Spatial Data Collections and Services
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EXECUTIVE SUMMARY

Introduction
With the growth of the World Wide Web over the last 15 years, the transition from print-based resources and services to electronic resources and services has occurred in all areas of librarianship. Library services and collection development in support of research and scholarship using spatial data is certainly among those aspects of the profession that have undergone significant changes over that time period. Resulting shifts in scholarship and instruction within the geophysical sciences have made digital mapping support a primary focus within cartographic units/libraries. Digital mapping has also created new user groups as researchers in the social and health sciences increasingly use geographic information systems (GIS) to plot and analyze data.

Support of digital spatial data use is nothing new to ARL member libraries. In 1999, SPEC Kit 238 (The ARL Geographic Information Systems Literacy Project, March 1999) indicated that GIS was indeed supported throughout the ARL membership. The survey conducted for the current SPEC Kit was designed to discover how this transition has progressed in ARL institutions and what effect it has had on staffing, collections, budget, and services.

Regardless of its format, spatial data offers challenges to library services and collection development. Space concerns, cataloging issues, and cartographic literacy accompany spatial data in print. Technological demands, training, and keeping pace with user expectations and needs accompany spatial data in digital format. This SPEC Kit offers a snapshot of how ARL libraries are handling these challenges 15 years after GIS and digital mapping first appeared in their parent institutions.

The survey was distributed to the 123 ARL member libraries in the winter of 2005. A total of 72 libraries (59%) responded by the February 16, 2005, deadline. Only one respondent indicated that resources and services in support of spatial data research and scholarship were not provided at her institution.

Background
When asked whether spatial data collections are dispersed throughout the institution or consolidated in one location, 18 institutions reported that these collections are consolidated in one location: nine collections are housed in a map library and nine in the main library on campus. The majority of respondents (53 or 74%) indicated that the collections are dispersed. About one third of these reported collections in two separate locations; the rest have collections spread over three to five locations. It was not surprising to find that the main library and map library are the most common locations for spatial data collections at these institutions (37 responses each); however, 35 respondents (66%) indicated that such collections are also kept...
in locations, such as computer labs, that are maintained by academic departments on campus. Of these 35 respondents, 26 also have map libraries and 9 have spatial data collections in the main library. Nineteen respondents have a designated GIS lab; five of these also have spatial data collections in the main library, six have collections in a map library, and eight have collections in all three locations. Twenty-eight of the respondents identified a variety of other locations, primarily branch and departmental libraries, that also house spatial data collections.

Although collections that are managed outside of the library may create challenges of access and awareness for library staff, they may also present opportunities for collaboration with those departments, especially in light of the financial advantages of pulling such resources and the fact that digital access facilitates use that is not tied to any one location.

**Staffing**

On average, staff support for spatial data collections in the main library is lower than at other locations. Librarian time typically amounts to less than one FTE, while there is about one FTE of support staff and one of student assistants. Only a handful of main library collections also employ an “other professional;” these positions range from .50 to 2 FTE. Within map libraries, however, there is usually at least one FTE librarian position and close to two support staff and student assistant FTEs. Map libraries also employ more “other professionals” than main libraries, from .50 to 6 FTE.

The most surprising staffing trends are in the spatial data collections/service points outside of the map and main library. Though fewer respondents were able to report FTE data for these locations, those who could revealed that, on average, there are more of almost every category of staff in academic department spaces, GIS labs, and other locations than in the map or main library.

The staff at each spatial data location have wide-ranging responsibilities. It is not surprising that a full range of traditional library services, from reference and bibliographic instruction to acquisitions and cataloging, are provided in the main library locations. What is unexpected is that the majority of map and departmental libraries also provide not only reference assistance and instruction, but also acquisitions, cataloging, interlibrary loan, and reserves. While most of the GIS labs provide reference and instruction, as well, few typical library services are provided in the academic department spaces. Across the spatial data locations, staff offer a variety of other services, too, including digitization support, data preparation, and specialized map production.

**Budget**

A slight majority of respondents (52%) indicated that their institutions maintain a separate budget for spatial data services and collection development, regardless of whether spatial data is in dispersed or consolidated locations. The median budget at institutions with dispersed collections was $19,261. At institutions with collections consolidated in a map library the median budget was $47,520. The median budget for collections consolidated in the main library was $50,000. As expected, staffing accounts for the single largest budget item, with print maps, digital data sets, and supplementary print materials standing out as other major budgetary expenses. Surprisingly, equipment is not a significant portion of the budget for most institutions. Although the survey did not include software as an individual budgetary category, three respondents listed it as an expense in the “other” category.

**Spatial Data Services**

Spatial data service points are staffed as few as 3 hours per week and as many as 110. The most common staffing level is 40 hours per week (31 of 64 respondents or 48%). Twelve respondents (19%)
reported that service points are staffed fewer than 40 hours per week; 21 (33%) reported that they are staffed more than 50 hours per week. During these service hours, map, main, and departmental libraries offer the most comprehensive reference services for spatial data users, including assistance with print map collections and supplemental print material, locating Web-based mapping resources, and searching bibliographic/research databases. Map libraries are more likely to support GIS and other types of digital mapping than the main or departmental libraries. Staff in academic departmental spaces/computer labs and designated GIS labs focus on helping users locate and use Web-based mapping resources and providing support for GIS and other types of digital mapping.

Instruction sessions on spatial data are offered by 62 of the respondents (87%). Forty-seven of these provided data on the number of sessions: about half offer one to nine sessions during a typical year and the rest offer ten or more, including both group and one-on-one instruction. The content of these sessions ranges from tours of and orientations to the collection to a “monthly course on maps,” to GIS software instruction to a semester-long course on “spatial foundations.”

GIS Services and Support
Sixty-seven of the respondents answered questions specifically about their institution’s support for GIS and digital mapping. Even at the institutions where spatial data collections are consolidated in either the map or main library, GIS resources and services are scattered across the institution. Where collections are consolidated in the main library, GIS resources and services are most often found in the library, a designated GIS lab, and academic departments; the library provides support in the library and lab, but not the departmental locations. Where collections are consolidated in the map library, GIS resources and services are also most often found in the library, GIS lab, and academic departments, but the library only provides support in the library, not the lab or departmental locations.

In the institutions with dispersed spatial data collections, GIS resources and services are most frequently found in academic departmental space. The next most common locations for such resources are the map library, main library, GIS labs, and public computing labs, in that order. Services to accompany the resources are most likely to be found in the map library and GIS lab. Again, library support for GIS is more often available in the map and main libraries. Only a handful of respondents report library support in academic departments, GIS labs, or public computing labs.

Libraries at the responding institutions offer a number of services in support of GIS. Ninety-seven percent offer assistance in locating data, 89% collect digital data sets, and a somewhat surprising 84% offer consultations. Seventy-one percent offer stand-alone instructional sessions on using GIS software or locating data, while 49% offer curriculum-based GIS instructional sessions, the least commonly offered service. Other GIS services include creating data and maps, map digitization, staff training, and research assistance, among others.

The libraries that support GIS are doing so with well-equipped facilities. Ninety-four percent of the respondents provide CD/DVD-RW drives for large data transfer, 71% offer at least standard scanners and all but one offer one to three kinds of printers—55% provide color laser printing. More specialized GIS equipment is increasingly available in ARL member libraries. Forty-six percent of the respondents provide large-format plotters and 31% provide large-format/map scanners. Other equipment includes advanced digitization equipment (i.e., digitizers, digital overhead cameras, digital preservation cameras) and GPS units.

Respondents were asked to indicate the level of GIS use among students, faculty, or researchers working in selected disciplines. It came as no surprise to find that geography, architecture, and
geology were the disciplines most heavily using GIS. Somewhat surprisingly, those working in the health sciences emerged as medium to heavy GIS users. Other disciplines making medium to high use of GIS include city/regional/urban planning, agriculture, forestry, and ecology/environmental studies.

Changes in Spatial Data Collections and Services

In order to gauge the impact of an increasingly digital environment for spatial data on member institutions, respondents were asked to compare current services, staffing, and budget to their levels in 1999, when ARL member institutions were last surveyed on GIS. Only nine respondents indicated that their library once supported spatial data research and no longer did as of February 2006; among the reasons given were that funding for a grant-supported project ran out, a degree program that used spatial data was dropped, and skilled staff moved on to other positions and weren’t replaced.

The period from 1999 to 2005 represented growth in the number of locations on campuses offering spatial data support. With the exception of one map library that was in use in 1999 but not in 2005, the number of map libraries, main libraries, academic departments, and GIS labs where spatial data is used increased over that time period. With the exception of one science library and one special collections location, all other locations that provided spatial data resources or services in 1999 were still in use in 2005, and eight new locations were added.

Over the same time period, about 60% of the respondents reported that the number of spatial data staff stayed the same, while 20% to 30% reported an increase and fewer than 20% reported a decrease. The greatest increases were in the categories of other professional, librarian, and graduate student assistants. The greatest decreases were in the categories of student and support staff.

Likewise, staff responsibility for spatial data services experienced some changes between 1999 and 2005. Predictably, few respondents reported any decreases in responsibility. The largest decreases were in cataloging and acquisitions (11% of respondents each). At the same time, cataloging increased for 39% of the respondents and acquisitions increased for 36%. Roughly half of the respondents reported that reference and instruction increased while the other half said they stayed the same. The fewest changes were reported for interlibrary loan and reserves.

Patron use of spatial data services followed an upward trend from 1999 to 2005. The vast majority of responding institutions (72%) have seen an increase in spatial data users since 1999, 24% indicated there was no change, and only 4% indicated a decrease in users. The number of spatial data instruction sessions increased at 44% of the responding institutions and remained the same at 53%. Perhaps in response to these trends, 38% of respondents increased the hours of spatial data service between 1999 and 2005.

Forty-seven percent of the responding institutions reported that their current budget for spatial data resources and services reflects no change since 1999, 38% report an increase, and 15% report a decrease. The budget changes seem to correlate most strongly with the changes in the number of librarians and other professional staff between 1999 and 2005. Of the 25 respondents whose budgets increased, 20 reported increases in the number of librarians or other professional staff; 22 of these 25 also experienced increases in the number of users, 17 experienced increases in hours of service, and 14 had increases in instruction sessions. Of the 10 respondents whose budgets decreased, all but one had either a decrease or no change in the number of staff; overall, users, service hours, and instruction sessions either stayed the same or decreased slightly. Twenty of the 31 respondents whose budgets stayed the same experienced increases in numbers of users; otherwise, there were few changes: 24
had no changes in the number of librarians or other professional staff, 20 had no changes in the number of instruction sessions, and 18 had no changes in the number of service hours.

**The Future of Spatial Data**

Overall, the demand for spatial data support seems to be growing at ARL member institutions and most are meeting the demand by either increasing or at least maintaining resource-allocation levels. Survey respondents were asked to comment on directions for spatial data at their institutions in the near future. Their comments indicate that they expect growth in the demand for digital spatial data and are revising collection development policies to address this need. They are also exploring data acquisition and discovery strategies. Some respondents expect to add more staff. Others are planning to consolidate collections to better serve users. In general, respondents seem eager to continue to find ways to integrate the use of spatial data into the research process.
SURVEY QUESTIONS and RESPONSES

The SPEC survey on Spatial Data Collections and Services was designed by Joseph A. Salem, Jr., formerly Head of the Map Library and Coordinator of Government Reference Documents and currently Head of Reference and Government Information Services at Kent State University. These results are based on data submitted by 72 of the 123 ARL member libraries (59%) by the deadline of February 16, 2005. The survey’s introductory text and questions are reproduced below, followed by the response data and selected comments from the respondents.

The transition from print-based resources and services to electronic resources and services has occurred in all phases of librarianship over the last fifteen years, especially with the growth of the World Wide Web. In conjunction with this transition, budgetary constraints and shifts in scholarship and instruction within the geophysical sciences have made digital mapping support a primary focus within cartographic units/libraries. Digital mapping can also create new user groups as researchers in the social and health sciences increasingly use geographic information systems (GIS) to plot and analyze data. In the midst of this emergence of new opportunities and roles for the map librarian, a review of the recent literature and of popular discussion lists for map librarians indicates that some cartographic libraries are being downsized and traditional, print-based collection development and services may be becoming a lower priority in order to facilitate support for digital mapping. According to the anecdotal evidence, this has resulted in reductions in staffing and in some cases the integration of stand-alone map/cartographic/spatial data units into the larger institution.

In 1999, ARL member libraries were surveyed on the services and resources dedicated to support of GIS within their map rooms or branch libraries. The results of that survey indicated that GIS was indeed supported throughout the ARL membership. This survey is designed to discover how this transition has progressed in ARL institutions and what effect it has had on staffing, collections, budget, and services. The results will provide a snapshot of spatial data services and collections in ARL institutions at the beginning of the 21st century.

BACKGROUND

1. Does your library offer resources (either digital or print) and services to support spatial data research and scholarship? N=72

<table>
<thead>
<tr>
<th>Yes</th>
<th>71</th>
<th>99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

Please complete the survey.

Please skip to question 15.
2. Are spatial data collections dispersed throughout the library(s)/institution or consolidated at one location? N=71

<table>
<thead>
<tr>
<th></th>
<th>Dispersed</th>
<th>Consolidated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispersed</td>
<td>53 (75%)</td>
<td>18 (25%)</td>
</tr>
</tbody>
</table>

Please indicate where these collections are located.

<table>
<thead>
<tr>
<th>Location</th>
<th>Dispersed (check all that apply)</th>
<th>Consolidated (check only one)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main library</td>
<td>37</td>
<td>9</td>
</tr>
<tr>
<td>Map library</td>
<td>37</td>
<td>9</td>
</tr>
<tr>
<td>Academic departmental space/computer lab</td>
<td>35</td>
<td>—</td>
</tr>
<tr>
<td>Designated GIS lab</td>
<td>19</td>
<td>—</td>
</tr>
<tr>
<td>Other location</td>
<td>28</td>
<td>—</td>
</tr>
<tr>
<td>Total number of respondents</td>
<td>53</td>
<td>18</td>
</tr>
</tbody>
</table>

Other Dispersed locations include:

- Science Library (4 responses)
- Institute affiliated with the campus (3)
- Geology Library (3)
- Geosciences Library (3)
- Geography Library (2)
- Art/Architecture/Engineering Library
- Census Info Center
- Data Library
- Environmental/Design Library
- Government Documents
- Information Arcade library classroom/computer lab
- Kentucky Geological Survey
Latin American Collection
Natural Resources Library
Physical Sciences and Engineering Library
Remote Sensing & GIS (a campus service & outreach center)
Science & Engineering library
Scripps Institution of Oceanography Library
Social science data resource library
Throughout distributed library system

**STAFFING**

3. For each of the following staffing categories, please indicate the current number (FTE) of library staff who provide services and collection management for each spatial data service point/collection location. N=71

**FTE by Location**

<table>
<thead>
<tr>
<th>FTE</th>
<th>Librarian N=9</th>
<th>Support Staff N=7</th>
<th>Student Assistant N=3</th>
<th>Other Professional N=2</th>
<th>Other Staff N=0</th>
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<tr>
<td>&lt;.25</td>
<td>2</td>
<td>1</td>
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<td>—</td>
<td>—</td>
</tr>
<tr>
<td>.25–.49</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>.50–.74</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>2</td>
<td>—</td>
</tr>
<tr>
<td>.75–.99</td>
<td>1</td>
<td>—</td>
<td>2</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1.00</td>
<td>3</td>
<td>4</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>&gt;1.00</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

| Minimum | .10           | .10               | .75                   | .50                    | —              |
| Maximum | 2.00          | 2.00              | 2.00                  | .50                    | —              |
| Mean    | .94           | 1.05              | 1.17                  | .50                    | —              |
| Median  | 1.00          | 1.00              | .75                   | .50                    | —              |
| Std Dev | .70           | .56               | .72                   | —                      | —              |
### Consolidated: Map Library N=9

<table>
<thead>
<tr>
<th>FTE</th>
<th>Librarian N=8</th>
<th>Support Staff N=7</th>
<th>Student Assistant N=5</th>
<th>Other Professional N=2</th>
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<tr>
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</tr>
<tr>
<td>.50–.74</td>
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<td>—</td>
<td>1</td>
<td>—</td>
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</tr>
<tr>
<td>.75–.99</td>
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<td>&gt;1.00</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

| Minimum | 1.00 | 1.00 | .50 | 2.00 | .50 |
| Maximum | 34.00 | 13.00 | 4.00 | 2.00 | 20.00 |
| Mean    | 5.64 | 2.86 | 1.95 | 2.00 | 10.25 |
| Median  | 1.00 | 1.00 | 2.00 | 2.00 | 10.25 |
| Std Dev | 11.51 | 4.49 | 1.35 | —   | —   |

Other staff includes:

- Graduate Assistant (.50 FTE)
- Pages (20 FTE)

### Dispersed: Main Library N=28

<table>
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<tr>
<th>FTE</th>
<th>Librarian N=24</th>
<th>Support Staff N=14</th>
<th>Student Assistant N=13</th>
<th>Other Professional N=3</th>
<th>Other Staff N=5</th>
</tr>
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<tbody>
<tr>
<td>Minimum</td>
<td>.02</td>
<td>.20</td>
<td>.10</td>
<td>.25</td>
<td>—</td>
</tr>
<tr>
<td>Maximum</td>
<td>3.00</td>
<td>2.00</td>
<td>2.50</td>
<td>2.00</td>
<td>—</td>
</tr>
<tr>
<td>Mean</td>
<td>.76</td>
<td>1.17</td>
<td>.98</td>
<td>1.08</td>
<td>—</td>
</tr>
<tr>
<td>Median</td>
<td>.56</td>
<td>1.00</td>
<td>.50</td>
<td>1.00</td>
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</tr>
<tr>
<td>Std Dev</td>
<td>.67</td>
<td>.70</td>
<td>.88</td>
<td>.88</td>
<td>—</td>
</tr>
</tbody>
</table>

Other staff includes:

- Archival technicians (3 FTE), historians (3 FTE), geographers (3 FTE), graphic technician (1 FTE)
- Cataloging & Acquisitions (.15 FTE)
- Data Services technical assistant
- Special Collections plus Science/General reference
- Temporary staff (.33 FTE)
Dispersed: Map Library N=35

<table>
<thead>
<tr>
<th>FTE</th>
<th>Librarian N=31</th>
<th>Support Staff N=28</th>
<th>Student Assistant N=28</th>
<th>Other Professional N=3</th>
<th>Other Staff N=6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>.05</td>
<td>.25</td>
<td>.05</td>
<td>.50</td>
<td>—</td>
</tr>
<tr>
<td>Maximum</td>
<td>2.00</td>
<td>4.50</td>
<td>22.00</td>
<td>6.00</td>
<td>—</td>
</tr>
<tr>
<td>Mean</td>
<td>.94</td>
<td>1.29</td>
<td>1.97</td>
<td>2.50</td>
<td>—</td>
</tr>
<tr>
<td>Median</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>—</td>
</tr>
<tr>
<td>Std Dev</td>
<td>.39</td>
<td>1.01</td>
<td>4.10</td>
<td>3.04</td>
<td>—</td>
</tr>
</tbody>
</table>

Other staff includes:

- Bibliographer plus some student assistance
- Geographer
- Head of department and computer technical persons
- Library Technicians
- Part-time shelver (1 FTE)
- Volunteer (.20 FTE)

Dispersed: Academic Departmental Space / Computer Lab N=12

<table>
<thead>
<tr>
<th>FTE</th>
<th>Librarian N=3</th>
<th>Support Staff N=7</th>
<th>Student Assistant N=2</th>
<th>Other Professional N=5</th>
<th>Other Staff N=3</th>
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</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>.10</td>
<td>.50</td>
<td>2.00</td>
<td>.50</td>
<td>—</td>
</tr>
<tr>
<td>Maximum</td>
<td>2.00</td>
<td>4.00</td>
<td>8.00</td>
<td>6.00</td>
<td>—</td>
</tr>
<tr>
<td>Mean</td>
<td>1.03</td>
<td>1.71</td>
<td>5.00</td>
<td>2.10</td>
<td>—</td>
</tr>
<tr>
<td>Median</td>
<td>1.00</td>
<td>1.50</td>
<td>5.00</td>
<td>1.00</td>
<td>—</td>
</tr>
<tr>
<td>Std Dev</td>
<td>.95</td>
<td>1.15</td>
<td>4.24</td>
<td>2.25</td>
<td>—</td>
</tr>
</tbody>
</table>

Other staff includes:

- Computer analyst and geographer
- One staff member who provides computer support for all locations
- Social Sciences Computing Services: full-time GIS person
### Dispersed: Designated GIS Lab N=8

<table>
<thead>
<tr>
<th>FTE</th>
<th>Librarian N=6</th>
<th>Support Staff N=0</th>
<th>Student Assistant N=5</th>
<th>Other Professional N=5</th>
<th>Other Staff N=2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>.10</td>
<td>—</td>
<td>.10</td>
<td>.50</td>
<td>—</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.00</td>
<td>—</td>
<td>6.00</td>
<td>3.25</td>
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<td>Mean</td>
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<td>1.55</td>
<td>—</td>
</tr>
<tr>
<td>Median</td>
<td>1.00</td>
<td>—</td>
<td>1.00</td>
<td>1.00</td>
<td>—</td>
</tr>
<tr>
<td>Std Dev</td>
<td>.38</td>
<td>—</td>
<td>2.39</td>
<td>1.10</td>
<td>—</td>
</tr>
</tbody>
</table>

Other staff includes:
- GIS programmers
- Information Technology Specialist

### Dispersed: Other Location N=19

<table>
<thead>
<tr>
<th>FTE</th>
<th>Librarian N=17</th>
<th>Support Staff N=10</th>
<th>Student Assistant N=3</th>
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</thead>
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<tr>
<td>Minimum</td>
<td>.03</td>
<td>.08</td>
<td>4.00</td>
<td>.20</td>
<td>—</td>
</tr>
<tr>
<td>Maximum</td>
<td>7.00</td>
<td>3.00</td>
<td>5.00</td>
<td>1.00</td>
<td>—</td>
</tr>
<tr>
<td>Mean</td>
<td>1.09</td>
<td>1.29</td>
<td>4.67</td>
<td>.73</td>
<td>—</td>
</tr>
<tr>
<td>Median</td>
<td>1.00</td>
<td>1.00</td>
<td>5.00</td>
<td>1.00</td>
<td>—</td>
</tr>
<tr>
<td>Std Dev</td>
<td>1.65</td>
<td>.93</td>
<td>.58</td>
<td>.46</td>
<td>—</td>
</tr>
</tbody>
</table>

Other locations include:
- Architecture Library
- Geoscience branch and Information Arcade library computer lab, which has ArcView loaded on some machines
- National Center for Ecological Study and Analysis
- Two-seat GIS lab located in the Map Collection

Other staff includes:
- Management staff
### FTE by Staff Category

#### Dispersed: Librarian N=49

<table>
<thead>
<tr>
<th>FTE</th>
<th>Map N=31</th>
<th>Main N=24</th>
<th>Academic Space N=3</th>
<th>Designated GIS Lab N=6</th>
<th>Other Location N=17</th>
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<tr>
<td>&lt;.25</td>
<td>1</td>
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<td>1</td>
<td>6</td>
</tr>
<tr>
<td>.25–.49</td>
<td>2</td>
<td>3</td>
<td>—</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>.50–.74</td>
<td>3</td>
<td>5</td>
<td>—</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>.75–.99</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1.00</td>
<td>23</td>
<td>9</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>&gt;1.00</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>—</td>
<td>4</td>
</tr>
</tbody>
</table>

| Minimum  | .05      | .02       | .10                | .10                    | .03                 |
| Maximum  | 2.00     | 3.00      | 2.00               | 1.00                   | 7.00                |
| Mean     | .94      | .76       | 1.03               | .77                    | 1.09                |
| Median   | 1.00     | .56       | 1.00               | 1.00                   | 1.00                |
| Std Dev  | .39      | .67       | .95                | .38                    | 1.65                |

