STUDIES RELATED TO WILDERNESS

The Wilderness Act (Public Law 88-577, September Survey and the U.S. Bureau of Mines to survey certain (fig. 3) and contains about 15 million short tons of areas on Federal lands to determine their mineral resources. This coal bed is low in sulfur (about 0.6 resource potential. Results must be made available to percent); however, because of numerous shale partings the public and be submitted to the President and the in the lower half of the bed, it has an ash content as Congress. This report presents the results of a high as 25 percent, or more. mineral resource survey of the Otter Creek Wilderness, Monongahela National Forest, Randolph and Tucker Counties, West Virginia, which was established as a wilderness by Public Law 93-622, January 3, 1975.

COAL RESOURCES

this report is based on geologic and structure contour sulfur content of about 1.0 percent. maps (Warlow, 1981) compiled using field data from U.S Geological Survey and U.S. Bureau of Mines personnel, an unpublished U.S. Forest Service (1975) report, and published reports by Reger and others (1923) and Reger geologic control and distance from measured data points Analyses are not available for this zone. are used to assign coal resources to measured, indicated, and inferred reliability categories. The measured category of coal extends to 0.25 mi from a measured data point; indicated coal extends from 0.25 Behum, P. T., and Mory, P. C., 1981, Maps showing to 0.75 mi from a measured data point; inferred coal extends from 0.75 to 3 mi from a measured data point (U.S. Bureau of Mines and U.S Geological Survey, 1976). The resource estimates in this report (table 1) include coal thicker than 14 in. in the measured, indicated, and inferred categories.

A total of 22 channel samples of coal were collected by the U.S Geological Survey and the U.S. Bureau of Mines during field investigations. The samples came from adit entrances, prospect trenches, and outcrops. The coal bed was penetrated to a depth weathering on analytical results (table 2). The analyses were conducted according to standards set forth in Swanson and Huffman (1976) and Zubovic and others (1979). Results of these analyses indicate that volatile bituminous (Warlow and others, 1981). Some of the coal in the wilderness is of marginal quality for use as coking coal (having 12 percent ash and 1.0 percent sulfur). A large amount of the remaining coal, U.S. Forest Service, 1975, Coal evaluation study, although moderate to high in ash content, contains less than 1.0 percent sulfur and, therefore, would be suitable for steam coal (Behum and Mory, 1981).

The Sewell(?) coal bed contains the largest amount of coal resources in the Otter Creek Wilderness, having This coal bed is thickest in the southeastern corner of the wilderness and thins to the west (fig. 1). The Sewell(?) coal bed generally contains less than 12 percent ash and less than 2 percent sulfur.

Sewell(?) Rider Coal Bed

Sewell(?) Coal Bed

The Sewell(?) rider coal bed contains about 6 million short tons of coal resources which are concentrated in the southeastern part of the wilderness (fig. 2). This coal bed is very low in sulfur, generally 0.5 percent or less, but its ash content can be as high as 20 percent, or more.

throughout the wilderness (fig. 4); however, most of the individual coal beds within the zone are not persistent over the entire area. Individual beds range The Otter Creek Wilderness contains at least 11 from 0 to 30 in. thick. About 26 million short tons of coal beds, of which 5 contain resources. The coal coal resources are present within this zone, which resource evaluation of the Otter Creek Wilderness in contains coals having low ash content and an average

(1928 and 1931). Isopachous maps of each coal bed small areas in the wilderness, two on Green Mountain (figs. 1-6) were prepared using these data and and one on McGowan Mountain (fig. 5). Coals of this thickness categories of 14-28 in., 28-42 in., and zone range from 0 to 22 in. This zone is of little greater than 42 in. Resource determinations were not importance because of its limited areal extent; only made for beds less than 14 in. thick. The amount of about 1 million tons of coal resources are present.

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Guidelines for sample collecting and analytical methods used in the U.S Geological Survey for determining chemical composition of coal: U.S Geological Survey Circular 735, 11 p. the rank of the coals in the wilderness is medium- U.S. Bureau of Mines and U.S Geological Survey, 1976, Coal resource classification system of the U.S.

