserve. The interval between the No. 6 and No. 7 coals is 30 to 40 ft thick. An 8-in. pipeline passes through block 134. |
| | | | | 48 | 58 | 50-100 | 74 | Peoria | 1 | 38 | | | | |
| | | | | 54 | 40 | | | | | 39 | | | | |
| 135 | No. 6 | 11.875 | 1,540 | 36 | 6 | 0-50 | 6 | Fulton | 58 | | | | 40 | |
| | | | | 48 | 12 | 50-100 | 94 | Peoria | 42 | | | | | |
| | | | | 54 | 82 | | | | | | | | | |
| 15 | No. 5 | See Knox County. | | | | | | | | | | | | |
| 37 | No. 5 | 12.057 | 1,680 | 48 | 100 | 0-50 | 14 | | | 134 | No. 6 | 290 | 39 | Active surface mine. |
| | | | | | | 50-100 | 86 | | | | | | | |
| 38 | No. 5 | 77.262 | 10,520 | 48 | 82 | 0-50 | 20 | | | 134 | No. 6 | 400 | 39 | |
| | | | | 54 | 18 | 50-100 | 80 | | | | | | | A few small abandoned underground mines lie in the southern part of block 38. |
| 39 | No. 5 | 50.052 | 6,180 | 54 | 100 | 0-50 | 13 | | | 134 | No. 6 | 700 | 39 | |
| | | | | | | 50-100 | 87 | | | | | | | |
| 40 | No. 5 | 21.442 | 2,650 | 54 | 100 | 0-50 | 13 | | | | | | 39 | |
| | | | | | | 50-100 | 87 | | | | | | | |
| 41 | No. 5 | 19.616 | 2,420 | 54 | 100 | 0-50 | 4 | | | | | | 39 | |
| | | | | | | 50-100 | 96 | | | | | | | Active surface mine. |
| 42 | No. 5 | 6.310 | 700 | 60 | 100 | 0-50 | 39 | | | | | | 39 | |
| | | | | | | 50-100 | 61 | | | | | | | |
| 43 | No. 5 | 7.286 | 900 | 54 | 100 | 0-50 | 7 | | | | | | 36 | Active surface mine. |
| | | | | | | 50-100 | 93 | | | | | | | |
| 44 | No. 5 | 14.382 | 1,600 | 60 | 100 | 0-50 | 26 | | | | | | 39 | A state highway and an 8-in. gas pipeline pass through the middle of block 44. Circular 348 (Smith and Berggren, 1963) shows a portion of block 44 as mined out; however, we can find no evidence that the area has been mined. |
| | | | | | | 50-100 | 74 | | | | | | | |
| 45 | No. 5 | 6.467 | 800 | 54 | 100 | 0-50 | 99 | | | | | | 39 | |
| | | | | | | 50-100 | 1 | | | | | | | |
| 46 | No. 5 | 6.636 | 820 | 54 | 100 | 0-50 | 100 | | | | | | 39 | |
| 53 | No. 5 | 11.381 | 1,150 | 66 | 100 | 0-50 | 100 | | | | | | 36 | |
| 32 | No. 2 | See Knox County. | | | | | | | | | | | | |
| 47 | No. 2 | 8.986 | 2,000 | 30 | 100 | 0-50 | 96 | | | | | | 39 | |
| | | | | | | 50-75 | 4 | | | | | | | |
| 48 | No. 2 | 10.034 | 2,790 | 24 | 100 | 0-50 | 23 | | | | | | 39 | |
| | | | | | | 50-60 | 77 | | | | | | | |
| 49 | No. 2 | 12.911 | 2,870 | 30 | 100 | 0-50 | 31 | | | | | | 39 | |
| | | | | | | 50-75 | 69 | | | | | | | |
| 50 | No. 2 | 37.934 | 8,480 | 24 | 9 | 0-50 | 52 | Fulton | 91 | | | | 39 | An 8-in. gas pipeline passes through block 50. |
| | | | | 30 | 91 | 50-75 | 48 | McDonough | 9 | | | | | |

APPENDIX 2—*Continued*

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fulton County—Continued | | | | | | | | | | | | | | |
| 51 | No. 2 | 17.054 | 3,810 | 24 | 2 | 0-50 | 47 | Fulton | 98 | | | | 36 | A large area of untested No. 2 coal lies southwest of block 51. |
| | | | | 30 | 98 | 50-75 | 53 | McDonough | 2 | | | | | |
| 52 | No. 2 | 11.972 | 2,680 | 24 | 3 | 0-50 | 34 | | | | | | 36 | |
| | | | | 30 | 97 | 50-75 | 66 | | | | | | | |
| 54 | No. 2 | 22.699 | 5,050 | 30 | 100 | 0-50 | 48 | | | | | | 36 | |
| | | | | | | 50-75 | 52 | | | | | | | |
| 55 | No. 2 | 52.444 | 11,650 | 30 | 100 | 0-50 | 42 | | | | | | 36 | |
| | | | | | | 50-75 | 58 | | | | | | | |
| 56 | No. 2 | 14.236 | 3,170 | 30 | 100 | 0-50 | 47 | | | | | | 36 | A 22-in. crude-oil pipeline passes through block 56. |
| | | | | | | 50-75 | 53 | | | | | | | |
| 57 | No. 2 | 7.855 | 1,750 | 30 | 100 | 0-50 | 45 | | | | | | 36 | |
| | | | | | | 50-75 | 55 | | | | | | | |
| 58 | No. 2 | 17.516 | 3,890 | 30 | 100 | 0-50 | 51 | | | | | | 36 | |
| | | | | | | 50-75 | 49 | | | | | | | |
| 59 | No. 2 | See Schuyler County. | | | | | | | | | | | | |
| 60 | No. 2 | 21.529 | 4,780 | 30 | 100 | 0-50 | 32 | | | | | | 36 | Active surface mine. |
| | | | | | | 50-75 | 68 | | | | | | | |
| 61 | No. 2 | See McDonough County. | | | | | | | | | | | | |
| 62 | No. 2 | See Schuyler County. | | | | | | | | | | | | |
| Gallatin County | | | | | | | | | | | | | | |
| 172 | No. 6 | 23.582 | 4,000 | 36 | 67 | 0-50 | 66 | Gallatin | 76 | | | | 44 | A fault lies on the east side of block 172. |
| | | | | 48 | 33 | 50-100 | 34 | Saline | 24 | | | | | |
| 175 | No. 6 | 24.714 | 2,830 | 48 | 12 | 0-50 | 59 | Gallatin | 74 | | | | 44 | |
| | | | | 60 | 88 | 50-100 | 41 | Saline | 26 | | | | | |
| 176 | No. 6 | 9.627 | 1,340 | 48 | 100 | 0-50 | 15 | | | | | | 44 | |
| | | | | | | 50-100 | 85 | | | | | | | |
| 97 | No. 5 | See Saline County. | | | | | | | | | | | | |
| 98 | No. 5 | See Saline County. | | | | | | | | | | | | |
| Greene County | | | | | | | | | | | | | | |
| 141 | No. 6 | 16.801 | 3,340 | 30 | 36 | 0-50 | 50 | | | | | | 42 | |
| | | | | 36 | 64 | 50-75 | 50 | | | | | | | |
| 142 | No. 6 | 11.614 | 1,080 | 72 | 100 | 50-100 | 37 | | | | | | 42 | |
| | | | | | | 100-125 | 63 | | | | | | | |
| 143 | No. 6 | See Macoupin County. | | | | | | | | | | | | |
| 79 | No. 2 | 15.322 | 3,410 | 30 | 100 | 0-50 | 86 | | | | | | 38 | |
| | | | | | | 50-75 | 14 | | | | | | | |
| 80 | No. 2 | 85.854 | 19,080 | 30 | 100 | 0-50 | 59 | | | | | | 38 | |
| | | | | | | 50-75 | 41 | | | | | | | |
| 81 | No. 2 | 46.242 | 10,380 | 24 | 4 | 0-50 | 60 | | | | | | 38 | An 8-in. gas pipeline passes through block 81. |
| | | | | 30 | 96 | 50-75 | 40 | | | | | | | |
| 82 | No. 2 | 26.475 | 5,880 | 30 | 100 | 0-50 | 41 | | | | | | 38 | |
| | | | | | | 50-75 | 59 | | | | | | | |

APPENDIX 2—*Continued*

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Grundy County | | | | | | | | | | | | | | |
| 1 | No. 4 | 7.408 | 1,650 | 30 | 100 | 0-50 | 2 | | | | | | 37 | |
| | | | | | | 50-75 | 98 | | | | | | | |
| 2 | No. 2 | 10.808 | 2,400 | 30 | 100 | 0-50 | 48 | | | | | | 37 | |
| | | | | | | 50-75 | 52 | | | | | | | |
| 3 | No. 2 | 6.650 | 1,480 | 30 | 100 | 0-50 | 18 | | | | | | 37 | |
| | | | | | | 50-75 | 82 | | | | | | | |
| Hancock County | | | | | | | | | | | | | | |
| 65 | No. 2 | 9.087 | 2,020 | 30 | 100 | 0-50 | 96 | Hancock | 90 | | | | 38 | |
| | | | | | | 50-75 | 4 | Schuyler | 10 | | | | | |
| 66 | No. 2 | See Adams County. | | | | | | | | | | | | |
| Henry County | | | | | | | | | | | | | | |
| 7 | No. 7 | 68.658 | 15,800 | 24 | 14 | 0-50 | 60 | Bureau | 42 | 111 | No. 6 | 8,800 | 39 | Block 7 is adjacent to Kewanee. A large area of untested No. 7 coal lies south of block 7. |
| | | | | 30 | 86 | 50-75 | 40 | Henry | 58 | 112 | | | | |
| | | | | | | | | | | 113 | | | | |
| | | | | | | | | Stark | <1 | 114 | | | | |
| 111 | No. 6 | 23.184 | 2,860 | 54 | 100 | 0-50 | 16 | Bureau | 4 | 7 | No. 7 | 1,330 | 40 | |
| | | | | | | 50-100 | 84 | Henry | 96 | | | | | |
| 112 | No. 6 | 11.409 | 1,580 | 48 | 100 | 0-50 | 23 | | | 7 | No. 7 | 1,040 | 40 | Block 112 contains numerous small, unmapped, abandoned mines. |
| | | | | | | 50-100 | 77 | | | | | | | |
| 113 | No. 6 | See Bureau County. | | | | | | | | | | | | |
| 114 | No. 6 | See Bureau County. | | | | | | | | | | | | |
| 115 | No. 6 | See Stark County. | | | | | | | | | | | | |
| 117 | No. 6 | 25.484 | 4,050 | 42 | 100 | 0-50 | 95 | | | | | | 40 | Several small abandoned mines lie in block 117. |
| | | | | | | 50-60 | 5 | | | | | | | |
| 8 | No. 2 | 11.997 | 2,670 | 30 | 100 | 0-50 | 98 | | | | | | 39 | Block 8 is adjacent to Atkinson. |
| | | | | | | 50-75 | 2 | | | | | | | |
| 9 | No. 2 | 7.745 | 1,720 | 30 | 100 | 0-50 | 20 | | | | | | 39 | A large area of untested No. 2 coal lies north of block 9. |
| | | | | | | 50-75 | 80 | | | | | | | |
| Jackson County | | | | | | | | | | | | | | |
| 156 | No. 6 | See Perry County. | | | | | | | | | | | | |
| 163 | No. 6 | 32.892 | 2,450 | 84 | 50 | 0-50 | 21 | | | 91 | No. 5 | 490 | 41 | Active surface mine. |
| | | | | 96 | 50 | 50-100 | 42 | | | | | | | |
| | | | | | | 100-125 | 36 | | | | | | | |
| 165 | No. 6 | 38.461 | 2,720 | 84 | 12 | 0-50 | 6 | Jackson | 69 | 91 | No. 5 | 30 | 41 | Active surface mine; block 165 is adjacent to Hurst in Williamson County. |
| | | | | 96 | 88 | 50-100 | 52 | Williamson | 31 | | | | | |
| | | | | | | 100-125 | 42 | | | | | | | |
| 90 | No. 5 | See Perry County. | | | | | | | | | | | | |
| 91 | No. 5 | 40.624 | 5,620 | 48 | 96 | 0-50 | 33 | | | 163 | No. 6 | 520 | 38 | Active surface mine; an area of untested No. 5 coal lies north of block 91. |
| | | | | 54 | 4 | 50-100 | 67 | | | 165 | | | | |