#### Dispersed: Support Staff N=45

<table>
<thead>
<tr>
<th>FTE</th>
<th>Map N=28</th>
<th>Main N=14</th>
<th>Academic Space N=7</th>
<th>Designated GIS Lab N=0</th>
<th>Other Location N=10</th>
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</thead>
<tbody>
<tr>
<td>&lt;.25</td>
<td>—</td>
<td>2</td>
<td>—</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>.25–.49</td>
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<td>—</td>
<td>—</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>.50–.74</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>.75–.99</td>
<td>2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1.00</td>
<td>12</td>
<td>5</td>
<td>2</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>&gt;1.00</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>—</td>
<td>4</td>
</tr>
</tbody>
</table>

| Minimum  | .25      | .20       | .50                | —                      | .08                 |
| Maximum  | 4.50     | 2.00      | 4.00               | —                      | 3.00                |
| Mean     | 1.29     | 1.17      | 1.71               | —                      | 1.29                |
| Median   | 1.00     | 1.00      | 1.50               | —                      | 1.00                |
| Std Dev  | 1.01     | .70       | 1.15               | —                      | .93                 |
### Dispersed: Student Assistant N=39

<table>
<thead>
<tr>
<th>FTE</th>
<th>Map N=28</th>
<th>Main N=13</th>
<th>Academic Space N=2</th>
<th>Designated GIS Lab N=5</th>
<th>Other Location N=3</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;.25</td>
<td>3</td>
<td>2</td>
<td>—</td>
<td>1</td>
<td>—</td>
</tr>
<tr>
<td>.25–.49</td>
<td>4</td>
<td>3</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<tr>
<td>.50–.74</td>
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<td>—</td>
</tr>
<tr>
<td>.75–.99</td>
<td>1</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1.00</td>
<td>7</td>
<td>—</td>
<td>—</td>
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<td>—</td>
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<tr>
<td>&gt;1.00</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

| Minimum | .05 | .10 | 2.00 | .10 | 4.00 |
| Maximum | 22.00 | 2.50 | 8.00 | 6.00 | 5.00 |
| Mean    | 1.97 | .98 | 5.00 | 1.92 | 4.67 |
| Median  | 1.00 | .50 | 5.00 | 1.00 | 5.00 |
| Std Dev | 4.10 | .88 | 4.24 | 1.10 | .58  |

### Dispersed: Other Professional N=17

<table>
<thead>
<tr>
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<th>Map N=3</th>
<th>Main N=3</th>
<th>Academic Space N=5</th>
<th>Designated GIS Lab N=5</th>
<th>Other Location N=3</th>
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<tr>
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<td>—</td>
</tr>
<tr>
<td>.50–.74</td>
<td>1</td>
<td>—</td>
<td>1</td>
<td>1</td>
<td>—</td>
</tr>
<tr>
<td>.75–.99</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
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<td>2</td>
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<td>&gt;1.00</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>—</td>
</tr>
</tbody>
</table>

| Minimum | .50 | .25 | .50 | .50 | .20 |
| Maximum | 6.00 | 2.00 | 6.00 | 3.25 | 1.00 |
| Mean    | 2.50 | 1.08 | 2.10 | 1.55 | .73 |
| Median  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Std Dev | 3.04 | .88 | 2.25 | 1.10 | .46 |
4. Which of the following services are currently provided at each spatial data service point/collection location? Check all that apply. N=71

<table>
<thead>
<tr>
<th>Consolidated N=18</th>
<th>Map Library N=9</th>
<th>Main Library N=9</th>
</tr>
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<tr>
<td>Reference</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Bibliographic instruction</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Circulation</td>
<td>7</td>
<td>7</td>
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<tr>
<td>Copy services</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Cataloging/technical services</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Interlibrary loan</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Reserves</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other service</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Other Map Library services include:
- Geo-spatial capture and conversion
- Preservation, scanning
- Scanning/digital lab

Other Main Library services include:
- Web development
- Scanning
Dispersed N=53

<table>
<thead>
<tr>
<th>Service</th>
<th>Map Library N=35</th>
<th>Main Library N=37</th>
<th>Academic Space N=12</th>
<th>Designated GIS Lab N=10</th>
<th>Other Location N=24</th>
<th>Total Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference</td>
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<td>31</td>
<td>5</td>
<td>8</td>
<td>22</td>
<td>53</td>
</tr>
<tr>
<td>Circulation</td>
<td>31</td>
<td>28</td>
<td>2</td>
<td>3</td>
<td>17</td>
<td>49</td>
</tr>
<tr>
<td>Cataloging / technical services</td>
<td>24</td>
<td>33</td>
<td>2</td>
<td>2</td>
<td>10</td>
<td>48</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>27</td>
<td>29</td>
<td>4</td>
<td>5</td>
<td>15</td>
<td>48</td>
</tr>
<tr>
<td>Copy services</td>
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<td>3</td>
<td>6</td>
<td>14</td>
<td>46</td>
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<tr>
<td>Bibliographic instruction</td>
<td>29</td>
<td>23</td>
<td>4</td>
<td>6</td>
<td>17</td>
<td>46</td>
</tr>
<tr>
<td>Interlibrary loan</td>
<td>20</td>
<td>23</td>
<td>—</td>
<td>2</td>
<td>14</td>
<td>41</td>
</tr>
<tr>
<td>Reserves</td>
<td>19</td>
<td>19</td>
<td>—</td>
<td>1</td>
<td>16</td>
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<td>Other service</td>
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<td>4</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>18</td>
</tr>
</tbody>
</table>

**Other Map Library services include:**

- Data preparation
- Digitization support
- GIS technology
- Publications, displays
- Research consultation and database development; scanning to create digitized maps
- Scanning, microfiche
- Special map production; Digital Chart of the World

We package digital data per course and the access is controlled by password. Some professors link it to the WebCT course environment. We process and make available geospatial data via a Web site.

**Other Main Library services include:**

- Finding Aid—Cuban Heritage Collection
- Information technology
- Mapping for Congress
- Tours, outreach, societies, external groups
Other Academic Space services include:

Assistance with data analysis; access to some data sets (mostly remote sensing) not held by Map Library; Academic department uploads Map Library data to networked course drive for class use.

Technical support; Web support

Other Designated GIS Lab services include:

Course instruction

Digitization support

Other Services at Other Locations include:

Campus workshops taught by librarians in School of Social Ecology labs

Scanning

**BUDGET**

5. Does your library have a separate budget for spatial data services and collection development?  
N=71

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consolidated: Main Library</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Consolidated: Map Library</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Dispersed</td>
<td>27</td>
<td>26</td>
</tr>
</tbody>
</table>

**Selected Comments from Respondents**

**Consolidated: Main Library**

Separate Budget

“Separate budget is for data (collection development only).”

“Separate budget for collection development only.”

“Acquisitions budget includes GIS, statistical, and data collections.”

**No Separate Budget**

“No discrete budget. Many items ordered on approval often using other budgets. We have received
institutional grants twice to update equipment.”
“Combined with entire Geosciences budget; a very small budget to purchase print maps.”

**Consolidated: Map Library**

**No Separate Budget**

“Only for collection development and supplies. Budget is combined with larger library budget for equipment (hardware/software), staffing, and databases.”

**Dispersed**

**Separate Budget**

“Yes, in that the collection development of spatial data is conducted through the Map Collection materials budget. Services, equipment, staff etc. are not funded separately.”

“Collection Development for spatial data (paper and digital) has its own budget. Services and equipment are rolled into other budgets.”

“The correct answer is, yes and no. There is a separate collections fund; service staffing is not a separate line item but rather is part of overall budget. Equipment and supplies costs are not broken out by department. Online bib resources for relevant databases are currently paid by CA Digital Library.”

“Map & Imagery Library has 4 separate budgets for printed maps, datasets, RS images, and books.”

“Fund line in Map & Geography Library specifically for cartographic materials from which digital data might also be purchased. Other library units do not have specific funds thus designated. Services come out of general unit operating funds. Budget figures below only Map & Geography cartographic materials budget.”

“Collection development only.”

“The budget is for the field of geography not just for spatial information. The library does not actively acquire spatial datasets as this is the responsibility of the University GIS Facility. This library budget figure given below is for materials and access only; equipment and staffing expenditures come from another budget line. The budget for FY2004 is broken down as follows: $7,000 for monographs and $9,000 for serials. The answer for question 7 includes the materials and access budget as well as the staffing and equipment budgets.”

“Equipment not included, part of library equipment budget. Some spatial data support comes from other allocations and is included.”

“The library has a GIS collection development budget, map budget, student assistant budget and 1 full time professional staff person.”

“We do have a separate budget for cartographic materials (both digital and print). Our equipment is not purchased from the same budget as our materials.”

“Maps library operations and collections budgets.”
“GIS Collection Development Budget.”

“Budget only includes map library acquisitions and not salaries for Map Librarian, GIS Coordinator, Government Information Librarian, and support staff.”

“Line item for purchase of maps.”

“Budget for map library is used for print resources (atlases, paper maps) as well as geospatial data resources. Many geospatial data resources are provided by publisher at no charge, others are purchased using the University Library’s electronic resources budget or using development funds.”

“We have $10K annual collection development budget for geodata.”

“In 2003, we have been allocated a specific budget for numeric, geospatial data, and print maps. Monographs and serials for geography and GIS are covered by a separate budget (human & physical geography.) Government documents are covered by a separate budget. As we are building a geospatial collection, we are allocating a large percentage of the budget to the electronic. The percentage of print vs electronic might change in the future. We will continue to allocate a large percentage of the budget to electronic.”

No Separate Budget

“Map Library does have a collection development budget, which is sometimes supplemented by additional funds. The other unit library has no specific allocations for spatial data or services.”

“Fund for map collections (not staffing) was $3960 for FY04. Prorated staff expense far exceeds this.”

“Data is purchased form subject funds on an as-needed or requested basis.”

“Included in the map library general budget.”

“Acquisitions come out of the Geography budget and maps budget.”

“Budget is for main map collection materials and does not include branch library collections.”

6. If yes, please indicate the budget figure allocated for spatial data resources (both print and digital) and services for fiscal year 2004. N=36

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Median</th>
</tr>
</thead>
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<td>6,723</td>
<td>150,011</td>
<td>57,381</td>
<td>50,000</td>
</tr>
<tr>
<td>Consolidated: Map Library</td>
<td>5</td>
<td>3,567</td>
<td>4,100,000</td>
<td>846,217</td>
<td>47,520</td>
</tr>
<tr>
<td>Dispersed</td>
<td>26</td>
<td>2,850</td>
<td>720,000</td>
<td>84,209</td>
<td>19,261</td>
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</tbody>
</table>
7. Please estimate how much of the spatial data resources and services budget is allocated for the following. N=36

<table>
<thead>
<tr>
<th>Consolidated: Main Library N=5</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Median</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print maps</td>
<td>2</td>
<td>1.70%</td>
<td>2.50%</td>
<td>2.10%</td>
<td>2.10%</td>
<td>.57</td>
</tr>
<tr>
<td>Supplementary print materials (i.e., atlases, gazetteers, government documents)</td>
<td>3</td>
<td>2.50%</td>
<td>95.00%</td>
<td>35.80%</td>
<td>10.00%</td>
<td>51.38</td>
</tr>
<tr>
<td>Bibliographic/research databases</td>
<td>2</td>
<td>5.00%</td>
<td>30.00%</td>
<td>17.50%</td>
<td>17.50%</td>
<td>17.68</td>
</tr>
<tr>
<td>Digital data sets</td>
<td>4</td>
<td>1.70%</td>
<td>100.00%</td>
<td>34.90%</td>
<td>19.00%</td>
<td>45.05</td>
</tr>
<tr>
<td>Staffing</td>
<td>3</td>
<td>15.00%</td>
<td>87.00%</td>
<td>63.00%</td>
<td>77.00%</td>
<td>45.57</td>
</tr>
<tr>
<td>Equipment</td>
<td>2</td>
<td>9.60%</td>
<td>15.00%</td>
<td>12.30%</td>
<td>12.30%</td>
<td>3.82</td>
</tr>
<tr>
<td>Other category</td>
<td>—</td>
<td>—</td>
<td>—</td>
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<table>
<thead>
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<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Median</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print maps</td>
<td>4</td>
<td>6.00%</td>
<td>30.00%</td>
<td>17.00%</td>
<td>16.00%</td>
<td>12.30</td>
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<tr>
<td>Supplementary print materials (i.e., atlases, gazetteers, government documents)</td>
<td>3</td>
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<td>22.10%</td>
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<td>19.46</td>
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<tr>
<td>Bibliographic/research databases</td>
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<td>10.00%</td>
<td>10.00%</td>
<td>10.00%</td>
<td>10.00%</td>
<td>—</td>
</tr>
<tr>
<td>Digital data sets</td>
<td>3</td>
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<tr>
<td>Staffing</td>
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<td>92.00%</td>
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<td>46.02%</td>
<td>65.03</td>
</tr>
<tr>
<td>Equipment</td>
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<td>10.00%</td>
<td>4.01%</td>
<td>2.00%</td>
<td>5.28</td>
</tr>
<tr>
<td>Other category</td>
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<td>—</td>
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<table>
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<tr>
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<th>Max</th>
<th>Mean</th>
<th>Median</th>
<th>Std Dev</th>
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</thead>
<tbody>
<tr>
<td>Print maps</td>
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<td>2.00%</td>
<td>90.00%</td>
<td>36.30%</td>
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<td>28.24</td>
</tr>
<tr>
<td>Supplementary print materials (i.e., atlases, gazetteers, government documents)</td>
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<tr>
<td>Bibliographic/research databases</td>
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<td>10.00%</td>
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<td>4.00%</td>
<td>4.12</td>
</tr>
<tr>
<td>Digital data sets</td>
<td>22</td>
<td>1.00%</td>
<td>100.00%</td>
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<td>7.00%</td>
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</tr>
<tr>
<td>Staffing</td>
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<td>68.50%</td>
<td>70.00%</td>
<td>11.04</td>
</tr>
<tr>
<td>Equipment</td>
<td>8</td>
<td>1.00%</td>
<td>23.00%</td>
<td>7.90%</td>
<td>5.00%</td>
<td>6.79</td>
</tr>
<tr>
<td>Other category</td>
<td>6</td>
<td>10.00%</td>
<td>36.00%</td>
<td>19.70%</td>
<td>20.00%</td>
<td>9.58</td>
</tr>
</tbody>
</table>
Other budget categories include:

10%: Supplies, equipment, storage, contracted services, software licensing

20%: GIS Software

20%: Aerial photos; software

22%: Remote-sensing images including aerial photos

36%: Monographs

“Appropriation is not the only way we acquire. We use government deposit, government transfers, copyright, donations, gifts, exchanges as other acquisition strategies.”

“Software is an important item in the budget. We need regular standard software: Office, PhotoShop, Adobe Acrobat, WinZIP, Beyond 20/20, etc. In addition, for geospatial data a variety of specialized software is acquired, maintained, and upgraded: ArcView, ArcGIS, Mapinfo, Geomatica-PCI, IDRISI-Kiliimanjaro, FME (Feature Manipulation Engine), SPSS, SAS, STATA. We also receive electronic and print resources as gifts.”

**SPATIAL DATA SERVICES**

8. Please indicate which of the following types of reference services are offered at each spatial data service point/collection location. Check all that apply. N=71

<table>
<thead>
<tr>
<th>Consolidated N=18</th>
<th>Map Library N=9</th>
<th>Main Library N=9</th>
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<tbody>
<tr>
<td>Using print map collection</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Using other print materials (i.e., atlases, gazetteers, government documents)</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Using/locating Web-based mapping resources</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Searching bibliographic / research databases</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Supporting GIS, remote sensing, or any other type of digital mapping</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Other reference service</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Other Map Library reference service includes:

Some general reference

Other Main Library reference service includes:

Map making
<table>
<thead>
<tr>
<th>Dispersed N=53</th>
<th>Map Library N=35</th>
<th>Main Library N=37</th>
<th>Academic Space N=22</th>
<th>Designated GIS Lab N=21</th>
<th>Other Location N=25</th>
<th>Total Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using print map collection</td>
<td>35</td>
<td>23</td>
<td>3</td>
<td>4</td>
<td>17</td>
<td>53</td>
</tr>
<tr>
<td>Using other print materials (i.e., atlases, gazetteers, government documents)</td>
<td>35</td>
<td>36</td>
<td>2</td>
<td>4</td>
<td>21</td>
<td>53</td>
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<tr>
<td>Using/locating Web-based mapping resources</td>
<td>32</td>
<td>31</td>
<td>11</td>
<td>12</td>
<td>19</td>
<td>52</td>
</tr>
<tr>
<td>Searching bibliographic / research databases</td>
<td>33</td>
<td>36</td>
<td>7</td>
<td>6</td>
<td>20</td>
<td>52</td>
</tr>
<tr>
<td>Supporting GIS, remote sensing, or any other type of digital mapping</td>
<td>23</td>
<td>17</td>
<td>15</td>
<td>12</td>
<td>11</td>
<td>49</td>
</tr>
<tr>
<td>Other reference service</td>
<td>4</td>
<td>6</td>
<td>2</td>
<td>—</td>
<td>1</td>
<td>10</td>
</tr>
</tbody>
</table>

Other Map Library reference services include:

- Aerial photo interpretation: scanning & CD-ROM instruction
- Support given for using GIS data, but not GIS software

Other Main Library reference service includes:

- Central Eurasian Information Resource—Web-based map & data application; assistance using the CEIR Atlas; infrequent assistance using digitizer (paper map -> digital)
- Chat reference
- E-mail reference—Cuban Heritage Collection
- Large-format printing
- Numerical data training

Other Academic Space reference service includes:

- Training; technical support

Other reference service in Other Location includes:

- Making maps on demand
9. If your library offers bibliographic instruction for spatial data, please indicate how many sessions are offered during a typical year. N=47

<table>
<thead>
<tr>
<th>Sessions</th>
<th>Main</th>
<th>Map</th>
<th>Dispersed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–4</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>12</td>
</tr>
<tr>
<td>5–9</td>
<td>1</td>
<td>1</td>
<td>9</td>
<td>11</td>
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<tr>
<td>10–14</td>
<td>—</td>
<td>2</td>
<td>6</td>
<td>8</td>
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<tr>
<td>15–19</td>
<td>—</td>
<td>—</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>20–24</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>8</td>
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<tr>
<td>25+</td>
<td>1</td>
<td>—</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Median</th>
<th>Std Dev</th>
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</thead>
<tbody>
<tr>
<td>Consolidated: Main Library</td>
<td>7</td>
<td>1</td>
<td>25</td>
<td>14</td>
<td>20</td>
<td>10.52</td>
</tr>
<tr>
<td>Consolidated: Map Library</td>
<td>5</td>
<td>4</td>
<td>20</td>
<td>10</td>
<td>10</td>
<td>6.42</td>
</tr>
<tr>
<td>Dispersed</td>
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<td>2</td>
<td>50</td>
<td>13</td>
<td>8</td>
<td>12.41</td>
</tr>
</tbody>
</table>

**Selected Comments from Respondents**

**Consolidated: Main Library**

**20–24 Sessions**

“Includes group and individual sessions.”

“Numerous one-on-one sessions.”
Consolidated: Map Library

1–4 Sessions
"Not really bibliographic. More how to use ArcView with MAGIC resources."

5–9 Sessions
"Typically are intro/tours for classes having reserve materials or assignments."

10–14 Sessions
"Monthly course on maps."

Dispersed

1–4 Sessions
"Introduction to content and use of print Map Collection and to digital spatial data available on the Web."

"Geography (advanced cartography); History"

"One census BI for demography masters students and one BI for undergraduate social sciences students."

"These are only sessions offered by the Map Library. University departments and affiliated agencies offer a
wider array of training sessions for GIS."

"At request of instructor, for specific classes."

"Presentation and localisation of data only."

"Most bibliographic instruction is conducted as informal bibliographic instruction."

5–9 Sessions
"Very few sessions are specifically on spatial data. Many other sessions might include mention of a print map
collection but this is not the focus of the class."

"Sessions specifically for digital spatial data may be incorporated with other bibliographic instruction.
Informal instruction sessions are also offered."

"These sessions are hands-on classroom sessions and exclude one-on-one sessions which vary from 2–6 per
year."

"Broad overview of primarily print cartographic information resources (Map and Geography Library only)."

10–14 Sessions
"Mixture of tours/orientations to the Map Collection and course-related sessions on how to find geospatial
data for course projects."

"Total sessions offered at both the map and unit library."
15–19 Sessions

“Some are taught by Map Librarian, some are taught by GIS Coordinator often times with another subject librarian.”

“GIS short courses on Introduction to GIS, Editing in GIS, Census 2000, GPS, Remote Sensing, and Harris County GIS.”

20–24 Sessions

“Orientations for incoming students and a variety of general and technical workshops.”

“Our Map Librarian and our GIS Librarian each offer about 10 bibliographic instruction sessions each year.”

“All but one done in the Map Collection (other one in Geoscience Library).”

25+ Sessions

“The map library gives one-hour tours of the collection and works with faculty on exercises where students work in the map library.”

“1. Individual BI to academic departments for applications and use of GIS/RSI materials: 8 two-hour sessions.
2. Semester course in academic department: ‘Spatial Foundations GIS’—24 class sessions.”

10. How many hours per week are spatial data services staffed? N=64
### Hours per Week

<table>
<thead>
<tr>
<th>Hours per Week</th>
<th>Main</th>
<th>Map</th>
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<tr>
<td>3–29</td>
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<td>1</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>30–39</td>
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<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>40–49</td>
<td>4</td>
<td>4</td>
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<td>50–59</td>
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<td>60–69</td>
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<tr>
<td>80+</td>
<td>2</td>
<td>—</td>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>

### Selected Comments from Respondents

#### Consolidated: Main Library

**3–29 Hours per Week**

“On demand”

**40–49 Hours per Week**

“Trained staff provide services as needed but are not dedicated solely to GIS.”

#### Consolidated: Map Library

**40–49 Hours per Week**

“The Geography and Map Division is opened to the public from 8:30 am to 5 pm Monday through Friday. Staff are in the Geography and Map Division from 6:30 am to 8 pm.”

“Beyond 45 professional staffed hours, also have weekend and night staffed by students who circulate, retrieve materials, for 34 more hours.”

#### Dispersed

**3–29 Hours per Week**

“Very dependent on my being here, I’m afraid. Map Collection is open 25 hours/week.”

**30–39 Hours per Week**

“These hours represent availability of some staff member with expertise including 4 librarians and 1 support staff member, though no one librarian has full time responsibility for spatial data services.”
“I don’t spend my 35 hours only on spatial data services. I have many other responsibilities.”

“The Geographic Information Centre is open 61 hours a week for a variety of services. We offer spatial data services 35 hours. Our Centre offers 24/7 access to graduate students.”