Monongahela National Forest: Elkins, W. Va., U.S. Forest Service unpublished open-file report, 45 p. Warlow, R. C., 1981, Geologic map, cross sections, generalized columnar section, and structure contour map of the Otter Creek Wilderness, Randolph and Tucker Counties, West Virginia: U.S Geological Survey Miscellaneous Field Studies Map MF-1267-A. a total of slightly less than 84 million short tons. Warlow, R. C., Oman, C. L., and Brookes, A. E., 1981, Chemical analysis and evaluation of 22 coal

> 81- 351,38p. Zubovic, Peter, Oman, Charles, Coleman, S. L., Bragg, Linda, Kerr, P. T., Kozey, K. M., Simon, F. O., Rowe, J. J., Medlin, J. H., and Walker, F. E., 1979, Chemical analysis of 617 coal samples from the eastern United States: U.S Geological Survey Open-File Report 79-665, 458 p.

C-2 Coal Zone

Kittanning Coal Zone

mines, quarries, prospects, and exposures in the Otter Creek Wilderness, Randolph and Tucker Counties, West Virginia: U.S. Geological Survey Reger, D. B., 1928, The Cheat Mountain coal field of Randolph County, West Virginia: West Virginia 1931, Randolph County: West Virginia Geological Survey County Report, 989 p. Reger, D. B., Price, W. A., and Tucker, R. C., 1923,

Bureau of Mines and U.S Geological Survey: U.S Geological Survey Bulletin 1450-B, 7 p.

samples from the Otter Creek Wilderness and adjacent area, Randolph and Tucker Counties, West Virginia: U.S Geological Survey Open-File Report

EXPLANATION

Area having coal less than 14 in. thick Area having coal 14-28 in. thick

Area having coal 28-42 in. thick Area having coal thicker than 42 in. thick

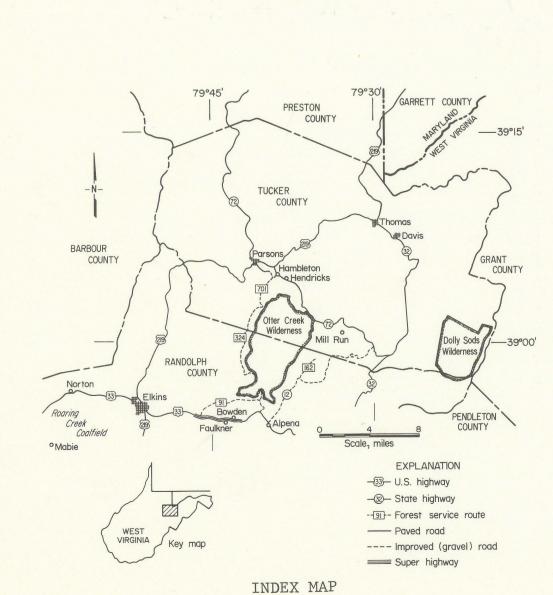
———— Outcrop of coal bed ______28__ — Coal thickness line--Showing thickness of coal bed

in inches. Dashed where coal is absent

bituminaus coal resources in the Otter Creek Wilderness, West Virginia, in thousands of short tons, covered by less than

			Original Resources														
		Measured				Indicated				Inferred				Total			
				In beds				In beds				In beds				In beds	
Formation	Coal Bed	In beds 14-28 inches thick	In beds 28-42 inches thick	more than 42 inches thick	e Total n es	In beds 14-28 inches thick	In beds 28-42 inches thick	more than 42 inches thick	Total	In beds 14-28 inches thick	In beds 28-42 inches thick	more than 42 inches thick	Total	In beds 14-28 inches thick	In beds 28-42 inches thick	more than 42 inches thick	Total
Allegheny	Kittanning zone	411	0	0	411	752	0	0	752	71	0	0	71	1,234	0	0	1,23
Kanawha and New River, undivided	C-2 zone (uncorrelated)	1,813	518	0	2,331	8,787	2,486	0	11,273	10,195	2,244	0	12,439	20,795	5,248	0	26,04
	C-1 (uncorrelated)	723	951	0	1,674	4,860	3,655	0	8,515	3,370	2,123	0	5,493	8,953	6,729	0	15,68
	Sewell(?) rider	809	292	0	1,101	2,154	1,422	0	3,576	1,139	179	0	1,318	4,102	1,893	0	5,99
	Sewell(?)	2,225	2,237	677	5,139	11,928	12,596	660	25,184	4,327	2,268	7	6,602	18,480	17,101	1,344	36,92
	Total	5,981	3,998	677	10,656	28,481	20,159	660	49,300	19,102	6,814	7	25,923	53,564	30,971	1,344	85,87

