


1979

UA66/8/3 Annual Report

WKU Geography & Geology

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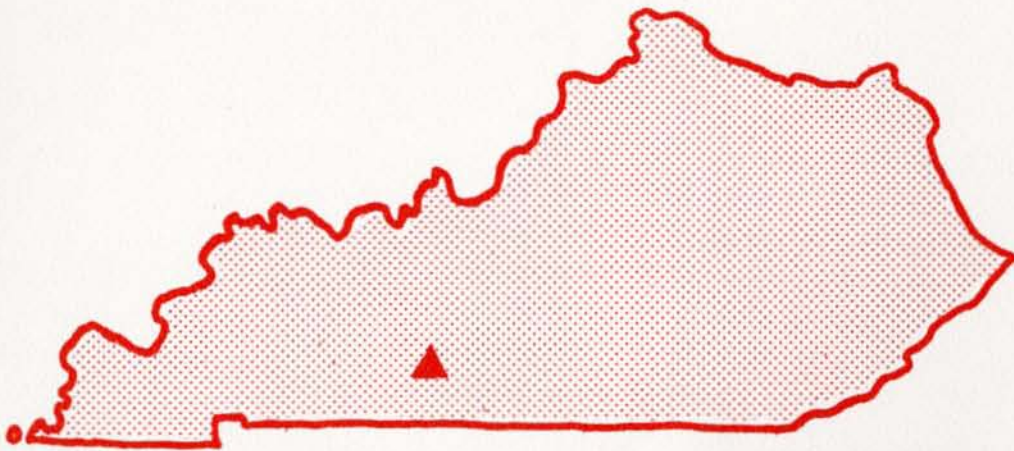
DEPARTMENT OF

GEOGRAPHY AND GEOLOGY



Annual Report

1978-79



WESTERN KENTUCKY UNIVERSITY

Bowling Green, Kentucky 42101

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DEPARTMENT

of

GEOGRAPHY AND GEOLOGY

ANNUAL REPORT

1978 - 1979

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ACKNOWLEDGEMENTS

Special thanks to our "media man" Dr. Ronald Dilamarter for his editorial work, selected material, and the cover design. To Mrs. Betsy Lowrey my gratitude for her good nature and seeing me through another year. Finally, my thanks to the faculty of the Department of Geography and Geology who have made their respective professions and department either the best or among the best in the Commonwealth.

Wayne L. Hoffman



WESTERN KENTUCKY UNIVERSITY

BOWLING GREEN, KENTUCKY 42101

Department of Geography and Geology

January 3, 1980

Dear Reader:

This is the second of a continuing series of Department of Geography and Geology Annual Reports. The purpose of the series is to provide the administration with an assessment of our current status in instruction, research, and public service. Moreover, the report provides an exchange of information regarding alumni, student, faculty, and the geography and geology programs.

Geography and Geology faculty continued their commitment to excellence in teaching, applied research, and public service activities during the 1978-79 academic year. An event of particular pride to the Department was the naming of Willard Cockrill as the first recipient of the University's Public Service Award. The recognition of Willard's long and continued public service activities in the College Heights Weather Station is applauded by his colleagues and the literally thousands of students who have enjoyed his introductory meteorology class. Also recognized was Al Petersen who was nominated for the Outstanding Teacher Award in Ogden College.

Faculty in the Department published thirty-three journal articles, monographs, or reports during the past year. Glen Conner's (State Climatologist) efforts with research associates Bob Sanderson, Bob Ashby, and Mike Phipps produced the majority of the studies. Monographs or reports were authored by Jim Bingham, Reza Ahsan, Jim Davis, and Wayne Hoffman. Journal articles were authored by Nick Crawford, Mark Lowry, Jack McGregor, Reza Ahsan and Ron Seeger.

Glen Conner completed a \$44,000 grant from the Department for Local Government and published climate summaries for the various area development districts. The Kentucky Climate Center directed by Glen is one of the most active in the United States. Wayne Hoffman received a \$5,000 grant from the Barren River Area Development District to direct two mapping projects. Ms. Vicki Hendricks was employed on both projects and did outstanding work. Nick Crawford continued his research on karst hydrogeology and received university and outside funding. In addition, Noland Fields, Jim Bingham, Ron Seeger, and Reza Ahsan received grants or fellowships during the past year for applied research.

In the area of program development, the department has university committee and Board of Regents approval for establishment of a Master of Science Degree in Geology. The M.S. proposal should be transmitted to the Council of Higher Education within the next few months. Work continues on the establishment of an undergraduate and graduate city and regional planning program, and university committee approval will soon be sought.

The department looks to the coming year with considerable optimism. The growth of majors and minors in our programs is a continuing source of encouragement. Continued efforts in applied research and cooperation with government agencies is anticipated.

Professional involvement in national and international groups will also increase. Various faculty are participating on committees for the 1980 Association of American Geographers meeting to be held in Louisville. This meeting will be co-hosted by the Geography and Geology Department. All faculty are preparing for the 1981 International Congress of Speleology meeting to be held on our campus during the month of July. Over three thousand

registrants are expected to challenge the organizing ability of Ron Dilamarte (Chairman, Local Arrangements Committee).

We invite you to visit us in our new spacious facilities. Any suggestions you may have to improve the report would be appreciated.

