

cannot be effectively represented in a single volume.

In the epilogue the editors reflect on the ideas presented throughout the book and make some statements about the current status of GIS with a prognosis for the future. It examines the outstanding issues in the research agenda, projections to the year 2000, and how GIS fits in the bigger societal future. Briefly examining its history, the editors think GIS is converging upon a set of generic issues through the use of technology. These issues include data capture, data modeling, accuracy, data volume, spatial analysis, user interfaces, cost/benefit analysis, and impacts on organizations. An argument is made for geographic information science instead of the technology of GIS. While GIS was once seen only as access to maps, it is now viewed as access to the world represented by maps. Drawing a parallel to statistical packages, GIS is said to be at the stage of those packages in 1970. Statistics emerged as a discipline, will GIS do the same or will it follow the path of remote sensing and remain an interdisciplinary tool for all spatial scientists?

While GIS has many of the trappings of a discipline, including journals, trade press, conferences, textbooks, college classes and curricula, is there a fundamental set of problems for GIS to examine? Two views of GIS are put forward, one in which GIS follows the path of the quantitative revolution in geography in the 1960s. Today few geographers, particularly human geographers, are concerned with quantification. This view portrays GIS as the Edsel of electronic data processing. The second view projects continued convergence of ideas, disciplines, technologies, and a need for the various application areas to remain affiliated. The editors prefer the second view and

expound upon it in projections for GIS to the year 2000.

In summary, the book is a major step in developing a comprehensive view of GIS. While one may not agree with the statements in the introduction or the epilogue (and there is contradiction among the contributors), the editors are to be commended for the production of such a reference work. Flaws, such as inclusion of the subsection titles only in the table of contents and not in the subsections themselves, some cited references which do not appear in the reference list or in the consolidated bibliography, and a few isolated grammatical errors, are minor. One major problem is the color plates. Most are too small to be effective (with as many as eight per page), particularly in the applications section, and in some cases the graphics are completely illegible. This problem notwithstanding, the book is an excellent presentation of the framework of GIS principles and provides a reasonable survey of the major GIS application areas with a few detailed examples. The editors elicit major themes in their introductions and tie the 56 chapters together well. This work is likely to become required reference material for GIS students and practitioners; it certainly belongs on the bookshelf of every GIS researcher.

cartographic perspectives on the news

Landsat commercialization will reach a major milestone on September 30, 1992, when taxpayer-subsidized operation of the program ends. Landsat is the United States Civil remote sensing satellite system operated by the Earth Observation Satellite Company (EOSAT). EOSAT announced it would assume opera-

tion costs for Landsat on October 1, saving the taxpayer \$19 million in Fiscal Year 1993. Landsat 6 will be completed and delivered to the government in October and NOAA has scheduled its launch for January 23, 1993.

The first Landsat was launched in 1972; since that time, an archive of over 2.7 million images have been created. These images are extremely valuable and useful for mapping, research, and monitoring the Earth's natural resources. The Landsat Thematic Mapper (TM) sensor collects data from a broad region of the electromagnetic spectrum that includes visible bands, near-infrared, shortwave-infrared, and thermal wavelengths. With Landsat's TM 30 x 30 meter resolution and large area coverage (100 x 100 miles), the sensor provides detailed information at relatively low cost per unit area, compared to aerial photography or other commercial satellite data. In addition, Landsat has repeat coverage every 16 days.

TM data is well suited for many environmental applications and is used to inventory and monitor world resources, wildlife habitats, marine environments and minerals. Carla Adams, at EOSAT, has compiled a brief description of case studies of environmental monitoring using Thematic Mapper data. Examples include the use of Landsat TM data to input information into a geographic information system by the Suwannee River Water Management District to help the regulatory and planning staff assess where land cover is changing and to locate areas where land use could harm surface water. Shoreline changes in the Aral Sea are being analyzed by comparing the 1977 MMS mosaic and 1987 mosaic. The United States National CoastWatch Program intends to use TM data to develop a comprehensive nationally standardized GIS to assess changes

in land cover and habitat in the coastal regions of the United States.

