Introduction

There are many definitions of the study of geography. Most scholars define the discipline of geography as broadly concerned with the study of the earth’s environment and interpretation of the different natural and man-made phenomena that occur across it. Geographers are interested in the interrelationships between phenomena across the earth’s landscape in individual locations and across different regions. Though considered a social science by scholars, the field of geography incorporates methods and techniques that relate the study of geography to a variety of disciplines, such as anthropology, geology, ecology, political science, transportation, health, engineering, and library and information science. The multidisciplinary nature of geography provides opportunities for scholars in the discipline to apply these geographic concepts to many areas of study. The application of geographic techniques to new areas of study has provided the impetus for proposing new hypotheses and testing theories in different disciplines. The research has advanced geographic thought beyond established paradigms, as scholars use computer applications and
remotely sensed data to redefine concepts of geographic space and to study the phenomena that occur in them.

Libraries have been an important facilitator in the development of techniques and methodologies in the discipline of geography, cartography, and related subjects. In the United States, for example, geographically themed collections have been integral to federal, academic, and public libraries, such as the Library of Congress, the Library of the American Geographical Society at the University of Wisconsin-Milwaukee, and the New York Public Library. These collections include maps, aerial photos, gazetteers, globes, three-dimensional models, atlases, remote-sensing data, geospatial data, and other materials that describe the spatial, geographic, geologic, and chronological aspects of the Earth.

Librarians have important roles in facilitating academic and scientific research and instruction. They apply their knowledge and skills in the collecting, archiving, and cataloging of geographic materials and participate in the scholarly publication process associated with geographic thought. This volume is intended to provide the librarian in academic library settings a guide to identify concepts and accepted guidelines in collecting, cataloging, and making accessible geographic data. The emphasis will be on digital geographic data or geospatial data since contemporary methodologies in geographic analysis are mostly computer based. The volume also examines other issues such as educational, user, and future issues.

Geographic Study and Maps

During the years following the Second World War, librarians in the United States adapted their information management techniques and operational frameworks to deal with the increased production and use of cartographic materials in both the public and private sector. An estimated 60,000 to 100,000 map sheets were being produced annually on a global scale and, in the United States, over 80% of map production was being generated by federal, state, and local agencies (Ristow, 1980). Many of the maps that were being produced were being acquired by academic libraries and public libraries. Published guidelines reflected current technology, such as the ubiquitous use of metal flat files used for the safekeeping of maps.

The early adoption of computer technology in librarianship was mirrored in geography and cartography with the advent of automated cartographic systems. Geographers and cartographers could quickly convert and transform map data into different projections and facilitate new methods and techniques in spatial analysis.

The production of maps and cartographic materials also increased with new capabilities of the automated cartographic systems. The cartographic automation of the 1960s evolved into today’s contemporary geographic information systems that
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