A Selected Bibliography: Remote Sensing Techniques for Evaluating the Effects of Surface Mining

Technicolor Graphic Services, Inc, Sioux Falls, SD

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A SELECTED BIBLIOGRAPHY: REMOTE SENSING TECHNIQUES FOR EVALUATING THE EFFECTS OF SURFACE MINING

U.S. GEOLOGICAL SURVEY
A selected bibliography: remote sensing techniques for evaluating the effects of surface mining

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This bibliography contains 39 citations of technical papers and other publications dealing with the applications of remote sensing techniques for analyzing and monitoring surface mining. These references summarize recent developments in methods used to identify, map, analyze, and monitor surface mining, particularly coal surface mining.

- bibliographies
- strip mining
- coal mining
- remote sensing
- aerial photography
- satellite photography
- surface mining

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A SELECTED BIBLIOGRAPHY:
REMOTE SENSING TECHNIQUES
FOR EVALUATING THE EFFECTS
OF SURFACE MINING
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ABSTRACT

This bibliography contains 39 citations of technical papers and
other publications dealing with the applications of remote sensing
techniques for analyzing and monitoring surface mining. These references
summarize recent developments in methods used to identify, map, analyze,
and monitor surface mining, particularly coal surface mining.

INTRODUCTION

The Surface Mining Control and Reclamation Act of 1977 mandated
stringent new regulations for surface mining. The primary intent of
this Act was to establish standards for the regulation of surface coal
mining operations and the reclamation of both active and abandoned mines.

The new regulations increase the need for improving resource
inventories and for monitoring compliance with environmental performance
standards. Remote sensing technology, when used in combination with
ancillary data such as ground-acquired data and field verification,

1/ Sponsored by the U.S. Geological Survey, Contract Number
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provides the resource manager with an effective method that can be used to improve resource inventories, to analyze mine operations, and to assess mining impacts upon associated resources.

This bibliography includes recent publications on remote sensing methods applied to the analysis and monitoring of surface mining. It is not an exhaustive list but rather a representative selection of remote sensing references.

References were selected from major periodicals, proceedings, symposia, and National Aeronautics and Space Administration reports dealing with remote sensing. The list of references is divided into four sections. The first section, entitled "Data acquired from Landsat," contains papers and publications that pertain to the use of either manual or digital analysis of Landsat multispectral data for monitoring surface mining. The second section, entitled "Data acquired from aircraft," includes publications in which remotely sensed data acquired from aircraft on different film types at different photographic scales, and from different geographic areas, are used to assess the effects of mine activity. The third section, entitled "Data acquired from aircraft and Landsat," is a list of publications and papers in which data collected by a combination of Landsat and aircraft systems are used. The fourth section, entitled "Other remotely sensed data," includes publications in which data other than aerial photographs or Landsat multispectral imagery (for example, Skylab photographs or thermal infrared imagery) are used.
The references followed by a National Technical Information Service (NTIS) identification number are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia, 22161.
SELECTED BIBLIOGRAPHY OF REMOTE SENSING TECHNIQUES, 
BY TYPE OF DATA

Data acquired from Landsat


Environmental Protection Agency, 1975, An application of ERTS technology to the evaluation of coal strip mining and reclamation in the Northern Great Plains: Denver, Colorado, Environmental Protection Agency, Office of Enforcement, National Field Investigations Center, 107 p. NTIS PB255-590/2BE.


Data acquired from aircraft


Hughes, T. H., Dillon, A. C., III, White, J. R., Jr., Drummond, S. E., Jr., and Hooks, W. G., 1975, Assessment of practicality of remote sensing techniques for a study of the effects of strip mining in Alabama: University, Alabama University, CR 144126, 190 p. NTIS N76-15534.


Parker, H. D., 1974, Remote sensing for western coal and oil shale
development planning and environmental analysis, in Remote Sensing
Applied to Energy-Related Problems, Miami, Florida, 1974,
Proceedings: University of Miami, School of Engineering and
Environmental Design, Clean Energy Research Institute, p. S4-3 - S4-15.

Spisz, E. W., 1978, Application of multispectral scanner data to the
study of an abandoned surface coal mine: Cleveland, Ohio, NASA

Tschantz, B. A., 1973, Strip-mined watershed hydrologic data acquisition
study: Knoxville, Tennessee, Tennessee University Water Resources

Wobber, F. J., and Amato, R. V., 1974, Aerial photography for surveying
surface mining and reclamation: Photographic Applications in
Science, Technology and Medicine, v. 9, no. 5, p. 22-23, 32-33.

Wobber, F. J., Wier, C. E., Leshendok, T., and Beeman, W., 1975, Coal
refuse site inventories: Photogrammetric Engineering and Remote
Sensing, v. 41, no. 9, p. 1163-1171.
Data acquired from aircraft and Landsat


Other Remotely Sensed data

Baldridge, P. E., Goesling, P. H., Martin, T. A., Wukelic, C. E., Stephan, J. G., Smail, H. E., and Ebbert, T. F., 1975, Utilizing Skylab data in on-going resources management programs in the state of Ohio: Columbus, Ohio, Department of Economic and Community Development, 139 p. NTIS N76-20579.