Sincerely,

Wayne L. Hoffman
Wayne L. Hoffman, Head
Department of Geography and Geology

COLLEGE HEIGHTS WEATHER STATION
AND THE
KENTUCKY CLIMATE CENTER

One of the strengths of the Department of Geography and Geology has been the meteorology program and its fully equipped weather station. Under the leadership of Mr. Willard Cockrill, the academic program has prospered and weather records and readings have been diligently recorded. In 1978, Willard's work and dedication was rewarded when the National Climate Center designated staff member Glen Conner as State Climatologist for Kentucky. The establishment of the Kentucky Climate Center followed in 1979.

For the Department records, Mr. Cockrill has written a short history of the weather station. This is followed by a report by Mr. Conner detailing the establishment and first year activities of the Kentucky Climate Center.

* * * * *

The College Heights Weather Station was established in 1928 and from then until 1947 the Weather Bureau paid a student a small fee to keep the records. With the establishment of a Weather Bureau Station at the local airport, the station at Western has been operated by the school for the meteorology classes and records have been kept by the faculty.

Our first instrument shelter was located just at the back of Van Meter Auditorium and from 1937 to December 11, 1972 on the roof of Cherry Hall; from 1972 to August 21, 1976 on the roof of Science and Technology Hall; since 1976 on the roof of Environmental Sciences and Technology Building.

Since records taken at the airport are sent to Asheville, North Carolina, microfilmed and stored, we have the only local records in Bowling Green. Our records have been used in many court cases and we average a call per week concerning weather records in Bowling Green.

The College Heights Weather Station has scattered weather records for Bowling Green from 1808 to 1883. Since 1883 we have fairly complete records to the present time.

The early records were kept by co-operative weather observers; the Weather Bureau furnished the instruments and the observer donated a few minutes each day and took the observations.

From January 1883 to December 31, 1893 and 1895 the records were kept by John E. Younglove with records taken at the corner of Main and State Streets in Bowling Green. In 1894, 1897, 1898, 1899, and 1900 the records were kept by M. H. Crump with the records probably taken at 813 Park Street in Bowling Green. The records for 1896 are unsigned. In 1901 and 1902 the records were kept by A. M. Causey and from 1903 through 1942 by Mrs. A. M. Causey. These records were kept at 702 10th Street in Bowling Green.

A Memorandum of Agreement among the National Climate Center, the National Weather Service, and Western Kentucky University designated Glen Conner as the official State Climatologist for Kentucky. This agreement was consummated in May 1978. The agreement tasks the State Climatologist to serve the public by directing statewide climatological programs and services.

The original state climatology program was initiated, funded, and manned by the National Weather Service. In 1973, the Federal program was eliminated due to funding considerations. For the next five years, Kentucky was without a climatological service. The acquisition of this function by the Department of Geography and Geology responded to the public need for this service.

Because Kentucky had been without the services of a State Climatologist for the prior five years, the initial effort was concentrated on the acquisition and archiving of Kentucky climatic data and information. The National Climate Center established and funded an account for use by the State Climatologist in obtaining climatic documentation. During the past academic year, judicious use

of this account permitted the acquisition of over 83,000 pages of data. These data are now available in printed, microfiche, and computer tape form. These data are archived and readily accessible to satisfy the public's requests for information and data.

A second effort has been the employment of Rodney Trugman, a work-study student, for the writing of computer programs for use with the University's PDP-11 computer. These programs allow rapid retrieval of data from magnetic tapes containing hourly, daily, and monthly climatic data. The programs provide for tabulations, calculations, and presentation of the data in matrix form. Programs have also been written for the Tektronics 4010 graphics terminal which can produce graphs and maps of the climatic data for Kentucky.

In the fall of 1978, a grant from the United States Department of Housing and Urban Development was awarded through the Kentucky Department for Local Government. This \$44,050 grant required that a climatological summary of each of the fifteen Area Development Districts in Kentucky be prepared and published. In fulfilling these requirements, climatic data for 115 Kentucky climate stations were summarized and analyzed. The fifteen volumes, ranging in length from 115 to 161 pages each, describe the climate within each of the districts over a thirty year period. They provide the basis for decision making on climate related or induced problems. Robert W. Sanderson, Robert Ashby, and Barbara Seeger were employed for the project and Mike Phipps contributed as a graduate assistant. Work on this project was completed in June, 1979.

The primary function of the State Climatologist for Kentucky is to provide service to the public. Although the first year emphasized data acquisition, this public service role has become increasingly active. A variety of users have requested climatological data or information, many as a result of referral by the National Weather Service. During the year, requests were received from

federal, state, and local governments; television, radio, and newspapers; construction, manufacturing, and mining companies; insurance, real estate, utilities, and agribusiness; universities, and secondary schools; attorneys, and other individuals. The number of requests have steadily increased. In the first six months of 1979, 102 requests were received and satisfied.

The name "Kentucky Climate Center" was informally adopted in early 1979 at the recommendation of the American Association of State Climatologists. This title is in consonance with the usage in other states and with the National Climate Center.

To improve the public service role, the Kentucky Climate Center published seven pamphlets. These pamphlets describe Kentucky's temperature and precipitation extremes, tornadoes, severe storms, heating degree days, growing season, and freeze-thaw cycles. These pamphlets added a new dimension to the public service provided.

During the past year, Congress passed the National Climate Program Act. The State Climatologist for Kentucky was an active participant in the preparation of the draft National Climate Program 5-Year Plan. This plan, when approved and funded by Congress, will guide and coordinate national efforts in climatic research and service. In anticipation of this plan, an initial draft of the Kentucky Climate Plan was prepared. After approval of the National Climate Plan, the draft will be appropriately revised and submitted to the State government for publication as the guide for climatic activities in Kentucky.