40–49 Hours per Week
“Just a paper collection. My office is adjacent so as to provide reference.”

“There are two full time GIS people for the GIS lab (1 from the library, one from Academic Computing) and an additional librarian with 5 hours per week dedicated to GIS.”

“I’m defining ‘spatial data’ as print or electronic. The student employees who staff on evenings and weekends in the map library aren’t expected to address electronic spatial data questions. They refer such questions to the librarian. Though if they simply want to use a data CD on their own with no assistance they are welcome to 83 hours per week that the map library is open.”

“An information assistant is available in the Data Center where GIS software is installed.”

“40 [hours] M–F, plus evenings/weekends. Levels of expertise vary, though. Evenings/weekends service is provided by non-specialists.”

“Map Collection is open 45 hours/week. Geoscience Library is open 58 hours/week. Information Arcade is open 71 hours/week.”

“Map Library is staffed 42.5 hours/week. GIS office is staffed 37.5 hours/week. Government Information is staffed 40 hours/week.”

“Librarian is available 7am–5pm.”

“49 hours at the Map Library. Services available on demand (but not specifically staffed) at the unit library, 40 hours/week.”

50–59 Hours per Week
“Evening hours September–June while classes are in session. No weekend hours.”

“During approximately 10 weeks each year when courses are not in session, hours decrease to 20/week.”

“All hours Map Collection is open.”

60–69 Hours per Week
“20—map library; 40—main library (map/geography liaison).”

“Full time staffing: 40 hours. Casual staffing only (evening, weekends): 24 hours.”

“We do not have a Map Library per se but we have a Map Room housed in the main library. The hours given here are for the Map Room not the main library, nor the hours of the University GIS Facility (37.5 hours).”

“Map library is a part of the Geology Library and is open all hours that the Geology Library is open.”
**80+ Hours per Week**
“Based on hours of operation/staffing at Map and Geography Library and Geology Library.”

“Our Map Library is open M-F 8am - 5pm (45 hours); GIS services in the main library are offered M-F 9am-5pm (40 hours).”

“Full time staff 40 hrs/wk; part-time staff 37 hrs/wk.”

“The Langson Library Multimedia Resource Center is open for 91 hours a week and GIS software is available on workstations in this center. The Science Library Interactive Learning Center is open for 92 hours/week. GIS software is not loaded there, but ILC staff and other library public services points refer users to the MRC. Librarians provide research consultations by appointment.”

**GIS SERVICES AND SUPPORT**

If your institution does not offer services in support of geographic information systems and digital mapping, please skip to question 15.

11. If GIS is supported at your institution, please indicate all locations at which software and other resources or services are available. Also indicate whether the library provides support for GIS at that location. Check all that apply. N=67

<table>
<thead>
<tr>
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<th>Library Support</th>
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<td>Resources</td>
<td>Services</td>
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<tr>
<td>Academic space</td>
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<td>3</td>
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<tr>
<td>Map library</td>
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<td>—</td>
</tr>
<tr>
<td>Main library</td>
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<td>5</td>
</tr>
<tr>
<td>Designated GIS lab</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Public computing lab(s)</td>
<td>2</td>
<td>1</td>
</tr>
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<td>Other location</td>
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<td>1</td>
</tr>
<tr>
<td>Total number of respondents</td>
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<td>5</td>
</tr>
</tbody>
</table>

Other location:

Architecture Library
Consolidated: Map Library N=9

<table>
<thead>
<tr>
<th>Library Support</th>
<th>Resources</th>
<th>Services</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic space</td>
<td>5</td>
<td>2</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>Map library</td>
<td>9</td>
<td>8</td>
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<td>—</td>
</tr>
<tr>
<td>Main library</td>
<td>2</td>
<td>—</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Designated GIS lab</td>
<td>5</td>
<td>3</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>Public computing lab(s)</td>
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<td>2</td>
</tr>
<tr>
<td>Other location</td>
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<td>2</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>Total number of respondents</td>
<td>9</td>
<td>8</td>
<td>9</td>
<td>5</td>
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</table>

Other location:

Research centers

Dispersed N=52

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<th>Services</th>
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<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic space</td>
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<td>30</td>
<td>8</td>
<td>29</td>
</tr>
<tr>
<td>Map library</td>
<td>32</td>
<td>22</td>
<td>28</td>
<td>2</td>
</tr>
<tr>
<td>Main library</td>
<td>31</td>
<td>16</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td>Designated GIS lab</td>
<td>28</td>
<td>21</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>Public computing lab(s)</td>
<td>25</td>
<td>4</td>
<td>5</td>
<td>14</td>
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<tr>
<td>Other location</td>
<td>17</td>
<td>10</td>
<td>12</td>
<td>5</td>
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<tr>
<td>Total number of respondents</td>
<td>52</td>
<td>46</td>
<td>45</td>
<td>34</td>
</tr>
</tbody>
</table>

Other locations include:

Branch libraries such as Social Work and Nursing and special libraries such as Law

Branch library: Natural Resources

Census Information Center

Data Resource Library

Geology Library

Geoscience Library & Information Arcade

Institutes

Multimedia Resources Center

National Center for Ecological Analysis and Systems

Pennsylvania State Data Access
Science & Engineering Library

“We provide service by e-mail and phone to answer questions and offer technical support. The resources are available via Web access.”

12. What types of services are provided in support of GIS at the library(s)? Check all that apply. N=65

<table>
<thead>
<tr>
<th>Service</th>
<th>Main N=7</th>
<th>Map N=9</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Offering assistance in locating data</td>
<td>6</td>
<td>9</td>
<td>48</td>
</tr>
<tr>
<td>Collecting digital data sets</td>
<td>5</td>
<td>9</td>
<td>44</td>
</tr>
<tr>
<td>Offering consultations (i.e., scheduled appointments, hands-on assistance)</td>
<td>7</td>
<td>7</td>
<td>41</td>
</tr>
<tr>
<td>Offering stand-alone instructional sessions on using GIS software or locating data</td>
<td>6</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>Offering curriculum-based instructional sessions on using GIS software or locating data</td>
<td>4</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Other service</td>
<td>1</td>
<td>2</td>
<td>8</td>
</tr>
</tbody>
</table>

Other Main Library GIS service:
Data creation, map scanning

Other Map Library GIS service:
Written instructions for course assignments

Other Dispersed GIS services include:
Assistance in applying GIS in research
Custom data sets and mapping
Data creation, manipulation, analysis; output production; and technical support
GIS Web site and staff training for Reference Department
Help in making particular maps or sets of maps
Maintaining an online geospatial data repository for New York State
Map production to support instruction and research/publication needs of students, faculty, and departments
Participate as members of research groups using geospatial data. Participate in the preparation of research grants.

Producing maps on demand

Scanning (small-format, large-format); informational tours

13. In addition to the GIS software available within library-supported service points, please indicate which of the following hardware is offered. Check all that apply. N=65

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Main N=7</th>
<th>Map N=9</th>
<th>Dispersed N=49</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD/DVD-RW drive</td>
<td>7</td>
<td>8</td>
<td>46</td>
</tr>
<tr>
<td>B/W laser printer</td>
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<td>6</td>
<td>35</td>
</tr>
<tr>
<td>Standard scanner</td>
<td>4</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>Standard printer (color or b/w)</td>
<td>3</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td>Color laser printer</td>
<td>5</td>
<td>5</td>
<td>26</td>
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<tr>
<td>Large-format plotter</td>
<td>3</td>
<td>6</td>
<td>21</td>
</tr>
<tr>
<td>Large-format/map scanner</td>
<td>2</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Other hardware</td>
<td>—</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

Other Map Library hardware includes:

- Large-format copier
- USB ports

Other Dispersed hardware includes:

- Color laser printer for staff only: for GIS displays, posters, publications
- Dicomed digital overhead camera
- Digital preservation camera
- Digitizer
- GPS unit
- Large-screen monitor
- Zip drives

We have 4 high-powered machines specifically for GIS use; each has a 20” flat-screen monitor. Each machine also has CD-RW and DVD-R drives (not DVD-RW). We have a DVD-RW drive in house (not publicly available), so we can copy DVDs if needed.
14. Please indicate the level of GIS use among the students, faculty, or researchers working in each of the following disciplines at your institution. N=64

<table>
<thead>
<tr>
<th>Discipline</th>
<th>None</th>
<th>Low use</th>
<th>Medium use</th>
<th>High use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geography</td>
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<td>—</td>
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<tr>
<td>Architecture</td>
<td>9</td>
<td>8</td>
<td>15</td>
<td>17</td>
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<tr>
<td>Geology</td>
<td>2</td>
<td>15</td>
<td>29</td>
<td>14</td>
</tr>
<tr>
<td>Health sciences</td>
<td>7</td>
<td>29</td>
<td>15</td>
<td>4</td>
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<tr>
<td>Sociology</td>
<td>11</td>
<td>31</td>
<td>13</td>
<td>2</td>
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<tr>
<td>Business</td>
<td>9</td>
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<tr>
<td>Political science</td>
<td>15</td>
<td>32</td>
<td>10</td>
<td>—</td>
</tr>
<tr>
<td>History</td>
<td>10</td>
<td>31</td>
<td>14</td>
<td>—</td>
</tr>
<tr>
<td>Other discipline</td>
<td>—</td>
<td>8</td>
<td>18</td>
<td>24</td>
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<tr>
<td>Total number of respondents</td>
<td>28</td>
<td>57</td>
<td>53</td>
<td>49</td>
</tr>
</tbody>
</table>

Other high use disciplines include:

- City/Regional/Urban Planning (7 responses)
- Agriculture (7)
- Forestry (6)
- Ecology/Environmental Studies (6)
- Anthropology (5)
- Biology (5)
- Engineering (4)
- Archaeology (3)
- Marine Sciences/Oceanography (3)
- Geomatics (2)
- Botany
- Classics
- Computer Science
- Criminal Justice
- Earth & Space Sciences
- Economics
- Education
English
Library and Information Science
Natural History Museum
Natural Resources
Religious Studies
Renewable Resources
Zoology

Other medium use disciplines include:
Agriculture (6)
Engineering (6)
Anthropology (4)
Biology (4)
Ecology/Environmental Science (4)
Landscape Architecture (3)
Natural Resources (2)
Social Work (2)
Architecture
Computer Science
Criminal Justice
Economics
Entomology
Land Resource Science
Public Policy

Other low use disciplines include:
Anthropology (3)
Biology (3)
Archeology (2)
Engineering (2)
CHANGES IN SPATIAL DATA COLLECTIONS AND SERVICES

15. If your library once supported spatial data research and scholarship but no longer does so, please indicate what change occurred and when. N=9

Selected Comments from Respondents

“Between 2000–2002 the libraries received grant funding from the Dept of Education Title VI to develop the Central Eurasian Information Resource (CEIR) Atlas which employed 0.45 librarian, 0.6 FTE research associates, 1.0 FTE student. Funding ceased and additional grant dollars are actively being sought.”

“Geography degree program was dropped.”

“In 1999, some initial GIS services were offered out of the library’s digital media center (not the map library), offered by a 1/4 time graduate assistant hired for that purpose. In 2000, the library hired a map librarian with a geography & GIS background and the GIS graduate assistant relocated to the map library. In 2002, I lost funding for the graduate assistant. On rare occasions I will make a custom map for someone, but don’t have time to do it on a regular basis. I mostly stick to providing access to data, giving advice on finding & converting data, and keeping in touch with local GIS expertise & data for making referrals.”

“Services were provided from a GIS lab facility within the libraries, but this support now provided from Maps Library.”

“Support has never been high and most recently has declined in the past 2–3 years with the loss of a librarian position. Nearly 10 years ago, a technical support person in the Map and Geography Library was developing
a program to support digital geospatial data use but that program collapsed when she left for a position elsewhere.”

16. Please indicate which spatial data service point/collection locations were in use in 1999 and today. Check all that apply. N=70

<table>
<thead>
<tr>
<th>Consolidated: Main Library N=9</th>
<th>1999</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Map library</td>
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<tr>
<td>Main library</td>
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<td>8</td>
</tr>
<tr>
<td>Academic space</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Designated GIS computer lab</td>
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<tr>
<td>Other location</td>
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<td>1</td>
</tr>
<tr>
<td>Total number of respondents</td>
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<td>9</td>
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</table>

<table>
<thead>
<tr>
<th>Consolidated: Map Library N=9</th>
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<th>2005</th>
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</tr>
<tr>
<td>Main library</td>
<td>—</td>
<td>2</td>
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<tr>
<td>Academic space</td>
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<td>5</td>
</tr>
<tr>
<td>Designated GIS computer lab</td>
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<table>
<thead>
<tr>
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<th>2005</th>
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<tr>
<td>Main library</td>
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<td>31</td>
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<tr>
<td>Academic space</td>
<td>30</td>
<td>34</td>
</tr>
<tr>
<td>Designated GIS computer lab</td>
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<td>22</td>
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<tr>
<td>Other location</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td>Total number of respondents</td>
<td>50</td>
<td>52</td>
</tr>
<tr>
<td>Other Location 1999</td>
<td>Other Location 2005</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Data Library</td>
<td>Data Library</td>
<td></td>
</tr>
<tr>
<td>Special Collections</td>
<td>Architecture Library</td>
<td></td>
</tr>
<tr>
<td>Physical Sciences &amp; Engineering Library</td>
<td>Physical Sciences &amp; Engineering Library</td>
<td></td>
</tr>
<tr>
<td>Scripps Institution of Oceanography Library</td>
<td>Scripps Institution of Oceanography Library</td>
<td></td>
</tr>
<tr>
<td>Institutes</td>
<td>Institutes</td>
<td></td>
</tr>
<tr>
<td>Other unit library</td>
<td>Other unit library</td>
<td></td>
</tr>
<tr>
<td>Discipline-oriented libraries</td>
<td>Discipline-oriented libraries</td>
<td></td>
</tr>
<tr>
<td>Geoscience Library</td>
<td>Geoscience Library; Information Arcade</td>
<td></td>
</tr>
<tr>
<td>Kentucky Geological Survey</td>
<td>Kentucky Geological Survey</td>
<td></td>
</tr>
<tr>
<td>Branch libraries</td>
<td>Branch libraries</td>
<td></td>
</tr>
<tr>
<td>General Map Collection</td>
<td>General Map Collection</td>
<td></td>
</tr>
<tr>
<td>Natural Resources Library; campus-wide network</td>
<td>Natural Resources Library; campus-wide network</td>
<td></td>
</tr>
<tr>
<td>Non-academic departments</td>
<td>Non-academic departments</td>
<td></td>
</tr>
<tr>
<td>Science Library</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geology Library, Latin American Collection</td>
<td>Geology Library, Latin American Collection</td>
<td></td>
</tr>
<tr>
<td>Research centers</td>
<td>Research centers</td>
<td></td>
</tr>
<tr>
<td>Digital lab in science/engineering library</td>
<td>Digital lab in science/engineering library</td>
<td></td>
</tr>
<tr>
<td>Science &amp; engineering library</td>
<td>Science &amp; engineering library</td>
<td></td>
</tr>
<tr>
<td>Data resources library</td>
<td>Data resources library</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Branch and Special Libraries</td>
<td></td>
</tr>
<tr>
<td></td>
<td>National Center for Ecological Analysis and Systems; staff use only</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walk-in campus computer lab (not departmental)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Geology Library</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public computing labs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Census Information Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Computer labs</td>
<td></td>
</tr>
</tbody>
</table>
17. For each of the following staffing categories, please indicate whether the number of spatial data staff indicated in question #3 reflects an increase, decrease, or no change since 1999. N=71

<table>
<thead>
<tr>
<th>Consolidated: Main Library N=9</th>
<th>Increase</th>
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<th>No change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Librarian</td>
<td>4</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>Support staff</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Undergraduate student assistant</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Other professional</td>
<td>2</td>
<td>—</td>
<td>4</td>
</tr>
<tr>
<td>Graduate student assistant</td>
<td>—</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Other staff</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Total number of respondents</td>
<td>4</td>
<td>2</td>
<td>7</td>
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</table>

<table>
<thead>
<tr>
<th>Consolidated: Map Library N=9</th>
<th>Increase</th>
<th>Decrease</th>
<th>No change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Librarian</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Support staff</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Undergraduate student assistant</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Other professional</td>
<td>2</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>Graduate student assistant</td>
<td>1</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>Other staff</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Total number of respondents</td>
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</table>

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Librarian</td>
<td>14</td>
<td>7</td>
<td>30</td>
</tr>
<tr>
<td>Support staff</td>
<td>9</td>
<td>8</td>
<td>29</td>
</tr>
<tr>
<td>Undergraduate student assistant</td>
<td>8</td>
<td>8</td>
<td>26</td>
</tr>
<tr>
<td>Other professional</td>
<td>8</td>
<td>2</td>
<td>19</td>
</tr>
<tr>
<td>Graduate student assistant</td>
<td>8</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Other staff</td>
<td>3</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>Total number of respondents</td>
<td>25</td>
<td>16</td>
<td>42</td>
</tr>
</tbody>
</table>

Other staff increase:

GIS Facility undergraduate student assistants

Volunteer in Map Library

The librarian now provides GIS and print map assistance whereas the 1999 librarian provided only print map assistance.
Other staff decrease:
Graduate Assistant in GIS

Other staff no change:
Map reshelving

18. Please indicate whether spatial data staff responsibility for each of the services listed below has increased, decreased, or stayed about the same since 1999. N=71

<table>
<thead>
<tr>
<th>Consolidated: Main Library N=9</th>
<th>Increased</th>
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<th>About the Same</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference</td>
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<td>—</td>
<td>6</td>
</tr>
<tr>
<td>Bibliographic instruction</td>
<td>5</td>
<td>—</td>
<td>4</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Circulation</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Cataloging/technical services</td>
<td>4</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>Preservation</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Copy services</td>
<td>2</td>
<td>—</td>
<td>4</td>
</tr>
<tr>
<td>Interlibrary loan</td>
<td>—</td>
<td>—</td>
<td>6</td>
</tr>
<tr>
<td>Reserves</td>
<td>1</td>
<td>—</td>
<td>4</td>
</tr>
<tr>
<td>Other service</td>
<td>3</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Total number of respondents</td>
<td>5</td>
<td>3</td>
<td>8</td>
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</table>

<table>
<thead>
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<th>About the Same</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Bibliographic instruction</td>
<td>4</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>Circulation</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>4</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>Cataloging/technical services</td>
<td>3</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>Preservation</td>
<td>2</td>
<td>—</td>
<td>6</td>
</tr>
<tr>
<td>Copy services</td>
<td>1</td>
<td>—</td>
<td>6</td>
</tr>
<tr>
<td>Interlibrary loan</td>
<td>1</td>
<td>—</td>
<td>4</td>
</tr>
<tr>
<td>Reserves</td>
<td>1</td>
<td>—</td>
<td>3</td>
</tr>
<tr>
<td>Other service</td>
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<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Total number of respondents</td>
<td>7</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Dispersed N=53</td>
<td>Increased</td>
<td>Decreased</td>
<td>About the Same</td>
</tr>
<tr>
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<td>-----------</td>
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<td>----------------</td>
</tr>
<tr>
<td>Reference</td>
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<tr>
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<tr>
<td>Acquisitions</td>
<td>16</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>Circulation</td>
<td>10</td>
<td>3</td>
<td>35</td>
</tr>
<tr>
<td>Cataloging/technical services</td>
<td>17</td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>Preservation</td>
<td>16</td>
<td>3</td>
<td>26</td>
</tr>
<tr>
<td>Copy services</td>
<td>7</td>
<td>2</td>
<td>35</td>
</tr>
<tr>
<td>Reserves</td>
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</tr>
<tr>
<td>Interlibrary loan</td>
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<td>38</td>
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</tr>
<tr>
<td>Total number of respondents</td>
<td>34</td>
<td>14</td>
<td>47</td>
</tr>
</tbody>
</table>

Other Main Library service increase:
- Scanning
- GIS lab space
- Web development

Other Map Library service increase:
- Scanning/plotting
- GIS specialists

Other Dispersed service increase:
- Scanning
- IT support for ArcIMS server
- Map production
- Since service began in 2002, all is increased from zero
- Training

Other Dispersed service decrease:
- GIS consultation (one-on-one)
- Hands-on advice & help
19. Does the current budget for spatial data resources and services represent an increase, decrease, or no change since 1999? N=66

<table>
<thead>
<tr>
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<tr>
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<tr>
<td><strong>Total</strong></td>
<td>25</td>
<td>10</td>
<td>31</td>
</tr>
</tbody>
</table>

20. Does the number of bibliographic sessions indicated in question #9 reflect an increase, decrease, or no change since 1999? N=64

<table>
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<th>Increase</th>
<th>Decrease</th>
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</tr>
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<td>3</td>
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<tr>
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<td>Dispersed N=46</td>
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<tr>
<td><strong>Total</strong></td>
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<td>2</td>
<td>34</td>
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</tbody>
</table>

21. Do the hours of spatial data service per week indicated in question #10 reflect an increase, decrease, or no change since 1999? N=71

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<th>Increase</th>
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<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Consolidated: Map Library N=9</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Dispersed N=53</td>
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<td>6</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>27</td>
<td>9</td>
<td>35</td>
</tr>
</tbody>
</table>

22. What is your impression of changes in the number of spatial data users served in a typical week since 1999? N=68

<table>
<thead>
<tr>
<th></th>
<th>Increase</th>
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23. Please provide any comments regarding trends in spatial data services and collections (either print or electronic) at your library since 1999. N=47

Selected Comments from Respondents

"Activity increased greatly when a license was negotiated to include spatial data in the Federal Gov’t. Depository services."

"In general, library use of digital spatial data and GIS services has shifted to disciplines beyond geography, such as environmental sciences, urban planning, and the social sciences as GIS skills in those areas expand. Demand for digital spatial data in GIS formats has increased among university users, while use of static electronic maps, online mapping, and electronic atlases are used more by public users. Use of imagery, especially historical aerial photography, continues to increase. Challenges involved data collection and data licensing for digital data; processing and storage of electronic formats and online maps."

"Increased lab space, GIS related software, hardware. Increase in use of online data sources. Increased GIS related events."

"A formal plan was developed in 1999 to expand the GIS program on campus beyond the Geology and Geophysics department. The program was further developed in 2002 when GIS came under the Virtual Data Center and partnered with the university’s newly created Research and Instructional Technology Services group in Academic Technology Services. Some of the Virtual Data Center budget is used to support GIS data acquisition. This is the increased spending referred to in question 19. The print collection has been gradually shrinking over time."

"Budget for digital geospatial data has increased; budget for print decreased. Big increase in the demand for digital geospatial data."

"In 1999, our collections placed more emphasis on paper than digital formats. Recently, we have had a staff change and recruited a librarian who is familiar with GIS. We began offering GIS reference services in 2004 and are actively collecting digital data and seeking opportunities to convert maps and other cartographic materials to digital formats. In 2003, we eliminated weekend and evening access hours to the map collection because of a service point reorganization, not because of a lack of demand. Our map refile statistics reflect decreased use due to decreased access. However, in the past year we have noticed an increased use of spatial resources and an increase in reference requests."

"The university has not yet decided if the university will have more comprehensive access to GIS."

"Our paper map collection has gotten smaller while our digital collection has grown."

"Increase in use of digital geospatial data; increase in scanning (large- and small-format); decrease in GIS consultation—departments have own labs."

"Many more people on campus have GIS. Mostly they’re pretty independent."

