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ERTS DATA USER TYPE 1 PROGRESS REPORT FOR OCTOBER/NOVEMBER 1972

Project Title/Objective: Relevance of ERTS to the State of Ohio

Proposal Number: MMC No. 87

Contract Number: NAS5-21782

BCL Subcontract Number: 72-17/G-1793

I. DATA COLLECTION

Initial ERTS-1 photography for Ohio was received in October. Discrepancies in the ERTS data shipping orders thus far received have been noted on the signed forms returned to GSFC. To date, all usable scenes received are for the eastern half of Ohio; cloud cover repeatedly obscuring most of the western portion. Satellite imagery now available (August, September, October) covers only one (Zaleski) of the five designated Ohio-ERTS study sites.

In order to commence data analysis required for the land-use demonstration experiment, it has become necessary to include the Columbus-Franklin County complex as a tentative study site for this analysis. The selection was based on cloud-free ERTS data being available and the fact that the Ohio Aerial Engineering Section has aircraft photography for this area as recent as April 1972. Ground-truth for this tentative site will be limited to on-site verification visits.

During this reporting period no aircraft photography was acquired. Some ground-truth data were obtained for the Zaleski study site and an on-site inspection was made of the strip-mined areas east and south of Cambridge.

The automatic recorder for Battelle's (ISCO) spectroradiometer was received, but not in acceptable working order. A replacement has recently been provided but operating temperature limitations may delay further radiometer, study-site surveys until spring.

(E72-10259) RELEVANCE OF ERTS TO THE STATE OF OHIO Progress Report, Oct. - Nov. 1972 D.C. Sweet (Ohio Dept. of Economic and Community) Nov. 1972 7 p CSCL 08I

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II. DATA ANALYSIS

Much of the initial data analysis effort expended since receipt of the first usable Ohio-ERTS imagery has related to staff and user-visitor familiarization with the extent natural and cultural features are discernible in multispectral and enhanced ERTS image displays, and how the useful information can be extracted and quantified. Visitor reactions to the numerous ERTS image analysis demonstrations have been favorable.

Before commencing routine data analysis, several additional equipment modifications were completed during this reporting period. These included the fabrication of an x-y comparator and a grid system for the Spatial Data 32-color viewer to permit rapid and accurate position location and readout of features being analyzed on the ERTS imagery. Also, calibration points have been established for this viewer to permit repeatable and controlled image magnification for scales ranging from 1:1,000,000 to 1:50,000.

A Model 61 Spectral Data Corporation viewer has been loaned to Battelle pending delivery of the Model 20 multispectral color viewer ordered in July. To date only limited use has been made of this viewer.

Some preliminary data analysis and initial ERTS data product generation have been accomplished since the receipt of ERTS data as related to (1) strip-mine identification and area assessment, (2) smoke plume detection, and (3) sedimentation patterns noted in Sandusky Bay.

III. DCS/DCP EFFORT

The DCP for the Ohio-ERTS program was received on October 23, 1972. Subsequently, the Battelle trailer housing the Schneider Robot Water Monitor has been prepared for installation of the DCP, and the power supply has been fabricated. Installation is currently delayed pending receipt of the necessary amplifiers to interface the sensors (which have millivolt outputs) to the DCP. It is planned that the DCP will be installed, tested, and placed in operation during December.

IV. DATA UTILITY ASSESSMENT

During October and November some 45 visitors from state and local government agencies toured the Battelle ERTS data analysis facilities. Most of these visitors were from the Ohio Department of Natural Resources and the newly-formed Ohio Environmental Protection Agency. These visits have been encouraged to familiarize potential user personnel with both the incoming ERTS photography and available image analysis equipment.

Several avenues are being pursued for state-level ERTS-1 data utility assessment. In response to specific requests from state agencies, ERTS demonstration packages are being prepared in specific application areas such as land-use, strip mining, forestry surveys, and flood plain management for evaluation of utility by state resource management personnel. In addition, an Ohio-ERTS data handbook is being prepared for distribution to key state personnel and Battelle discipline specialists. This handbook, which will be continuously updated, will contain samples of the better imagery received (in several bands) for user education and as an aid for identifying additional demonstration product candidates.

In addition to these routine aspects of the utility assessment program, Battelle facilities are available to state resource managers who are working on a specific real-time problem and would like to test the applicability of ERTS imagery. This is presently being done in the case of an erosion problem which the Department of Natural Resources has in Meigs County.