APPENDIX 2—*Continued*

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jackson County—Continued | | | | | | | | | | | | | | |
| 159 | Unnamed coal near Campbell Hill | 9.801 | 1,360 | 48 | 100 | 0-50<br>50-60 | 98<br>2 | | | | | | 41 | |
| 160 | Murphysboro | 35.254 | 3,630 | 48<br>72 | 22<br>78 | 0-50<br>50-75 | 97<br>3 | | | | | | 41 | Block 160 is pocketed by several small abandoned mines. The Murphysboro Coal has not been mapped in the area around block 160 because of insufficient data. |
| 161 | Murphysboro | 13.278 | 1,890 | 36<br>72 | 54<br>46 | 0-50<br>50-100 | 76<br>24 | | | | | | 41 | Block 161 is adjacent to Murphysboro. |
| 162 | Murphysboro | 17.573 | 1,720 | 48<br>60<br>72<br>84<br>96 | 22<br>8<br>33<br>21<br>15 | 0-50<br>50-100 | 68<br>32 | Jackson<br>Williamson | 74<br>26 | | | | 41 | Block 162 is adjacent to Carbondale and Crab Orchard Lake Wildlife Refuge. |
| Jefferson County | | | | | | | | | | | | | | |
| 177 | Opdyke | 16.296 | 5,640 | 18 | 100 | 0-50 | 100 | | | | | | 44 | Active surface mine; large areas of untested Opdyke Coal surround block 177. |
| 178 | Opdyke | 6.320 | 2,340 | 18 | 100 | 0-50 | 100 | | | | | | 44 | Large areas of untested Opdyke Coal surround block 178. |
| Jersey County | | | | | | | | | | | | | | |
| 144 | No. 6 | 30.765 | 4,850 | 24<br>36<br>48<br>60 | < 1<br>41<br>57<br>2 | 0-50<br>50-100 | 39<br>61 | | | | | | 42 | Piasa Creek divides block 144.<br>A large area of untested No. 6 coal lies north of block 144. |
| 83 | No. 2 | 29.357 | 6,520 | 30 | 100 | 0-50<br>50-75 | 80<br>20 | | | | | | 38 | |
| 84 | No. 2 | 23.627 | 5,250 | 30 | 100 | 0-50<br>50-75 | 59<br>41 | | | | | | 38 | Some small areas of cultural development lie within block 84. |
| 85 | No. 2 | See Madison County. | | | | | | | | | | | | |
| Knox County | | | | | | | | | | | | | | |
| 14 | No. 7 | See Peoria County. | | | | | | | | | | | | |
| 118 | No. 6 | 11.328 | 1,800 | 42 | 100 | 0-50<br>50-60 | 97<br>3 | | | | | | 40 | |
| 119 | No. 6 | 58.349 | 9,260 | 42 | 100 | 0-50<br>50-75 | 48<br>52 | | | | | | 40 | Active surface mine. |
| 120 | No. 6 | 39.734 | 6,310 | 42 | 100 | 0-50<br>50-75 | 35<br>65 | | | | | | 40 | |
| 121 | No. 6 | 25.545 | 4,050 | 42 | 100 | 0-50<br>50-75 | 56<br>44 | | | | | | 40 | A major railroad bisects block 121. |

APPENDIX 2—*Continued*

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Knox County—Continued | | | | | | | | | | | | | | |
| 122 | No. 6 | 7.271 | 1,160 | 42 | 100 | 0-50 | 100 | | | | | | 40 | |
| 132 | No. 6 | See Peoria County. | | | | | | | | | | | | |
| 133 | No. 6 | 20.708 | 2,560 | 54 | 100 | 0-50 | 15 | Fulton | 9 | | | | 40 | |
| | | | | | | 50-100 | 85 | Knox | 91 | | | | | |
| 11 | No. 5 | See Peoria County. | | | | | | | | | | | | |
| 15 | No. 5 | 80.453 | 11,180 | 48 | 100 | 0-50 | 28 | Fulton | 44 | | | | 39 | Active surface mine. |
| | | | | | | 50-100 | 72 | Knox | 56 | | | | | An 8-in. pipeline passes through the south edge of block 15. |
| 16 | No. 5 | 26.451 | 5,880 | 30 | 100 | 0-50 | 54 | | | | | | 39 | A 12-in. pipeline passes through block 16. |
| | | | | | | 50-75 | 46 | | | | | | | |
| 17 | No. 5 | 11.733 | 2,610 | 30 | 100 | 0-50 | 31 | Knox | 95 | | | | 39 | |
| | | | | | | 50-75 | 69 | Peoria | 5 | | | | | |
| 18 | No. 5 | 15.036 | 3,350 | 24 | 1 | 0-50 | 86 | | | | | | 39 | |
| | | | | 30 | 99 | 50-75 | 14 | | | | | | | |
| 19 | No. 5 | 6.195 | 2,290 | 18 | 100 | 0-50 | 99 | | | | | | 39 | Areas of untested No. 5 coal lie north and west of block 19. |
| | | | | | | 50-60 | 1 | | | | | | | |
| 20 | No. 5 | 11.572 | 3,210 | 24 | 100 | 0-50 | 100 | | | | | | 39 | |
| 21 | No. 5 | 9.814 | 2,670 | 24 | 94 | 0-50 | 100 | | | | | | 39 | Block 21 is adjacent to Galesburg. |
| | | | | 36 | 6 | | | | | | | | | |
| 22 | No. 5 | 26.645 | 5,700 | 30 | 78 | 0-50 | 100 | | | | | | 39 | Block 22 is adjacent to Galesburg and Knoxville. Five pipelines pass through block 22. |
| | | | | 36 | 22 | | | | | | | | | |
| 31 | No. 5 | 10.863 | 1,720 | 36 | 42 | 0-50 | 100 | | | | | | 39 | |
| | | | | 48 | 58 | | | | | | | | | |
| 23 | No. 2 | 6.624 | 1,620 | 24 | 40 | 0-50 | 45 | Knox | 97 | | | | 39 | |
| | | | | 30 | 60 | 50-75 | 54 | Warren | 3 | | | | | |
| 26 | No. 2 | 12.163 | 3,380 | 24 | 100 | 0-50 | 99 | Knox | 51 | | | | 39 | A small creek runs through block 26. |
| | | | | | | 50-60 | 1 | Warren | 49 | | | | | |
| 29 | No. 2 | 6.930 | 1,930 | 24 | 100 | 0-50 | 99 | Knox | 88 | | | | 39 | A small creek runs through block 29. |
| | | | | | | 50-60 | 1 | Warren | 12 | | | | | |
| 30 | No. 2 | 8.573 | 2,380 | 24 | 100 | 0-50 | 91 | | | | | | 39 | |
| | | | | | | 50-60 | 9 | | | | | | | |
| 32 | No. 2 | 36.434 | 8,700 | 24 | 30 | 0-50 | 71 | Fulton | 1 | | | | 39 | |
| | | | | 30 | 70 | 50-75 | 29 | Knox | 99 | | | | | |
| 33 | No. 2 | 9.047 | 2,430 | 24 | 83 | 0-50 | 94 | | | | | | 39 | |
| | | | | 30 | 17 | 50-75 | 6 | | | | | | | |
| 34 | No. 2 | 22.018 | 6,050 | 24 | 95 | 0-50 | 95 | | | | | | 39 | |
| | | | | 30 | 5 | 50-75 | 5 | | | | | | | |
| 35 | No. 2 | 25.519 | 6,940 | 24 | 89 | 0-50 | 60 | | | | | | 39 | |
| | | | | 30 | 11 | 50-60 | 40 | | | | | | | |
| 36 | No. 2 | 9.263 | 2,060 | 30 | 100 | 0-50 | 39 | | | | | | 39 | |
| | | | | | | 50-75 | 61 | | | | | | | |

APPENDIX 2—*Continued*

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| La Salle County | | | | | | | | | | | | | | |
| 105 | No. 6 | See Livingston County. | | | | | | | | | | | | |
| 106 | No. 6 | 20.350 | 2,510 | 48 | 45 | 0-50 | 68 | La Salle | 56 | | | | 43 | Block 106 is adjacent to Streator; three large crude-oil pipelines pass through block 106. An area of untested No. 6 coal lies to the south. |
| | | | | 60 | 55 | 50-100 | 32 | Livingston | 44 | | | | | |
| 107 | No. 6 | 7.208 | 820 | 48 | 24 | 50-100 | 100 | | | | | | 43 | |
| | | | | 60 | 67 | | | | | | | | | |
| | | | | 96 | 9 | | | | | | | | | |
| Livingston County | | | | | | | | | | | | | | |
| 105 | No. 6 | 12.999 | 1,550 | 48 | 29 | 0-50 | 2 | La Salle | 16 | | | | 43 | Block 105 is adjacent to Streator; three pipelines pass through the block. An area of untested No. 6 coal lies to the east. |
| | | | | 60 | 71 | 50-100 | 98 | Livingston | 84 | | | | | |
| 106 | No. 6 | See La Salle County. | | | | | | | | | | | | |
| McDonough County | | | | | | | | | | | | | | |
| 50 | No. 2 | See Fulton County. | | | | | | | | | | | | |
| 51 | No. 2 | See Fulton County. | | | | | | | | | | | | |
| 61 | No. 2 | 36.728 | 8,160 | 30 | 100 | 0-50 | 60 | Fulton | 31 | | | | 36 | |
| | | | | | | 50-75 | 40 | McDonough | 67 | | | | | |
| | | | | | | | | Schuyler | 2 | | | | | |
| 62 | No. 2 | See Schuyler County. | | | | | | | | | | | | |
| 63 | No. 2 | 10.399 | 2,440 | 24 | 75 | 0-50 | 91 | | | | | | 36 | |
| | | | | 30 | 25 | 50-75 | 9 | | | | | | | |
| 64 | No. 2 | 35.881 | 8,570 | 24 | 98 | 0-50 | 71 | | | | | | 36 | |
| | | | | 30 | 2 | 50-60 | 29 | | | | | | | |
| Macoupin County | | | | | | | | | | | | | | |
| 143 | No. 6 | 97.220 | 12,790 | 48 | 85 | 0-50 | 62 | Greene | 25 | | | | 42 | A large area of untested No. 6 coal lies south of block 143. |
| | | | | 60 | 1 | 50-100 | 38 | Macoupin | 75 | | | | | |
| | | | | 72 | 8 | | | | | | | | | |
| | | | | 84 | 5 | | | | | | | | | |
| 145 | No. 6 | See Madison County. | | | | | | | | | | | | |
| Madison County | | | | | | | | | | | | | | |
| 145 | No. 6 | 53.024 | 7,810 | 36 | 33 | 0-50 | 45 | Macoupin | 17 | | | | 42 | |
| | | | | 48 | 45 | 50-100 | 56 | Madison | 83 | | | | | |
| | | | | 60 | 19 | | | | | | | | | |
| | | | | 72 | 3 | | | | | | | | | |
| 146 | No. 6 | 11.919 | 1,450 | 36 | 5 | 0-50 | 7 | | | | | | 42 | |
| | | | | 48 | 30 | 50-100 | 92 | | | | | | | |
| | | | | 60 | 56 | | | | | | | | | |
| | | | | 72 | 8 | | | | | | | | | |
| 147 | No. 6 | 136.983 | 13,560 | 48 | 1 | 0-50 | 14 | | | | | | 42 | Block 147 is adjacent to Bethalto and Edwardsville; six major pipelines pass through the block. |
| | | | | 60 | 32 | 50-100 | 56 | | | | | | | |
| | | | | 72 | 67 | 100-125 | 30 | | | | | | | |