"Significant user interest in digitizing print collection. Many new, inexperienced users ask for GIS assistance. Overall increase in data downloads from online repository. Increasing availability of Web-mapping services that meet basic needs."
“Paper map use relatively constant. GIS use and digital data demand slightly higher, but very irregular.”

“Increased faculty and grad students consultation; increased scanning and in-house use of print materials; decreased map circulation but increased use of foreign maps to create data sets; increased acquisition & use of digital RSI instead of print. Library’s scanning of aerial photos & antique maps to Web site have increased e-mails and in-house use of materials.”

“Patron base spans across a larger number of disciplines.”

“More spatial data resources are available online (online interactive mapping, more data available for download), so patrons may be bypassing library services. GIS software is more widely used on individual desktops now, and also allows for easier manipulation of the data downloaded.”

“The trend has been for GIS support and expertise to be provided by campus departments that actively use and teach GIS software. Financial support for University GIS software was previously included in the libraries’ budget but is now provided through an agency that coordinates Post-Secondary Education and administers a state-wide GIS contract for institutions in higher education.”

“Everything increases. In 1999, we had only one set of data and now we have a many sets of data from different sources. Users come from more and more different departments.”

“Have hired a librarian specializing in digital spatial data. Have acquired digital spatial data.”

“The significant changes have occurred in the General Map Collection (Other Location in this survey). The main reason was the appointment in 1997 of a full-time map librarian. Since then, acquisition, cataloging, preservation, reference, and circulation have been continuously going up.”

“Now that we have a librarian with a GIS background we purchase datasets beyond what comes free through depository. We seek special funding to acquire datasets and archive datasets that require a trained user.”

“We have endeavored to disintermediate access to data and instruction, so that both are available to users 24/7. We participated in building GIS infrastructure campus-wide. We promoted GIS services to a broader range of academic disciplines, beyond the users who were early adopters of GIS.”

“Higher expectations for specialty cartographic data and services; want individualized products for classwork. Digital requests up and scanning services requested.”

“Print resources are still used heavily and there is concern from some users of digital artifacts in GIS data. However, use of digital geospatial data sources has increased substantially both by researchers and undergraduate students looking for information for hiking/trips and class projects.”

“Use of paper air photos is increasing. In 1992, GIS service established in the library and was only publicly accessible GIS ‘lab’ on campus. Now, over a decade later, there are several departmental GIS labs across campus devoted to instruction or research and the university maintains an institutional site license with ESRI. Library still provides the only publicly accessible GIS service unit on campus.”

“The e-mail service offered as part of our online map collection has seen an increase in questions related to GIS.”

“Many more consortial and collaborative ‘arrangements’ with other post-secondary institutions and with data publishers (for data acquisitions).”
“Increased use by outside users, especially environmental consultants.”

“Physical acquisitions are down due to the amount of data being streamed via Web services etc. More data producers are sharing data via the Internet rather than on CD, DVD, etc.”

“Access to the library’s maps on the American Memory Web site reflects increased interest from the general public in maps; in-house users have decreased. Increased request for electronic data has occurred, however, the number of specialists available to accommodate such requests has not increased and the specialists in place serve exclusively Congressional requests. The trend in both current research and historical cartographic research reflects increased use of GIS to analyze events, occurrences from a geospatial perspective. This trend places substantial challenges and opportunities to the future direction of the map library in light of what it acquires, accesses, serves, supports, archives, etc.”

“On campus, spatial data awareness is impressive. We see a substantial augmentation in professional hiring. They are injecting an interest and use of spatial data in their teaching and research. The number of grant proposals submitted with spatial data resources listed has augmented, as well. We are attracting a large number of graduate and post-graduate students wanting to use spatial data in their research and theses.”

24. Please provide any comments regarding the direction of spatial data services and collections (either print or electronic) at your library within the next three years. N=45

Selected Comments from Respondents

“We expect activity to continue to increase. We are preparing a formal document: ‘Maps and Geospatial Information at the University of Alberta Libraries: A plan for the future.’”

“Our collection development policy is currently being revised and will address electronic spatial materials. Our collection goals include building and maintaining a primary set of spatial data in conjunction with other GIS facilities on campus and within the parameters of our collection development policy. Several targeted areas include: 1) remotely accessible, relatively high-resolution digital imagery of the local area every two years; 2) historical aerial imagery of the local area, print or electronic; 3) local and regional government-produced GIS data; 4) Mexican or border region spatial data, print or electronic. Map Collection items of special interest or high use may be digitized and made available remotely. Service goals will emphasize assistance locating, selecting, and appropriate use of spatial data rather than software instruction.”

“We are working on cooperation/collaboration with municipal agencies involved with GIS, including data acquisition.”

“Our goals include expanding GIS use in the areas of Law, History, Chemistry and Education.”

“Considerable portion of maps collection still needs to be converted to machine readable form (recon). Increase in digital services. Ongoing training program for non-map specialists (The Map Library and Map Librarian moved from the old main library to the Koerner Library.) Some atlases (lower use, duplicates) may be moved from main storage to the automated storage system.”

“We anticipate an increase in digital spatial data acquisition and user demand for GIS reference services. Our
acquisition of paper maps will probably decrease as we receive fewer through the Federal Depository Library Program. Also, we expect an increasing percentage of our acquisitions budget will be spent on electronic resources."

“We have noticed an increase in free digital resources (Web pages, etc.) that are not reflected in our collections budget. We have been cataloging these as appropriate which impacts our catalog department. This trend will likely continue.”

“Increase in conversion of analog materials to digital. Increase in collections of digital geospatial data.”

“We expect use and services in all areas related to spatial data to grow. Specific goals include more and diversified instructional workshops, more course-related instruction, management of one of the university’s GIS site licenses, assuming responsibility for maintaining a university-wide Web site on GIS activities and resources, and continued improvements to the online geospatial data repository.”

“We are contemplating offering a more extensive geospatial data service point, but that is contingent upon budgetary matters.”

“We will be moving towards greater acquisition & use of international spatial data collection both map and RSI; increased library service stations for both GIS & RSI software; training of additional staff in use of GIS/RSI software; increased scanning of print maps & aerial photos which are loaded to a shared Web site; acquisition of foreign topos set not yet available in digital format.”

“No anticipated change for this area.”

“Due to budgetary constraints, we do not foresee any innovative changes regarding spatial data services and collections. If resources were available, we would vigorously pursue the purchase of data collections and the creation of data subsets specific to Illinois.”

“Need to do more staff training and patron training on ArcView. When a level of comfort has been reached with the software, should do outreach to social sciences, and strive to increase use of spatial data by grads and undergrads. Need for preservation of paper maps will drive digitization projects in future, these will go on the Web, and I believe their visibility will fuel more use of spatial data resources by social sciences such as history students and professors.”

“With FDLP issues in mind, I anticipate fewer tangible/print acquisitions.”

“We want to create a statistical and geospatial data center. We want to improve our services and the access to the collection.”

“Administrative integration between Map Library in Geographic Library in 2006.”

“Develop our collection and configure our services so that students and faculty can discover and access remotely held data anywhere in the world, exploring both the technical and economic/digital rights issues. We will continue to research and develop powerful data discovery tools, taking advantage of metadata standards, enabling users to locate data sets easily with the very specific characteristics they need. We will develop and refine sustainable methods for digital content preservation. We will continue to promote geospatial services to users from disciplines new to GIS, adjusting our data acquisition practices as appropriate. We will further integrate our print map collection with digital resources We will develop services for students and faculty whose orientation is toward basic mapping rather than sophisticated GIS analyses.”
“Increasing emphasis on GIS support and collaboration with our central IT department. Hiring for GIS skills in a Business Librarian position to support users in management, economics and agricultural economics. Libraries are reaching out to new disciplines to support their geospatial data needs.”

“The designated GIS lab will be moving to a larger space with a separate teaching facility.”

“I think there are opportunities for increased usage in departments such as Economics and Political Science, however there would need to be more support provided by the libraries or the Computer Center.”

“Library GIS efforts over the next three years are likely to be low key practical responses to specific needs. We do not anticipate beginning a full-scale library GIS program at this time.”

“We expect more BI and GIS projects, larger Web presence through mapping projects (ArcIMS). Concern with changes in GPO US depository distribution policies.”

“This map collection is simply an adjunct to the Science-Engineering Dept.—paper maps. No movement toward GIS or other electronic formats. Years ago, the Documents Division looked into providing GIS access, but determined it impractical, esp. since the campus Geography Dept. has a GIS lab and is self-sufficient.”

“Our GIS/map collection is being combined with other units specializing in electronic data formats (like e-texts) into a department providing support for use of digital materials in instruction and research.”

“Would like to see great use and integration of geospatial software applications to geospatial information finding tasks. Seeking grant funding to convert analog resources to digital is an area to explore. Development of tools to facilitate collaboration between data users, scholars, and community. Identify user needs. Investigate usability of geospatial tools for searching.”

“Expect print collection to increase in number of monographs. Expect collection development policy to be developed for adding digital data to the collections.”

“More staff involved including staff from Main Library Reference, from those providing statistical data services (e.g., census data) and those working with Government Documents.”

“Hoping to have a part-time or full-time GIS analyst. We are a separate unit from the main library. I’m not sure of their plans.”

“Demand has been increasing, expect to add 1FTE expert. Major staffing challenge exists in competing with the market place and demand for the expertise.”

“Current trends in the past 5 years indicate that traditional map collections (paper primarily) have reached a crossroads. Will the historical materials in the collection be treated as a different collection or will both be integrated based on geo-spatial, whether contemporary or historical data, considerations? A series of separate collections based on format would not allow the benefit of model building and analyses essential to an understanding of the relationship of place to time, place to event, in describing cultural and social and scientific occurrences.”

“We intend to continue to develop the spatial data collection. Priority will be given to electronic. Partnership in teaching and software support will be augmented. We will give a special attention and develop special services to answer the growing needs of the faculty of agriculture and environmental sciences which is located 50 km from the main campus.”
**RESPONDING INSTITUTIONS**

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REPRESENTATIVE DOCUMENTS
Organization Charts
Digital Research and Instructional Services

Last Updated: 30 November 2004

University Librarian
Karin Wittenborg
FA283

Associate University Librarian
Production and Technology Services
Martha Blodgett
FA502

Director, Digital Research and Instructional Services
Michael Furlough
FP627

User Support Programmer
Information Technology Specialist I
Adam Soroka

Metadata Specialist for User Projects
[Vacant]

Associate Director, Rare Materials Digital Services
Bradley Dagga

Associate Director, Electronic Text Center
Matthew Gibson

Associate Director, Geospatial & Statistical Data Center
Donna Tolson

Project Manager
Information Technology Specialist II
Christina Deane

Project Manager
Gordon Project
Karen James
[.5FTE]

Digitizing Coordinator
Library Specialist II
Jeanna Pardee

Web Specialist
Information Technology Specialist I
Jennifer Sorenson
[Wage]

Assistant Director, Electronic Text Center
Information Technology Specialist II
Cynthia Speer

Coordinator, Japanese Text Initiative
Information Technology Specialist II
Sachiko Iwabuchi

Geographic Information Specialist
Information Technology Specialist II
Blair Tinker

Metadata Coordinator
Information Technology Specialist II
Sherry Lake
[Wage]

Map Coordinator
Library Specialist I
Haynes Earnhardt
[.5FTE]
Job Descriptions
POSITION DESCRIPTION

COLLEGE: University Libraries, Arizona State University

DEPARTMENT: Government Documents & Maps Department

TITLE: Librarian or Archivist, Map Collection

POSITION SUMMARY:

The Librarian or Archivist, responsible for daily operations of the Map Collection, reports to the Head, Government Documents & Maps Department. Responsibilities include the supervision of classified staff; classification and indexing of maps; instruction and reference assistance in the use of maps and geographic information; application of new technologies, including Geographic Information Systems, to meet users' needs; promotion of the map collection; and collection development.

ESSENTIAL FUNCTIONS:

1. Organizes and monitors the work of the Map Collection, providing services responsive to user needs including the application of electronic technologies. Responsible for collection maintenance contributing to the preservation of library materials in the Unit. Directs and monitors the activities of the Unit staff responsible for classification and indexing of map materials for the University Libraries, editing the Map Index, and providing reference assistance in the Map Collection.

2. Provides reference assistance and library instruction in the use of geographical and cartographic information.

3. In cooperation with the Department Head, participates in the hiring, training, supervising, development and evaluation of the Unit's staff; nurtures emphasis on customer service.

4. Devotes four to six hours a week to selection, liaison, and three year assessments of the geography collection. Monitors approval plans. Maintains active liaison with faculty so as to properly coordinate their needs with University Libraries goals and priorities. Keeps abreast of resources and developments in electronic formats.

5. Contributes to the preparation of budget recommendations, reports, studies, and/or surveys as required.

6. Maintains in-depth knowledge of the activities, accomplishments, needs, and problems of the Unit. Consults with and keeps the Department Head apprised as appropriate.

7. Identifies and responds to user needs and problems; handles user complaints as appropriate.

8. Provides leadership for the development of the Map Collection by participating in local, regional, and national professional organizations.

9. Engages in professional development and service activities as required by the University criteria for the continuing appointment and promotion of librarians/archivists.
10. Participates in library committees and meetings as appropriate.

11. Assumes other non-essential related responsibilities as assigned; performs other duties as required.

QUALIFICATIONS:

Required:

- M.L.S. from an ALA-accredited program, or, Master's degree in geography with experience or education in acquisition, organization, management, preservation, and making available source material of significance to research.

- Experience with electronic cartographic resources, such as GIS.

- Experience in staff or user training and usage of electronic cartographic resources.

- Knowledge of maps in traditional formats and cartographic information in digital form.

- Knowledge of computer technology as it applies to map or archival collections.

- Demonstrated ability to work effectively with all levels of staff and library users.

- Ability to work collegially in small group and team environments.

- Strong interpersonal and communication skills.

Preferred:

- Academic coursework in geography, cartography, history, or related fields.

- Knowledge or experience with U.S. federal depository cartographic data in electronic format.

- Knowledge of cataloging or classification and indexing of maps or archival materials.

- Reference experience in a map collection.

- Supervisory experience.

- Experience with or knowledge of Web page development.

- Knowledge of principles and processes for providing outstanding customer service including quality service standards, customer service evaluation, and related attributes.
University of California, Davis
General Library

Statement of Primary Responsibilities

Name: ________________________________

Department: Government Information and Maps

Payroll Title: Librarian

Working Title: Map/GIS (Geographical Information Services) Librarian

Names & Payroll Titles of Those Whose Work is Reviewed:

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Description of Responsibilities Assigned in Common:

REFERENCE SERVICE: Provides reference service for government information in a variety of formats from the United States, state, local and foreign governments, intergovernmental agencies, and for the Maps and Microcopy collections, general information and periodicals queries. Responds to requests for information in person, by mail, telephone or via electronic mail. Instructs users in the use of specialized reference sources and the library catalogs. Assists users with use of government information in electronic formats. Uses online databases for reference. Contacts government information and other government information collections to acquire requested information.

EDUCATIONAL SERVICES: Explains role and resources of the Department and library to visitors to the Department. May prepare bibliographies and guides. When requested, provides course-related bibliographic instruction. Participates in the training of Library Assistants for service at the Government Information/Maps and Periodicals/Microforms Desk. Assists in orienting other Library staff to Department Resources.

SELECTION AND MANAGEMENT OF RESOURCES: In consultation with other selectors, assists in deselection of material from the collection; for discard, alternative storage locations, or replacement in alternative formats. Also identifies material requiring preservation, makes recommendations for replacement of missing books and serials.

Description of Unique Responsibilities:

Map/GIS Collection Management:

Participates in long and short-range planning for map acquisitions, processing, maintenance and access. Develops the map collection in all formats. Coordinates with other department and library staff and with the Systems Department in providing access to digital resources. Coordinates Map Collection activities within the Department and with other units of the library.
As subject specialist in cartography, develops the print and digital collections to support campus research needs and interests.

Provides specialized reference assistance and consultation to users of cartographic and geospatial data.

Develops the Library’s GIS program, including data collection and dissemination, maintenance of the Library’s GIS website, collaboration in campus-wide GIS activities, and relevant user education services.

Coordinates with other UC map selectors on cooperative collection development, statewide access to map and GIS resources, and digitization, preservation and archiving projects.

Consults with faculty and with department and library instructional librarians on instruction needs for the map collection. Provides specialized instruction in the use of map and GIS resources to students, faculty and staff, and others. Develops printed and electronic guides, handouts and tutorials in the use of map and GIS resources.

Develops the content of department and library web pages related to map and GIS resources. Participates in the design and maintenance of departmental web pages.

Develops and implements map digitization projects in consultation with departmental and library staff.

Provides lead supervision to the Map Assistant in the day to day operations of the map collection. Provides evaluative comments on the performance of the map assistant to the Technical Processing supervisor in the area of technical processing and record. Participates in the hiring, training, work assignment and evaluation of student assistants.

Assists in the development of standards for bibliographic access for the collection, including metadata standards for digital materials, and advises on the processing of cartographic materials. maintenance.

Signature

________________________________________

________________________________________  Signature of Review Initiator

Signature of Department Head (If Not Review Initiator)

Date: 2/17/04

*The Statement of Primary Responsibilities describes the librarian's specific functions to be judged under the first criterion, "Professional competence and quality of service within the library," as explained in APM 210-4.e.3.a.

LPS C-9 Rev92
STATEMENT OF DUTIES AND RESPONSIBILITIES
Librarian Series
Incumbent Identification

Name: Mary Lynette Larsgaard

Date of initial appointment: August 1, 1988

Academic Rank/Step: Librarian, Distinguished Step (salary schedule: Librarian III)

Current Date: January 31, 2003; job description applies 2001 to present

Primary Supervisor: Larry Carver, Specialist

Secondary Supervisor: Andrea Duda, Sciences Collection Coordinator, fall 1999-

Functional Job Title: Assistant Head, Map and Imagery Laboratory

Direct Supervision of:

Rusty Brown               Library Assistant IV (100%)
Ann Hefferman           Library Assistant IV (100%)
Marilyn Treusdell       Library Assistant II (50%)

SUMMARY OF DUTIES AND RESPONSIBILITIES

(Outline of major duties associated with this position)

Assists Department Head, as requested, in overall management of the Map and Imagery Laboratory (MIL), including daily operation and long-range planning; contributes to goals and objectives, annual and monthly reports, and budget, personnel, and equipment requests for MIL. In charge of MIL during absence of the Department Head.

DESCRIPTIVE DETAILS OF DUTIES AND RESPONSIBILITIES

(May include Administrative/Management; Reference; Collection Development; Library Instruction; Cataloging; Area of Specialty, etc.)

The Assistant Head of the Map and Imagery Laboratory is responsible for managing the day-to-day operations of MIL, under the general direction of the head. Supervises 3.5 FTE and is in charge of MIL in the absence of the department head. Oversees technical and reference services. Participates in the management of the department, including planning, development of policies and procedures, and resources allocation.

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

The major departmental functional areas are: 1) Reference, research assistance, and laboratory training; 2) Bibliographical control and retrieval access of remotely sensed materials and maps (cataloging, classification, indexing); 3) Acquisitions of remotely sensed materials and maps (bibliographic searching, ordering, processing, claiming, order follow-up, depository maintenance); 4) Circulation, shelving, and filing of departmental materials; 5) Development and maintenance of the Laboratory, its collections and remote sensing/cartographic equipment.

Specific responsibilities further include:

1. Responsible for assisting the head in long- and short-range planning for all aspects of MIL programs and operations. Evaluates effectiveness of MIL policies and programs, and advises head as to additions and changes needed.
2. Responsible for public service functions, including the finding of geodata and the instruction of faculty, staff, students, and other researchers in the applications of the Laboratory, its equipment, collections, and services. Provides reference service and research assistance in fields relating to MIL resources. Provides tours and lectures about the collections and their use. Performs outreach activities to promote MIL services.
3. Assists in the design of bibliographic and administrative databases in support of MIL operations. Supervises implementation and instructs staff and users in accessing these databases. Responsible for designing and supervising cataloging and metadata creation; responsible for original cataloging.
4. Is responsible for supervising of ordering, and processing of imagery and map collections. Supervises classification process.
5. Responsible for the day-to-day supervision of 3.5 FTE. Performs duties of absent staff members on a stand-in basis. Reviews performance and makes merit recommendations to the head. Recommends hiring and/or release to the head. Carries out the establishment of job duties and priorities as set by head.
7. Maintains awareness of current development in the cartographic, digital, and related library fields.
8. Participates in library meetings, as requested, and informs other MIL staff of information disseminated there. Serves on committees as requested, and, as priorities permit, as authorized.

Responsibilities for collection development:

1. Responsible to the Assistant University Librarian for Collection Development for the collections of maps, atlases, gazetteers, and related reference materials -- including development, evaluation, vendor selection, and weeding -- so that they best support the academic and research programs given available funding and space considerations. Responsible for assisting head in maintaining faculty liaisons.
2. Responsible to the Assistant University Librarian for Collection Development for the continuous analysis of the academic programs and research needs of the campus in order to propose and implement policies on the selection of maps and cartographic data (in any form, including digital); atlases; gazetteers; and related reference materials.
3. Implements the Library’s Gift Acceptance Policy for the Map & Imagery Laboratory. Reviews donated materials, or proposed gifts, of maps and other cartographic data, atlases, gazetteers, and related reference materials for their appropriateness to MIL collecting parameters and their relevance to university academic programs and research. Recommends to the head the acceptance or rejection of gifts or depositories requiring formal library commitment, purchase of storage cabinets, or additional processing staff.
4. Performs other duties and responsibilities as assigned.
University of Colorado Libraries
Position Description
Map Librarian

POSITION SUMMARY: The Map Librarian is a tenure-track faculty position reporting to the Head of the Jerry Crail Johnson Earth Sciences Library. A significant part of the responsibilities of this position includes research/creative work and service, in keeping with the tenure standards of the University of Colorado at Boulder. The position is supervised by the Head of the Jerry Crail Johnson Earth Sciences Library.

RESPONSIBILITIES:
1. Administrative head of the Map Library
   a. Trains and supervises staff assigned to the Map Library
   b. Oversees the Map Library materials and student assistant budgets
   c. Sets policy, priorities and procedures for the Map Library, in consultation with the Head of the Earth Sciences Library

2. Reference Services
   a. Provides reference service for the map collection and the general Earth Sciences Library collection
   b. Instructs library users and staff in the use of the map collection
   c. Provides bibliographic instruction
   d. Acts as a reference resource for issues regarding cartographic material

3. Collection Development
   a. Selects appropriate material in all formats including spatial data
   b. Seeks input from teaching and research faculty in departments outside of the University Libraries regarding collection development in the map collection
   c. Acts as liaison with the Government Publications Department for issues related to maps and cartographic material

4. Collection Access
   a. Oversees cataloging of map collection for inclusion in the Libraries’ online catalog and acts as liaison to the Cataloging Department
   b. Responsible for the physical layout of the collection
   c. Continues to develop Map Library web page to provide access to map reference resources on the Internet.

5. Digital spatial data and related software
   a. Serves as primary resource for digital spatial data and related software, such as GIS within the University Libraries
   b. Keeps current with the technology related to digital spatial data, including resources available through the Internet
   c. Provides assistance to library users and staff in the use of digital spatial data and related software, such as GIS
   d. Works closely with teaching faculty

6. Participates in the policy and planning activities for the Jerry Crail Johnson Earth Sciences Library

7. Maintains a consistent record of significant contributions in the areas of research and/or scholarly activity and service
Please refer to the Guidelines for Preparing the Position Analysis Worksheet prior to completing this document.

