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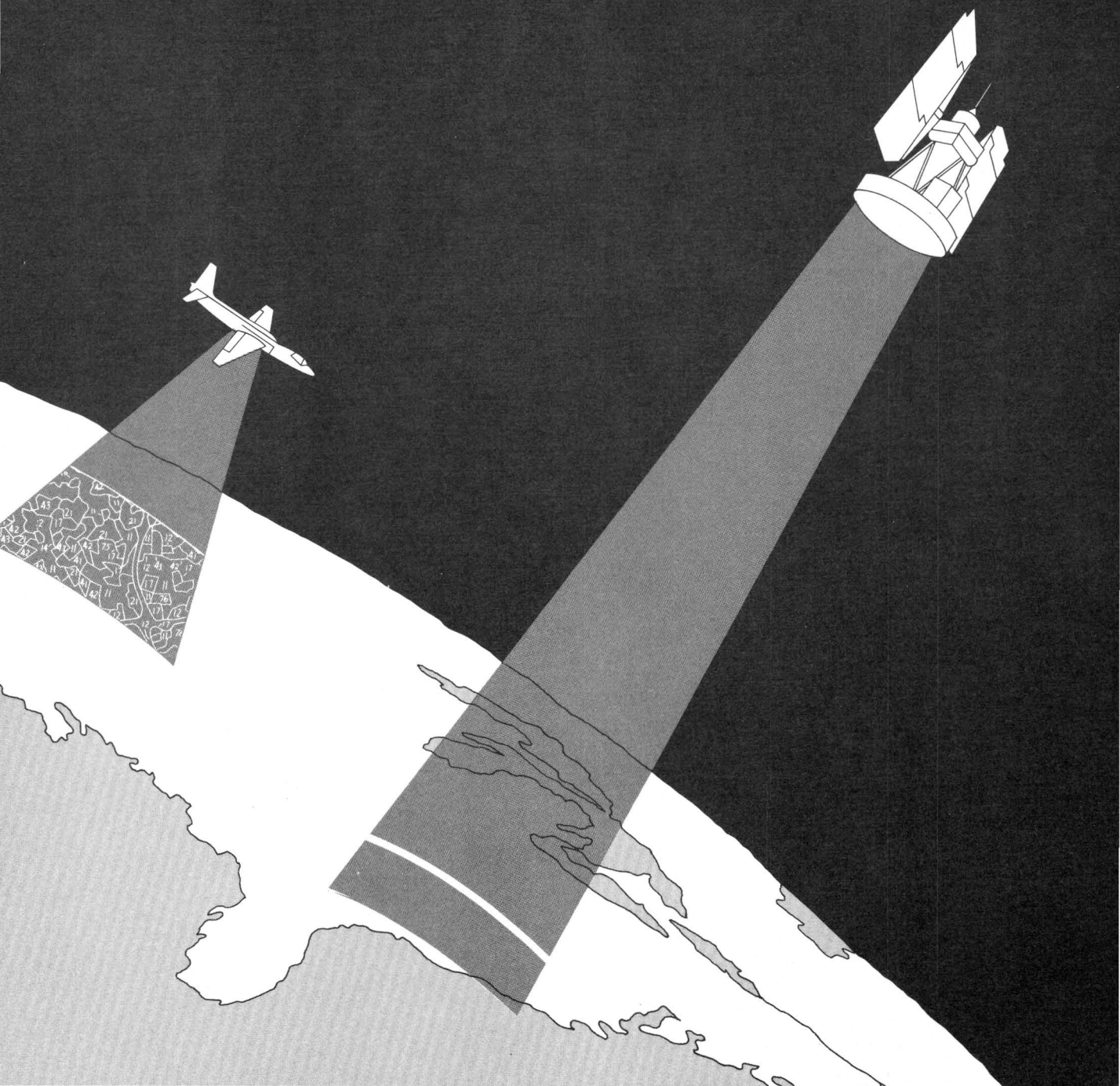
Geographic Research in the U.S. Geological Survey

Bibliography - 1966-1980



GEOGRAPHIC RESEARCH IN THE U.S. GEOLOGICAL SURVEY:

BIBLIOGRAPHY - 1966-1980

By Mary E. Graziani

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By

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INTRODUCTION

This bibliography was compiled to provide a record of geographic research, particularly research utilizing remotely sensed data, undertaken in the Geological Survey from 1966 through 1980. It also provides specific information about the availability of reports, papers, maps, and other publications which resulted from this research. Many of the cited reports deal specifically with testing the use of satellite and high-altitude remotely sensed data in a geographic context, some of which was performed in anticipation of, and in conjunction with, the launching of the first Earth observation satellites.

Although geography is a science utilized in many multidisciplinary projects, the entries in this bibliography pertain only to research undertaken or sponsored by the Geological Survey's Office of Geographic Research, Geography Program, or Geographic Applications Program.

HISTORICAL BACKGROUND

Although the first Chief Geographer of the Geological Survey was appointed in 1882 to head up the topographic mapping program, it was not until the early 1960's when the decision was made to assume responsibility for the publication of The National Atlas of the United States that the role of geography as a discipline assumed a new status in the Survey. In 1965, Arch C. Gerlach, then Chief of the Geography and Map Division of the Library of Congress, came to the Survey on a loan basis to act as Editor of the Atlas and to head up the National Atlas Project in the Topographic Division. In December 1967, Mr. Gerlach was appointed Staff Geographer (later Chief Geographer), and after a few months the Office of the Chief Geographer was established in the Director's Office to initiate and carry out geographic research and to provide advisory, planning, liaison, and coordination functions in the field of geography in the Geological Survey, the Department of the Interior, and other Federal agencies and national and international organizations.