APPENDIX 2—*Continued*

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Madison County—Continued | | | | | | | | | | | | | | |
| 148 | No. 6 | 25.186 | 2,330 | 72 | 100 | 50-100 | 60 | | | | | | 42 | Five major pipelines pass through block 148. |
| | | | | | | 100-125 | 40 | | | | | | | |
| 85 | No. 2 | 10.699 | 2,380 | 30 | 100 | 0-50 | 63 | Jersey | 3 | | | | 38 | Block 85 borders Alton. |
| | | | | | | 50-75 | 37 | Madison | 97 | | | | | |
| 86 | No. 2 | 23.918 | 5,130 | 30 | 79 | 0-50 | 50 | | | | | | 38 | Block 86 borders Alton. |
| | | | | 36 | 21 | 50-75 | 50 | | | | | | | |
| Menard County | | | | | | | | | | | | | | |
| 73 | No. 5 | See Sangamon County. | | | | | | | | | | | | |
| Morgan County | | | | | | | | | | | | | | |
| 140 | No. 6 | 11.190 | 1,790 | 24 | 2 | 0-50 | 19 | | | | | | 42 | |
| | | | | 36 | 54 | 50-75 | 81 | | | | | | | |
| | | | | 48 | 23 | | | | | | | | | |
| | | | | 60 | 21 | | | | | | | | | |
| 74 | No. 2 | 11.090 | 2,460 | 30 | 100 | 0-50 | 58 | Cass | 20 | | | | 36 | |
| | | | | | | 50-75 | 42 | Morgan | 80 | | | | | |
| 75 | No. 2 | 42.164 | 9,370 | 30 | 100 | 0-50 | 49 | | | | | | 36 | |
| | | | | | | 50-75 | 51 | | | | | | | |
| Peoria County | | | | | | | | | | | | | | |
| 10 | No. 7 | 25.091 | 5,850 | 24 | 20 | 0-50 | 72 | Peoria | 88 | 123 | No. 6 | 680 | 39 | Areas of untested No. 7 coal lie to the north, south, and southwest. |
| | | | | 30 | 80 | 50-75 | 28 | Stark | 12 | | | | | |
| 13 | No. 7 | 13.256 | 4,910 | 18 | 100 | 0-50 | 100 | | | 136 | No. 6 | 4,700 | 39 | |
| 14 | No. 7 | 7.644 | 2,920 | 18 | 100 | 0-50 | 100 | Knox | 26 | 132 | No. 6 | 2,470 | 39 | |
| | | | | | | | | Peoria | 68 | | | | | |
| | | | | | | | | Fulton | 5 | | | | | |
| 123 | No. 6 | 207.152 | 31,660 | 18 | 1 | 0-50 | 33 | Peoria | 99 | 10 | No. 7 | 680 | 40 | Four pipelines—one 8-in., two 12-in., and one 20-in. —pass through block 123. |
| | | | | 42 | 57 | 50-100 | 66 | Stark | 1 | | | | | |
| | | | | 48 | 42 | | | | | | | | | |
| 124 | No. 6 | 6.497 | 1,030 | 42 | 100 | 0-50 | 86 | | | | | | 40 | |
| | | | | | | 50-75 | 14 | | | | | | | |
| 125 | No. 6 | 12.371 | 1,720 | 48 | 100 | 0-50 | 22 | | | | | | 40 | |
| | | | | | | 50-100 | 78 | | | | | | | |
| 126 | No. 6 | 19.926 | 2,770 | 48 | 100 | 0-50 | 23 | | | | | | 40 | |
| | | | | | | 50-100 | 77 | | | | | | | |
| 127 | No. 6 | 29.439 | 3,630 | 54 | 100 | 0-50 | 22 | | | | | | 40 | Adjacent to Peoria suburbs; contains some small areas of culture. An 8-in. gas pipeline passes through the block. |
| | | | | | | 50-100 | 78 | | | | | | | |
| 128 | No. 6 | 12.716 | 1,770 | 48 | 100 | 0-50 | 35 | | | | | | 40 | |
| | | | | | | 50-100 | 65 | | | | | | | |
| 129 | No. 6 | 8.922 | 1,240 | 48 | 100 | 0-50 | 26 | | | | | | 40 | Active surface mine. |
| | | | | | | 50-100 | 74 | | | | | | | |
| 130 | No. 6 | 17.483 | 2,430 | 48 | 99 | 0-50 | 32 | | | | | | 40 | Active surface mine. |
| | | | | 54 | 1 | 50-100 | 68 | | | | | | | |
| 131 | No. 6 | 16.772 | 2,330 | 48 | 100 | 0-50 | 56 | | | 11 | No. 5 | 1,030 | 40 | Active surface mine. |
| | | | | | | 50-100 | 44 | | | | | | | |

APPENDIX 2—*Continued*

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Peoria County—Continued | | | | | | | | | | | | | | |
| 132 | No. 6 | 37.758 | 4,660 | 54 | 100 | 0-50 | 50 | Knox | 16 | 11 | No. 5 | 3,730 | 40 | Active surface mine. |
| | | | | | | 50-100 | 50 | Peoria | 84 | 14 | No. 7 | | | |
| 134 | No. 6 | See Fulton County. | | | | | | | | | | | | |
| 135 | No. 6 | See Fulton County. | | | | | | | | | | | | |
| 136 | No. 6 | 53.189 | 7,390 | 48 | 100 | 0-50 | 21 | | | 13 | No. 7 | 4,700 | 40 | |
| | | | | | | 50-100 | 79 | | | | | | | |
| 137 | No. 6 | 19.503 | 2,710 | 48 | 100 | 0-50 | 23 | | | | | | 40 | Adjacent to Peoria suburbs. |
| | | | | | | 50-100 | 77 | | | | | | | |
| 138 | No. 6 | 6.349 | 1,180 | 36 | 100 | 0-50 | 20 | | | | | | 40 | |
| | | | | | | 50-75 | 80 | | | | | | | |
| 139 | No. 6 | 10.603 | 1,310 | 54 | 100 | 0-50 | 6 | | | | | | 40 | Adjacent to Glasford and to Kingston Mines. |
| | | | | | | 50-100 | 94 | | | | | | | |
| 11 | No. 5 | 194.278 | 30,090 | 30 | 3 | 0-50 | 33 | Knox | 30 | 131, | No. 6 | 2,280 | 39 | Block 11 surrounds Elmwood; a large area of untested No. 5 coal lies to the north; active surface mines. One 12-in. and two 8-in. gas pipelines pass through block 11. |
| | | | | 36 | 20 | 50-100 | 66 | Peoria | 70 | 132 | | | | |
| | | | | 42 | 19 | | | | | | | | | |
| | | | | 48 | 57 | | | | | | | | | |
| 12 | No. 5 | 9.986 | 1,390 | 48 | 100 | 0-50 | 11 | | | | | | 39 | Two 6-in. and two 8-in. gas pipelines pass through block 12. |
| | | | | | | 50-100 | 89 | | | | | | | |
| 17 | No. 5 | See Knox County. | | | | | | | | | | | | |
| Perry County | | | | | | | | | | | | | | |
| 154 | No. 6 | 374.533 | 35,040 | 60 | 11 | 0-50 | 8 | Perry | 85 | 88, 89, | No. 5 | 6,930 | 41 | Active surface mines. A 20-in. crude-oil pipeline passes through the west edge of block 154. |
| | | | | 72 | 82 | 50-100 | 71 | Randolph | 15 | 90 | | | | |
| | | | | 84 | 7 | 100-125 | 21 | | | | | | | |
| | | | | 96 | <1 | | | | | | | | | |
| 155 | No. 6 | 160.890 | 14,300 | 60 | 8 | 0-50 | 5 | | | | | | 41 | Active surface mine. Three large gas pipelines pass through block 155. |
| | | | | 72 | 53 | 50-100 | 71 | | | | | | | |
| | | | | 84 | 37 | 100-125 | 24 | | | | | | | |
| | | | | 96 | 1 | | | | | | | | | |
| 156 | No. 6 | 38.207 | 3,340 | 72 | 61 | 0-50 | 36 | Jackson | 29 | | | | 41 | |
| | | | | 84 | 37 | 50-100 | 64 | Perry | 71 | | | | | |
| | | | | 96 | 1 | | | | | | | | | |
| 157 | No. 6 | 13.999 | 1,370 | 60 | 29 | 0-50 | 100 | | | 90 | No. 5 | 1,350 | 41 | Active surface mine. |
| | | | | 72 | 71 | | | | | | | | | |
| 158 | No. 6 | 10.072 | 950 | 60 | 7 | 50-100 | 76 | | | | | | 41 | |
| | | | | 72 | 93 | 100-125 | 24 | | | | | | | |
| 89 | No. 5 | See Randolph County. | | | | | | | | | | | | |
| 90 | No. 5 | 107.592 | 14,300 | 36 | 8 | 0-50 | 25 | Jackson | 1 | 154, | No. 6 | 7,500 | 37 | Active surface mines; the No. 5 coal has not been mapped north and east of block 90 because of insufficient data. |
| | | | | 48 | 29 | 50-100 | 75 | Perry | 99 | 157 | | | | |
| | | | | 54 | 63 | | | | | | | | | |
| Pike County | | | | | | | | | | | | | | |
| 76 | No. 2 | 6.861 | 2,190 | 18 | 45 | 0-50 | 92 | | | | | | 38 | |
| | | | | 24 | 55 | 50-60 | 8 | | | | | | | |
| 77 | No. 2 | 8.897 | 3,300 | 18 | 100 | 0-50 | 93 | | | | | | 38 | |
| | | | | | | 50-60 | 7 | | | | | | | |