Instructions: This form is to be completed by the supervisor of the position. When completed, refer it to the employee currently in the position for comment.

Note: As this position analysis worksheet is completed, be certain to include the primary responsibilities and elements of the position. The worksheet is used as a tool in evaluating the position only, not the specific qualifications, skills, or performance of any incumbent. If you have any questions, please consult your college/division human resource officer or OHR Employment Services at 254-8370.

Proposed Position:

University Job Title: Public Services Librarian
Working Title (if different): Public Services Librarian
PS Dept Code: Position
Pay Band: #:
Department Name: Public Services/Mann Library
Immediate Supervisor: Kathy Chiang
University Job Title: Head of Public Services

POSITION SUMMARY

Explain the basic purpose of the position and summarize the responsibilities.

Under the direction of the Head of Public Services, provides reference and computer search services, teaches classes and workshops as assigned and contributes toward collection development activities. Develops expertise in some area of electronic libraries or information technology. Develops and conducts research and development projects relating to libraries and information technologies.
## Duties and Responsibilities

List the required responsibilities of the position. Use brief sentences that begin with action verbs (e.g., conduct, operate, prepare, coordinate, etc.) Estimate the percentage of total annual work time spent on each responsibility listed. (Use additional sheets if necessary.)

<table>
<thead>
<tr>
<th>Responsibilities</th>
<th>Approximate % of Time, Annualized</th>
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<tbody>
<tr>
<td><strong>1. Reference, Consulting and Instruction</strong></td>
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<tr>
<td>a. Maintain a detailed understanding of the Mann Library printed and electronic reference collection.</td>
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<td>b. Provide extended assistance through consultations both in Mann Library and offsite especially questions about spatial data, GIS, and html document creation.</td>
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<td>c. Maintain an understanding of electronic resources relevant to Mann services and clientele; acquire and refine searching skills with bibliographic, numeric, full text, and other data.</td>
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<tr>
<td>d. Maintain a general knowledge of the Mann Library print collection and Cornell University Library collections.</td>
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<tr>
<td>e. Contribute to, reference services policies and procedures.</td>
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<tr>
<td>f. Provide general and extended reference services at the Reference Desk.</td>
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<td>g. Provide service on weekdays, some nights and weekends.</td>
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<tr>
<td>h. Assist in reference collection development.</td>
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<td><strong>2. Instruction</strong></td>
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<tr>
<td>a. Participate in classroom instruction, workshops, orientations, tours, etc.</td>
<td>10%</td>
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<td>b. Participate in planning and developing the overall Mann Library instruction program.</td>
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<td>c. Develop appropriate teaching materials.</td>
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<td>d. Apply varying teaching strategies for instructing students, faculty, and staff</td>
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<td><strong>3. Spatial Data</strong></td>
<td>35%</td>
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<tr>
<td>a. Develop expertise in spatial data issues for libraries, and their use in data analysis programs such as raster and vector based GIS.</td>
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<tr>
<td>b. Maintain and increase the networked delivery of spatial data via the CUGIR site.</td>
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<td>c. Develop services to enhance access to spatial data.</td>
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<td>d. Serve as liaison to campus, state, and national GIS and spatial data organizations.</td>
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<tr>
<td>e. Assist in the research and development of library systems and services to support the delivery of other data, such as those we disseminate for the USDA.</td>
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<tr>
<td><strong>4. Professional activities</strong></td>
<td>25%</td>
</tr>
<tr>
<td>a. Contribute to appropriate library and systemwide committees and working groups.</td>
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<tr>
<td>b. Assist in the active promotion of public services.</td>
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<tr>
<td>c. Manage or participate in other library activities and special projects, especially those involving new technologies.</td>
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<tr>
<td>d. Attend professional meetings, workshops and conferences for training and continuing professional development as appropriate.</td>
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<tr>
<td>e. Participate in writing grant proposals.</td>
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<tr>
<td>f. Other duties as assigned.</td>
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</tbody>
</table>
FACTOR EVALUATION

I. Education
Describe the minimum level of knowledge/education or equivalency required to perform competently in the position. Specify the field of study or area of training/certification. Include any formal training, certification and/or degrees required:

Description and specific examples:
MLS from ALA accredited school

II. Experience
Describe the minimum amount of job-related experience (including on-the-job training), areas of experience and specific skills and abilities needed in addition to the above-noted level of knowledge/educational equivalency to perform competently in the position:

Description and specific examples:
Excellent communication and interpersonal skills required. Highly desirable: at least two years of professional library experience in an academic setting; supervisory experience; experience with computer and telecommunications technologies for information management, experience with teaching information management and computer technologies. Subject background in life or social sciences also highly desirable.

III. Supervision Received
Describe the extent of supervision, instruction, or direction the position receives in performing the job responsibilities:

Description and specific examples:

IV. Supervision Given
Describe the position's responsibility for supervising, directing, or instructing others, including student and temporary employees:

Description and specific examples:

V. Complexity and Scope
Describe in detail the frequency, complexity and scope of the position's requirement for the application of reasoning, analytical thought, creativity, and innovation:

Description and specific examples:

VI. Accountability
Describe the position's decision making responsibility and accountability through scope of impact on operations and/or resources of a section, department, college, unit or University:

Description and specific examples:
VII. Contacts

Describe the type and extent of contacts with individuals, including other University employees, individuals outside the University, and students:

Description and specific examples:

<table>
<thead>
<tr>
<th>Contacts (Include internal and external, level and frequency):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Works closely with other members of the Public Services Division, with members of the Information Technology Section, and other members of the Mann Library Staff. Frequent contacts with undergraduate and graduate students, faculty, extension and research staff, and other members of the College of Agriculture and Life Sciences, the College of Human Ecology, the Division of Biological Science, and the Division of Nutritional Sciences. Works with librarians from other units of the Cornell University Library and with staff of Cornell Information Technologies as appropriate. Participates in Cornell committees and external professional associations.</td>
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</tbody>
</table>

VIII. Information Management

Describe the role of the position in managing information and communication utilizing computers and other technologies. Include the complexity, degree of programming and other skills required.

Description and specific examples:

IX. Work environment

Describe the type and extent of physical effort, mental and visual concentration, and exposure to potential hazards in which the position regularly operates:

Description and specific examples:

| Primary work areas are in the library or in classroom settings. Extensive work with computers and books requires a great deal of visual concentration. Reference and instruction involved standing and walking. |

GENERAL COMMENTS
LIBRARY FACULTY POSITION DESCRIPTION FORM

Name: 

Position Title: Head, Geology Library 

If other than full time, please indicate: 

Campus: Indiana University, Bloomington 

Library/Branch/Department: Geology Library 

Immediate Supervisor(s): 

Department Head: 

I. Primary responsibilities 

A. Plan, implement and evaluate Geology Library services, operations, and collections. 

B. Collection Development 

1. Serve as the Libraries’ Liaison to Geology faculty, researchers and students, coordinating the needs of the Department of Geosciences and Indiana Geological Survey with the Libraries’ goals and priorities. 
2. Develop and maintain the collection development policy. 
3. Evaluate and weed the collection. 
4. Identify and order materials and resources needed to support teaching and research at Indiana University, monitor approval plan and canceling serials as needed. 
5. Prepare budget requests for Geology serials and monographs. 
6. Manage receipt and processing of exchange materials from Indiana Geological Survey. 

C. Provide reference service to library users, utilizing appropriate electronic, print and Internet resources. 

1. Develop, maintain and expand Geology Library web pages to assist with and improve services to Library users. 
2. Develop web and print resources to facilitate use of geoscience information. 
3. Locate and acquire specialized geospatial data for GIS users. 
4. Provide specialized document delivery, current awareness, online searching and GIS services.
D. Provide library instruction related to geoscience and spatial information and GIS services in conjunction with appropriate personnel in GIMSS and the Geography/Map Library.

1. Make an effort to identify people who most need GIS services and assistance and offer training or classroom sessions.
2. In conjunction with GIMSS and GML, contribute to the Libraries' effort in geospatial information, assessing the needs for and developing plans to deliver GIS services and providing library staff training as needed.
3. Conduct tours and library instruction sessions related to geoscience information and geographic information systems (GIS).

E. Administration

1. Organize, monitor and direct work of Geology Library staff.
2. Develop, amend and/or document Geology Library position descriptions, procedures and job manuals.
3. Identify and respond to user needs and problems, handling complaints as appropriate.
4. Publicize Geology Library and spatial data services.
5. Hire and train support staff as needed.
6. Prepare budget requests, equipment requests, reports, studies and surveys as needed.
7. Represent the Geology Library at Science Library, Geology Library Advisory Committee and other meetings.
8. Develop plans to effectively use Geology Library space in conjunction with staff.
9. Hold staff meetings.

G. Professional Development & Service

1. Maintain membership in appropriate professional organizations, including Special Libraries Association, American Library Association, Geoscience Information Society, Western Association of Map Libraries, and other organizations.
4. Attend meetings pertaining to GIS in Indiana as appropriate.
5. Participate in local, regional and national meetings related to geoscience information and GIS.
6. Represent IU Libraries and the Geology Library at local meetings relevant to geoscience and geospatial information.

II. Secondary responsibilities

A. Perform other duties as requested or assigned.
B. Participate in Library and University committees and meetings as requested.
III. Qualifications

A. Master’s Degree in Library Science. Essential

B. Knowledge of information resources in the Physical or Life Sciences and geospatial information. Essential

C. Library Administrative Experience. Essential

D. Knowledge of computer applications to library services. Essential

E. Experience with GIS software and metadata standards and practices. Preferred

F. Undergraduate Degree in Science. Preferred

G. Instructional Experience. Preferred
Manitoba Library Association

Manitoba Library Jobs

Assistant/Associate Librarian
University of Manitoba

The University of Manitoba invites Applications for the position of Librarian to support Faculty of Environment and Libraries’ GIS services (Two Year Term Renewable) Elizabeth Dafoe Library.

Duties and Responsibilities:

Reporting to the Head, Elizabeth Dafoe Library, and the Head, Reference Services, the incumbent is responsible for developing the collection in the areas taught by the Faculty of Environment composed of Human Geography, Physical Geography, Environmental Science and Environmental Studies, Geological Sciences and Natural Resources Management, and including Geographic Information Systems (GIS) and digital maps; developing and delivering digital library services, specifically in the area of geographic information systems (GIS), such as consultation and/or advice on the use of GIS to support research activities dependent upon or enhanced by geospatial data analysis or preservation, and training library patrons in the use of GIS software and systems; and developing and maintaining a GIS services web site and participating in the development and maintenance of the goals and objectives of the Reference Services Section; providing reference service at the Reference Desk; planning, preparing and presenting orientation and bibliographic instruction programs and literature.

Qualifications

Required: A Master's degree from an ALA accredited Library School and an undergraduate degree in one of the subject areas included in the Faculty of Environment; academic experience with spatial and numeric data resources and experience in using Arcview software; a high degree of computer literacy and a demonstrated interest in new technologies and their applications to academic libraries and excellent communication skills and potential to excel as an instructor.

Preferred: Experience with web site software and building web sites and public service experience.

About the Libraries:

The Elizabeth Dafoe Library, one of 9 unit libraries and 9 satellite information centers within the University of Manitoba Libraries, supports the teaching and research requirements of the faculty and students of Arts, Education, Human Ecology, Nursing, Physical Education and Recreation Studies, and Social Work. Service is also provided to other members of the university community including off-campus students, and to the general public. The unit includes Circulation Services, Reference Services and the Icelandic Collection. The library contains over 1,100,000 books and bound periodicals; 500,000 government publications; 700,000 microforms; 100,000 maps; and subscribes to over 4,000 periodicals. Elizabeth Dafoe is the main point of access for the Libraries' Data resources and services and for digital maps and GIS services. Approximately 320,000 items are circulated each year. The Library performs the functions of access to collections, collection development, reference services, plus orientation and bibliographic instruction, and provides correspondence/off-campus library services.

The Reference Services Section of the Elizabeth Dafoe Library has a collection of approximately 30,000 reference works and handles over 30,000 enquiries per year. Staff provide general and subject specific bibliographic instruction to the students in the faculties served. The Section
consists of 10 academic librarians, 5 library assistants and several casual staff.

Winnipeg (www.city.winnipeg.mb.ca) is a prairie city with a population of more than 650,000. The ethnic diversity of the city is important and is celebrated in many annual festivals. Excellent cultural amenities include ballet, theater, symphony and museums, and professional sports teams are popular. Housing is the most affordable in Canada. Winnipeg is located close to superb recreational activities with a wide variety of lakes, beaches and wilderness areas within an easy drive to the city.

The University of Manitoba welcomes diversity in the workplace and encourages applications from qualified men and women, including members of visible minorities, Aboriginal peoples and persons with disabilities. All qualified candidates are encouraged to apply; however Canadians and permanent residents will be given priority.

Rank: Assistant/Associate Librarian

Salary: Commensurate with experience

This position is a two year term appointment with the possibility of renewal.

Librarians enjoy academic status and are appointed to one of four ranks: General, Assistant, Associate and Librarian, with possibility of promotion.

This position will be available on July 1, 2004. Applicants should submit their application, referring to position #AKS482, and include a curriculum vitae and the names and addresses (including phone, e-mail address and fax numbers) of three references by June 30, 2004 to the address below.

Ms Carolynne Presser
Director of Libraries
The University of Manitoba Libraries
Winnipeg, MB, R3T 2N2

Application materials, including letters of reference, will be handled in accordance with Manitoba's Freedom of Information and Protection of Privacy Act.

N.E.
MICHIGAN STATE UNIVERSITY LIBRARIES

Faculty Position Description

Name: Kathleen W. Weessies
Rank: Librarian II
Title: Maps/GIS Librarian II

Function: Reporting to the Social Sciences Coordinator, takes responsibility for the management and operation of the Maps/GIS Library. This includes technical services and public services functions. Also develop and maintain collections of geography and map materials for the entire library system including selection of materials, management of the collection, promotion of the collection, faculty liaison, library instruction, outreach, and compliance with federal depository regulations. May also provide scheduled reference service at the Main Library Reference Desk. Participates in professional and research activities and serves on Library and University committees; other duties as assigned.

Characteristic Duties and Responsibilities:

As Maps/GIS Librarian and Maps and Geography Bibliographer (75% appointment):

- Responsible for management and operation of the Map/GIS Library, including technical services and public services functions.
- Hire and supervise student worker staff to provide service hours set by the Associate Director of Public Services.
- Manage collection of geography and map materials, including monitoring approval plans and evaluating gift materials. Select and order current and retrospective publications.
- Communicate and work regularly with department faculty to address their curricular and research needs in the library collection.
- Provide specialized bibliographic instruction, reference, and research services to faculty, students and the general public in the area of geography and maps.
- Coordinate with map copy cataloger and technical services to ensure accurate and timely processing and cataloging of geography and maps materials.
- Plan and implement GIS services in collaboration with the University’s departments and research centers, as appropriate for a university library.
- Work with the regional depository librarian and the MSU Government Documents staff to monitor all selective housing agreements for maps and geospatial data.
- Further develop the Map/GIS Library web site to deliver information, metadata and geospatial files to users.

As Reference Librarian (25% appointment):

- Provide quality reference assistance to library patrons at the Reference Desk, including evening and weekend hours.
- Provide general bibliographic instruction classes and tours as needed.
- Attend weekly reference to maintain an awareness of developments and/or changes in policies or procedures in the department.
North Carolina State University Libraries

Data Services Librarian
Vacancy Announcement

Between the mountains of the Blue Ridge and the shores of the Outer Banks lies North Carolina's Research Triangle of Raleigh, Durham, and Chapel Hill. One of the nation's premier concentrations of academic, corporate, and public research, the area combines moderate year-round temperatures, rolling hills, championship college athletics, and a rich diversity of cultural events. While the Triangle consistently leads the lists of desirable American communities, the North Carolina State University Libraries has been recognized as the first recipient of the Association of College and Research Libraries' Excellence in Academic Libraries Award for its teamwork, innovation, and continuous interaction with students and faculty to further the educational mission of NC State University. In the past eight years, the NCSU Libraries has made an unprecedented rise through the ranks of the Association of Research Libraries to its current position of 32nd among the 112 university member libraries.

The NCSU Libraries invites applications and nominations for the position of Data Services Librarian. The Libraries' innovative spatial and numeric data services program provides access to Geographic Information Systems (GIS) software, training, and data resources, serving faculty, students, and staff across the university. These services are based in the Research and Information Services Department (53 librarians, 4 support staff, and graduate assistants) and involve collaboration with others throughout the Libraries. Collaboration also takes place with Triangle Research Libraries Network (TRLN) colleagues, faculty-led research groups, University Extension, and digital library colleagues across the country and internationally. The Libraries is a selective Federal documents depository and a member of the InterUniversity Consortium for Political and Social Research (ICPSR).

Responsibilities
Develops and manages spatial and numeric data resources and services supporting teaching, research, and extension at the university. Provides leadership in developing and expanding GIS services for the NC State community. Consults with faculty and students to analyze data needs and to locate and deliver data in appropriate formats. Working closely with library colleagues, participates in the selection, organization, delivery, updating, and archiving of data collections. Collects and develops metadata and maintains awareness of metadata standards and trends. Serves as NC State's official representative to the ICPSR. Provides instructional sessions and develops Web-based tutorials, data documentation, and research resources. Establishes configurations for the Libraries' public GIS workstations and offers guidance in their use. Educates library staff in the use of data resources. Fosters outreach and collaboration with state and local government agencies. Serves on library-wide committees, task forces, and teams. Is expected to be active professionally and to contribute to developments in the field. Reports to the Head of Research and Information Services.

Qualifications
Required: ALA-accredited MLS or relevant advanced degree such as in Information Science or Geography. Experience with spatial and numeric data resources and familiarity with current issues, technologies, and software applications related to those resources. Ability to identify, retrieve, and use data resources. Familiarity with electronic government resources such as census and statistical data. Understanding of the educational mission of a research university and a demonstrated service orientation. Excellent interpersonal skills;
ability to communicate clearly, knowledgeably, and personably, orally and in writing, with clients and colleagues. Ability to work collaboratively in a team environment; ability to work independently.

Preferred: ALA-accredited MLS. Two or more years relevant experience.

The University and the Libraries
As one of the nation’s outstanding land-grant universities, NC State offers degrees through the Colleges of Agriculture & Life Sciences, Design, Education, Engineering, Humanities & Social Sciences, Management, Natural Resources, Physical & Mathematical Sciences, Textiles, and Veterinary Medicine. As the largest academic institution in the state, NC State enrolls more than 28,000 students and offers doctoral degrees in 58 fields of study. The university is nationally ranked in the top ten for industry-sponsored research, 17th in licensing revenues and patents, and 4th in total research expenditures among public universities without medical schools. NC State is a national leader in networking technologies and a charter member of the North Carolina Networking Initiative (NCNI), an Internet2 initiative with the most advanced operational networking system infrastructure in the nation.

The library system consists of a central library and branch libraries for design, natural resources, textiles, and veterinary medicine. With a staff of approximately 300 FTE, the Libraries has over 3 million volumes, acquires more than 47,000 print and electronic serials, and has a total annual budget of over $24 million, with approximately $8.5 million allocated to collections. The NCSU Libraries is the lead server site for NC LIVE (North Carolina Libraries for Virtual Education), a multi-type library initiative, making digital resources accessible to the citizens of North Carolina.

The NCSU Libraries is a founding member of SOLINET and a member of the Association of Research Libraries, the Digital Library Federation, the Coalition for Networked Information, the Scholarly Publishing and Academic Resources Coalition, the Council for Library and Information Resources, and the Center for Research Libraries. Duke University, the University of North Carolina at Chapel Hill, North Carolina Central University and NC State form the Triangle Research Libraries Network (TRLN), with combined resources of more than 10 million volumes, and collections budgets totaling more than $29 million.

Salary and Benefits
The Libraries offers a competitive salary commensurate with experience, minimum $37,000 with required qualifications, or minimum $40,000 with preferred qualifications. Librarians have academic status without tenure or rank. Benefits include: 24 days vacation, 12 days sick leave; State of NC comprehensive major medical insurance, and state, TIAA/CREF, or other retirement options. Additional and optional dental, life, disability, deferred compensation, and legal plans are available. Tuition waiver program for all campuses of The University of North Carolina is available. Relocation allowance.

Application process and schedule
Applications will be reviewed upon receipt and will be accepted until the position is filled. Candidates are encouraged to apply as soon as possible to receive full consideration. The nomination committee may invite candidates for confidential, pre-interview screenings. This position is available immediately, with an expected start date of January 1, 2003. The start date is negotiable. To apply, send cover letter (including title of position), resume, and the names, addresses, and telephone numbers of four current, professional references to: Joseph Hester, Academic Personnel Librarian; NCSU Libraries, Box 7111, North Carolina State University, Raleigh, NC 27695-7111

North Carolina State University is an Affirmative Action/Equal Opportunity Employer. Individuals with disabilities desiring accommodations in the application process should contact Laura Blessing, NCSU Libraries Personnel Services Office, at (919) 515-5322 or Laura_Blessing@ncsu.edu
**PART I: ORGANIZATIONAL INFORMATION**

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<thead>
<tr>
<th>Position Number</th>
<th>Working Title</th>
<th>Organization</th>
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<tbody>
<tr>
<td></td>
<td>Associate Director, Geostat Center</td>
<td>University of Virginia Library</td>
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**PART II: POSITION INFORMATION**

<table>
<thead>
<tr>
<th>Percent of Total Working Time</th>
<th>Task Description</th>
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</table>
| 50%                           | Manages Geostat Center  
Provides reference and information service relating to statistical, geographic and government data using both print and electronic information delivery systems. Serves as a resource for other Library faculty and staff with regard to the provision of geospatial and statistical data products and services. Oversees management of Geostat lab, including policies, scheduling, and planning. Develops and maintains "core competencies" among Center public service staff. Establishes service quality guidelines for all public service consultants, monitors performance. Supervises two (2) Information Technology Specialists, one (1) Library Assistant assigned to Geostat for 20 hours a week, and one (1) wage employee serving in the capacity of Metadata Specialist.  
With Center director, develops budgets, Center work goals, and planning objectives. Makes purchasing decisions and monitors wage and OTPS budget. Writes administrative reports as necessary. |
| 25%                           | Collection Development and Access Services  
With input from Director, develops statistical and numeric data collections in accordance with established collection development criteria. Consults with University teaching and research faculty, students, and staff on projects requiring statistical and/or geospatial data, and promotes the use of these data resources across the University. Works with digital library research and development team members on creating web-based identification and retrieval tools for statistical data collections. Promotes the use of Center services and collections across the University of Virginia. |
| 15%                           | User Education Coordination  
Develops, organizes, and promotes user and staff education programs for the Geospatial and Statistical Data Center in conjunction with the Library's user and staff education departments. Develops outreach activities to promote Center's services to users; collaborates with teaching faculty to develop library instruction to suit the needs of their students. Receives and schedules requests from faculty for class and individual instruction sessions. Prepares documentation, instructional guides, and promotional materials for Geostat resources. |
| 10%                           | Professional Development  
Keeps abreast of and contributes to the professional and research literature in data librarianship and related fields. Attends and participates in professional meetings and conferences. Serves as Geostat and Library representative at regional, state, national, and international meetings as needed. Assesses personal training needs and participates in training programs to meet those needs. |
POSITION DESCRIPTION

TITLE: Head, Map Collection and Cartographic Information Services

Serves as Head, Map Collection and Cartographic Information Services and is responsible for overall management and leadership of the Map Collection and coordinates the Libraries Geographic Information System (GIS) related programs and activities. As selector and liaison for Geography, selects appropriate information resources to support curriculum and research and provides a range of liaison and instructional services. The position reports to the Head, Sciences Libraries.