Table 2.--Trace-element concentrations, in parts per million, in 22 samples of coal from the Otter Creek Wilderness [Analyses by U.S Geological Survey. L, less than the value shown; (S) determinations by automatic plate-reading computer-assisted emission spectrographic analyses. Complete analyses given in Warlow and others (1981).]



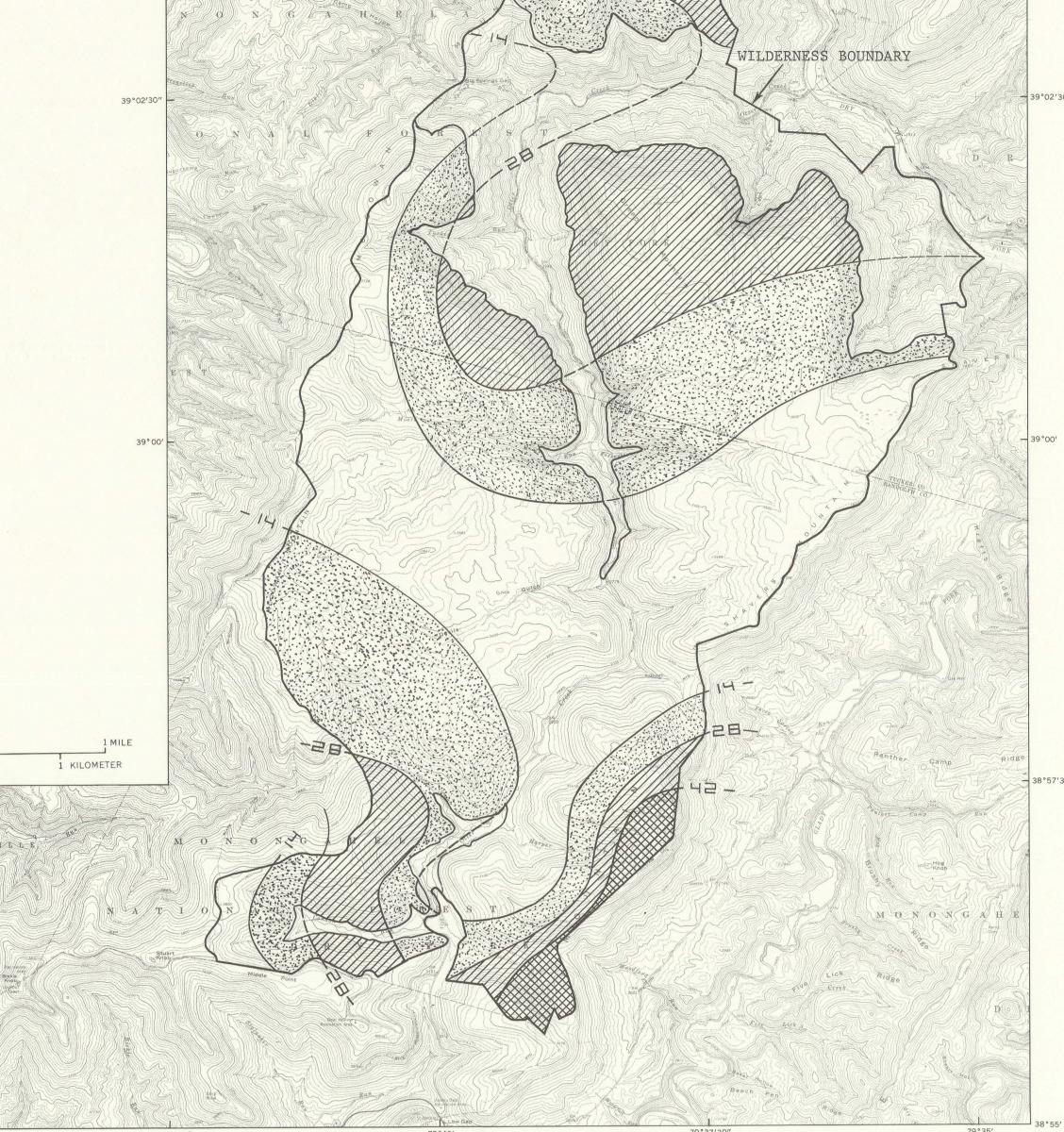
C-1 Coal Bed

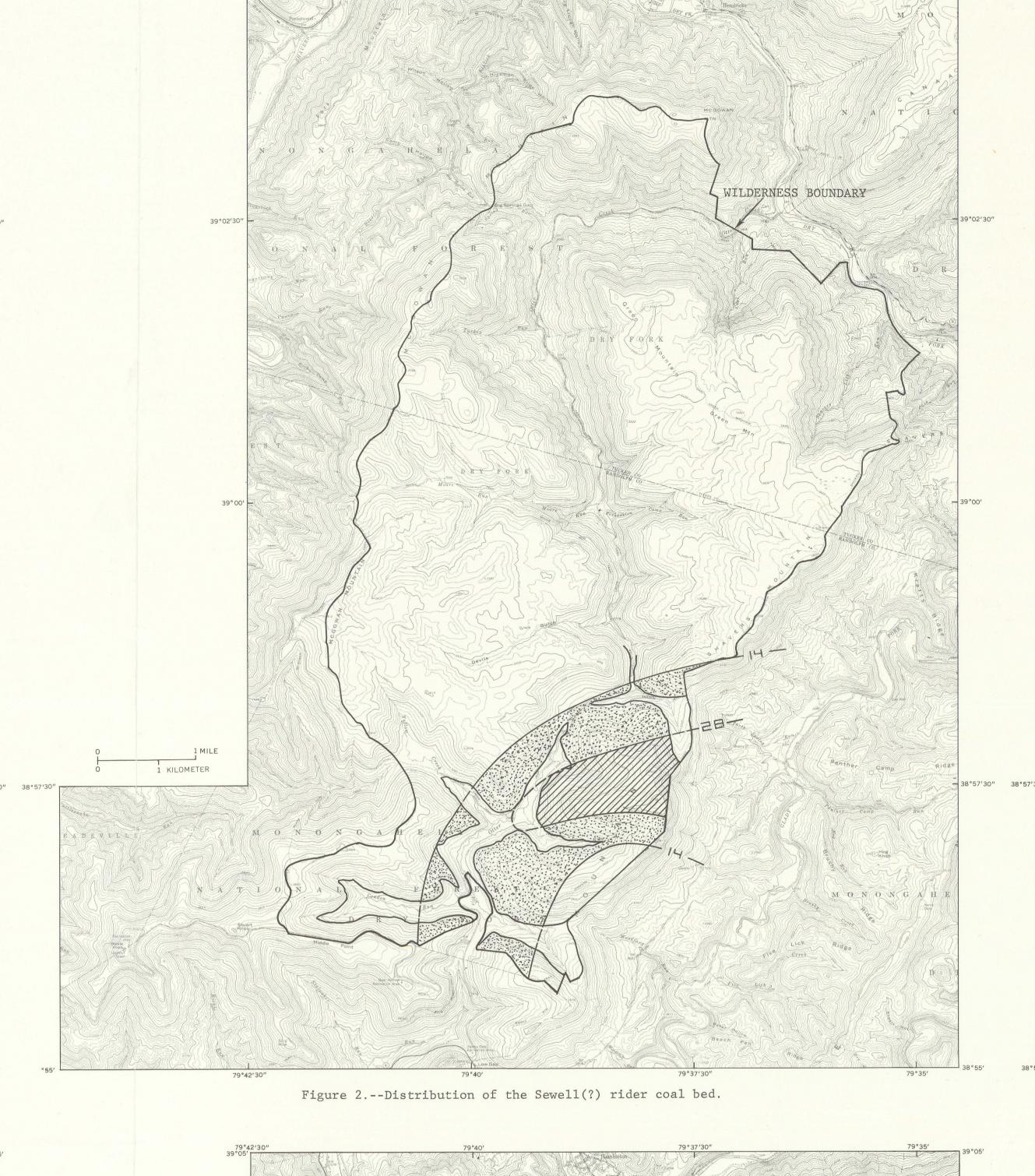
The C-1 coal bed is thickest in the southeastern 3, 1964) and related acts require the U.S Geological and northwestern parts of the Otter Creek Wilderness