APPENDIX 2–*Continued*

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Randolph County | | | | | | | | | | | | | | |
| 153 | No. 6 | 88.088 | 8,220 | 36 | <1 | 0-50 | 15 | | | 87 | No. 5 | 660 | 41 | Two active surface mines. |
| | | | | 48 | 1 | 50-100 | 52 | | | | | | | |
| | | | | 60 | 19 | 100-125 | 33 | | | | | | | |
| | | | | 72 | 53 | | | | | | | | | |
| | | | | 84 | 27 | | | | | | | | | |
| 154 | No. 6 | See Perry County. | | | | | | | | | | | | |
| 87 | No. 5 | 28.539 | 3,730 | 48 | 47 | 0-50 | 42 | | | 153 | No. 6 | 660 | 37 | Active surface mine. An area of untested No. 5 coal lies north of block 87. |
| | | | | 54 | 53 | 50-100 | 58 | | | | | | | |
| 88 | No. 5 | 37.377 | 5,730 | 36 | 13 | 0-50 | 24 | | | 154 | No. 6 | 670 | 37 | Active surface mine. An area of untested No. 5 coal lies to the northeast. |
| | | | | 42 | 60 | 50-100 | 76 | | | | | | | |
| | | | | 48 | 3 | | | | | | | | | |
| | | | | 54 | 24 | | | | | | | | | |
| 89 | No. 5 | 25.530 | 3,150 | 54 | 100 | 0-50 | 49 | Perry | 34 | 154 | No. 6 | 110 | 37 | |
| | | | | | | 50-100 | 51 | Randolph | 66 | | | | | |
| St. Clair County | | | | | | | | | | | | | | |
| 149 | No. 6 | 19.591 | 1,550 | 84 | 100 | 0-50 | 11 | | | | | | 41 | Block 149 is in the highly developed East St. Louis-Belleville area. |
| | | | | | | 50-100 | 64 | | | | | | | |
| | | | | | | 100-125 | 24 | | | | | | | |
| 150 | No. 6 | 32.985 | 3,120 | 60 | 11 | 0-50 | 100 | | | | | | 41 | Block 150 contains small areas of culture and numerous small abandoned mines. |
| | | | | 72 | 89 | | | | | | | | | |
| 151 | No. 6 | 359.206 | 28,630 | 72 | 10 | 0-50 | 1 | | | | | | 41 | The Kaskaskia River passes through the south end of block 151. The block is adjacent to Belleville and contains an operating surface mine and an underground mine. |
| | | | | 84 | 81 | 50-100 | 47 | | | | | | | |
| | | | | 96 | 9 | 100-125 | 53 | | | | | | | |
| | | | | 108 | <1 | | | | | | | | | |
| 152 | No. 6 | 15.351 | 1,260 | 72 | 19 | 0-50 | 7 | | | | | | 41 | Block 152 is adjacent to Freeburg and to an operating underground mine. |
| | | | | 84 | 81 | 50-100 | 80 | | | | | | | |
| | | | | | | 100-125 | 13 | | | | | | | |
| Saline County | | | | | | | | | | | | | | |
| 95 | No. 7 | 8.471 | 2,350 | 24 | 100 | 0-50 | 100 | | | 171 | No. 6 | 1,890 | 38 | A fault lies in block 95; displacement undetermined. |
| 171 | No. 6 | 93.048 | 10,200 | 48 | 10 | 0-50 | 13 | Saline | 95 | 95 | No. 7 | 1,890 | 44 | Active surface mine. |
| | | | | 60 | 66 | 50-100 | 65 | Williamson | 5 | | | | | |
| | | | | 72 | 24 | 100-125 | 22 | | | | | | | |
| 172 | No. 6 | See Gallatin County. | | | | | | | | | | | | |
| 173 | No. 6 | 10.476 | 1,340 | 36 | 10 | 0-50 | 27 | | | | | | 44 | |
| | | | | 48 | 35 | 50-100 | 72 | | | | | | | |
| | | | | 60 | 55 | | | | | | | | | |
| 174 | No. 6 | 14.387 | 1,760 | 48 | 39 | 0-50 | 31 | | | | | | 44 | |
| | | | | 60 | 61 | 50-100 | 69 | | | | | | | |
| 175 | No. 6 | See Gallatin County. | | | | | | | | | | | | |
| 97 | No. 5 | 18.807 | 2,160 | 48 | 14 | 0-50 | 10 | Gallatin | 16 | | | | 38 | A fault lies in block 97; displacement undetermined. |
| | | | | 60 | 86 | 50-100 | 90 | Saline | 84 | | | | | |
| 98 | No. 5 | 6.653 | 850 | 48 | 60 | 0-50 | 52 | Galatin | 40 | | | | 38 | |
| | | | | 60 | 40 | 50-100 | 48 | Saline | 60 | | | | | |
| 170 | De Koven | 7.707 | 1,430 | 36 | 100 | 0-50 | 43 | | | 96 | Davis | 1,430 | 44 | Active surface mine. |
| | | | | | | 50-75 | 57 | | | | | | | |
| 96 | Davis | 10.120 | 1,610 | 42 | 100 | 0-50 | 29 | | | 170 | De Koven | 1,430 | 38 | Active surface mine. |
| | | | | | | 50-100 | 71 | | | | | | | |

APPENDIX 2—*Continued*

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sangamon County | | | | | | | | | | | | | | |
| 73 | No. 5 | 152.611 | 14,250 | 60 | 4 | 50-100 | 19 | Sangamon | 72 | | | | 36 | An 8-in. gas pipeline passes through block 73. Large areas of untested coal border block 73 in Cass and Morgan Counties. |
| | | | | 72 | 96 | 100-125 | 81 | Menard | 28 | | | | | |
| Schuyler County | | | | | | | | | | | | | | |
| 71 | No. 5 | 27.929 | 5,890 | 18 | 32 | 0-50 | 90 | | | | | | 36 | Adjacent to Rushville. 22-in. crude-oil pipeline passes through the north edge of block 71. |
| | | | | 36 | 22 | 50-100 | 10 | | | | | | | |
| | | | | 60 | 46 | | | | | | | | | |
| 72 | No. 5 | 56.734 | 6,300 | 60 | 100 | 0-50 | 69 | | | | | | 36 | |
| | | | | | | 50-100 | 28 | | | | | | | |
| | | | | | | 100-125 | 3 | | | | | | | |
| 59 | No. 2 | 37.517 | 8,370 | 24 | 7 | 0-50 | 53 | Fulton | 48 | | | | 36 | |
| | | | | 30 | 93 | 50-75 | 47 | Schuyler | 52 | | | | | |
| 61 | No. 2 | See McDonough County. | | | | | | | | | | | | |
| 62 | No. 2 | 36.602 | 8,130 | 30 | 100 | 0-50 | 44 | Fulton | 22 | | | | 36 | |
| | | | | | | 50-75 | 56 | McDonough | 10 | | | | | |
| | | | | | | | | Schuyler | 68 | | | | | |
| 65 | No. 2 | See Hancock County. | | | | | | | | | | | | |
| 66 | No. 2 | See Adams County. | | | | | | | | | | | | |
| 68 | No. 2 | 8.703 | 2,070 | 24 | 100 | 0-50 | 98 | | | | | | 38 | |
| | | | | | | 50-60 | 2 | | | | | | | |
| 69 | No. 2 | 6.889 | 1,910 | 24 | 100 | 0-50 | 100 | | | | | | 36 | About 11 mi $^2$ of No. 2 coal beneath 50-75 feet of overburden lie north of block 69. |
| 70 | No. 2 | 12.376 | 3,440 | 24 | 100 | 0-50 | 61 | | | | | | 36 | A 12-in. gas pipeline passes through block 70. |
| | | | | | | 50-60 | 39 | | | | | | | |
| Scott County | | | | | | | | | | | | | | |
| 78 | No. 2 | 29.619 | 6,580 | 30 | 100 | 0-50 | 17 | | | | | | 36 | Adjacent to Winchester. |
| | | | | | | 50-75 | 83 | | | | | | | |
| Shelby County | | | | | | | | | | | | | | |
| 185 | Trow-bridge | 16.369 | 3,900 | 24 | 100 | 0-50 | 97 | Cumberland | 15 | | | | 43 | Block 185 is bisected by the southwestern edge of Lake Mattoon. |
| | | | | | | 50-60 | 3 | Shelby | 85 | | | | | |
| | | | | | | | | | | | | | 43 | |
| 183 | Shelby-ville | 13.539 | 5,020 | 18 | 100 | 0-50 | 100 | | | | | | | Block 183 is bisected by a small creek. |
| Stark County | | | | | | | | | | | | | | |
| 7 | No. 7 | See Henry County. | | | | | | | | | | | | |
| 10 | No. 7 | See Peoria County. | | | | | | | | | | | | |
| 114 | No. 6 | See Bureau County. | | | | | | | | | | | | |
| 115 | No. 6 | 292.671 | 40,010 | 42 | 6 | 0-50 | 11 | Stark | 84 | | | | 40 | The Spoon River passes through block 115. A 16-in. gas pipeline passes through the west edge of the block. An area of untested No. 6 coal borders the southeast side of the block. |
| | | | | 48 | 73 | 50-100 | 89 | Henry | 16 | | | | | |
| | | | | 54 | 21 | 100-125 | <1 | | | | | | | |

APPENDIX 2—*Continued*

| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stark County—Continued | | | | | | | | | | | | | | |
| 116 | No. 6 | 10.710 | 1,700 | 42 | 100 | 0-50 | 100 | | | | | | 40 | |
| 123 | No. 6 | See Peoria County. | | | | | | | | | | | | |
| Vermilion County | | | | | | | | | | | | | | |
| 102 | No. 7 | 8.516 | 1,580 | 36 | 100 | 0-50 | 8 | | | | | | 37 | Block 102 is adjacent to Georgetown; two 12-in. gas pipelines pass through the block. |
| | | | | | | 50-75 | 92 | | | | | | | |
| 103 | No. 7 | 18.591 | 2,870 | 36 | 41 | 0-50 | 6 | | | | | | 37 | Block 103 is adjacent to Westville; two 12-in. gas pipelines pass through the block. |
| | | | | 48 | 46 | 50-100 | 93 | | | | | | | |
| | | | | 60 | 13 | | | | | | | | | |
| 104 | No. 7 | 73.224 | 6,920 | 60 | 12 | 0-50 | 4 | | | | | | 37 | Block 104 is adjacent to Catlin and Danville; it is pocketed by numerous small underground mines and part is separated by an abandoned strip mine. |
| | | | | 72 | 86 | 50-100 | 24 | | | | | | | |
| | | | | 84 | 2 | 100-125 | 71 | | | | | | | |
| 184 | No. 6 | 46.167 | 5,290 | 36 | 2 | 0-50 | 21 | | | | | | 42 | |
| | | | | 48 | 43 | 50-100 | 46 | | | | | | | |
| | | | | 60 | 11 | 100-125 | 33 | | | | | | | |
| | | | | 72 | 34 | | | | | | | | | |
| | | | | 84 | 10 | | | | | | | | | |
| Wabash County | | | | | | | | | | | | | | |
| 179 | Friendsville | 19.529 | 3,390 | 36 | 89 | 0-50 | 48 | | | | | | 44 | Areas of untested Friendsville Coal border block 179. The block is adjacent to Belmont. |
| | | | | 42 | 11 | 50-75 | 52 | | | | | | | |
| 180 | Friendsville | 92.018 | 19,140 | 30 | 71 | 0-50 | 71 | | | | | | 44 | Some small oil fields are within block 180. Untested areas of Friendsville Coal lie west and north of the block. |
| | | | | | | 50-100 | 29 | | | | | | | |
| | | | | 36 | 19 | | | | | | | | | |
| | | | | 42 | 8 | | | | | | | | | |
| | | | | 48 | 2 | | | | | | | | | |
| 181 | Friendsville | 24.759 | 4,520 | 30 | 49 | 0-50 | 93 | | | | | | 44 | Some small oil fields are within block 181. An untested area of Friendsville Coal lie north of the block. |
| | | | | 42 | 42 | 50-75 | 7 | | | | | | | |
| | | | | 48 | 10 | | | | | | | | | |
| Warren County | | | | | | | | | | | | | | |
| 23 | No. 2 | See Knox County. | | | | | | | | | | | | |
| 24 | No. 2 | 11.865 | 3,300 | 24 | 100 | 0-50 | 99 | | | | | | 39 | |
| | | | | | | 50-60 | 1 | | | | | | | |
| 25 | No. 2 | 16.168 | 4,490 | 24 | 100 | 0-50 | 90 | | | | | | 39 | Block 25 is adjacent to Monmouth. |
| | | | | | | 50-60 | 10 | | | | | | | |
| 26 | No. 2 | See Knox County. | | | | | | | | | | | | |
| 27 | No. 2 | 7.832 | 2,180 | 24 | 100 | 0-50 | 95 | | | | | | 39 | Block 27 is adjacent to Roseville. Four-in. and 7-in. gas pipelines pass through the block. |
| | | | | | | 50-60 | 5 | | | | | | | |

