GIS for Libraries
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What Is GIS?
A geographic information system (GIS) is a computer-based tool for mapping and analysis that links maps to databases. GIS manages location-based information and provides the tools to display and analyze it—whether it is population characteristics, economic development opportunities, or vegetation types. More importantly, GIS provides tools to visualize, query, and overlay those databases in ways simply not possible with the rows and columns of traditional spreadsheets.

How Is GIS Used in Academic and Research Libraries?

Teaching and Research
Colleges and universities around the world use GIS for teaching and research in a variety of disciplines. As the steward of information resources on campus, the library is a key component of the campus GIS infrastructure, managing geospatial data collections and promoting information literacy.

Libraries offer a variety of services to support the use of GIS including such things as acquiring data, collecting relevant books and journals, helping patrons locate and evaluate data, providing GIS instruction, and providing access to software.

Data Collections
Many libraries already have large collections of geospatial data obtained through the Federal Depository Library Program. ArcGIS® integrates data from the Census Bureau, USGS, EPA, and other agencies to simplify access to government information. In addition, ArcGIS supports Web services, allowing your students and faculty to access geospatial data anywhere on the Web.

Your library can become a geospatial data portal, providing a metadata catalog to help users locate data. Relevant information can then be displayed through a user-friendly map viewer or accessed through ArcGIS tools for more in-depth analysis and mapping.

See www.esri.com/libraries.

ESRI GIS Solutions for Libraries
ArcGIS is an integrated suite of applications for creating, analyzing, mapping, and publishing geospatial data.

ArcGIS Server and ArcGIS Image Server provide tools for managing and sharing large data collections.

ArcGIS Desktop (ArcInfo®, ArcEditor™, ArcView®) provides tools for mapping and analysis as well as data creation and editing. A suite of optional extensions dramatically expands the functional capabilities of these products with specialized GIS tools.

- ArcGIS Spatial Analyst—Advanced analysis with raster data
- ArcGIS 3D Analyst™—3D visualization and analysis
- ArcGIS Network Analyst—Analysis for transportation networks
- ArcGIS Geostatistical Analyst—Advanced statistical and modeling tools
- ArcGIS Tracking Analyst—Visualization and analysis of time-based data
- ArcGIS Business Analyst—Extensive business data and analysis tools
- ArcGIS Publisher and ArcReader™—Tools for publishing and sharing maps
- ArcScan™ for ArcGIS—Tools for converting paper maps to digital data

ArcGIS Explorer provides an easy-to-use viewer for digital globes and integrates data from a variety of sources including Web map services, shapefiles, KML, and imagery. It also supports query and analysis on the underlying data to help you solve problems and answer questions.

The GIS Portal Toolkit provides data management, search, mapping, and data publishing capabilities through a one-stop Web site.

See www.esri.com/arcgis.
Data
ESRI provides a wide range of ready-to-use geospatial data including basemaps, streets, demographics, business data, imagery, and terrain.

Community "Tapestry" is a lifestyle segmentation system that classifies U.S. neighborhoods based on their socioeconomic and demographic composition. Lifestyle data is widely used in business and marketing, health care, public affairs, and other areas of the social sciences to understand population patterns and trends.

Demographic data provides current-year estimates and five-year projections about the U.S. population, households by type and relationship, housing units, occupancy, income levels, age, race, Hispanic origin, and more.

Market data measures the demand for a product or service within a ZIP Code®, county, or other defined trade area. Data is available for both market potential (based on consumer surveys) and actual retail activity (based on sales).

Business data provides business locations, employment, and sales data for more than 11 million businesses in the United States.

ArcGIS® Online Services provides free, ready-to-use data services for ArcGIS users including 2D and 3D maps. Content includes streets, terrain, and high-quality basemaps. Because ArcGIS Online Services is hosted by ESRI, you don’t have to acquire, maintain, or store the data.

See www.esri.com/data.

Books
ESRI® Press publishes books on GIS, cartography, and the application of spatial analysis to many areas of public and private endeavor including land-use planning, health care, education, business, government, and science.

See www.esri.com/esripress.

Training
ESRI offers a wide variety of training options, including instructor-led classes, self-study online classes, and self-study workbooks, which provide hands-on experience with GIS software. In addition, ESRI offers free Web training seminars and podcasts that cover GIS concepts and offer practical tips and tricks.

See training.esri.com.

Support
ESRI is committed to supporting the use of GIS in education in a variety of ways including the GIS Education Community Web portal, the ESRI Education User Conference and other events, user groups, and technical support.

• The ESRI Education Community site facilitates the exchange of ideas and experiences, curriculum, and data between GIS educators around the globe. The site is open to anyone with an interest in GIS in education and includes several tools for collaboration and exchange. See www.esri.com/edcommunity.

• The ESRI Education User Conference and ESRI International User Conference provide numerous educational opportunities. There, you can learn from your peers, consult with ESRI staff, and explore the latest technology. See www.esri.com/events.

• Looking for journal articles, conference proceedings, or other publications about geographic information science and GIS technology? The GIS Bibliography provides references for more than 50,000 items. See www.esri.com/training/library.

• Talking with other users is often the best way to get answers to your questions and learn about best practices for using GIS in education. See www.esri.com/usergroups.

• The ESRI Support Center offers 24/7 access to the ESRI knowledge base, user-to-user forums, downloads of scripts and models to streamline your work, and specialty Web sites like Mapping Center and Project Center. See www.esri.com/support.
For more than 35 years, ESRI has been helping people make better decisions through management and analysis of geographic information. A full-service GIS company, ESRI offers a framework for implementing GIS technology and business logic in any organization from personal GIS on the desktop to enterprise-wide GIS servers (including the Web) and mobile devices. ESRI GIS solutions are flexible and can be customized to meet the needs of our users.

For More Information

1-800-GIS-XPRT (1-800-447-9778)

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Locate an ESRI value-added reseller near you at

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Outside the United States, contact your local ESRI distributor. For the number of your distributor, call ESRI at 909-793-2853, ext. 1-1235, or visit our Web site at

www.esri.com/distributors

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