The C-2 coal zone is fairly evenly distributed

The Kittanning coal zone occurs only in three

County Report, 542 p. of at least 1 foot in sampling to reduce the effects of Swanson, V. E., and Huffman, Claude, Jr., 1976,





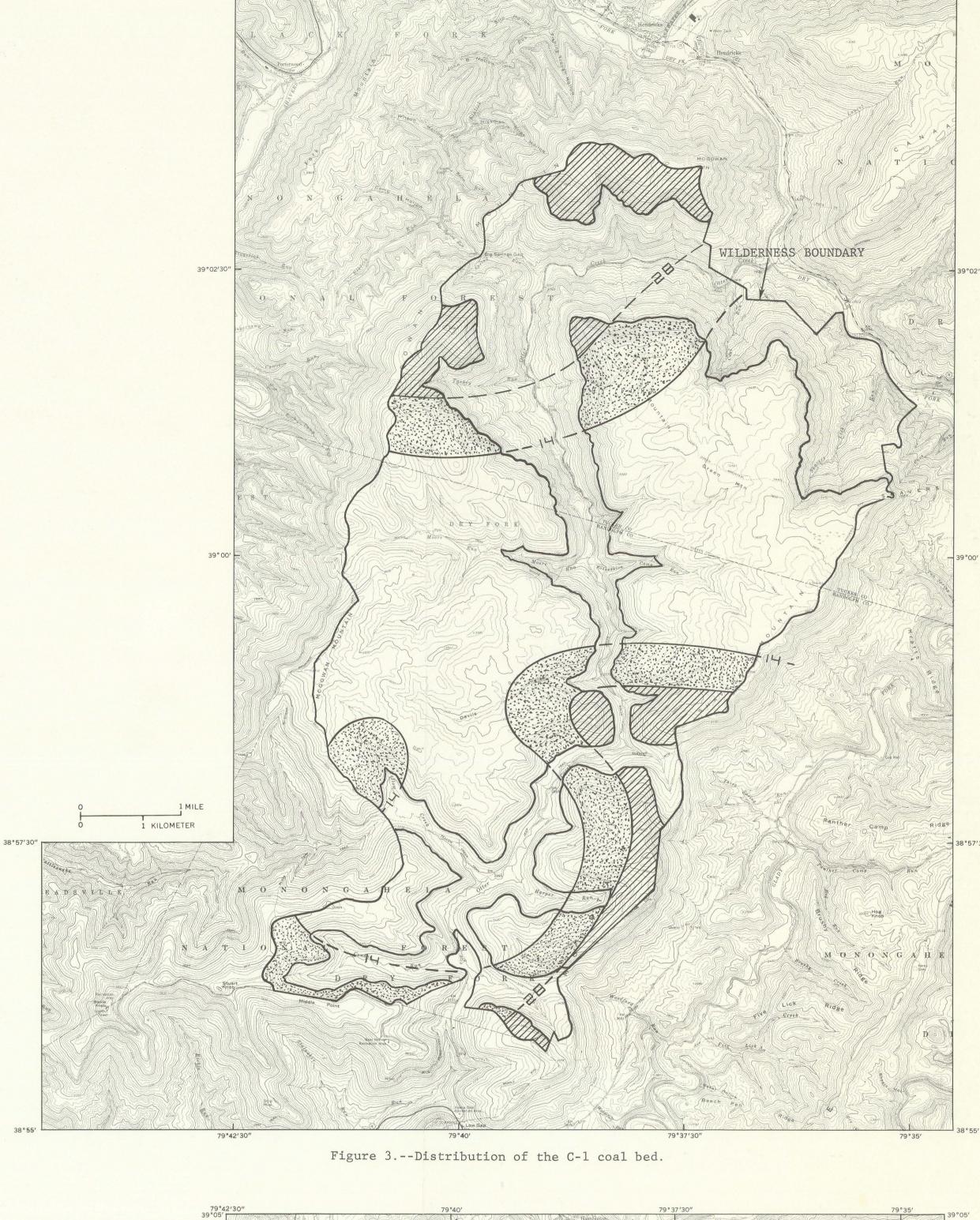


Figure 6. -- Known coal resource distribution of thickest coal beds.