APPENDIX 2—*Continued*

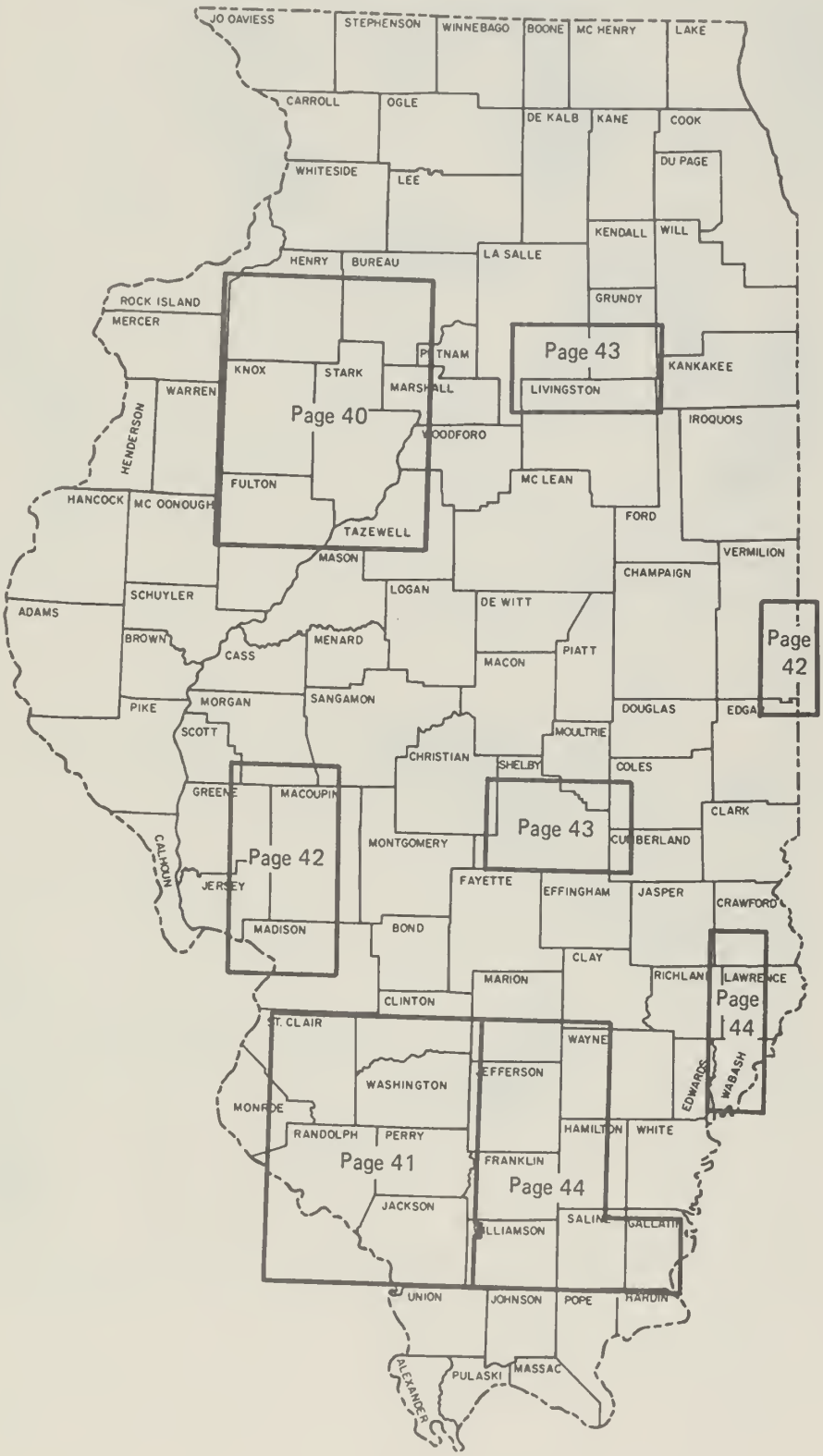
| Block number | Coal member | Reserves (in millions of tons) | Acreage | Distribution of tonnage: By thickness (in.) | By thickness: Percentage of total | By depth (ft) | By depth: Percentage of total | By county: County | By county: Percentage of total | Overlap: Block number | Overlap: Coal member | Overlap: Acreage | Page reference to map (app. 3) | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Warren County—Continued | | | | | | | | | | | | | | |
| 28 | No. 2 | 11.672 | 3,240 | 24 | 100 | 0-50 | 77 | | | | | | 39 | Block 28 is adjacent to Roseville. |
| | | | | | | 50-60 | 23 | | | | | | | |
| 29 | No. 2 | See Knox County. | | | | | | | | | | | | |
| Williamson County | | | | | | | | | | | | | | |
| 164 | No. 6 | 15.164 | 1,050 | 96 | 95 | 50-100 | 32 | | | | | | 41 | This block is sandwiched between the Big Muddy River and a large abandoned underground mine. |
| | | | | 108 | 5 | 100-125 | 68 | | | | | | | |
| 165 | No. 6 | See Jackson County. | | | | | | | | | | | | |
| 166 | No. 6 | 14.005 | 870 | 108 | 100 | 0-50 | 74 | | | 93 | No. 5 | 660 | 44 | This block is adjacent to the communities of Energy and Carterville. |
| | | | | | | 50-100 | 26 | | | | | | | |
| 167 | No. 6 | 11.632 | 1,290 | 60 | 100 | 0-50 | 3 | | | | | | 44 | Active surface mine in this block. |
| | | | | | | 50-100 | 97 | | | | | | | |
| 168 | No. 6 | 9.706 | 980 | 66 | 100 | 0-50 | 100 | | | | | | 44 | |
| 171 | No. 6 | See Saline County. | | | | | | | | | | | | |
| 93 | No. 5 | 12.525 | 1,740 | 48 | 100 | 0-50 | 51 | | | 166 | No. 6 | 660 | 38 | Block 93 borders Energy and Carterville; active surface mine. |
| | | | | | | 50-100 | 49 | | | | | | | |
| 94 | No. 5 | 16.902 | 2,350 | 48 | 100 | 0-50 | 37 | | | | | | 38 | Block 94 is adjacent to Marion. |
| | | | | | | 50-100 | 63 | | | | | | | |
| 169 | De Koven | 5.042 | 930 | 36 | 100 | 0-50 | 54 | | | 92 | Davis | 810 | 44 | |
| | | | | | | 50-75 | 46 | | | | | | | |
| 92 | Davis | 4.345 | 810 | 36 | 100 | 0-50 | 33 | | | 169 | De Koven | 810 | 38 | |
| | | | | | | 50-100 | 67 | | | | | | | |
| 162 | Murphysboro | See Jackson County. | | | | | | | | | | | | |

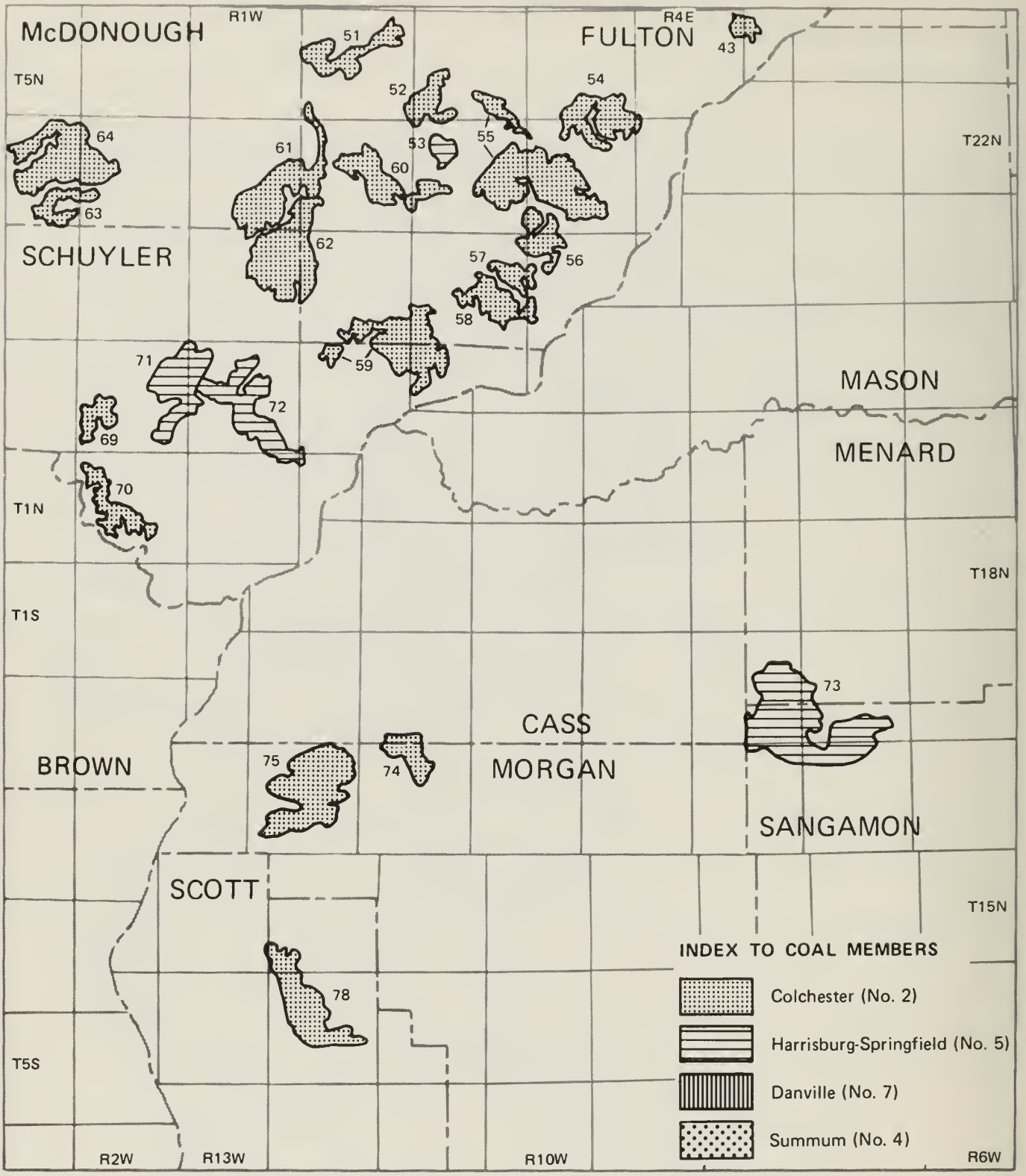
## INDEX TO COAL MEMBERS

Colchester (No. 2)
Harrisburg-Springfield (No. 5)
Danville (No. 7)
De Koven

## INDEX TO COAL MEMBERS

Summum (No. 4)
Herrin (No. 6)
Davis
Other coal members
- Shelbyville
- Friendsville
- Trowbridge
- Opdyke
- Murphysboro
- Unnamed coal near Bristol Hill, Crawford County
- Unnamed coal near Campbell Hill, Jackson County