SPECIFIC DUTIES AND RESPONSIBILITIES

1. Provides leadership and direction for the Map Collection and Cartographic Information Services. Has overall responsibility for administration of service programs, collection development and management of staff.


3. Selects both traditional cartographic materials (maps, atlases, remote sensing images) and geospatial data sets (through purchase or access) for research and curricular support. Manages the materials budget for Maps. Arranges for cataloging of maps and remote sensing imagery and metadata for geospatial data.

4. Serves as liaison with campus users of GIS and cartographic materials. Provides instructional services in support of GIS and map use.

5. Establishes and directs appropriate suite of information services to assist those using maps and GIS data and software. Ensures that Map Collection and GIS web sites are current and provide appropriate information to the user community.

6. Serves as Geography Selector and manages the materials budget for Geography. Maintains liaison activities with the Geography Department, keeping them informed of Libraries activities, changes and direction; achieving an understanding of teaching and research programs; working collaboratively with the department on meeting library and information resource and services needs; providing instruction, consultation and research services as needed.

7. May provide reference service in other service units.

8. Serves as Chair of the Information Literacy Committee.

9. Maintains a broad understanding of Libraries’ operations, policies, priorities and objectives and contributes to these as appropriate.
Collection Development Policies
III. Policies: Map Library

I. Purpose:
The purpose of the Map Library collection is to provide well-rounded, world-wide coverage comprised of general and thematic maps and atlases, at small and large scales, and related reference materials such as gazetteers. The Map Library supports teaching and research efforts for many academic departments, primarily Geography and Geology. The collection is well-used by other departments in the sciences and social sciences, including History, Political Science, Environmental Design, Environmental Studies, and Biology. Cartographic materials are used in nearly all disciplines and the Map Library strives to support a wide range of research and teaching programs.

A. Curricular emphasis

1. Geography
   Areas of emphasis within the undergraduate degree in geography that relate to maps are: understanding the spatial components of problems and the diverse factors relating to human interaction with the environment, the general geographical principles of human-environment interaction, global change, and human spatial organization, and the spatial distributions of physical and human characteristics on the Earth’s surface.

2. Geological Sciences
   Areas of emphasis within the undergraduate degree in geology that relate to maps are: the structure and composition of the Earth, its dynamic processes, its evolution, and the methods used in the field to map and interpret the diverse variety of rock types and structures.

B. Research emphasis

1. Geography
   General areas of research interest within the geography department at the undergraduate level are: physical geography, human geography, environment-society relations, and geographic information science. The graduate programs are expanded far beyond these and include: area studies, cultural anthropology, regional development and planning, third world development, and remote sensing.

2. Geological Sciences
   General areas of research interest within the geology department at
the undergraduate level are: geology, geophysics, and environmental geoscience. The graduate programs are expanded far beyond these and include: paleontology, subsurface hydrodynamics, remote sensing, sedimentology, seismology, and tectonics.

C. Level of Degrees granted
The Department of Geography and the Department of Geological Sciences both offer BA, MA, and PhD degree programs.

D. Special Studies Programs
N/A

E. Other Subjects That Overlap and Utilize Materials
History, Political Science, Environmental Design, Environmental Studies, and Biology. Cartographic materials are multi-disciplinary and are used by many departments in the sciences and social sciences.

F. Institutes or Labs That Utilize Materials
Cooperative Institute for Research in Environmental Sciences (CIRES), Institute of Arctic and Alpine Research (INSTAAR), National Snow and Ice Data Center (NSIDC), Center of the American West.

G. Special Populations Outside The University That Utilize Materials
Public patrons, especially genealogists. National Center for Atmospheric Research (NCAR), National Oceanic and Atmospheric Administration (NOAA).

H. Other Considerations
The Map Library supports a wide variety of disciplines, touching on the research and teaching needs of many university departments. Map Library materials are made of up many different formats: paper maps, aerial photographs, atlases, books, and digital data.

II. General Collection Guidelines:

A. Methods of Acquiring Materials
A majority of Map Library materials are acquired through the Federal Depository Library Program (FDLP), through our status as a Regional Depository Library. Other government documents are acquired through the Law Library’s selective housing arrangement. Commercially produced maps or maps otherwise unavailable through the FDLP are purchased through large map vendors such as Omni Maps and Map Link, the United States Geological Survey, mapping agencies from countries outside of the United States, and other vendors. Reference books and atlases are purchased, when possible, through the approval plan from Blackwell North America. Gift materials are accepted on the basis of the needs of the collection.

B. Languages
Primarily English. Foreign language materials may be purchased when English-language materials are not available or upon faculty members’ request.

C. Chronological Guidelines
The Map Library collects current and historical materials.

D. Geographical Guidelines

1. Cartographic materials for the County of Boulder and the State of Colorado are of primary importance. All subjects and scales are collected.
2. Materials covering the western United States are also collected at large scale, for all subjects as available and as influenced by research and teaching needs.
3. Complete topographic coverage for the entire United States is collected at large and small scales.
4. Thematic maps in areas of interest (e.g. geology) and road maps for the United States are collected at smaller scales and may be collected in larger scales by request.
5. Topographic maps, thematic maps in areas of interest (e.g. geology) and road maps are collected for international areas at...
smaller scales and may be collected in larger scales by request.

E. Treatment of Subject

1. Reference Works
The Map Library collects reference works about maps, cartography, the history of mapping and cartography, geographic information systems, and map librarianship, as well as dictionaries and gazetteers. Directories of map libraries and map producers are collected. Indices and bibliographies are collected as available.

2. Atlases
Current and historical world atlases are collected, as available. General, thematic, and road atlases are collected for regions of the world at levels of detail according to teaching and research needs. Regional or country historical atlases are collected selectively. Atlases of Colorado and the West are collected.

3. Maps and Digital Data
Topographic maps, geologic maps, thematic maps, road and recreational maps, city plan maps, nautical charts, bathymetric maps, aeronautical charts, and facsimiles of historical maps are collected in paper or digital format. Digital cartographic data is collected with the same guidelines and areas of focus as paper materials. Relevant indices and directories are collected.

4. Software
Software to display and manipulate digital data is obtained through campus-wide site license, as a package with the purchase of digital maps, or as freeware.

5. Aerial Photographs and Satellite Imagery
Aerial photographs of Boulder County and the Front Range are collected. Medium-small scale satellite imagery of areas of interest is collected. Large scale aerial photographs and satellite data of international or national cities will be purchased selectively, upon faculty request and as the budget permits. Aerial photographs and satellite data are increasingly collected in digital format.

F. Types of Materials
The map library collects cartographic materials in paper and digital format on CD-ROM, DVD or accessed through the Internet. Maps, atlases, aerial photographs, and geospatial data will be collected. Serials are purchased as the budget permits. Globes and raised relief maps are collected as representative examples. Mounted wall maps are not collected.

G. Date of Publication
Emphasis is on recently published materials. Reprints of historical materials are purchased whenever possible. Occasionally, as the budget permits, an important historical piece may be purchased.

H. Other General Considerations:
Most materials are housed in the Map Library. Rare or valuable materials may be housed in Special Collections. Older and seldom used materials may be housed in off-site storage.

III. Observations and Qualifications by Subject and LC Class
All of these classifications, except G3160-9980, are also the responsibility of other bibliographers and are collected for Map Library reference use as needed.

F590.3 – 596.3 United States Local History. The West. Trans-Mississippi Region. Great Plains.
F721 Rocky Mountains.
F771-785 Colorado.
D Gazetteers

G1000-3122 Atlases.
G3160-3171 Globes.
Collection Policy:
Cornell University Geospatial Information Repository (CUGIR)

General Collection Principles
CUGIR is an active online repository in the National Spatial Data Clearinghouse program. CUGIR provides free access to geospatial data and metadata for New York State, with special emphasis on natural features related to agriculture, ecology, natural resources and human environment interactions.

Data Partners
Most data (with the exception of the Census TIGER/Line files) for CUGIR is collected through direct relationships with individual and institutional data partners. While CUGIR is dedicated to providing access to accurate and usable data, data partners and providers are ultimately responsible for the quality of individual data sets.

Metadata
CUGIR data and metadata files are collected, distributed and archived at Mann Library. For purposes of use and resource discovery, all files collected for CUGIR should include associated metadata. One metadata record per data file is the preferred arrangement.

All data files will be cataloged according to FGDC standards (CSDGM—The Content Standard for Digital Geospatial Metadata). Every effort will be made to see that all data will be accompanied by FGDC compliant metadata. In some cases, the CUGIR working group (or the metadata librarian) will make arrangements to assist data partners with the creation of FGDC compliant metadata.

Data
For inclusion in CUGIR, data must fall within a defined subject and scope and meet specified standards of content and format set by the CUGIR Working Group. Each file is evaluated according to its content, usability, value, and utility within the wider collection. Data not selected for CUGIR, may be selected for the Mann Library general collection.

Data and metadata already available at other sites may be archived within CUGIR (i.e. New York State GIS Clearinghouse).

Whenever possible, individual data files (map layers) will be made available separately so that users can download only those files that interest them. Likewise, data files will be provided for the smallest possible geographic units. Very large files may be divided into segments so that users can download data for smaller geographic areas.

Data files that are frequently updated and succeeded by newer versions will be archived. No "old" versions of these files will be made publicly available without permissions from the original data producer (with the exception of the Census TIGER/Line files).
Subject Definition and Scope

Data collected for CUGIR represents a wide range of ecological and environmental characteristics for New York State.

CUGIR collects data in the following areas:
Positional data (streets, political and place boundaries, major physical features and structures)
Landforms and topography
Soil types and characteristics
Hydrography
Agricultural activities (crops and livestock)
Natural-resource management activities (forestry, fisheries, etc.)
Wildlife data (distribution, characteristics, migration, etc.)
Environmental hazards (hazardous waste sites, etc.)
Other environmental characteristics (land use, climate, etc.)

Geographical Scope
New York State data
New York County data
Data for adjacent areas with significant impact on New York State

File Formats and Types
File formats will be chosen to facilitate sharing of data and should (in most cases) accommodate users who do not have access to proprietary software or those who do not have access to the latest versions of proprietary and non-proprietary software. In most cases, data provided by our collaborating agencies will be made accessible in the format in which they were provided.
Current formats within CUGIR include:
.shp (Shapefile)
.tif (geotiff)
.e00 (Arc/Info export)
.dem (digital elevation model)

Other Related Collections
Olin Library Map & Geospatial Information Collection
New York State GIS Clearinghouse
The University of Iowa Map Collection, which houses over 188,000 maps and charts on the third floor of the Main Library, is the largest map collection in the state. The collection is international in scope and subject coverage is broad, excluding geologic maps, which are collected at the Geology Library. The Map Collection also includes approximately 146,000 aerial photographs, mostly of Iowa counties, as well as Iowa county atlases and plat books, foreign and other atlases, and various geographic reference books.

The Map Collection’s primary purpose is to serve the curriculum and research needs of the faculty, students, and staff of the University of Iowa. In addition, as part of a federal regional depository and Iowa state document depository, the collection serves the general public, both within and from outside the state.

Main area of emphasis: Collection (maps and photos, selected books) is done at the comprehensive level for Johnson County and cities within Johnson County. The Map Collection collects extensively for southeastern Iowa, and—according to patron and/or curriculum needs—the state of Iowa in general. These items are systematically, and frequently, updated.

North America: Collecting is done with decreasing comprehensiveness as the distance from Iowa increases, i.e., contiguous states, Midwest region, United States, North American continent. Special collections of state highway and city maps from the United States are collected and periodically updated.

Other world areas: Topographic map coverages and thematic maps are purchased and/or updated for areas and countries, according to patron demand and/or curriculum needs, or in response to world events. In addition, current overview maps of nations and regions are purchased and updated frequently.

Chronology: Emphasis is on obtaining materials produced currently.

Other formats, types of materials:
- Digital information: The Map Collection obtains digital spatial data, both via purchase and through the federal depository program, as well as numeric data in electronic format. Resources available digitally, on CD-ROM and on the World Wide Web, will be analyzed for possible effects on purchases and on areas of this collection development statement.
- Atlases: The Map Collection collects national, thematic, and road atlases for the United States, other countries, and the world.
- Reference resources: Geographic and cartographic dictionaries, gazetteers, and other appropriate reference works are collected for use of the Map Collection staff and its patrons.
Policy Statement
General Map Collection
Government Information & Special Formats
Otto G. Richter Library
(Draft - May 2002)

**Purpose of policy**
The purpose of this policy is to clarify what types of maps and other cartographic materials are processed and collected in the General Map Collection.

**General objectives of the General Map Collection**
The purpose of the General Map Collection is to provide mainly printed cartographic materials needed by the faculty, staff, and students of the University of Miami. Although there is a particular emphasis toward supporting the research and studies done in the Department of Geography & Regional Studies and the School of Architecture, the General Map Collection is structured to support all levels of study (from undergraduate to faculty research) within a broad range of subject areas (see Appendix B).

**Procedure for review and revision of the policy**
This policy will be reviewed annually by the map librarian and the Head of the Government Information & Special Formats Department.

**Scope of Coverage**
A. Languages: A map can still be useful regardless of what language the text may be written in or whether the user can read that language. Therefore, language is not a limiting factor although preference is given to those in English and other romance languages as well as those which have been transliterated into the Roman alphabet.

B. Chronological guidelines. All maps are printed after 1900. This may include historical reproductions or maps showing historical information. Maps published before 1900 are stored in the Archives and Special Collections Department.

C. Geographical Guidelines: The geographic scope of the General Map Collection is essentially all known areas of land, including other planets. The only limits to this are scale and the level of acquisitions activity. Maps of the oceans are kept; nautical charts are sent to the Library of the Rosenstiel School of Marine and Atmospheric Sciences. Appendix A contains the details.

D. Subject Guidelines: A map is a two- or three-dimensional means of showing the spatial distribution of a topic of interest. In the General Map Collection, we collect maps from many subject areas. Appendix B contains the details.

E. Date of Publication. All maps must be published after 1900.

F. Formats Collected: includes single maps, map sets, globes, and relief maps. Actual aerial photographs and satellite image tapes are not collected; printed maps made from them are collected. The Map Librarian makes decisions on atlases and other bound materials only when they are to be stored in map Reference; those kept in the Reference Collection are the responsibility of that department.
Sources of print materials

Approximately 60% of the materials in the General Map Collection have come from the Federal Depository Program. Also, in the 1980's, the Department of Geography donated their paper map collection to the Library. This gift consisted of several thousand maps, mostly surplus from the Army Map Service.

Also in the late 1980's, the Library participated in the Library of Congress Summer Map Intern Project. This resulted in the Library receiving as gifts several thousand more maps. Most of these have not yet been processed due to lack of staff.

Other sources include: purchases made with two allocations, ZMP and IMP, from the Library’s materials budget or special funds; the Florida State Depository Program; maps purchased as part of our IGO collection; and gifts of maps donated to the Library. Also, as mentioned above, the collection houses any loose maps that come with books and journals received by the Library.

Retention of materials

In so far as possible since only a portion of the collection has been cataloged, we try to avoid any duplication of maps. Multiple editions are not allowed except as noted below. In rare instances, we may have added copies of maps that are in particularly high demand. An example of this could be obtaining a second copy of the topographic sheets for Miami-Dade County due to their very heavy use.

With topographic map sets, we retain only the latest edition of each sheet. The one exception to this is Florida. As many as half of our patrons using topographic maps of Florida will specifically ask for older editions. We therefore retain one copy of every edition of every sheet for Florida.

The other major problem of duplication is the maps from the National Geographic Magazine. These are collected by many private subscribers to the magazine and are frequently donated in bulk to the Library. To avoid duplicating these titles, the map librarian maintains a list (in lieu of cataloging) of all of these maps that we currently own. This allows us to quickly and accurately weed any such gift and avoid duplication.

Terri J. Robar
Special Formats Librarian
March 2002
Appendix A
Geographical Guidelines

The geographic scope of the General map Collection is essentially all known areas of land. The only limits to this are scale and the level of acquisitions activity. The Conspectus Collection Depth Indicators are used to show the activity levels. They range from 0 (out of scope) to 5 (comprehensive).

Reminder: the level of activity for an area with the Federal Depository Program (FDP) may be driven by our interest in a particular map series rather than an interest in that region; i.e., we want the maps for one region so we are forced to take them for all regions covered by the series. In such cases, the primary series is listed on the following chart. This explains the often great difference in the scores between the FDP and other Sources.

Also, the General Map Collection stores loose maps that have been removed from books or journals. These maps can represent any area that is of interest within the book and journal guidelines. There is, therefore, no geographic area for which we will not collect anything.

As a general guideline, the Conspectus Indicators, when applied to this map collection, are defined as follows:

0 - Out of Scope. Not used in this collection due to the above default situations.
1 - Received by default. The map came in a book or journal, as part of a federal series, or was part of the Geography Department’s gift set.
2 - Willing to accept basic maps received as gifts. Examples: road maps and major city maps. May purchase maps if all gifts are out-of-date.
3 - Will seek out free maps and may purchase more than basic maps if there is a special interest on campus.
4 - Definite interest in this area. Will seek out maps from all sources.
5 - Comprehensive
<table>
<thead>
<tr>
<th>Area</th>
<th>Maximum scale for sets</th>
<th>Federal Depository Program</th>
<th>Other Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraterrestrial</td>
<td>1:500,000</td>
<td>Level: 5</td>
<td>Level: 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series: PrEx 3.10/4</td>
<td></td>
</tr>
<tr>
<td>World (as a whole)</td>
<td>1:500,000</td>
<td>Level: 5</td>
<td>Level: 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series: PrEx 3.10/4</td>
<td></td>
</tr>
<tr>
<td>North America (as a whole) and Canada</td>
<td>1:250,000</td>
<td>Level: 5</td>
<td>Level: 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series: PrEx 3.10/4</td>
<td></td>
</tr>
<tr>
<td>United States - Entire country</td>
<td>1:100,000</td>
<td>Level: 5</td>
<td>Level: 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States - Individual states (excluding Florida &amp; topographic)</td>
<td>1:24,000</td>
<td>Level: 4</td>
<td>Level: 3</td>
</tr>
<tr>
<td>Florida</td>
<td>1:24,000</td>
<td>Level: 5</td>
<td>Level: 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States - topographic series</td>
<td>1:24,000</td>
<td>Level: 5</td>
<td>Level: 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- eastern U.S. and Rocky Mts.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- other states</td>
<td></td>
</tr>
<tr>
<td>Central America &amp; its countries</td>
<td>1:100,000</td>
<td>Level: 5</td>
<td>Level: 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series: PrEx 3.10/4</td>
<td></td>
</tr>
<tr>
<td>Caribbean &amp; West Indies and their countries</td>
<td>1:10,000</td>
<td>Level: 5</td>
<td>Level: 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series: PrEx 3.10/4</td>
<td></td>
</tr>
<tr>
<td>South America and its countries</td>
<td>1:100,000</td>
<td>Level: 5</td>
<td>Level: 5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series: PrEx 3.10/4</td>
<td></td>
</tr>
<tr>
<td>Europe and its countries</td>
<td>1:50,000</td>
<td>Level: 5</td>
<td>Level: 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series: PrEx 3.10/4</td>
<td></td>
</tr>
<tr>
<td>Middle East and its countries</td>
<td>1:250,000</td>
<td>Level: 5</td>
<td>Level: 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series: PrEx 3.10/4</td>
<td></td>
</tr>
<tr>
<td>Asia and its countries</td>
<td>1:250,000</td>
<td>Level: 5</td>
<td>Level: 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series: PrEx 3.10/4</td>
<td></td>
</tr>
<tr>
<td>Africa and its countries</td>
<td>1:250,000</td>
<td>Level: 5</td>
<td>Level: 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series: PrEx 3.10/4</td>
<td></td>
</tr>
<tr>
<td>Oceans</td>
<td>1:250,000</td>
<td>Level: 5</td>
<td>Level: 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Series: PrEx 3.10/4</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B
Subject Guidelines

A map is a two dimensional means of showing the spatial distribution of a subject. That subject can be from almost any discipline. The limits of our collection are related but not limited to the areas of study at UM. Except for the occasional class assignment, our patrons’ requests are quite random and include a wide variety of interests.

Listed below are some general subject sub-divisions copied from the Library of Congress G Classification Schedule for maps. Maps from any of these subjects might be added to our collection due to the default situations described in Appendix A.

An asterisk (*) indicates an area in which we collect heavily either due to the Federal Depository Program and/or the interests of our patrons. A cross (†) indicates an area of lesser interest that does come in routinely on the FDP.

-------------------------------------------------------------------------------------------------------
Agriculture. Shows the distribution of soils, crops, or livestock.
Aquatic Biological Resources. Shows fishing, fisheries, aquatic vegetation, and catching of marine mammals such as whaling.
Biogeography. Shows the distribution of plants and animals.
†Commerce & Trade. Shows marketing, tariffs, finance, and the movement of commodities.
†Communications. Shows the distribution of communication devices or routes of communications (i.e., telephone lines).
†Economic Geography. Shows economic conditions & regions, natural resources, land use, public lands, and labor.
Forests & Forestry. Shows forest types, conservation, forest fires, and lumbering.
Historical Geography. Shows specific events at some time in the past, including military and exploration.
†Human Geography. Shows population, religions, medicine, customs, recreation, housing, and income.
Manufacturing & Processing. Shows location and extent of manufacturing and processing industries as well as service industries.
†Mathematical Geography. Shows various projections, time zones, surveying, and comparative areas.
Military & Naval Geography. Shows the administration and general operation of peacetime military forces.
*Physical Sciences. Shows physiography, hydrology, geology, tectonics, meteorology, and geophysics.
*Political Geography. Shows boundaries, sovereignty, international relations, administrative divisions, and government.
†Technology. Shows engineering, power, utilities, and pollution.
†Transportation. Shows roads, railroads, and pipelines as well as water, air, and space transportation.
-------------------------------------------------------------------------------------------------------
Descriptions of Services and Resources
### Geographic Information Systems (GIS)

**About GIS**

A Geographic Information System (GIS) is a computer software system that can be used to make maps and analyze spatial data. Additional information on GIS is available from the US Geological Survey and ESRI, a GIS software producer.

- Spatial Data Sources
- GIS Software
- GIS Services and Use Policy
- GIS Training
- GIS Links

#### Spatial Data Sources

**GIS Software**

The Map Collection maintains two PC workstations with GIS software and a scanner for use of Map Collection or other cartographic materials.

**Workstations:**

1. ArcGIS 8.x; ArcView 3.x; Windows 2000; zip drive; DVD player; CD-ROM burner
2. ArcGIS 8.x; ArcView 3.x; Windows 2000; Photoshop; 11"x17" flatbed scanner; DVD player; CD-ROM burner

**GIS Services and Use Policy**

The Geographic Information System (GIS) services are available at all times when the Map Collection is open. General reference needs take precedence over GIS assistance. During periods of high
demand, access to GIS computers may be limited in order to accommodate the needs of all users. Staff in the Collection can assist users in identifying, selecting and accessing data, and with basic GIS functions and techniques; however, staff can not provide technical support or produce customized products for individual users. Several software manuals are available for reference use in the Collection.