The Kentucky Climate Center's first year was productive and useful to the public. It is anticipated that both the quantity of requests and the quality of the responses will continue to increase during the coming year.

FACULTY

- S. Reza Ahsan, Ph.D. (Florida), Professor. Cartography, Air Photo, South Asia.
- James M. Bingham, Ph.D. coursework (Indiana State), Assistant Professor. Economic, Location Theory, Planning.
- W. Willard Cockrill, Ph.D. coursework (Tennessee), Professor. Meteorology, Conservation, Europe.
- D. Glen Conner, M.S. (Western Kentucky University) Assistant Professor. Meteorology, State Climatologist.
- Nicholas C. Crawford, Ph.D. (Clark), Associate Professor. Geomorphology, Hydrology.
- James L. Davis, Ph.D. (Northwestern), Professor. Urban, Transportation, North America.
- Ronald R. Dilamarter, Ph.D. (Iowa), Associate Professor. Geomorphology, Soils, Hydrology.
- Noland E. Fields, Jr., Ph.D. (Louisiana State), Professor. Environmental Geology, Sedimentary Geology, Paleontology.
- Frank Groschelle, M.S. (Nebraska), Part-time. City and Regional Planning.
- Edmund E. Hegen, Ph.D. (Florida), Professor. Resources and Conservation, Cultural, Field Methods, Latin America.
- Wayne L. Hoffman, Ph.D. (Florida), Head, Professor. Urban, Economic, Planning.
- Mark Lowry II, Ph.D. (Syracuse), Associate Professor. Urban, Social, Planning.
- Jack D. McGregor, Ph.D. (Illinois), Professor. Mineralogy, Petrology, Petroleum Geology.
- Tyrel G. Moore, Ph.D. Candidate (Tennessee), Instructor. Planning, Historical, Cultural.
- Albert J. Petersen, Jr., Ph.D. (Louisiana State), Professor. Cultural, Rural Settlements, the Great Plains.
- Claude E. Pickard, Ph.D. (Nebraska), Professor. Economic, Settlement Patterns, North America.
- James Quinlan, Ph.D. (Texas), Adjunct Professor. Hydrogeology.
- C. Ronald Seeger, Ph.D. (Pittsburgh), Professor. Planetology, Lunar Geology, Structural Geology, Geophysics.
- James W. Taylor, Ph.D. (Indiana), Professor. Physical, Agricultural, Philosophy.

PROFESSIONAL STAFF

Robert Ashby, B.S. (Western Kentucky University), Research Assistant -
Climate Grant.

Vicki H. Hendricks, B.S. (Western Kentucky University), Staff Cartographer.

Robert W. Sanderson, M.S. (University of Michigan), Research Associate -
Climate Grant.

VISITORS TO THE DEPARTMENT

Leszek Baraniecki, Institute of Geography, University of Wroclaw, Poland.

Dennis Ehrhardt, Department of Geography and Planning, Southwestern
Louisiana University, Lafayette, LA.

Jack Ford, Department of Geography, Shippensburg State College,
Shippensburg, PA.

Placido La Valle, University of Windsor, Windsor, Ontario, Canada.

Jack Ransome, University of Windsor, Windsor, Ontario, Canada.

Richard Stearns, Department of Geology, Vanderbilt University,
Nashville, TN.

GRADUATE STUDENTS, FALL - 1979

Kenneth H. Beeler, Jacksonville State University

John W. Borders, Western Kentucky University

David Bosse, SUNY at Oneonta

Alice Faye Brooks, Austin Peay State University

Louis Lee Carter, Western Kentucky University

James C. Cabbage, Western Kentucky University

Jeffrey Ewell, SUNY at Buffalo

M. A. Ghasemi, University of Iran, Tehran

James R. Goodbar, Texas A&M

Y. Y. Hour, Central Police College, Republic of China

Mohammad Reza Judalizadeh, Tehran College of Insurance

Gary Wayne Larimore, Western Kentucky University

Craig Leslie, State College at Fitchburg

Frank C. Lincoln, Austin Peay State University

Alan L. Little, University of South Carolina

Napoleon Momodu, Western Kentucky University

John Michael Phipps, Morehead State University

Donald Rice, Allegheny College

James R. Richardson, University of Kentucky

William Lee Scott, Huron College

Kenneth T. Trinkler, College of the Ozarks

Preston Dwight Vincent, Western Kentucky University

James Wells, Western Kentucky University

Kimberly White, Western Kentucky University

Wade H. Whitley II, University of Georgia

MASTERS DEGREES AWARDED 1978-1979

Master of Science

- Frederick H. Mader - Thesis Title. "Alabama's Segregation Academies:
A Geographic Analysis of Enrollment
Decline." (Director: Lowry)
- Wayne F. Perkins - Thesis Title. "An Analysis of Locational Aspects
of the Portland Cement Industry
in Kentucky." (Director: Taylor)

Master of Public Service (City and Regional Planning)

- Irvin G. Boysen
- Thomas A. Martin
- Nancy G. Speakman

Master of Arts in Education (Geography Minor)

- Donald W. Merideth
- Lawrence S. Owens

UNDERGRADUATE ENROLLMENT DATA

Program Enrollment

Enrollment in the various programs within the Department of Geography and Geology have increased dramatically in the past three years (Table 1). The fall 1976 data reveals 121 students concentrating in the various departmental programs. Spring 1979 data shows an enrollment of 183. For the two time periods, this is an absolute increase of 62 students and a percentage increase of 33.9% majors and minors.