The first demonstration package, showing the extent that Ohio strip-mined areas can be delineated on ERTS photography, has been prepared and given to the Department of Natural Resources for evaluation as to potential usefulness and suggestions regarding possible refinements needed in future products. A portion of this analysis is to be incorporated into a press release planned for December.

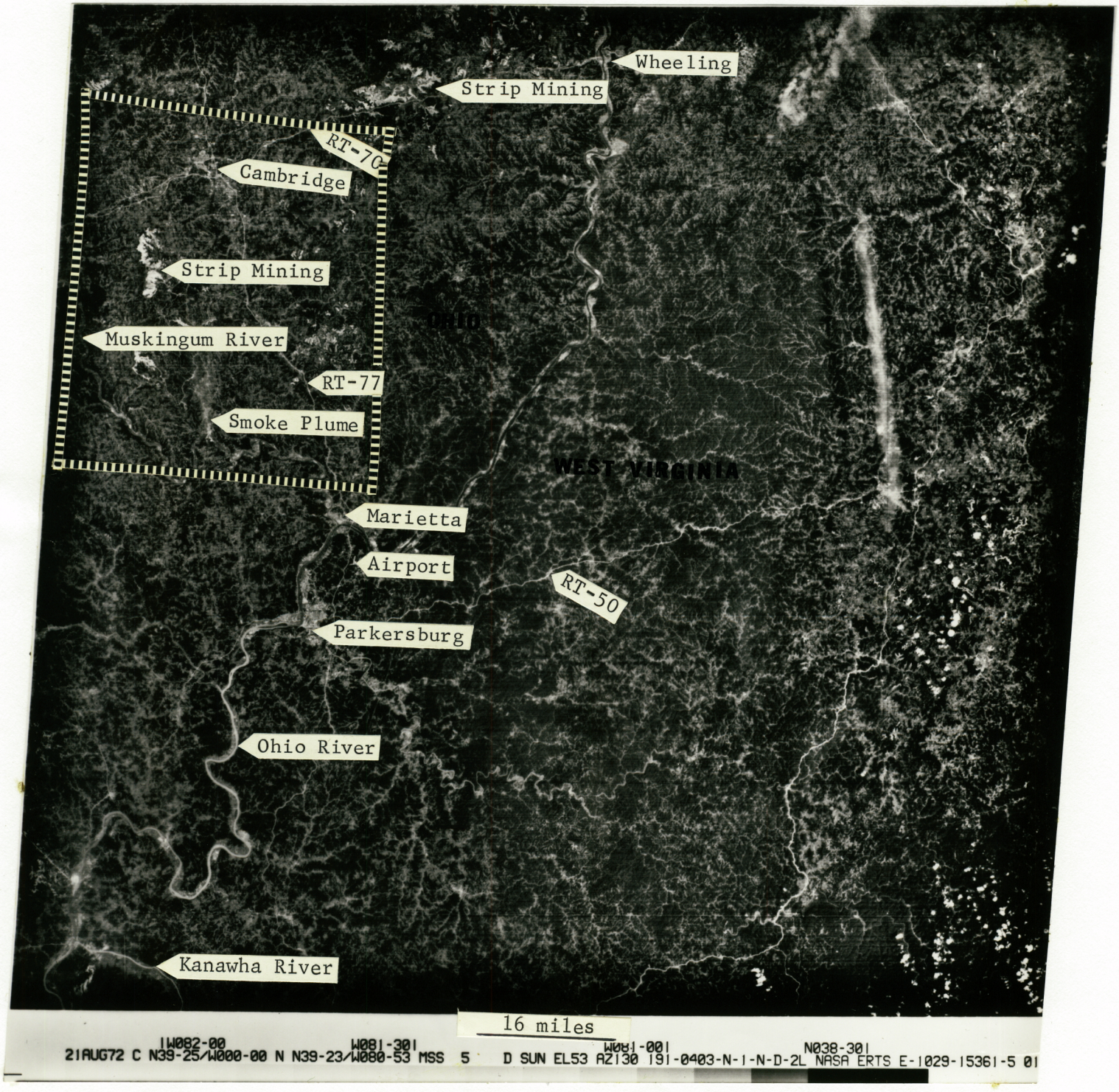
V. SIGNIFICANT RESULTS

The ability to delineate and inventory strip-mined areas using ERTS imagery has been established. This gives Ohio a method to rapidly gain an up-to-date inventory of strip-mined lands for state planning purposes, which has not been available previously.