GIS software in the Map Collection is available for research and instructional use only. Non-educational (i.e. commercial) use is prohibited by our site license. Individual users may not store data and project files or load software on GIS workstations in the Collection.

**GIS Training**

**Class Instruction**
The Map Librarian can introduce Geographic Information System technologies and strategies for spatial data acquisition in a classroom setting. Please contact the Map Collection (480-965-3582) for more information.

**Manuals and Tutorials**
Software manuals and instruction guides are available through the main library collection. Use the Library Catalog to search for manuals and guides. The Map Collection also has several manuals for reference use. The Geospatial Partnership for Scientific Inquiry (Former GIS Lab) has a number of GIS Tutorials under the Student Services section of its web page.

**On-line Training**
Self-paced, on-line instruction is available for ASU faculty, staff and students through the ESRI Virtual Campus, managed by the Geospatial Partnership for Scientific Inquiry (Former GIS Lab).

**Coursework**
Formal training and coursework is offered in a number of departments at Arizona State University. ASU offers a GIS certification program and a Masters of Advanced Study in Geographic Information Systems (MAS-GIS) through the Geography Department. See the ASU GIS Links below.

**GIS Links**
For data sources see: Spatial Data Sources

Arizona State University Sites

- Active Tectonics, Quantitative Structural Geology, and Geomorphology Research Group
- Geospatial Partnership for Scientific Inquiry (Former GIS Lab)
- Masters of Advanced Study in Geographic Information Systems Program
- School of Business Economic Information
- Central Arizona/Phoenix Long-Term Ecological Research Project (CAP-LTER)
- City of Scottsdale, Arizona Remote Sensing Project
- Geographic Information Science Certificate Program
- Geography Department
- Geological Remote Sensing Laboratory (GRSL)
- Planetary Geology Group

University of Arizona Sites

- Advanced Resource Technology Lab
- Arizona GAP Analysis Project
- Arizona Regional Image Archive (ARIA)
- Arizona Remote Sensing Center
- GIS at the University of Arizona Libraries
- ArcInfo Users Group
- On-Line Spatial Data Libraries

City Government Sites

- Mesa
- Phoenix
- Scottsdale
- Sedona
- Tempe
- Tucson

County Government Sites

Maricopa County

- Assessor GIS GIS Portal, Recorder's Plat Maps
- Department of Transportation
- Flood Control District
- Planning and Development
- Elections Department

Other Counties
Arizona State Government Sites

- Arizona Department of Transportation - Planning Division
- Arizona Department of Water Resources Geographic Information Services
- Arizona Geographic Information Council (AGIC)
- Arizona Land Resource Information System (ALRIS)
- Arizona State Cartographer's Office
- Arizona State Land Department

Other Arizona GIS Sites of Interest

- Natural Resources Conservation Service Arizona - GIS Home Page
- Southern Arizona Geographic Information Systems Consortium
- Santa Rita Experimental Range
- US Bureau of Land Management in Arizona
- Verde River Watershed

US Government GIS Sites

- Federal Geographic Data Committee (FGDC) Web Site
- Geospatial One-Stop
- National States Geographic Information Council

Software Vendors, Newsletters, Directories and Other Sites

- ESRI (Environmental Systems Research Institute, Inc.) Home
- Geocommunity Home
- Geography Network (ESRI)
- GIS Data Depot (GeoCommunity)
- GIS Monitor: Ultimate Map/GIS Directory
- Spatialnews (GeoCommunity)
Spatial Data Sources

- ASU Libraries Data
- ASU Campus Data
- Internet Data Sources

About this List: This is a selected list of datasets and internet sources for spatial data. The purpose is to include reliable sources of commonly-sought data, most of which is available free of charge, suitable for use with geographic information systems. If you have comments, corrections or suggested sources, please contact the Map Collection.

ASU Libraries' Data

The Map Collection has spatial data available for Arizona, other U.S. states, the United States, and the World. Most of the datasets in the Collection are available on CD-ROM; the Collection’s primary CD-ROMs are listed below. Other datasets can be searched in the Library Catalog. Some datasets, such as U.S. Census information, are held in Government Documents on the 3rd floor of Hayden Library. For more information on available data, please contact the Map Collection at (480) 965-3582.

Note: Some CD-ROMs are non-circulating and must be used within the Map Collection.

CD-ROMs in the ASU Libraries’ Map Collection

- Arizona Geological Survey Digital Information Series
- Arizona Geological Survey Digital Geologic Map Series
- BASINS (Better Assessment Science Integrating Point and Nonpoint Sources)
- City of Phoenix GIS Data (1999)
- Climate Atlas of the United States
- ESRI Data and Maps (1998, 2001)
- ESRI ArcUSA 1:1M GIS Database – Coterminous U.S.
- ESRI ArcWorld 1:3M GIS Database – Continental
- GAP Analysis: California
- GAP Analysis: Oregon
- GAP Analysis: Washington
- GeoLytics 1980
- GeoLytics 1990
- INEGI Mexico 1:2,500,000 Digital Topography
- LandView II: Mapping of Selected EPA-regulated Sites; TIGER/Line 1992 and 1990 Census of Population and Housing
- LandView III: Environmental Mapping Software
- LandView IV
- LandView 6: A Viewer for EPA, Census Bureau and USGS Data and Maps
- Research maps (R-maps): HUD/PD&R policy and research data for use with GIS - Vol. 1 & Vol. 3
- TIGER/Files (1990)
- TIGER/Census Tract Street Index (1994, 2000)
- USGS Digital Data Series
- USGS Digital Raster Graphics (DRGs): AZ, CA, NM, NV, CO
- USGS Global GIS Databases:
  - Digital Atlas of South Pacific
  - Digital Atlas of South Asia
  - Digital Atlas of Africa
  - Digital Atlas of Central and South America
- United States Waterways Data CD-ROM
- United States Waterways Data CD-ROM:
  - 1:100,000-Scale Digital Line Graphics (DLGs) Data: Hydrography and Transportation

ASU Campus Data

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<td>Arizona Geological Survey, Sensing, and Imaging Laboratory</td>
<td>Arizona State University</td>
<td>Arizona; Southwest</td>
<td>Remote Sensing Imagery, Land Cover</td>
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Internet Data Sources
## Arizona Data

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<td>Pima Association of Governments</td>
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<td>Pima County Geographic Data Library</td>
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<td>University of Arizona/USGS plus others</td>
<td>Arizona; Colorado; Nevada; Utah; New Mexico</td>
<td>Landcover; Landform; Geology</td>
<td>ArcINFO Grid; ERDAS Imagine</td>
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### United States

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<td>United States &amp; World</td>
<td>Demographic; Environmental</td>
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<td>Environmental</td>
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<td>*Limited data (DLGs, DEMs, ULC, NWI, TIGER) are free downloads</td>
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<td>Yes</td>
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Mexico

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<td>DEM; DRGs; DOQQ; Remote Sensing Imagery</td>
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<td>CGIAR Consortium for Spatial Information (CGIAR-CSI)</td>
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<td>Shuttle Radar Topographic Mission (SRTM), 30-meter DEM</td>
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*Limited data (DLGs, DEMs, LU/LC, NWI, TIGER) are free downloads.
*Some layers have limited coverage.
*Downloadable in 5 x 5 degree tiles.
The Map Collection is an extensive research-level collection of maps, both print and electronic, and a supporting collection of guides, gazetteers and atlases. It supports a variety of disciplines including agronomy, botany, history, economics, and environmental studies. The collection emphasizes the Central California Valley area and maps of local importance. The collection also contains many topographic maps and maps of agriculture and agricultural-related subjects from areas with similar climate and growing types to those of the Central Valley. Digital geospatial data are collected with an emphasis on the Central Valley, California and areas related to current and anticipated University research and instruction needs, with an emphasis on data that may be made freely available to the University community.

Access

The Map Collection is located on the lower level of Shields Library in the Government Information and Maps Department and is open Monday through Friday 9 AM to 5 PM except for University Holidays. The majority of the collection is open stacks, so you may retrieve the maps for yourself. If you wish assistance with locating the maps you want, please contact the Map/GIS Librarian at 530-752-5248 or ask at the Government Information and Maps Reference Desk (530-752-1689).

Due to repeated loss and damage, the Map Collection is non-circulating. Please consult with the Government Information & Maps Reference Desk regarding special loan or copying arrangements.

Subject Coverage

The Map Collection covers a wide range of subjects. Because of the campus’s extensive research and teaching programs in agriculture and related areas, subjects emphasized include: agriculture, soils, vegetation, irrigation, land use, and water resources. Also available are maps relating to economics, ethnology, history, nuclear energy, governments, and other subjects. Additional collection emphases are:

- Current topographic maps (1:24,000 scale for California and the western United States of America, 1:250,000 for the United States, and 1:1,000,000 for the world)
- Historic topographic maps of California
- Aerial photography of the Central Valley
- California road maps
- Geological and geophysical maps
- Nautical charts of the west coast of North America

The Physical Sciences & Engineering Library has a small map collection which consists of specific folded USGS
map series and Open File reports.

Geographic Coverage
The Government Information and Maps collection emphasizes the Central California Valley (Sacramento and San Joaquin River Valleys) in all scales, formats, and subjects. The collection also emphasizes maps (especially for agricultural-related subjects) of areas with a similar agro-climate to the Central Valley (i.e., Mediterranean) and for major viticulture and wine producing regions. Maps of other regions of the world are available at a smaller scale and on more limited subjects. (e.g., topography, roads).

Locating Maps
Except for the USGS topographic map series, all maps in the collection are cataloged. You can use UC Davis Library's catalog Harvest to locate maps on the topic you are interested in by following these easy tips:
- Use the Advanced Search and limit the format to "Maps/Cartographic Materials." (This will retrieve all sheet maps and most atlases that meet your criteria.)
- Do a Field Search in subject on the place name (e.g., Davis) you are interested in.
- Use the other field search boxes to limit your search by keywords if you are interested in a specific topic (e.g., soils, irrigation).
- If you do not find what you want, broaden the search by using a broader geographic subject (e.g., Yolo instead of Davis).

If you cannot find what you are seeking, please ask for assistance at the Government Information and Maps Reference Desk.

Cataloged maps are filed by call number in cases in the Map Room. Maps designated "Old Maps" are in a locked case and must be requested at the Government Information and Maps Reference Desk. USGS topographic maps are filed alphabetically by map name within each series. Indexes are available to help you determine the map name.

Other Map Collections
If the UC Davis Library does not have the map you want, check with the Government Information and Maps staff about the possibility of gaining access to maps at the other University of California Campuses. You can search Melvyl, the catalog for all the University of California Campuses to see what other collections have. The other Library's web sites are also a good source of information about their collection and contain many useful links to On-line resources.
- UC Berkeley
- UC Irvine
- UC Los Angeles
- UC Riverside
- UC San Diego
  - Scripps Institution of Oceanography
- UC Santa Barbara
  - The Alexandria Digital Library
- UC Santa Cruz
A geographic information system (GIS) is a computer-based tool that stores geographically referenced, or geo-referenced, data (i.e., data identified according to their locations) and links it with non-geographic attributes (tabular data about the location) to allow for information processing. In addition to helping map your data, GIS software allows you to see, explore, and analyze data by location, revealing hidden patterns and trends that are not readily apparent from spreadsheets or statistical packages. For more information on GIS visit the USGS's GIS site or the Kingston Centre for GIS.

GIS Reference Services

The Government Information and Maps Department at Shields Library has a GIS reference service to provide access to spatial data products received through the federal and state depository programs as well as those that are purchased by the Library. This service is intended to meet library patron demands for access to GIS databases, software, and software reference tools by providing a moderate level of GIS reference. Currently Government Information and Maps provides, by appointment, the following services:

- Consultation concerning whether GIS would be a useful tool for specific research or a project
- Help determining GIS data needs and assistance with locating data to meet those needs
- Limited assistance with incorporating data into existing GIS projects
- Assistance in locating software manuals and sources of information concerning best practices

GIS Workstation

Government Information and Maps has a GIS workstation that UC Davis students, faculty, researchers, and other staff may make an appointment to use for a maximum of two hours per day. The workstation consists of the following:

- Intel Pentium 4 with 2.80 GHz processor
- The full suite of ArcGIS Desktop software including:
  - ArcView
  - ArcEditor
  - ArcInfo
  - 3D Analyst
  - ArcPress
  - ArcScan
  - Geostatistical Analyst
  - Spatial Analyst
  - StreetMap
  - Survey Analyst
  - Tracking Analyst
- 1.52 GB hard drive
- 1.44 MB drive for 3.5" floppy disks
- DVD/CD reader
- CD-RW drive
- Internet access
- Black and white 8.5" x 14" printer
- An 8.5" x 14" color scanner

The Map/GIS Librarian (530-752-5248) can provide limited workstation assistance with:

- Software
- Incorporating data into existing GIS projects
- Technical support with software, hardware, diagnosing the cause of error messages, and managing files

Workstation use must comply with UC Davis Computer Use Policy and the Library Computer Use Policy as well as the following guidelines:

- GIS users must make an appointment with the Map/GIS Librarian to use the GIS workstation.
- GIS software and data licensed by the library may not be used for commercial purposes.
- Software and spatial data may be licensed and subject to restrictions on who can use it and how it can be used. We provide GIS users with public domain data and any other data and software that we can under the terms of the licenses.
- It is advisable to save your data and project files to portable media. Check with the Map/GIS Librarian (530-752-5248) to find out what data storage methods are available.
- At the request of the GIS user we may create a directory on the hard disk of the computer to store files. All files that are not in the user's directory may be deleted. If
Available Data

GIS datasets available at Shields Library and the Physical Sciences and Engineering Library are either acquired through the federal and state depository library programs or purchased selectively. Most of them are for use with ArcView or ArcInfo. To view a partial list of data available, go to Digital Mapping Data on CD-ROM. Additional data may be located by searching the Harvest Catalog. Ask at the Government Information Reference Desk to use the CD-ROMs.

Online Data Resources

Aside from the data held on site, data may be downloaded from the Internet. Many government sites offer free data and some commercial sites offer data for a minimal fee. Some good places to look for free or inexpensive data include:

California Spatial Information Library (CASIEL)
This state government site allows you to download free frequently used datasets for California, including vector data, DRGs, DOQQS, and other image data.

California Environmental Information Catalog
An online directory for reporting and discovery of information resources for California. Participants include cities, counties, utilities, state and federal agencies, private businesses, and academic institutions that have spatial and other types of data resources.

City of Davis – Mapping & Geographic Information Systems
Online maps and downloadable digital layers for the City of Davis

Digital Mapping Data on CD-ROM

US Census Bureau’s Cartographic Boundary Files
Downloaded boundary files that are selected generalized extracts from the Census Bureau’s TIGER geographic database and are designed for use in a Geographic Information System (GIS) or similar mapping system.

ESRI’s Downloadable Data site
This commercial site has both free and for-fee downloadable files.

GeoCommunity
The GIS DataDepot has numerous data holdings that are available for free download, additional data can be downloaded via a "Premium" option or written to CD-ROM for a fee.

The National Atlas of the United States
Downloadable map layers from the United States Geological Survey (USGS). Most of the map layers were compiled at a scale of 1:2,000,000 and cover the full geographic extent of the United States of America, although some cover the conterminous United States only. Some map layers include Puerto Rico and the U.S. Virgin Islands.

National Spatial Data Infrastructure (NSDI), Geospatial Data Clearinghouse
The Clearinghouse functions as a detailed catalog service with support for links to spatial data and browse graphics. Participation in the Clearinghouse includes federal, state, university, and vendor participants in the United States and abroad.

TranStats, the Intermodal Transportation Database
The Bureau of Transportation Statistics, Intermodal Transportation Database is searchable for geospatial data and statistical data.

University of Maryland, Global Land Cover Facility
Satellite and satellite derived imagery and data.

USGS Geographic Data Download
Links to information on DEMs, DLGs, and land use/land cover data from the USGS.

USGS Maps and Other Products
USGS’s site providing information on print and digital maps, aerial photographs, and related products.

USGS National Mapping Information
This site describes USGS’s National Mapping program and links to information about USGS geospatial data products.

Websites for Digital GIS Data
Stanford University’s Branner Library site that provides many useful links to GIS Data resources.

Other UC Davis GIS and Related Resources

College of Agriculture and Environmental Sciences Informatics Center
Center for Spatial Technologies and Remote Sensing
California Space Institute
Engineering Services - Geographic Information Systems
Community Design and Planning Services
Geography Graduate Group
GIS Related Courses at UC Davis
Geographic Information Systems Minor
GIS Information at UC Davis

An e-mail discussion list for UC Davis and affiliated GIS users. To subscribe, send the message subscribe gisinfo YOUR NAME to Listproc@ucdavis.edu.
GIS services

Our mandate: to provide assistance in locating, selecting, and using GIS data and software.

Location:
Research Desk in the Lower Level of the Library.

Hours of operation
Monday to Friday: 10:00 am to 4:30 PM

Please email libgis@uoguelph.ca.

On-site consultation or individualized assistance is available by appointment.

GIS data
Data is available for use by registered members of the University of Guelph community (faculty, staff, students). If you are connecting from off-campus, you may need to log on before you can access these data sources.

GIS software (e.g. Arcview, ArcGIS) is required.

Please consult with staff for assistance or suggestions for new data.

GIS software
GIS Computer Pool:
Three computers located outside the Data Resource Centre have ESRI ArcView 3.3 and ArcGIS 9.0 installed. A login and password are required. Consult staff for details.

Access is provided to a colour photocopier for printing maps and projects from ArcView. Contact staff for details.

Available for Download:
ESRI ArcView 3.3 and ArcGIS are available for download to personal computers by faculty, staff, and graduate students at the University of Guelph. The use of a volume-licensed software product requires a yearly fee. Details are available on the Computing and Communications Services (CCS) download page (http://elms94.e-academy.com/guelph/).

Software Training & Support
ESRI Virtual Campus Online Courses are available free of charge to all academic users at the University. (From the CCS homepage choose "Download Software" and click on the link to the new software distribution site. In the search box search for ESRI for a list of their products and follow the instructions for enrolling.

DRC Workshops: For descriptions visit the GIS homepage.
GIS Services

The Indiana University Libraries' GIS Services provides library users with GIS software, hardware and data, educates beginning GIS users about geographic information systems and geospatial information and assists with use of software and data. Our objectives are to:

- Help users identify and locate data for use with GIS.
- Provide access to computers, GIS software, software and other desktop mapping applications.
- Work with faculty and instructors to integrate geospatial and statistical data into relevant classes and coursework. Identify, acquire and provide access to geospatial and statistical data.
- Assist with use of GIS software and geospatial data.

What is a Geographic Information System?

A geographic information system (GIS) is a computer system that is used to collect, store, analyze, and display data that relates to a geographic area. Additional information on GIS is available from the U.S. Geological Survey or ESRI, a GIS software producer.

GIS Services

The Geographic Information System (GIS) software and hardware is available in the Geology Library, Geography & Map Library, Government Information, Microforms and Statistical Data Collections and Services and the Information Commons. GIS software in the IU Libraries is available for research and instructional use only. Non-educational (i.e. commercial) use is prohibited by our site license. The Geology Librarian can provide assistance with GIS use, including making maps and locating and formatting data for use with GIS. Call the Geology Library (812-855-1494) for more information on GIS assistance.

GIS Data

A geographic information system uses data about the World to display information. A GIS can display almost any geographic feature that appears on a map. A wide variety of data is available in the IU Libraries and other units on campus.

- **Geology Library** - Collects geologic and environmental data about Indiana, the United States, and the World.
- **Geography and Map Library** - Has a wide variety of electronic resources, including GIS data. See the [Electronic Resources in the Geography and Map Library](http://www.lib.indiana.edu/geo) web site for information on GIS data available.
- **Government Information, Microforms and Statistical Services (GIMSS)** - Provides access to U.S. Census Data and international data from non-Governmental Organizations, such as the United Nations and Food & Agriculture Organization.
- **Indiana Geological Survey** - A wide variety of Indiana data is available from the GIS Atlas for Indiana. See their web site for information on available data.
- **Indiana Spatial Data Portal** - Over 400 gigabytes of GIS data for Indiana, such as Digital Raster Graphics (scanned topographic maps), Digital Orthophoto Quarter Quadrangles (digital aerial photographs), Digital Elevation Models and other base data is available from the ISDP.

GIS Maps

- **Indiana Ancestry, Ethnicity and Race** - Maps and a poster showing the ancestry, ethnicity and race of people in Indiana. Maps show the percent of people in a civil
GIS Training

General Instruction - The Geology Librarian can introduce Geographic Information System technologies and methods of spatial data acquisition in a classroom setting or provide one-on-one assistance with GIS software and data. Please contact the Geology Library (812-855-1494) for more information.

Online Training - ESRI's Virtual Campus provides GIS education and training on the Web, including classes on GIS science, applications, and technology. Through the ESRI site license with Indiana University, IU faculty, staff and students can take ESRI-authored online courses and workshops at no cost. Courses developed by academic and industry specialists are available at a 40% discount. For information on courses available through ESRI see the Course Catalog. A code is required to access ESRI courses and workshops. Information on requesting codes is available on Data Management Support's ESRI Virtual Campus web site.

Classes - Formal GIS coursework is offered in several departments on campus, including Geography, Geology, Anthropology, SPEA and the School of Business. Consult the department class listings for more information.

Local Workshops - UITS Data Management Support occasionally offers short, hands-on GIS workshops through the UITS Infoshares program. For more information on these workshops, see the DMS Events calendar.

More Information on GIS at IU and in Indiana is available at:

- Center for Geospatial Data Analysis
- Center for the Study of Institutions, Population and Environmental Change
- UITS Geographic Information Technologies
- Polis Center
- INGIS - Indiana GIS Initiative
NCSU LIBRARIES GEOSPATIAL (GIS) DATA SERVICES

GIS Data at NCSU Libraries
Libraries Geodata Collection
Browse by data collection
GIS Lookup
Browse by data keywords
GIS Lookup: Keyword Search
Access the Geodata Server
Data downloading instructions

GIS Data on the Web
Data Download Sites on the Web
Key links to finding data
Interactive Mapping Sites
Mapping websites, global to local
Web Mapping & Feature Services
Stream data from remote servers into your GIS software (WMS/WFS)
Historic data and maps
Links to various digital collections

What's New?
NCSU LIBRARIES GIS NEWS
New DRGs for NC available
2001 Land Use/Land Cover available
ArcGIS software is NOW available
GIS Public Workstation Now Available
New Website and Data Searching Capabilities
NCSU Libraries, Library of Congress Work to Preserve At-Risk Data

Libraries’ Data Services
Geospatial Data Services
Hardware, software, GIS assistance, and staff
Numeric Data Services
Tabular, statistical data
Contact Data Services Staff
Submit questions or comments
NCGDAP
NCSU, CGIA, Lib. of Congress GIS Data Archiving Project

GIS Data on the Web
Overview of GIS
What is GIS and how is it used?
ESRI Virtual Campus
Free, online training for NCSU faculty, staff and students
ESRI Software Documentation
Download user manuals (PDFs)
ESRI Virtual Campus Library
GIS Literature and Documentation Search

Learn About GIS
GIS at NC State University
Campus GIS Links
Software access, academic units, labs, and research
NC State GIS Email Lists
Announcements and discussion
GIScience at NCSU
Comprehensive information about GIS activity on campus (UCGIS Application)
LIBRARIES GIS SERVICES

Getting Data

The Libraries provides access to a wide range of data resources, much of which is accessible to the campus community. Libraries GIS Team members will assist researchers in identifying additional sources of value-added and public domain geographic and attribute data and, if possible, will acquire it and provide on-site access. Referrals may be made to data clearinghouses. Major Libraries GIS data acquisitions will be announced on the GIS-ANNOUNCE e-mail list.