TABLE 1

Historical Perspective

	<u>Fall</u> <u>'76</u>	<u>Spr</u> <u>'77</u>	<u>Fall</u> <u>'77</u>	<u>Spr</u> <u>'78</u>	<u>Fall</u> <u>'78</u>	<u>Spr</u> <u>'79</u>
Earth Science---Major	5	3	3	1	1	2
Geography---Major	32	32	31	37	43	55
Geology---Major	29	27	31	28	35	43
Geophysics---Major	1	1	0	2	4	4
Hydrology---Area	0	0	0	0	2	1
Earth Science---Minor	3	3	3	2	1	2
Geography---Minor	22	30	24	20	19	29
Geology---Minor	6	8	6	11	12	16
Cartographic & Mapping Technology--- Associate Degree	3	2	5	4	5	5
Meteorological Technology--- Associate Degree	<u>20</u>	<u>32</u>	<u>34</u>	<u>30</u>	<u>27</u>	<u>26</u>
TOTAL	121	138	138	135	149	183

In last year's report a twenty-five percent increase in geology majors was projected for the next two years. The outstanding employment opportunities in this dynamic field were certain to be reflected in increased student awareness and interest. The program enrollment data indicates that we were much too conservative in our projections. Enrollment in the geology major increased over 35% in one year (Spring 1978 - Spring 1979). An additional increase in majors of 25% is confidently projected for the coming year.

In the geography major the same dramatic enrollment surge was experienced. With an increase of more than 32% for the referenced (Spring 1978 - Spring 1979) time periods, the geography major is in excellent health. Student interest in our meteorology, planning, and cartographic tracks has been particularly evident in the past year. Employment opportunities and the growing faculty awareness of the need for specialization or concentration has attracted increasing numbers of students to the discipline. Given these conditions, an additional 25% increase in majors does not seem unreasonable for the coming (1979-80) year.

A minor enrollment decrease in the two-year meteorological technology program was experienced during 1978-79. This is a technical enrollment decrease rather than an actual decline in student interest. Initiated four years ago, this program is now graduating the first students who have elected to remain at the university to receive a four year degree.

Student Credit Hour Enrollment

The Geography and Geology Department suffered a rather large decrease in student credit hour enrollment during the Fall (1978) semester. The decline of 640 student credit hours (Fall 1977 - Fall 1978) can be explained by five factors: 1) The decline in freshman enrollment; 2) The decision to expand advance registration; 3) In the case of human geography, we are still experiencing the effect of the additional history requirement in the Category "C" area of general education; 4) A decline in geography's off-campus offerings due to curriculum changes in the MPS core program and the demise of Eagle (Fort Campbell) University; 5) A decrease in the number of faculty with instructional assignments. Despite the decrease in student credit hour enrollment, a student-faculty ratio of 19.05 for the Fall 1978 Semester attests to the vitality of the departmental programs and courses.

TABLE 2

Historical Perspective

	Fall '76	Spr '77	Fall '77	Spr '78	Fall '78	Spr '79
Geography	3878	3391	3633	3279	3141	3401
Geology	886	886	890	929	741	859
TOTAL	4764	4277	4523	4208	3882	4260

PROGRAM DEVELOPMENT

New Programs

A proposal for the establishment of a Master of Science degree in Geology has been approved by the Board of Regents. With employment opportunities considered excellent, we believe the Council of Higher Education will quickly approve the University's request for establishment of this new graduate degree program.

Preliminary drafts of proposals leading to a Masters Degree and Bachelor of Science Degree in City and Regional Planning were prepared in the Spring Semester. A favorable consultant's report has been secured and we intend to submit the proposals for administrative evaluation early in the Fall 1979 Semester. No university in the Commonwealth has a graduate program in this vital discipline.

Change in Programs

A program change in the core area of the Master of Public Service Degree was initiated and approved during the 1978-79 academic year. Essentially, the change provides for greater flexibility in course selection. In addition, the geography faculty approved a motion to require a minimum of 36 hours for the completion of the City and Regional Planning Option of the Master of Public Service Degree.

The Hydrology Program is also under review. This program, because of its numerous requirements and high standards, has not prospered at Western. While retaining the high standards, we hope to provide greater flexibility to allow students to more easily meet requirements. The program is currently under geography and geology committee deliberation, but soon will be presented to participating departments.

Course Developments

New Courses (1978-79).

Geography 426 & 426G - Applied Meteorology/Climatology
Geography 200 - Introduction to Latin America

Deletion of Courses (1978-79).

Geography 200 - Geography in Europe I
Geography 400 - Geography in Europe II

Changes in Courses (1978-79).

Geography 215 to Geography 315 - Cartography I
Geography 250 to Geography 350 - Economic Geography
Geography 251 to Geography 451 - Geography of Kentucky
Geology 340 to Geology 430 - Optical Mineralogy.

Changes in Title (1978-79).

Geography 467 & 467G - Geography of the Bible Lands to
Geography of the Middle East

Other Teaching-Learning Developments

New curriculum materials were purchased for the self-paced (Keller) introductory physical geography courses. Preliminary analysis indicates that students are quite receptive to the new materials and future demand for such courses will be quite strong.