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R1W
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FULTON
T5N
T22N
SCHUYLER
MASON
MENARD
T1N
T18N
T1S
CASS
BROWN
MORGAN
SANGAMON
SCOTT
T15N
T5S
R2W
R13W
R10W
R6W
51
52
53
54
55
43
64
63
61
60
62
57
56
58
59
71
72
69
70
73
75
74
78
INDEX TO COAL MEMBERS
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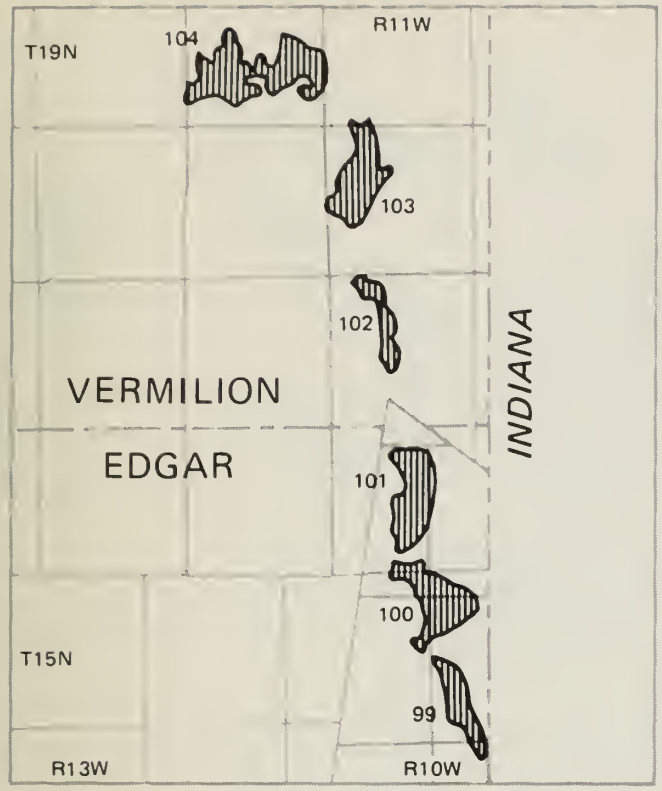
Harrisburg-Springfield (No. 5)
Danville (No. 7)
Summum (No. 4)
0
5
10
15 mi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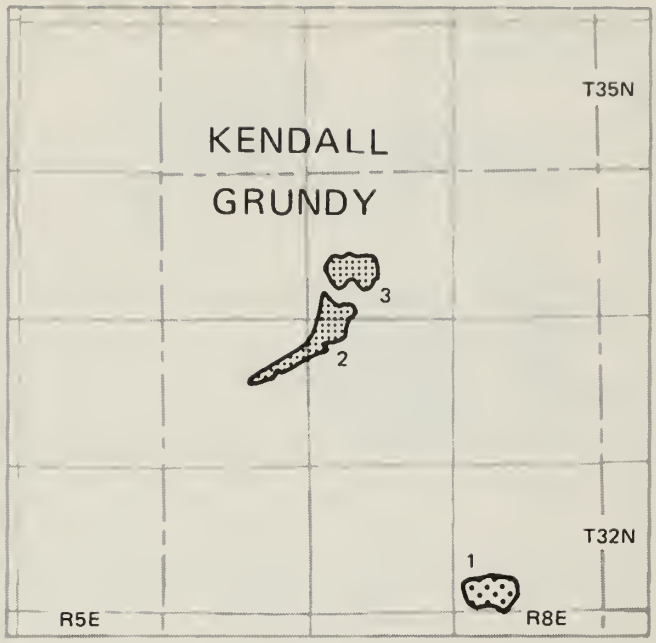
T15N
R13W
R10W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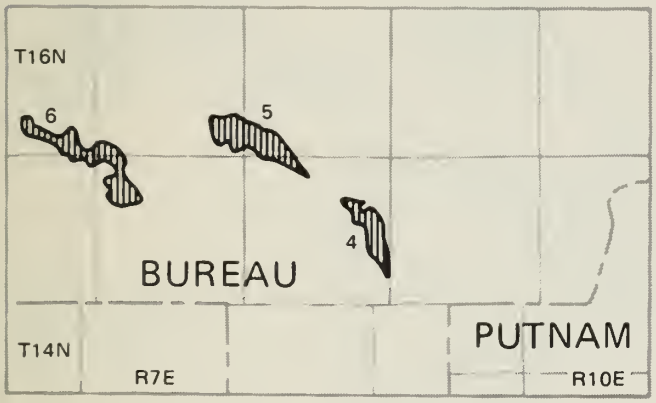
R5E
R8E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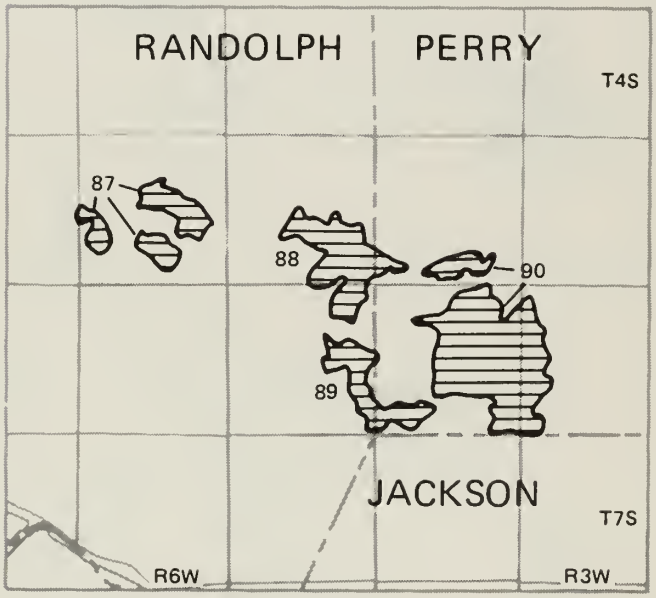
BUREAU
PUTNAM
T14N
R7E
R10E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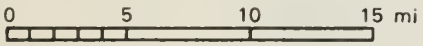
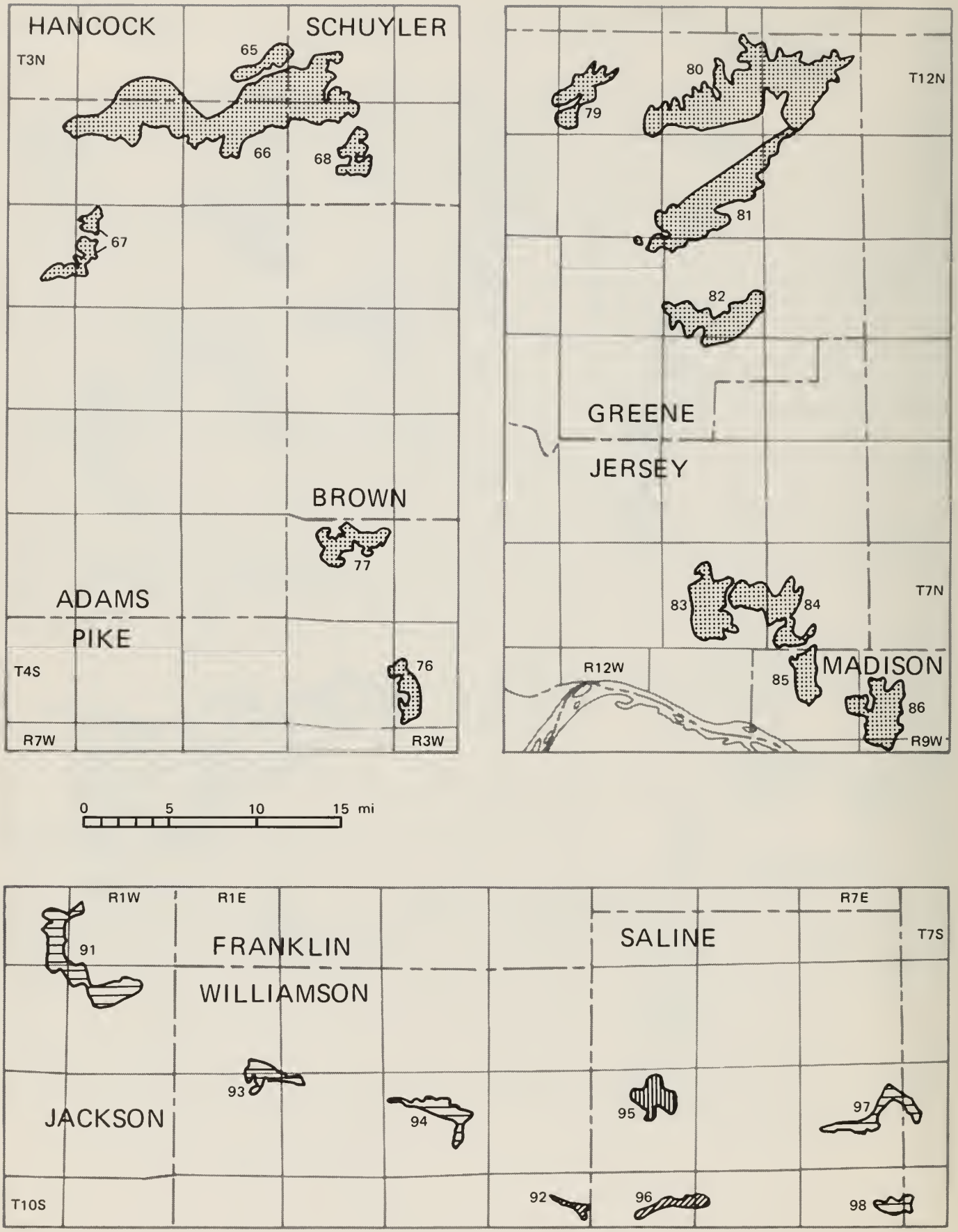
PERRY
T4S
87
88
90
89
JACKSON
T7S
R6W
R3W