VI. MISCELLANEOUS

About 10 people from the State of Ohio and Battelle participated in a one-week remote sensing short course at The Ohio State University which was supported in part by the Ohio Department of Economic and Community Development. The course covered all aspects of the theory and practice of remote sensing of potential importance to the resource manager.

A press announcement describing the initial Ohio-ERTS photography is being prepared and copies of the enhanced/annotated imagery used in this release are attached. The item will note the demonstrated ability to delineate and inventory Ohio's strip-mined areas using ERTS-1 imagery, detect power-plant smoke plumes, and provide the data necessary to compile up-to-date land-use maps for the entire state.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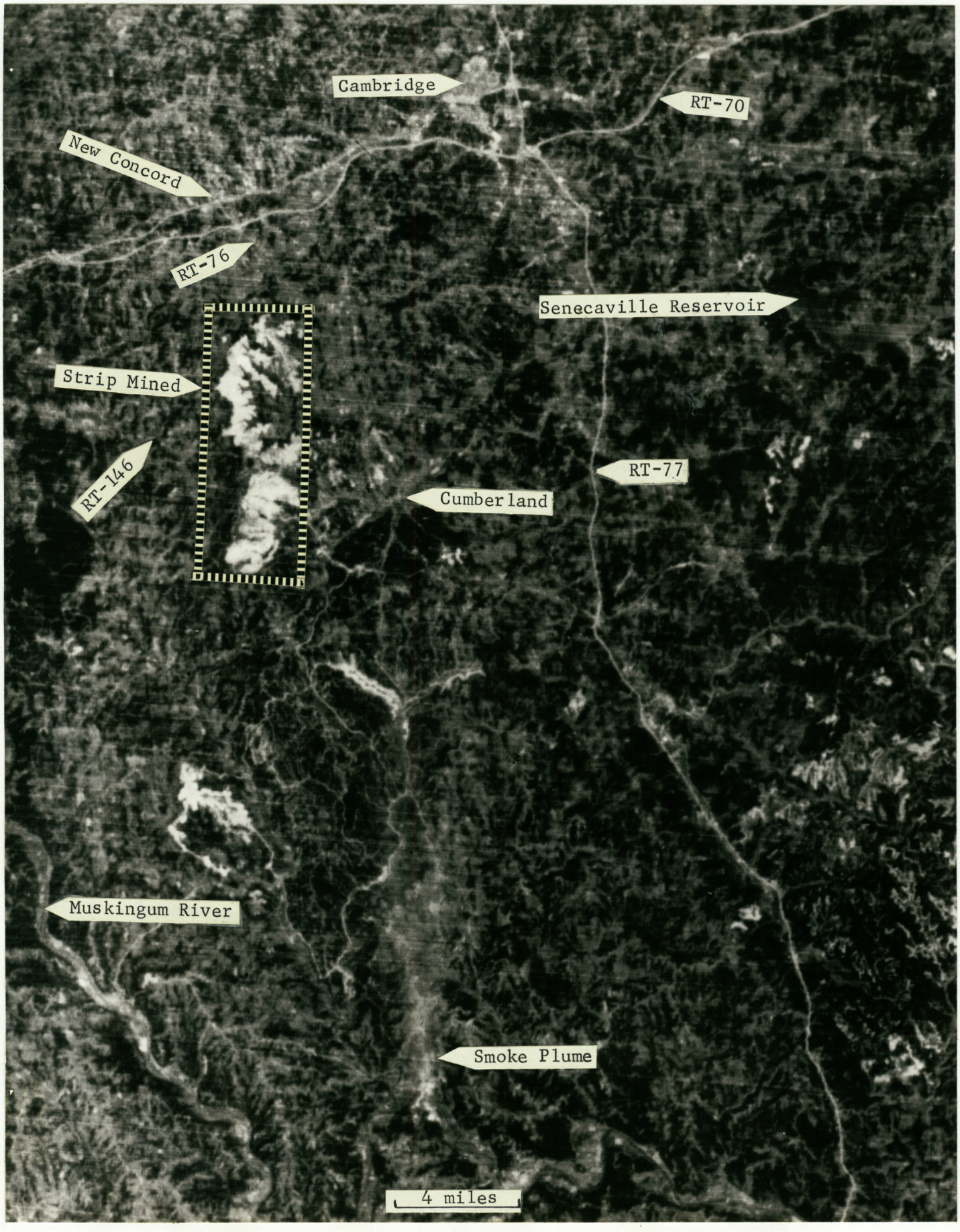