Beginning in 1966, the Geographic Applications Program (GAP) initiated several research projects to demonstrate the value and use of remote sensing technology and data in the field of geography with funding support from the Department of the Interior's Earth Resources Observation Systems (EROS) Program and the National Aeronautics and Space Administration. The direction of this Program was assigned in 1968 to the Chief Geographer, who coordinated the research carried out through contracts with various university departments of geography, professional associations, and a few private firms.

Among the in-house research projects carried out by the Geographic Applications Program were the Central Atlantic Regional Ecological Test Site (CARETS) project, the Census Cities project, the Phoenix-Tucson (Arizona) land use project, and the Ozarks Regional Commission cooperative land use mapping project. Concurrent with these projects were exploratory research and development of a geographic information system for handling and analyzing land resource data, and the development of a land use and land cover classification system for use with remotely sensed data. James R. Anderson, a professor at the University of Florida who had worked on the agricultural section of the National Atlas, was selected to lead the land use classification system research work.

Mr. Anderson was appointed Chief Geographer in 1972 to continue the research for a land use and land cover classification and the land use mapping of the Nation. In 1973, the Office of the Chief Geographer and the Geographic Applications Program were renamed the Geography Program.

Development and testing of the two-level land use and land cover classification system for use with high-altitude and remote sensor data continued, and in late 1974, the Geological Survey received funding from Congress to initiate a Land Use Data and Analysis (LUDA) Program under which the entire United States would be mapped using this system. The program provided for the systematic and comprehensive collection and update of land use and land cover data on a nationwide basis at scales of 1:250,000 and 1:100,000, with demonstration mapping of selected urban areas at 1:50,000 and 1:24,000.

In April 1975, in order to more effectively meet the Nation's rapidly increasing need for multidisciplinary Earth and other natural science and related engineering information needs, the Geological Survey formally established the Land Information and Analysis (LIA) Office. Included in the new LIA organization were the Geography Program, the Earth Resources Observation Systems (EROS) Program, the Resource and Land Investigations (RALI) Program, and two related research programs from other divisions of the USGS--the Environmental Impact Analysis Program and the Earth Sciences Applications Program.

The Geography Program's responsibilities in LIA were to collect and analyze land use data on a nationwide basis, develop methods of applying these data, and demonstrate their usefulness to the solution of problems arising from the interaction of land use practices and environmental factors. The data compiled were to be stored in digital form for computer manipulation and displayed in map and statistical formats. Some other research aims were to experiment with automated land use and land cover classification data and detection of changes for future uses of land, as well as to develop accuracy/reliability standards for land use mapping.

A reorganization plan was approved in late November 1979 by the Department of the Interior to establish a National Mapping Division in the Geological Survey

which would include the Geography Program, the Topographic Division, and certain elements of the Publications Division. The addition of the functions of the Geography Program to this new organization would expand the products, services, and research potential of the new Division. Within the National Mapping Division, the Geography Program became the Office of Geographic Research. When the reorganization became effective in mid-1980, Anderson accepted the position of Senior Scientist in the Office of the Chief, National Mapping Division, and Richard E. Witmer, who had joined the USGS in 1974, was appointed Chief of the Office of Geographic Research.

Primary functions of the new Office of Geographic Research remained unchanged except for the addition of the responsibility for research and investigations on domestic names for national standardization and information services. Today, work continues on conducting geographic research and investigations for the land use and land cover program, related research projects, and on participating in multidisciplinary studies employing the techniques and methods of modern geographic analysis.

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Citations in this bibliography include reports, papers, maps, and other publications listed in alphabetical-chronological order by author or, in the absence of an individual author, by contracting agency or university. Because many were prepared in response to specific research projects and by contract with various universities and other scientific groups, distribution copies of individual reports, papers, maps, etc., may no longer be available from the Geological Survey. However, copies of the majority of the papers and reports are on file in the Office of Geographic Research, National Mapping Division, Reston, Va. We have included the primary preparing agency, university, or scientific group as well as contract or grant numbers in each entry in order to provide as much information as possible to researchers. In some cases funding for this research was awarded through several different agencies, but we have not attempted to include all agencies in each entry.

A few experimental maps, including two land use and land cover maps in full color, have been included. Standard land use and land cover and associated maps placed on open file and published in the L-series by the Geological Survey have not been included in this bibliography.

Indexes by subject and by author are provided to aid researchers.

Geological Survey open-file reports or maps are on file for reference use in USGS libraries, Public Inquiries Offices, or National Cartographic Information Center (NCIC) offices located in Reston, Va., Denver, Colo., or Menlo Park, Calif. Most of the open-file reports, although no maps, may be reproduced on a cost basis by request to the USGS Open-File Services Section, Western Distribution Branch, U.S. Geological Survey, Box 25425, Federal Center,

Denver, CO 80225. When ordering, please indicate the open-file number, if known, as well as the author and title.

Reports or maps which have an NTIS number indicated in the entry may be ordered from the National Technical Information Service (NTIS), U.S. Department of Commerce, Springfield, VA 22161. When ordering, please include the NTIS number shown in the entry.

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