Because TM data provides current land cover information, it can be used to map urban cover, update urban-rural boundaries, and identify the urban fringe zone for planning. Further examples of TM data use for oil spill tracking, water quality assessment, air pollution, and global warming demonstrate the vast amount of analytical and mapping uses of Landsat imagery and data. Landsat 6 will provide even further value of this data to the mapping community with the introduction of a 15 meter panchromatic band.

EOSAT is interested in making Landsat data grants available to researchers. They have made an agreement with NASA to dedicate up to 25% of productive capacity to the collection of research data selected by NASA, which will then pay 50% of the list price for this data set and will distribute the data to researchers for noncommercial use. EOSAT will use all revenues from these NASA purchases to make grants to researchers.

recent publications

GEOGRAPHIC INFORMATION SYSTEMS

A publication entitled *Geographic Information Systems (GIS) and Mapping—Standardization and Applications* (Special Technical Publication (STP) 1126) is available from the American Society for Testing and Materials. It contains twenty-six papers from a 1990 Symposium sponsored by the United States Geological Survey and the American Society for Testing and Materials (ASTM)

Section D18.01.03 on Remote Sensing and D18.01.05 on Mapping and GIS. The purpose of the symposium was to bring together engineers and scientists to provide a forum for exchanging experiences and findings related to GIS; learn from a variety of applications; promote technology transfer; and provide educational resources for GIS, maps, and remote sensing. Persons desiring a copy of the publication should contact the ASTM Marketing and Sales Office, 1916 Race Street, Philadelphia, Pennsylvania 19103 (215) 299-5536.

A number of current publications are available from the American Society for Photogrammetry and Remote Sensing (ASPRS). These include: *Geographic Information Systems: A Guide to the Technology* by John Antenucci, Kay Brown, Peter Croswell, Michael Kevany, and Hugh Archer; *Introductory Readings in Geographic Information Systems*, edited by Donna Peuquet and Duane Marble; *The Integration of Remote Sensing and Geographic Information Systems* (Proceedings of a special NCGIA session held at the 1991 ASPRS-ACSM Annual Meeting). To obtain a price list and more information, contact: ASPRS, P.O. Box 1269, Evans City, PA 16033; (412) 772-0070, fax (412) 772-5281.

The Extension Service of the University of Minnesota has released a 12 page publication titled *Introduction to Data Analysis Using Geographic Information Systems*. The publication provides basic information about the analytical capabilities of geographic information systems and describes some of the computer programs used by a GIS for map analysis. The cost of the publications is \$2. To order, request item

NR-FO-5740 and send a check or money order payable to the University of Minnesota to: Distribution Center, 3 Coffey Hall, University of Minnesota, 1420 Eckles Ave., St. Paul, MN 55108-6064. The Telephone number for the Distribution Center is (612) 625-8173. Their Federal Tax ID number is 41-6007513.

DIGITAL DATA AND ELECTRONIC ATLASES

Strategic Mapping has announced the release of *StreetBase Plus* files. The files are derived from Dynamap 2000, an enhanced set of TIGER files originally developed by Geographic Data Technology. StreetBase Plus provides a higher address match rate when compared to StreetBase or standard TIGER files. StreetBase Plus files contain over 10 million valid address ranges, zip code information for all street types and unique street segments. In addition to the requirements for running Atlas Software, your system must be equipped with at least: 2 MB RAM and DOS 3.3 or higher. Contact: Strategic Mapping, Inc., 4030 Moorpark Ave, Suite 250, San Jose, CA 95117; (408) 985-7400, fax (408) 985-0859.

Omnigraphics has announced a new series: *The Omni Gazetteer State Series*. The series will cover all 50 states individually and will be available starting in September with the *Omni Gazetteer of New York State*. Each volume will cover a state's populated places, plus structures, facilities, locales, historical places, landmarks, and named geographic features. For more information contact: Paul Rogers, Omnigraphics, Inc., Penobscot Building, Detroit, MI 48226; (800) 234-1340, fax (313) 961-1383.