0
5
10
15 mi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SCHUYLER
T3N
65
66
68
67
BROWN
77
ADAMS
PIKE
T4S
76
R7W
R3W
T12N
80
79
81
82
GREENE
JERSEY
T7N
83
84
R12W
85
MADISON
86
R9W
0
5
10
15 mi
R1W
R1E
R7E
91
FRANKLIN
SALINE
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WILLIAMSON
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JACKSON
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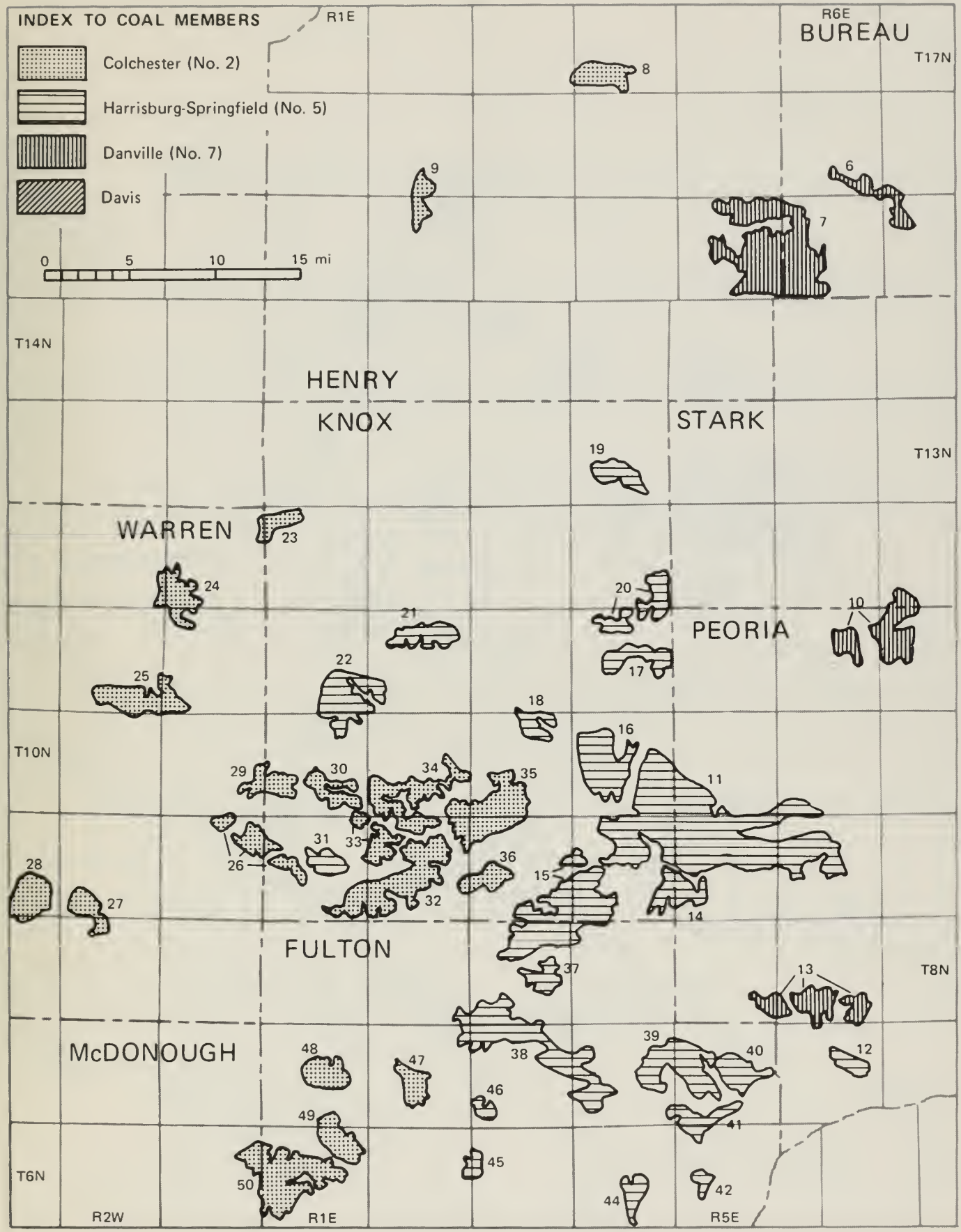
95
97
T10S
92
96
98


INDEX TO COAL MEMBERS
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Harrisburg-Springfield (No. 5)
Danville (No. 7)
Davis
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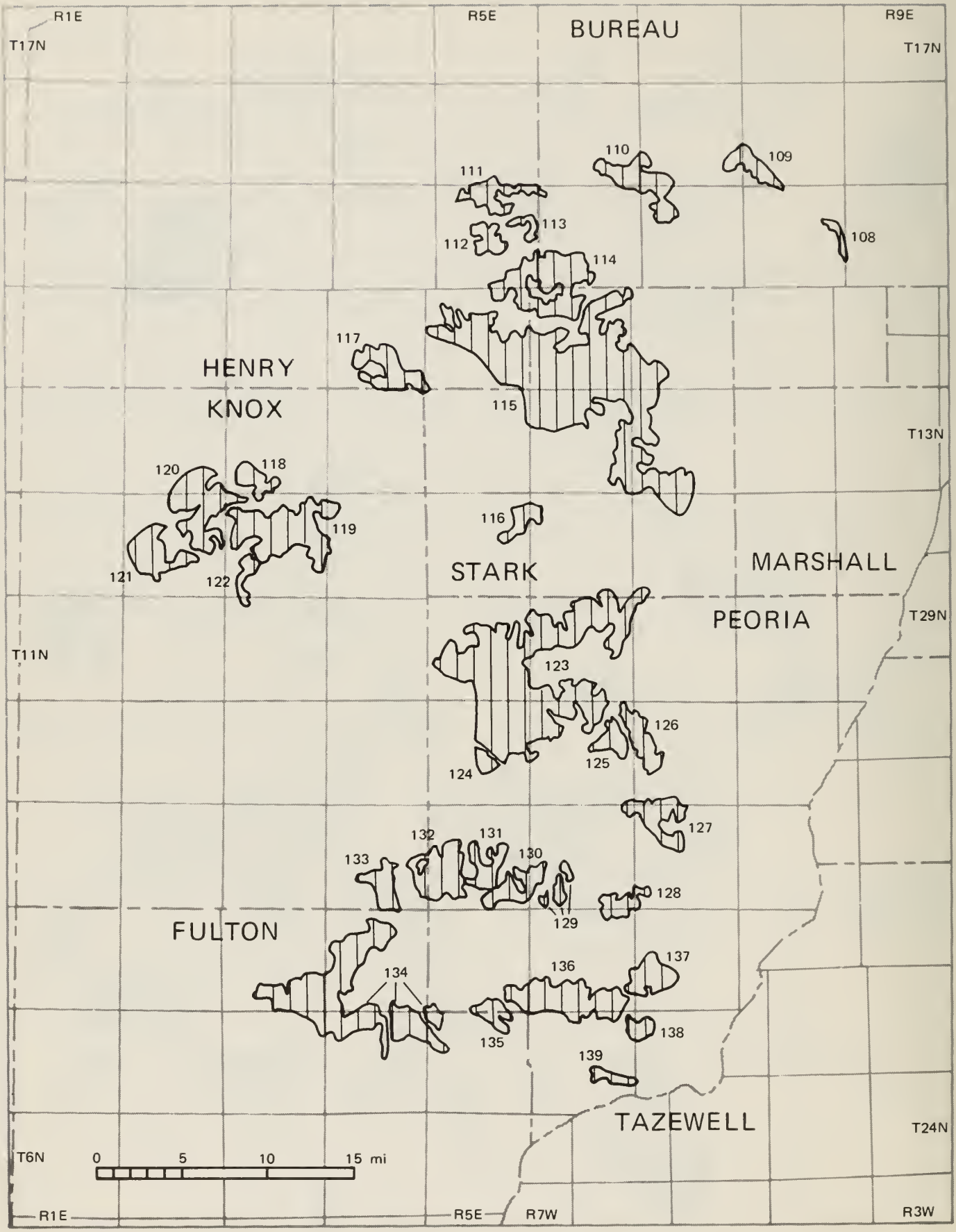
R1E
R6E
BUREAU
T17N
T14N
HENRY
KNOX
STARK
T13N
WARREN
PEORIA
T10N
FULTON
T8N
McDONOUGH
T6N
R2W
R1E
R5E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R5E
BUREAU
R9E
T17N
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109
111
113
112
108
114
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HENRY
KNOX
115
T13N
120
118
119
116
121
122
STARK
MARSHALL
PEORIA
T29N
T11N
123
126
124
125
127
132
131
133
130
128
129
FULTON
134
136
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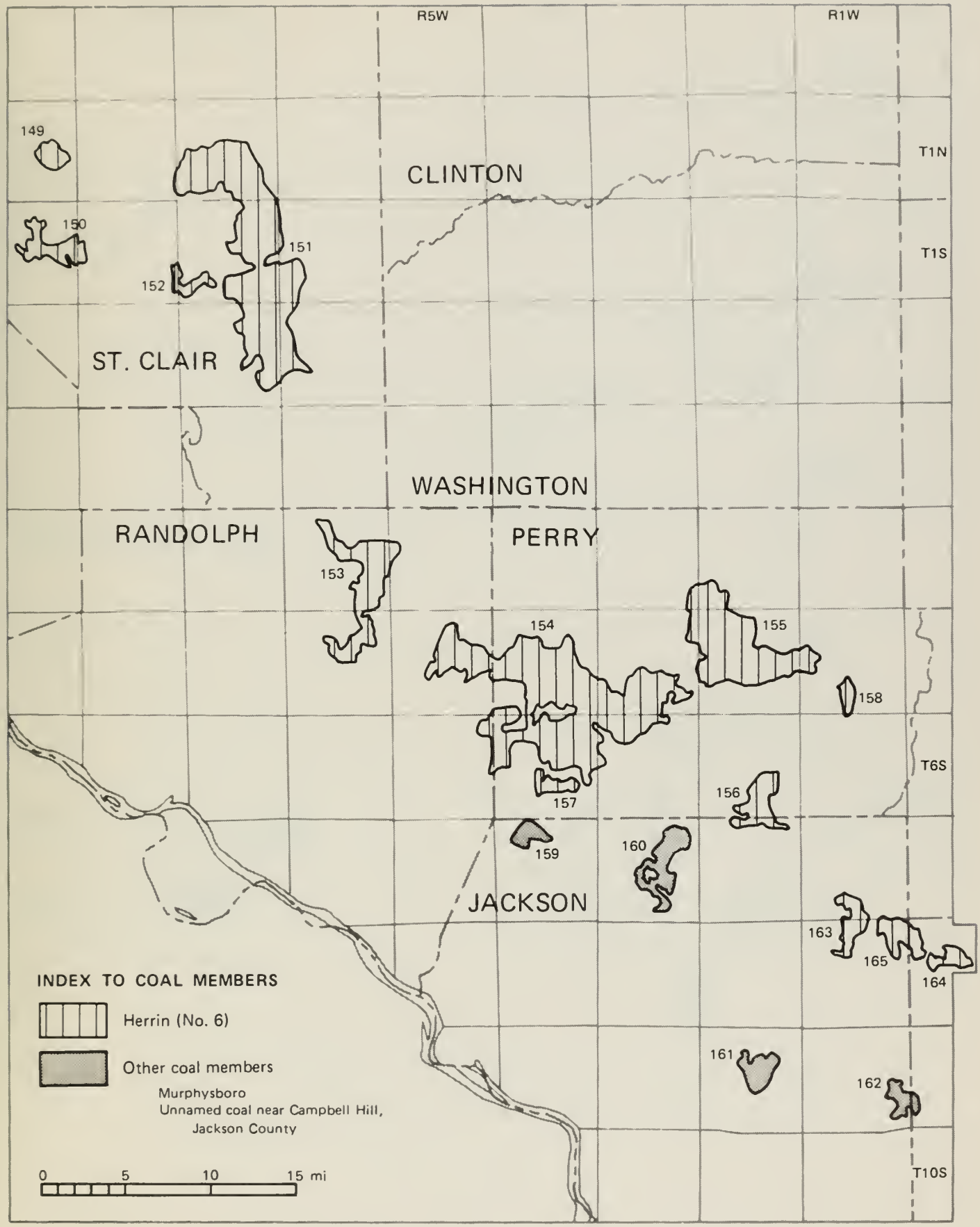
R5E
R7W
R3W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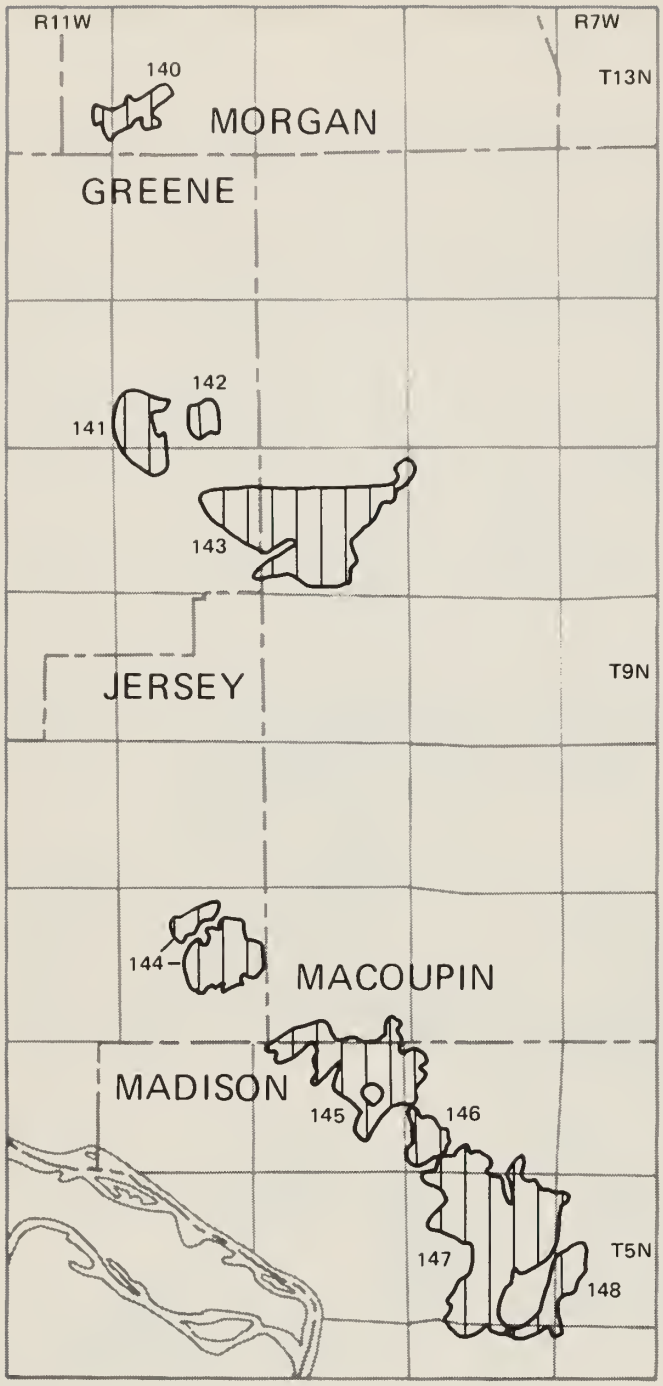
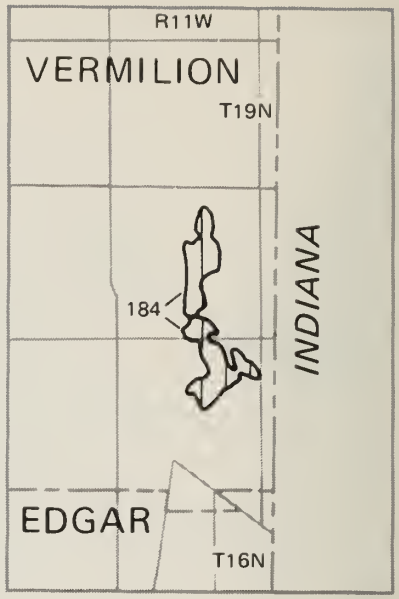
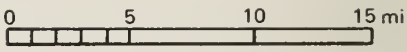
T1N
T1S
T6S
T10S
CLINTON
ST. CLAIR
WASHINGTON
RANDOLPH
PERRY
JACKSON
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
INDEX TO COAL MEMBERS
Herrin (No. 6)
Other coal members
Murphysboro
Unnamed coal near Campbell Hill, Jackson County
0
5
10
15 mi