Discussions are being conducted with staff from Mammoth Cave National Park to establish a summer continuing education program within the federal facility. Cave related courses of all types would be offered under the leadership of outstanding professors. We envision not only participating in the course offerings, but coordinating at least initially the Western Kentucky University effort.

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DEPARTMENT GRADUATES
1978-79

Geography Majors

Daniel Couden
Timothy Deckard
Dixon Duffett
William Greene
Kirkman Hodges
Donald Houchin
Darrell Meador
Charles Outlaw
Thomas Phillips
Timothy Roberts
Robbie Sarles
George Sexton
Harold Sydnor
Bashiru Talabi

Geology Majors

Bruce Bell
William Dost
George Sexton
Harold Sydnor
Stephen Ward

Earth Science Majors

Kevin Grant

Geography Minors

Carl Chappell
Peter Day
Gary Kellem
Stephen Ward

Geology Minors

Daniel Couden
Darrell Meador
Robert Reid

Meteorological Tech - Associate
Degree Majors:

Daniel Couden
Daniel Ferry

City and Regional Planning Option
Administrative Services Area of
Concentration

Thomas Phillips

The remainder of the annual report documents the involvement of the faculty in various professional activities outside the classroom, beginning with last year's faculty publications and ending with this year's research activities

PUBLICATIONS

- Ahsan, S. Reza, "Background of Indians Who Settled in Trinidad," in Allen D. Bushong, (ed), Festschrift for Raymond E. Crist, University of South Carolina Press. (forthcoming).
- Ahsan, S. Reza, Environmental Atlas, Barren River Area Development District, Bowling Green, Kentucky, 1978, 20 pp.
- Bingham, James M., A Selective Development Proposal for Future Industrial Growth in the Barren River Area Development District, Barren River Area Development District, Bowling Green, Kentucky, 1978, 13 pp.
- Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Purchase Area Development District, Publication Number 1, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.
- Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Pennyryle Area Development District, Publication Number 2, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.
- Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Green River Area Development District, Publication Number 3, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.
- Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Lincoln Trail Area Development District, Publication Number 4, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.
- Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Barren River Area Development District, Publication Number 5, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.
- Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Lake Cumberland Area Development District, Publication Number 6, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.
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- Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Northern Kentucky Area Development District, Publication Number 8, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.

Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Buffalo Trace Area Development District, Publication Number 9, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.

Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Fiveco Area Development District, Publication Number 10, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.

Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Gateway Area Development District, Publication Number 11, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.

Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Big Sandy Area Development District, Publication Number 12, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.

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Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Blue Grass Area Development District, Publication Number 14, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.

Conner, Glen, Robert W. Sanderson, Robert Ashby and J.M. Phipps, Climatological Summary: Kentuckiana Regional Planning and Development Agency, Publication Number 15, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.

Conner, Glen and Robert Sanderson, Temperature Extremes in Kentucky 1948-1977, Publication Number 16, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.

Conner, Glen and Robert Ashby, Tornadoes in Kentucky 1950-1977, Publication Number 17, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.

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Conner, Glen and Robert Sanderson, Heating Degree Days in Kentucky 1950-1977, Publication Number 20, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.

- Conner, Glen, Robert Sanderson, and J.M. Phipps, Growing Season in Kentucky 1948-1977, Publication Number 21, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.
- Conner, Glen and J.M. Phipps, Freeze-Thaw Cycles in Kentucky 1948-1973, Publication Number 22, Kentucky Climate Center, Western Kentucky University, Bowling Green, Kentucky, 1979.
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- Davis, James L., (co-author), Energy Costs in Manufacturing Production: An Interregional Analysis, Regional Science Research Center, Cambridge, 1979, 131 pp.
- Hoffman, Wayne L., "The Rochester Dam: A Socio-Economic Analysis," Proceedings, Geography Section, Kentucky Academy of Science, (forthcoming).
- Hoffman, Wayne L., (principal author), Open Space and Recreation Plan, Barren River Area Development District, July, 1979, 100 pp. (forthcoming).
- Lowry, Mark II, "Population and Race in Mississippi," in Geographie de La Population, 1979.
- McGregor, Jack, "Petroleum and Petroleum Refining," The New World Book of Knowledge, Danbury, Connecticut, pp. 169-178, (forthcoming).
- Moore, Tyrel G., "The Role of Ferryboat Landings in East Tennessee's Economic Development," in Studies in the Social Sciences: Essays on the Historical and Cultural Geography of the Southeast, West Georgia State, (forthcoming).
- Seeger, C. Ronald, (co-author), "Geochemical Characterization of the Lunar Nearside Using the Skylab S-192 Multispectral Scanner Data," Lunar and Planetary Science X, 1979, pp. 1098-1100.

PAPERS PRESENTED

- Ahsan, S. Reza, "Use of Remote Sensing for Resource Management," USAF Systems Command, Panama City, Florida, 1978.
- Crawford, Nicholas, "The Hydrogeology of the Central Kentucky Karst and the Origin of the Flint-Mammoth Cave System," Tri-District Conference of the U.S.G.S., Bowling Green, Kentucky.
- Crawford, Nicholas, "Hydrogeology of the Cumberland Plateau Escarpment of Tennessee," University of Kentucky, Lexington, Kentucky, 1978.
- Crawford, Nicholas, "The Hydrogeology of the Central Kentucky Karst and the Origin of the Flint-Mammoth Cave System," Southeast Regional Association, National Speleological Society, South Pittsburg, Tennessee, 1979.
- Hoffman, Wayne L., "The Rochester Dam: A Socio-Economic Analysis," Kentucky Academy of Science, 1978.
- Seeger, C. Ronald, "Multispectral Data Interpretation," NASA/ASEE Annual Summer Presentation, Houston, Texas, 1978.
- Seeger, C. Ronald, (co-author), "Geochemical Characterization of the Lunar Nearside Using the Skylab S-192 Multispectral Scanner Data," Lunar and Planetary Science Meeting, Houston, Texas, 1979.
- Taylor, James W., "Ducktown: The Making of a Desert," Southeast Division, Association of American Geographers, 1978.