Figure 1.--Distribution of the Sewell(?) coal bed.

Figure 4.--Distribution of the C-2 coal zone.

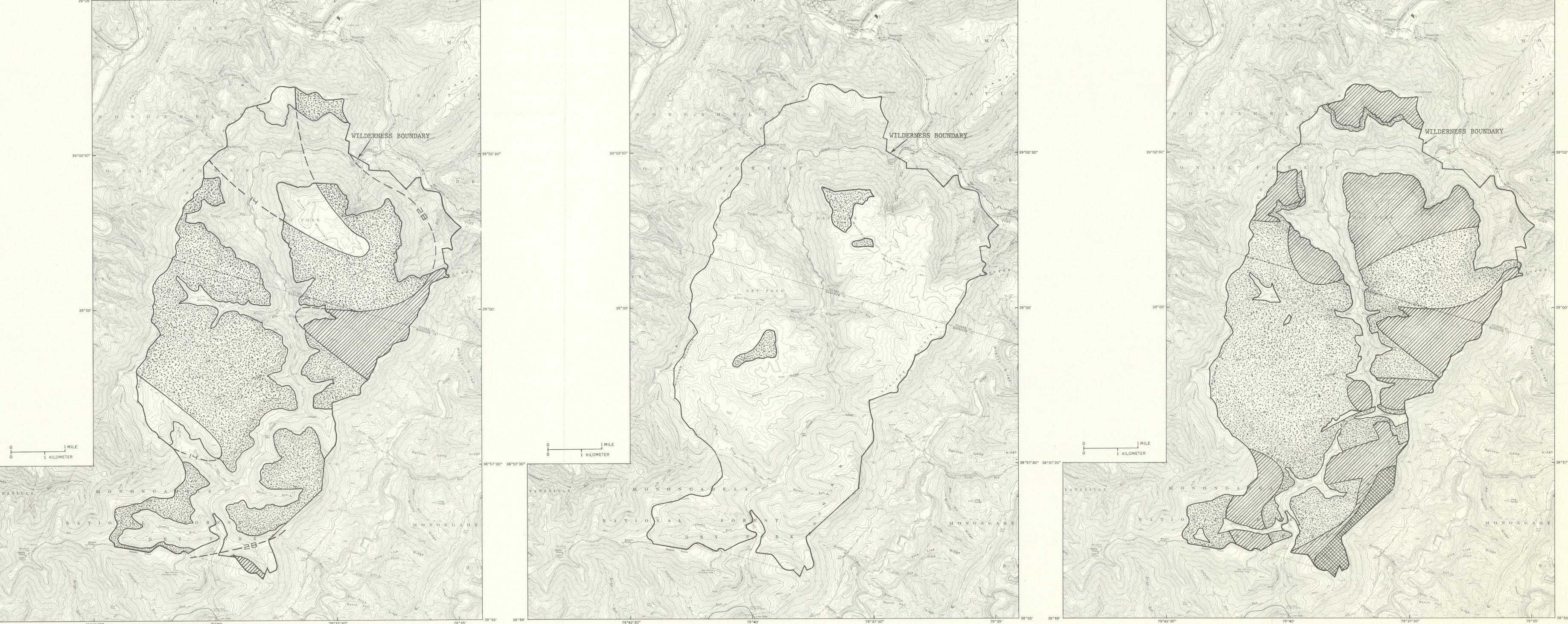


Figure 5.--Distribution of the Kittanning coal zone.

Ralph C. Warlow MAPS SHOWING MINERAL RESOURCE POTENTIAL OF THE OTTER CREEK WILDERNESS, RANDOLPH AND TUCKER COUNTIES, WEST VIRGINIA

SHEET 1-COAL RESOURCE MAPS