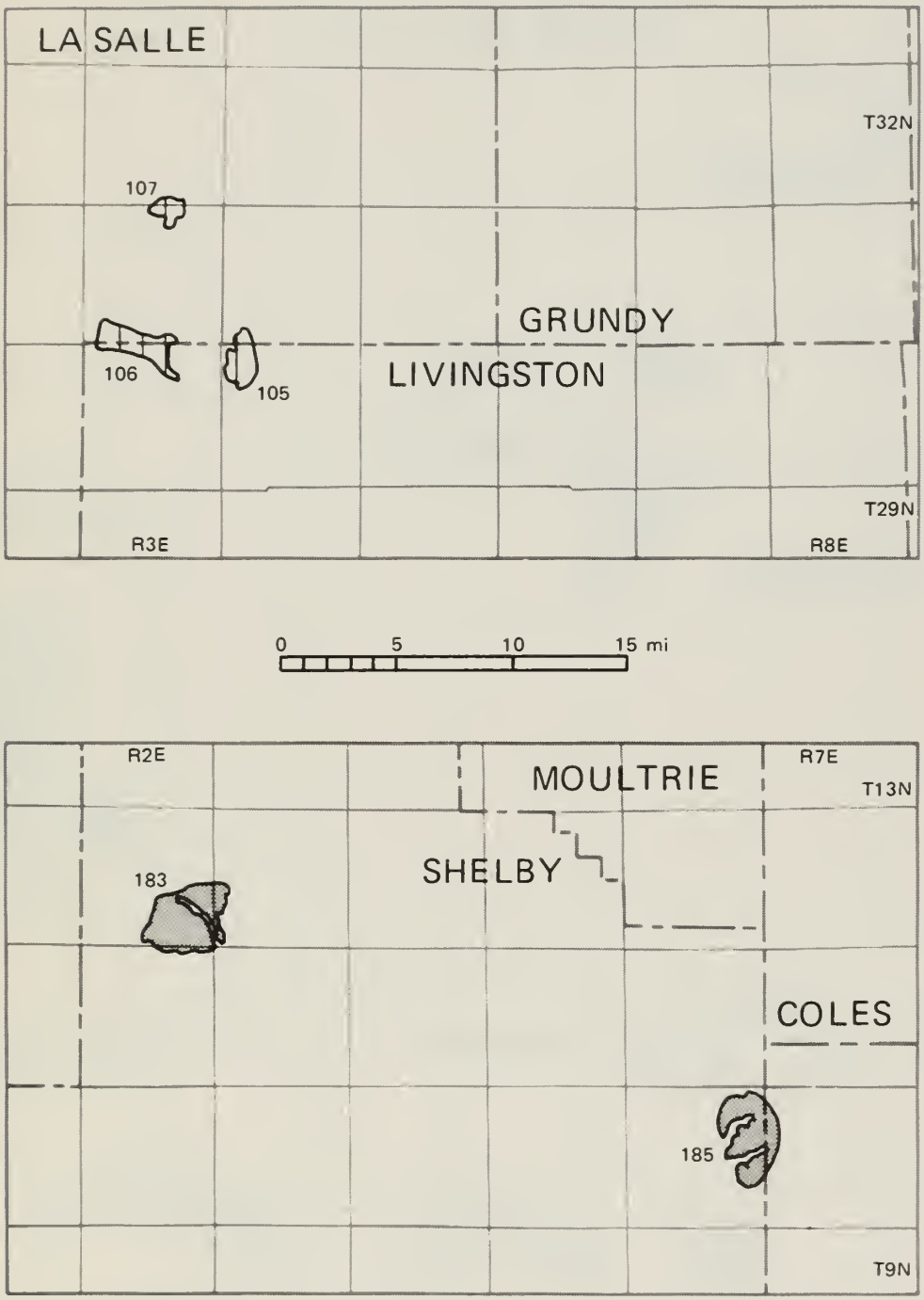

**INDEX TO COAL MEMBERS**

Herrin (No. 6)

Other coal members

Shelbyville

Trowbridge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GRUNDY
106
105
LIVINGSTON
T29N
R3E
R8E
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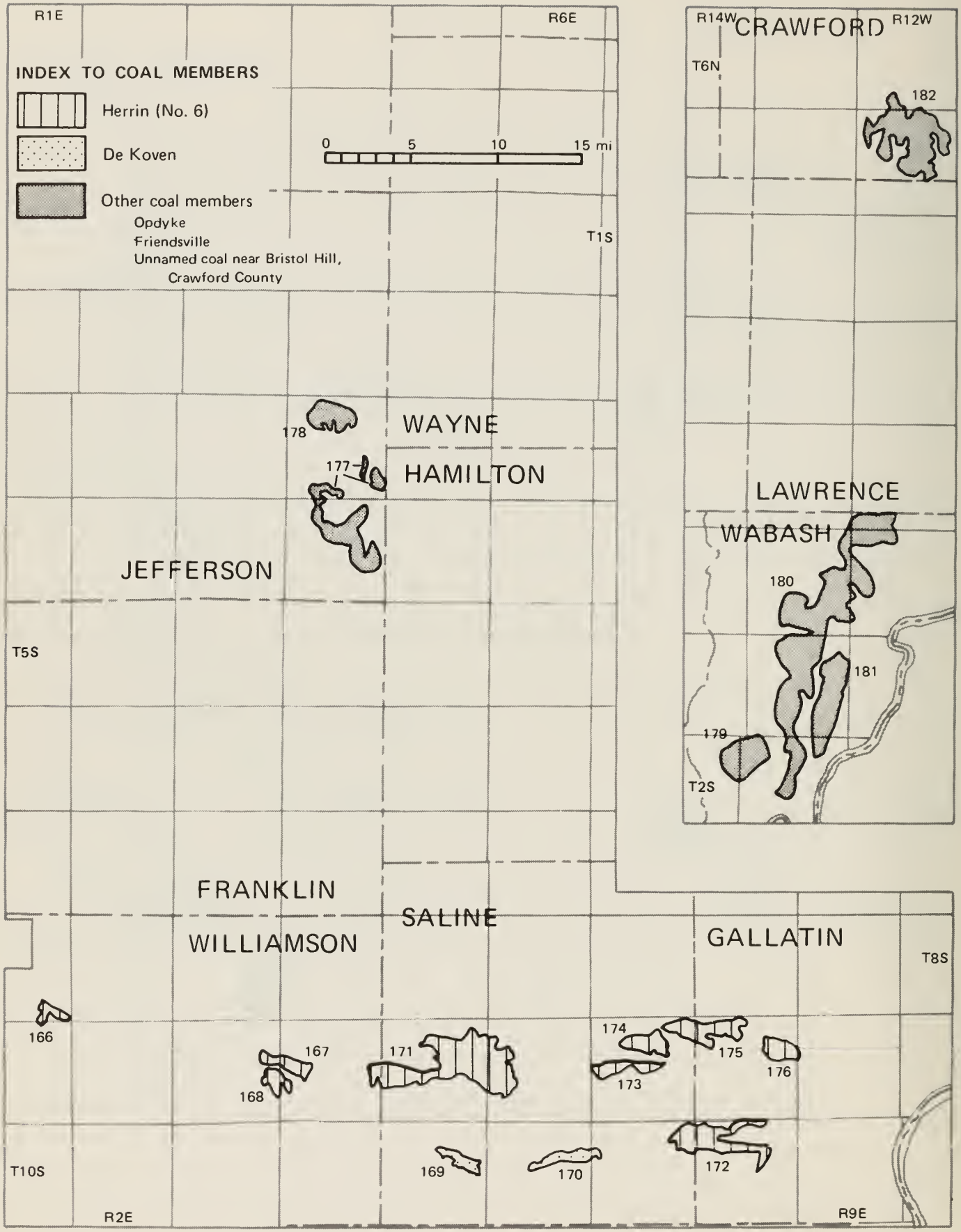
R2E
MOULTRIE
R7E
T13N
183
SHELBY
COLES
185
T9N


R1E
R6E
R14W
CRAWFORD
R12W
T6N
INDEX TO COAL MEMBERS
Herrin (No. 6)
De Koven
Other coal members
Opdyke
Friendsville
Unnamed coal near Bristol Hill, Crawford County
0 5 10 15 mi
T1S
182
178
WAYNE
177
HAMILTON
LAWRENCE
WABASH
JEFFERSON
180
181
179
T5S
T2S
FRANKLIN
SALINE
WILLIAMSON
GALLATIN
T8S
166
167
168
171
174
175
176
173
169
170
172
T10S
R2E
R9E