PROFESSIONAL WORKSHOPS ATTENDED

- Ahsan, S. Reza - NASA Faculty Seminar, Houston, Texas, 1978.
BRADD Landuse Workshop, Bowling Green, Kentucky, 1978.
Western Kentucky University Grant Conference, 1979.
- Bingham, James M. - BRADD Landuse Workshop, Bowling Green, Kentucky, 1978.
- Conner, D. Glen - Regional Intergovernmental Climate Workshop, St. Louis, Missouri, 1978.
- Crawford, Nicholas - Speleology Workshop, Springfield, Missouri, 1979.
- Davis, James L. - BRADD Landuse Workshop, Bowling Green, Kentucky, 1978.
Western Kentucky University Grants Conference, 1979.
- Fields, Noland E. - BRADD Landuse Workshop, Bowling Green, Kentucky, 1978.
Coal Geology Workshop, University of Oklahoma, 1978.
BRADD Solid Waste Workshop, Bowling Green, Kentucky, 1979.
- Hegen, Edmund E. - Latin American Center Workshop, Western Kentucky University, 1978.
- Hoffman, Wayne L. - BRADD Landuse Workshop, Bowling Green, Kentucky, 1978.
Western Kentucky University Grant Conference, 1979.
NARC, Solid Waste Workshop, Nashville, Tennessee, 1979.
BRADD Solid Waste Workshop, Bowling Green, Kentucky, 1979.
- Moore, Tyrel G. - BRADD Landuse Workshop, Bowling Green, Kentucky, 1978.
BRADD Solid Waste Workshop, Bowling Green, Kentucky, 1979.
- Petersen, Albert - Historic Preservation for the Downtown, Nashville, Tennessee, 1979.
- Seeger, C. Ronald - New Madrid Study Group, 1978.

POSITIONS HELD IN PROFESSIONAL ORGANIZATIONS

Ahsan, S. Reza

Steering Committee of Cartography Special Interest Section
Association of American Geographers
Local Arrangements Committee, 1980 Annual Meeting
Association of American Geographers

Conner, D. Glen

Kentucky Representative and
Committee on Publication and Promotions
American Association of State Climatologists

Crawford, Nicholas

Program Committee and Planning Committee, 8th International
Congress of Speleology

Dilamarter, Ronald

Chairman-Local Arrangements, Planning Committee
8th International Congress of Speleology
Local Arrangements Committee, Co-chairman Field Trip Committee
1980 Meeting, Association of American Geographers

Fields, Noland

Planning Committee
Kentucky Association of Professional Scientists

Hegen, Edmund

Geography Representative-Kentucky Academy of Science
American Association for Advancement of Science
Committee on Latin American Studies in Latin American Universities
Latin American Studies Organization and Organization of
American Studies

Hoffman, Wayne

Steering Committee, Membership Committee
Southeastern Division
Association of American Geographers
Program Chairman, Kentucky Planning Association
Meeting, Fall, 1979
Local Arrangement Committee and Co-Chairman
Field Trip Committee, 1980 Annual Meeting
Association of American Geographers

McGregor, Jack

Vice President, Geology Area, Board of Directors
Kentucky Society of Natural History

Petersen, Albert

Field Trip Committee, 1980 Annual Meeting
Association of American Geographers

Seeger, C. Ronald

President, Geology Section
Kentucky Academy of Science

REPRESENTATION AT PROFESSIONAL MEETINGS

*participated in meeting as chairman of a session, paper presentation, officer, or in some other professional manner

Governor's Conference on Local Government, Louisville, Kentucky, July, 1978. Davis, Hoffman.

Mid-West American Geophysical Union, St. Louis, Missouri, September, 1978. Seeger.

Governor's Conference on Environment, Lexington, Kentucky, September, 1978. Cockrill, Davis, Hoffman.

Geomorphology Symposium, 9th Annual, Binghamton, New York, October, 1978. Dilamarter.

Association of American State Climatologists, College Park, Maryland, October, 1978. Conner*.

National Council for Geographic Education, Milwaukee, Wisconsin, October, 1978. Taylor.

Wisconsin Council for Geographic Education, Milwaukee, Wisconsin, October, 1978. Taylor*.

Kentucky Academy of Science, Richmond, Kentucky, November, 1978. Ahsan, Hoffman*, Lowry, Moore, Pickard, Seeger*, Taylor.

Pioneer America Society, Pleasant Hill, Kentucky, November, 1978. Petersen.

Mid-South Division of American Society of Photogrammetry, Huntsville, Alabama, November, 1978. Ahsan.

Southeastern Division, Association of American Geographers, Athens, Georgia, November, 1978. Dilamarter, Hoffman*, Moore, Pickard, Taylor*.