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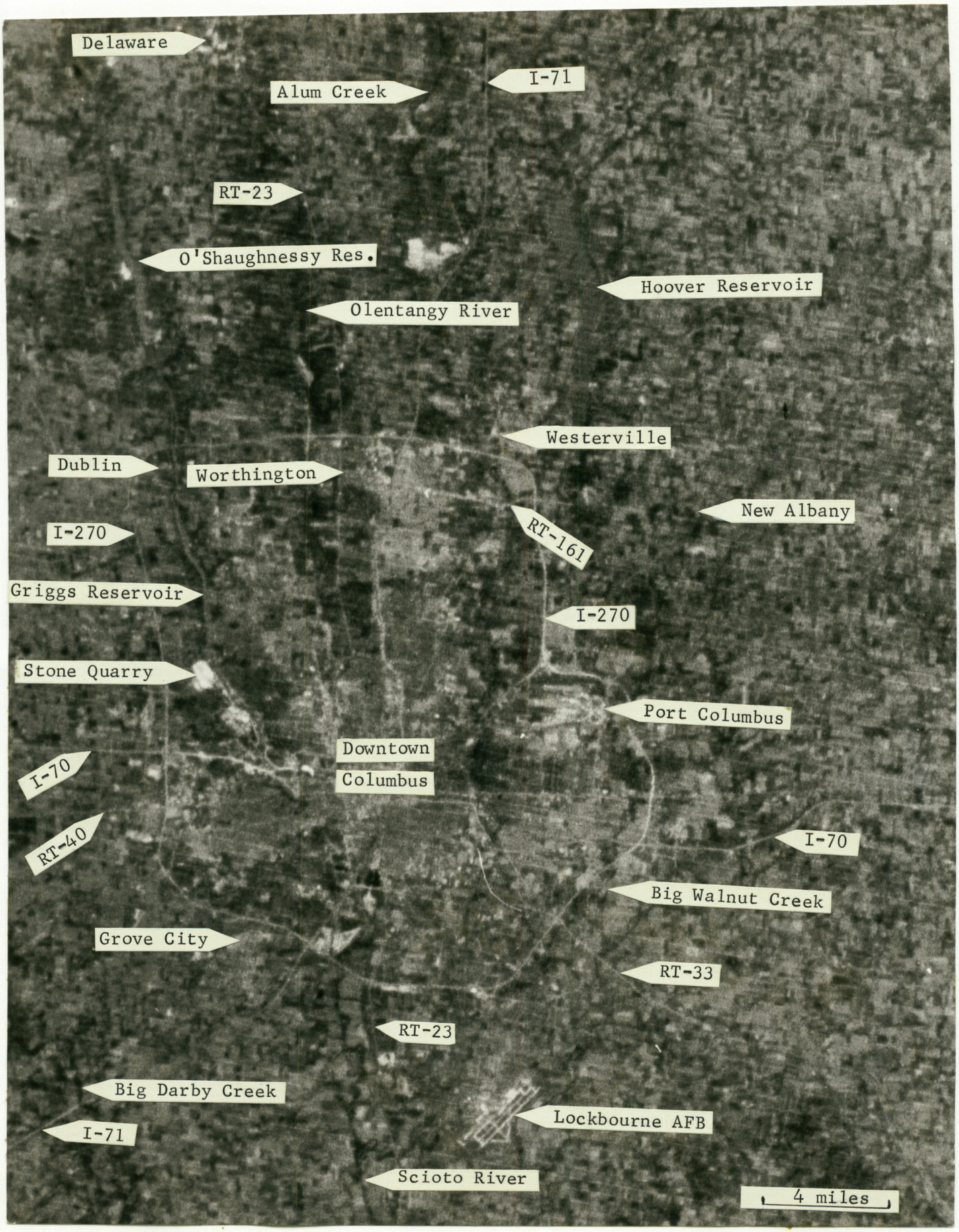

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