Kentucky Planning Association, Louisville, Kentucky, December, 1978. Ahsan, Hoffman.

Kentucky Geological Survey, Lexington, Kentucky, February, 1979. Crawford.

American Congress on Surveying and Mapping, Washington, D. C., March, 1979. Ahsan.

American Society of Photogrammetry, Washington, D. C., March, 1979. Ahsan.

Tenth Annual Lunar and Planetary Sciences Meeting, Houston, Texas, March, 1979. Seeger*.

REPRESENTATION AT PROFESSIONAL MEETINGS (continued)

Latin American Studies Association, Pittsburgh, Pennsylvania, April, 1979.
Hegen*.

Western Kentucky University Latin American Spring Conference, Bowling Green,
Kentucky, April, 1979. Hegen*.

Southeastern Section, Geological Society of America, Blacksburg, Virginia,
April, 1979. Fields.

Governor's Conference on Volunteerism, Louisville, Kentucky, April, 1979.
Lowry.

Tri-District Conference of the U.S. Geological Survey, Bowling Green,
Kentucky, April, 1979. Crawford*.

Association of American Geographers, Philadelphia, Pennsylvania, April, 1979.
Ahsan, Bingham, Hoffman, Petersen.

Ellen Semple Day, Lexington, Kentucky, April, 1979. Lowry.

Kentucky Planning Association, Lexington, Kentucky, April, 1979. Hoffman.

Southeast Regional Association, South Pittsburg, Tennessee, June, 1979.
Crawford*.

GRANTS AND FELLOWSHIPS

- Ahsan, S. Reza - Summer Research Fellow, USAF, Tyndall Air Force Base, Florida.
- Bingham, James M. - Selected Development Program for BRADD. (Barren River Area Development District)
- Conner, D. Glen - Climatological Summaries for the Kentucky Area Development Districts. Department for Local Government, \$44,050.
- Crawford, Nicholas - Karst Related Flooding Problems in the Bowling Green Area. Faculty Research and Resources Management Institute Grant.
- Dye Tracing of Subsurface Streams. Summer Faculty Fellowship, Western Kentucky University.
- Phase II, Dye Testing: Grider Pond - Cave Mill Road Interceptor Project. G. Reynolds Watkins Consulting Engineers.
- Karst Flooding - Rockfield Area. M.C. Hinton, Developer.
- Fields, Noland E. - Solid Waste Disposal Sites. Summer Faculty Fellowship, Western Kentucky University.
- Hoffman, Wayne L. - Cartographic and Mapping Project. Barren River Area Development District, \$5,000.
- Seeger, C. Ronald - Summer NASA/ASEE Research Fellow. Johnson Space Center, Houston, Texas.

SERVICE ON OFF-CAMPUS ADVISORY COMMITTEES

- Conner, D. Glen - Kentucky Representative to National Climate Plan.
- Crawford, Nicholas - Ohio River Basin Commission - Citizens Task Force,
Cumberland River Plan.
National Speleological Society, Executive Committee
of Green River Grotto.
- Dilamarter, Ronald - National Speleological Society, Executive Committee
of Green River Grotto.
- Hegen, Edmund E. - Board of Directors
Agriculture Committee
Education and Technology Transfer Committee
Partners of the Americas, Kentucky-Ecuador.
- Hoffman, Wayne L. - Ohio River Basin Commission - Citizens Task Force,
Green River Plan.
BRADD - Natural Resources and Environmental
Protection Committee.
BRADD - Solid Waste Committee.
- Petersen, Albert - Board of Directors, Bowling Green-Warren County
Landmark Society.
Central Bowling Green Revitalization Committee.

ACCREDITATION OR EVALUATION TEAM MEMBER

- Ahsan, S. Reza - Evaluator of the U.S. Civil Service Commission
Guidelines/Curriculum.
Cartography Interest Section, AAG, 1979.
- Seeger, C. Ronald - COSIP Review, NSF, 1979.

OTHER PUBLIC SERVICE AND CREATIVE CONTRIBUTIONS

- Ahsan, S. Reza - Participated in Sister City Program - Kentucky and Ecuador.
- Cockrill, Willard - Weather talks at several public schools.
Presentation to K-Club, State Auditor's Meeting.
Provided College Heights Weather Station Data to an average of three callers per week.
- Conner, Glen - As State Climatologist, responded to well over 100 requests for climatological data.
Presentation to Rotary Club, Auburn, Kentucky.
Presentation to Senior Citizens Club, Scottsville, Kentucky.
Presentation to Kiwanis Club, Madisonville, Kentucky.
Member, Allen County Planning Commission.
- Crawford, Nicholas - Provided free hydrologic consultations to:
University Estates Subdivision, Bowling Green, Kentucky
Russellville Road Underpass, Kentucky Department of Transportation
Rockfield Subdivision, Warren County
Ramada Inn, Bowling Green, Kentucky
Brentwood South Subdivision, Brentwood, Tennessee
Nahm Sinkhole, Bowling Green, Kentucky
- Hoffman, Wayne - Western Kentucky University Carpool Coordinator - Barren River Area Development District.
- Lowry, Mark - Talks to Civic Organizations.
- Seeger, C. Ronald - Consultations and interviews on "Meteor Observation."
- Taylor, James W. - Presentation to Reedyville Community Club - "Alaska's Geography."

CURRENT RESEARCH ACTIVITIES

Ahsan, S. Reza

Dr. Ahsan will be working on two projects: 1) The Study of Indenture Systems in the Caribbean, and 2) The Application of Remote Sensing to U.S. Naval Base Master Planning Activities. A paper will be presented at the National Council of Geographic Education Meeting in Mexico City, October 29 - November 4, 1979. A paper and a report will come from NAVFAC (U.S. Navy Facility Command Engineers) meeting in January in collaboration with the Advanced Space Sciences Group at Naval Research Lab, Washington, D. C. Dr. Ahsan may investigate applications of space imageries in Middle East and South Asia. He will be an External Examiner, Ph.D. Dissertations, Aligarh University, Aligarh, India.

Bingham, James M.

Mr. Bingham, in collaboration with LCADD planners and students, will complete a study to determine attitudes of Russell countians to industrial growth and development. Research underway includes a spatial analysis of economic growth with BRADD, agricultural regions study of Kentucky based on production and land use, and an empirical test of the breaking point model using the Greenwood Mall as a case example.

Cockrill, W. Willard

Mr. Cockrill continues his research and interest in the area of meteorology. He continues to up-date his records and his map of tornadoes.

Conner, D. Glen

Mr. Conner is currently researching data for a paper on "The Climate of Bardstown, Kentucky, 1858-1978." Bardstown has one of the longest climate records in the state. He also has a study underway which will result in a paper which discusses "Growing Degree Days in Kentucky." This study uses a developed computer program which derives growing degree day data from the temperature records. The paper will emphasize monthly and areal variations. Work continues on developing computer programs which will allow future research on consecutive wet-dry days by deriving data from daily records.

Crawford, Nicholas C.

Dr. Crawford is continuing with his investigation of the karst-related flooding problems of the Bowling Green area. Other projects include: an investigation of the hydrogeology of the Lost River, Warren County, Kentucky; an investigation of sinkhole collapse in the Bowling Green area; an investigation of the feasibility of using the large subsurface streams which flow under Bowling Green as a source of geothermal energy which could be utilized through the use of ground water heat pumps to heat and cool factories, shopping centers, and homes; an investigation of nonpoint pollution of the carbonate aquifer in the Bowling Green area.

CURRENT RESEARCH ACTIVITIES (continued)

Davis, James L.

Vice President Davis continues to be active in his professional pursuits. He is currently preparing a paper to be presented to the Kentucky Academy of Science and will chair sessions at the Man and Cybernetics International Conference and the Annual SEAAG.

Dilamarter, Ronald R.

Dr. Dilamarter continues research on the karst and fluvial geomorphology of the Western Pennyroyal. Still in preparation are articles on Iowa topography and North American Karst.

Fields, Noland E.

Dr. Fields continues his work and involvement in the area of environmental geology. He is completing a geologic evaluation of solid waste disposal sites and problems in Taylor and Russell Counties for the Lake Cumberland Area Development District. He is also beginning research on such problems for all LCADD counties and hopes to expand such work to other ADD areas also. Dr. Fields' other interests and studies relate to the stratigraphy, depositional history and coal formations of the Western Kentucky Coal Field.

Hegen, Edmund E.

Dr. Hegen is on a year's sabbatical in Chile. He remains active in geography and is researching several topics for possible publication.

Hoffman, Wayne L.

Dr. Hoffman is working on a railroad transportation grant concerning the establishment of "local feeder" lines in a regional context. He continues his association with the Barren River Area Development District and hopes to participate in one or more of their projects during the coming year.

Lowry II, Mark

Dr. Lowry is continuing research on "Public and Private School Trends in Mississippi." He is preparing a manuscript titled, "Centuryman Drill Sergeant: Reliable Recruitment." It presents a sociological profile and attitudinal analysis of the Drill Sergeants of the 100th Training Division located in Kentucky. Other papers in preparation are "City at the Crossroads: Newburgh, New York," and "Ethnic Patterns in a New York Village."

McGregor, Jack D.

Dr. McGregor is involved in the application of remote sensing techniques to the discovery of petroleum in south-central Kentucky. Thirteen holes have been drilled and another 130-150 are in the process of being funded by private sources.

CURRENT RESEARCH ACTIVITIES (continued)

Moore, Tyrel G.

Mr. Moore is continuing with research and writing on his dissertation which focuses on the economic development of the Eastern Kentucky Coalfield from 1830-1940. He anticipates completing the doctoral degree late in the spring semester. After that time, he hopes to prepare portions of the dissertation for publication as journal articles during the coming year.

Petersen, Albert

Dr. Petersen plans to: expand the cultural-architectural survey of Warren County, Kentucky and submit the results to the Kentucky Heritage Commission; continue work on the Board of Directors of the Bowling Green Landmark Society and as a member of the Central Bowling Green Revitalization Committee; work with the Kentucky Heritage Commission staff on a log house survey of Kentucky.

Pickard, Claude E.

Dr. Pickard is working on the impact of resource exploitation on quality of life.

Seeger, C. Ronald

Dr. Seeger plans to present his work with the SKYLAB S-192 multispectral scanner data at the conference on the Lunar Highlands Crust at the Lunar and Planetary Institute, Houston, Texas, November 14-16, 1979. The paper for the proceedings volume will then be written, with submission deadline in January, 1980. He would then like to remain active with the "New Madrid Study Group" investigating the tectonic setting of the central mid-continent.

Taylor, James W.

Dr. Taylor may up-date his data on Ducktown, Tennessee. He is not planning anything new in research since he plans to retire at the end of the academic year.