Assistance to non-NCSU users will be provided as resources permit.

Software and Workstations

Access to many ESRI software products such as ArcGIS are available through NCSU’s campus site license. All Unity workstations in public labs can run ArcGIS. The NCSU Libraries provides access to selected GIS software on publically available computer workstations.

The software may be used by faculty, staff, and students of NCSU (NCSU affiliates) and individuals from the community (non-NCSU affiliates), under the following guidelines:

- If it becomes necessary, preference will be given to NCSU affiliates.
- No products may be used for commercial purposes. Due notice is posted at each computer.
- Requests for on-demand map production will not be taken.

Instruction & Assistance

Independent, online training is available to NCSU faculty, staff, and students through our ESRI Virtual Campus Subscription.

On-site, individualized assistance is offered by appointment. Assistance via e-mail or telephone is also provided. Contact Jeff Essic, Data Services Librarian, DH Hill Library, at 515-5698 or by e-mail at jeff_essic@ncsu.edu.

GIS users may post technical questions or start discussions on the NCSU-GIS e-mail list.

Libraries GIS Team Members

Contacts for Consultation

Jeff Essic
Data Services Librarian (specializes in geospatial data)
D.H. Hill Library
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fax: (919) 515-0264
jeff_essic@ncsu.edu or use the Data Services Contact Form

Michele Hayslett
Data Services Librarian (specializes in numeric data)
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Go to Libraries GIS Home Page
LIBRARIES GIS DATA COLLECTION

The availability and extent of the data sets listed below are indicated in parentheses. Data Server indicates networked access via the Geodata Server. CD-ROM indicates offline availability. Follow the links for additional information about the data sets. Licensing provisions require that some of the data sets be made available online only to NCSU affiliated users. To look up data resources by layer or theme rather than by source consult GIS Lookup.

ArcAtlas (Data Server) NC only
Over 40 layers of global physical and cultural data at 1:10 million to 1:25 million scale.

ArcUSA (Data Server) NCSU only
Contains geographic and attribute data for the coterminous United States at two scales: 1:2,000,000 and 1:25,000,000.

ArcWorld (Data Server) NCSU only
Contains global geographic and attribute data at two scales: 1:3,000,000 and 1:25,000,000.

BasinPro (Data Server, CDROM) NCSU only
NC Center for Geographic Information and Analysis GIS data (CGIA database and more) in State Plane meters or feet, shapefile.

Block to Zip Correspondence File (Data Server) NCSU only

BusinessMAP 4 (Coming Soon) NCSU only
Standalone ESRI software & data for basic GIS viewing, mapping, and business decision-support.

Census Data earlier than 2000 (CD, Web, Data Server)
U.S. Census data earlier than 2000 via software, web, ICPSR, NCSU network.

Census 2000 Data (CD, Web, Data Server)

CensusCD Data & Software (DH Hill GIS Workstations)

CGIA See: North Carolina Center for Geographic Information & Analysis NCSU only

Climate Atlas of the United States (CD-ROM, Data Server)
ArcExplorer projects and shapefiles, climate data.

C-MAP: Clean Air Mapping and Analysis (Web)
Air, land, water, deposition, climate, emissions, etc. GIS data from EPA.

Coastal Change and Analysis Program (C-CAP) (Web, Data Server)
Land cover change data for coastal NC, SC, GA, VA, others.

Community 2020 (HUD) (DH Hill GIS Workstation 4)
HUD program data, census, streets & boundaries, demographic estimates and projections. HUD community planning software.
County Government GIS Data (CD-ROM, Web)
Growing collection of local government orthophotos, parcel data, street centerlines, etc.

Digital Chart of the World (Web)
A 1:1,000,000 scale geographic and tabular database of the world.

Digital Elevation Models (DEM) (Web, Netware)
Digital elevation data by 1:20k and 1:24k quad, see also: 7.5' DEM data page.

Digital Orthophoto Quarter Quadrangles (DOQQs) (CD-ROM, Data Server)
Digital images containing orthorectified aerial photography at a resolution of 1 meter.

Digital Raster Graphics (DRGs) (Web, CD-ROM)
Digitized, georeferenced 1:24k, 11:100k and 1:250k quad sheets.

Dynamap Traffic Counts (Data Server) NC only
Traffic counts (point shapefile) for North Carolina, mostly 1995.

Dynamap 2000 (by request) NC only
Added value streets, address, boundary & landmark data for North Carolina, class use only.

Environmental Sensitivity Index (ESI) (Data Server, CD-ROM, Web)
Coastal habitat data and PDF maps (NC, SC, GA).

EPA BASINS Data (Web, CD-ROM)
Reach 3 Alpha hydrology, LULC data, and various environmental data sets, downloadable by river subbasin.

ESRI Data & Maps and StreetMap USA for ArcGIS (Data Server, CD-ROM) NC only
A wide variety of world, U.S., Canadian, Mexican and European data in shapefile format.

Estimates & Projections (Wessex) (DH Hill GIS Workstation 4)

FCC License Areas and Database Extracts (Web, Data Server)
FCC license areas and point extracts from TV, cellular and wireless databases.

FEMA Q3 Digital Flood Data (Data Server, Web, CD-ROM)
1:24,000 scale digital flood zone and flood plain data for 53 North Carolina counties.

FEMA HAZUS Data (Data Server, CD-ROM)
Hazard mitigation software and data. Includes flood, hurricane, shelter, facilities, infrastructure, and background data. NC and national coverage.

Geographic Names Information System (GNIS) (Data Server, CD-ROM, Web)
A point database containing locations for almost 2 million physical and cultural geographic features in the United States.

Geology, Oil and Gas Fields and Geological Provinces (CD-ROM, Web)
A USGS world data series in various ESRI formats.

Geology of the Conterminous U.S. (CD-ROM, Web)
Geology data at 1:2.5m scale in ArcInfo, DLG formats.

Inter-University Consortium for Political and Social Research (ICPSR) (Web, Data Server, CD-ROM) NC only
Data related to political science, economics, sociology, psychology, education, social work, public administration, criminal justice, etc.

Labels & Lists Voter Registration Data (Data Server) NC only
Voter registration data for North Carolina.

Land Use/Land Cover (LULC) (Web, NC data on Data Server)
USGS land use/land cover data in ArcInfo, GIRAS or CTG format.

Landsat Global Population (Data Server, CD-ROM)
30 arc second gridded population data.

Landsat 7 Satellite Imagery (Data Server, Web, CD-ROM)
Multispectral satellite imagery, in GeoTIFF, UTM.

**LandView III (CD-ROM, DH Hill GIS Workstation 4)**
Environmental data and mapping software package including TIGER 95, EPA data and census tabular data.

**National Atlas of the United States (USGS) (Web, Data Server)**
Predominately 1:2,000,000 scale physical and cultural data layers in shapefile format.

**National Elevation Dataset (Data Server, Web)**
USGS 10 meter/30 meter DEM's reworked as seamless Grid mosaics.

**National Geochemical Atlas (CD-ROM, Web)**
TIFFs, shapefiles and original DBF data.

**National Highway Planning Network (NHPN) (Web, Data Server)**
1:100,000 coverages of current and planned highways, including freeways, urban arterials and minor rural arterials.

**National Hydrography Dataset (NHD) (Web)**
New 1:100,000 nationwide hydrography/hydrology.

**National Land Cover Dataset (Data Server, CD-ROM, Web)**
Landsat-derived land cover data, MRLC program.

**National Transportation Atlas Database (Web, CD-ROM, Data Server)**
A collection of mostly 1:100,000 infrastructure and boundary data layers.

**Natural Resources Conservation Service (NRCS) Data (Web, Data Server)**
National Resources Inventory (NRI), State of the Land maps and coverages, STATSGO and SSURGO soils.

**Neuse Basin 1998-99 Land Cover/Use (Data Server)**
Landsat and SPOT derived data, ArcInfo Grid format.

**NOAA Digital Nautical Charts (CD-ROM, Data Server)**
Digital Nautical Charts for coastal North Carolina and South Carolina, ArcView compatible.

**NOAA Climate & Weather Data (CD-ROM, Data Server)**
Various climate and weather data resources.

**North American Transportation Atlas Database (Data Server)**
A collection of mostly 1:100,000 infrastructure and boundary data layers. Also data for Mexico and Canada (1:1M).

**North Carolina Center for Geographic Information and Analysis (CGIA) Data (Netware, FTP)**
Layers from the North Carolina state government corporate GIS database.

**North Carolina DENR Data (Data Server)**
Various GIS and image resources.

**North Carolina Dept. of Transportation Data (Data Server)**
Various GIS, CAD and image resources.

**NC Division of Coastal Management Data (Data Server)**
Coastal wetland types, potential wetland restoration data, beach access sites, coastal marinas, and interactive Web mapping sites.

**Ocean GIS Southeast (Web, Data Server)**
Over 50 ARC/INFO or Shapefile data layers for NC, SC, GA, FL coasts and offshore areas.

**Protected Areas GIS (CD-ROM)**
Estuarine reserve boundaries, DRG's, DOQQ's, nautical charts.

**Raleigh City GIS Data (Web, Data Server, CD-ROM)**
Topographic, planimetric, utilities and zoning data in DXF format.

**Southern Appalachian Assessment (SAA) GIS Data Base (CD-ROM, Web)**
Over 200 ARC/INFO data layers for an eight state area, including 22 NC counties.

**SPOT Panchromatic Imagery for NC (Data Server)**
A satellite-imagery-based black-and-white mosaic of the entire State of North Carolina with a resolution of about 10 m.
Spatial Data Collections and Services

State Climate Office of NC Weather & Climate Data (Web)
AgNet and Cooperative Observation Station data.

SureMaps Raster (DH Hill GIS Workstations) (Web)
A commercial source for digital topo map data. Can be output seamlessly in a projection of choice at an extent of choice.

TIGER/Line (Data Server, CD-ROM, Web)

Triangle J Council of Governments (Data Server)
Transit planning data, employment/population projections, waste facilities & water lines.

UNEP GRID Data (Web, Data Server)
Global and regional environmental and human data.

USGS Report Series Data (CDROM, Web)
Various national and regional data resources.

Wake County GIS Data (Data Server)
Topographic, parcel, soils and other data in DXF or ARC/INFO format.

Go to Libraries GIS Data Top Page
Lab Facilities & Services

- Acquisition and retrieval of statistical and spatial data
- Assistance in using statistical and GIS software
- Instructional support in statistical and spatial analysis
- Data extraction from TIGER, DLG, DRG, and other formats
- Conversion/translation between GIS and statistical packages
- Large image scanning
- Image registration

Software available at the Geostat lab

Categories: Databases | GIS | Graphics & Presentations | Network | Statistics | Text

Databases

- CensusCD 1980 (Call number HA 214.C45 1999)
  Data from the 1980 Census down to the tract level. Data include items from both short and long forms (SF1 and SF3). *We do not have a user guide specifically for the 1980 CD, but those for the 1990 and 2000 data sets will cover the basic features.*

- CensusCD + Maps 1990 (Call number HA214 .C46 1999)
  Data from the 1990 Census long form (SF3). Geography down to the tract level. Data encompass a broad array of population and housing characteristics including age, sex, race, household relationship, education, income, ancestry, employment, disability status, and others items.

- Census 2000 Redistricting Blocks (Call number HA 201.122 .C466 2001)
  Data from the 2000 Census PL94-171 file used for redistricting. Geography restricted to the block level, but you can choose blocks for states, counties, tracts, etc. Population characteristics are limited to counts by race (63 categories) and voting age status. Also contains 1990 redistricting data for comparison.

- Census 2000 SF1 (Call number HA 201.122 .C467 2001)
  Data from the 2000 Census short form (Summary File 1). Geography for all levels down to (but not including) the block. Data include age, sex, race, relationship to householder, and basic housing information (number of units, occupancy & vacancy, tenure).

- Census 2000 SF1 Blocks (Call number HA 201.122 .C463 2001)
  Exactly like Census 2000 SF1, but for blocks only. *Note:* this is a 4 CD set, one for each Census region. Make sure you have the correct disk for the area you are interested in.
Census 2000 SF3 (Call number HA 201.122 C465 2002)
This CD-ROM contains the Long Form data from the 2000 Census. **Note:** this is a 4 CD set, one for each Census region. Make sure you have the correct disk for the area you are interested in.

Data from the 1970, 1980, 1990, and 2000 decennial censuses for tract-level data. Data are limited to basic population and housing characteristics from the short form questionnaire. Please refer to the "Quick User Guide" in the Help menu for assistance in using this software.

CPS Utilities (Call number HA 203 C87)
The Current Population Survey (CPS) is a monthly survey of about 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics. Data include employment, unemployment, earnings, hours of work, and a variety of demographic characteristics including age, sex, race, marital status, and educational attainment.

Global Development Finance (Call number IBRD 1/D 35 D/ 2002)
The 2002 version contains a database of more than 200 time-series indicators covering the years 1970 through 2001 in most cases and to 2009 for “pipeline data.”

National Longitudinal Surveys (NLS) Investigator (Call number HD 5724 N576)
The National Longitudinal Surveys, sponsored by the U.S. Bureau of Labor Statistics (BLS), U.S. Department of Labor, are a set of 50,000 surveys gathering information on the labor market experiences of American men and women since 1966.

This database provides individual level data from the Decennial Census -- from 1850 through 1990. The data files comprise both individual and household records.

Trans-Atlantic Slave Trade Database (Call number HT1322 T74 1999)
The Trans-Atlantic Slave Trade Database contains detailed records of over 27,000 slave shop voyages made between 1595 and 1866 (roughly 70% of the trans-Atlantic trade).

World Development Indicators (Call number HC59.69 W682)
This CD-ROM contains a database of more than 500 time series covering the years 1960 through 2002. It also contains all the tables from the WDI book and the Atlas, including those covering the 200 or so indicators for which only a single year of data is available.

GIS Utilities
- ERDAS IMAGINE
- ArcView GIS
- Street Map
- Image Analyst
- 3D Analyst
• Spatial Analyst
  • ArcGIS
    • ArcCatalog
    • ArcMap
    • ArcScene
    • ArcToolbox
  • Spatial Analyst
  • Geostatistical Analyst
  • 3D Analyst

Graphics and Presentations
• Adobe Photoshop
• Microsoft PowerPoint
• GeoExpress View (Mr. SID viewer)
• Dreamweaver MX

Network Utilities (E-Mail, HomeDir, etc.)
• Corporate Time for the Web
• Exceed
• Home Directory
• Internet Explorer
• Mulberry
• Mozilla
• Secure CRT
• Secure FX
• WinZip

Statistics Utilities
• Access XP
• Amos Basic
• Excel XP
• Intercooled Stata
• SAS
• SPSS for Windows
• Stat Transfer

Text Utilities
• Acrobat Reader
• Acrobat Distiller
• Microsoft Word
• NoteTab Pro
What Is GIS?

A Geographic Information System (GIS) is a database management system for the display and analysis of digital geospatial data. GIS combines mapping capabilities, databases of geographic and feature information, and spatial analysis to allow users to look at an area in relation to other areas, in relation to changes over time, and in relation to various other factors.

"Simply put, a GIS combines layers of information about a place to give you a better understanding of that place. What layers of information you combine depends on your purpose—finding the best location for a new store, analyzing environmental damage, viewing similar crimes in a city to detect a pattern, and so on." (ESRI, What Is GIS?)

For more information, see How Can I Get Started with GIS? below.

What GIS Services Does The Map Collection Provide?

Map Collection staff can:

- Provide access to GIS and desktop mapping software. The University of Washington has a site license with ESRI which governs who can install the software and how it can be used.
- Identify, acquire, and provide access to digital geospatial and statistical data for use in GIS.
- Help you determine your data needs and assist with locating the data to suit those needs.
- Help you incorporate data into your GIS projects.

Map Collection staff cannot:

- create maps for you; we can help you find data and integrate it into your existing GIS projects or refer you to technical support.
- teach you how to use GIS software; we do provide manuals and access to online tutorials.

The Map Collection has collections of digital geospatial data on CD-ROM and on servers for research and educational use. Our collection focuses on the Puget Sound and State of Washington areas, but we also have national and international datasets. Examples of our data include digital orthophotos of the Seattle area, U.S. Census data and geographic shapefiles from GeoLytics, digital line graphs (DLGs) and digital raster graphics (DRGs), as well as datasets from the City of Seattle, King County, and Snohomish County. Information in these datasets includes street layers, bike paths, critical areas (e.g., potential slide areas), building outlines, and much more. To see some of the digital data that the Map Collection offers online, look at the Washington State Geospatial Data Archive. Use of selected datasets is restricted to UW students, faculty and staff due to license agreements with the data creator/provider.

There are two GIS workstations available in the Map Collection. Primary access to these machines is given to patrons affiliated with the University of Washington. Non-affiliated patrons may speak with a librarian about use of the machines and software, as well as use of digital data.

GIS Assistance Hours and Contact Information

GIS assistance is available in the Map Collection 9:00 am - 5:00 pm, Monday through Friday. Scheduling an appointment will guarantee that staff are available to help
you when you arrive. Email gis@lib.washington.edu or call (206) 543-9392 to set up an appointment.

Although during academic quarters the Map Collection is also open Monday through Thursday evenings and Saturday afternoons (please consult the Map Collection's Hours for more details), no GIS staff are available at that time. However, computers, software and data are still accessible.

If you need data for your GIS projects, please allow at least 48 hours for our response (not counting weekends).

Map Collection/Government Publications GIS Lab

Map Collection/Government Publications GIS Lab is open 20 hours per week for UW students, staff and faculty. The lab web page provides information on lab hours, locations, hardware and software.

How Can I Get Started with GIS?

- The University of Washington Consortium for Geographic Information and Analysis (UWCGIA) is an organization for everyone at UW who uses GIS, remote sensing, and related technologies. Refer to their list of academic departments that teach GIS theory and use, or go directly to their list of GIS courses.
- ESRI, a leading manufacturer of GIS software, provides a What Is GIS? webpage, and also teaches classes through its Virtual Campus. If you are affiliated with UW, you can register free for Virtual Campus courses.
- The King County GIS Center offers GIS classes and free brown-bag workshops which are open to anyone in the Puget Sound Region. Go to the KCGIS Training page for more information about courses offered, prices, and registration.
- Map Collection GIS staff are available to teach a workshop on locating GIS data available in the libraries and elsewhere. Email gis@lib.washington.edu or call (206) 543-9392 to arrange for a presentation to your class or group.
- Other introductory information is available from the United States Geological Survey (USGS) and from the United States Census Bureau.

How Do I Find GIS Data?

We provide a Needs Assessment to help you define what data you need. Please review this to clarify your data needs prior to contacting us for assistance.

There are many sources of data for use with GIS. The sites listed here are just a few usefull starting points.

1. Washington State Geospatial Data Archives (WAGDA), includes data for King County, City of Seattle, Washington geology, Washington digital elevation models (DEMs) and digital line graphs (DLGs). Some of this data is restricted to use by UW students, faculty, and staff. These data sets are clearly marked as UW restricted.
2. Search the UW Library Catalog for digital mapping products or geospatial data not available through WAGDA (use "digital data", "gis data", or "electronic resource" in a keyword search to find records; refer to our Tips for Searching the Catalog).
3. Access Washington is the place to start when looking for geospatial data produced by Washington state agencies. Examples of agency GIS sites include:
   - WA Dept of Ecology
   - WA Dept of Natural Resources (DNR)
   - WA Dept of Natural Resources Forest Practices
   - WA Dept of Transportation (WSDOT)
4. Maps/GIS Resource Page is a collection of websites for cartographic information, organized by geography, which have been selected by UW librarians. See the "Datasets" category for links to sources of geospatial data.
5. Washington State Geospatial Clearinghouse is a metadata node on the National Spatial Data Infrastructure. Use this site to search descriptions of datasets created nationwide. Dataset descriptions contain contact information for acquiring the data. This site also contains a form to create and maintain FGDC-compliant metadata records.
6. Ask yourself which organization might have produced the data you need:
   - a city, county, or state government?
   - the United States Federal government?
   - another country's government?
   - an international government organization such as the United Nations or the European Union?
   - a nonprofit organization?
   - a for-profit organization?
   - Search for their website using a specialized search service such as Firstgov.gov (U.S. Federal government), or a general Internet search service such as Google, AllTheWeb, or Zooma.
7. Contact us at gis@lib.washington.edu for additional assistance.

Where Can I Buy GIS Data?

GIS data can be expensive. If you are considering buying GIS data for a University of Washington project, please first email us at gis@lib.washington.edu or call us at (206) 543-9392. We may already own data that would be helpful to you or may be able to help you locate what you are looking for.

Frequently Used Resources

Software

UW Libraries provides access to a variety of software packages, including TopoUSA, Microsoft Encarta, MapPoint 2000, Census data extraction software, and several applications available through the university-wide ESRI site license.

ESRI software (ArcGIS, ArcInfo, etc.)

Call No: None. Talk to the GIS Librarian for more information.

How to use: Review the conditions of the site license. All of the software is installed on both computers in the Map Collection GIS lab. It is also available in various campus labs including those in Mary Gates Hall and the Odegaard Undergraduate Library. Circulating copies of installation media are available from the Map Collection. To ensure compliance with the restrictions of the site license, software only circulates to faculty and staff, or to students who have written permission from a faculty or
staff member. If you have questions, email us at gis@lib.washington.edu.

Getting to Know ArcGIS
Call No: Maps Computer Manuals G70.212.G489 2001 (The 2nd edition, which covers ArcGIS 9.0, is on order.)
What: A workbook for learning ArcGIS.
How to use: The Map Collection has a few copies of this text, which can be used on site or checked out for three days. Purchase of the workbook (from ESRI or any bookseller) includes a 180-day trial version of the software.

ESRI Maps & Data
Call No: None. Talk to the GIS Librarian for more information.
What: The ESRI data set includes political and administrative boundaries, street layers, other natural and manmade features for the U.S., Canada, Mexico, Europe, and the world.
How to use: Consult the full list of the GIS data available on the most recent ESRI Data and Maps CDs (UW restricted). If you have questions, email us at gis@lib.washington.edu.

The Global GIS Database
Call No: Africa G8201.A25 2001 G5
South Asia G7626.A25 2007 G5
South Pacific G9251.A25 2001 G5
Central and South America G4801.A25 2000 G4
What: These discs contain digital atlases for the countries in each region. They include free GIS software, or they may also be used with ESRI's ArcView software. Customized ArcView tools, specifically designed to make the atlas easier to use, are also included.
How to use: These discs can be checked out, or you can use them in our GIS lab. We encourage you to examine the CDs for your region of interest and copy the specific datafiles you need to your own CD-ROM. While there is some software/interface provided, it is actually ArcView 3.3, an earlier version of ArcGIS.

Data Files
USGS Digital Orthophoto Quarter Quads (DOQQs)
Call No: G4281.A4 s40 G4 and online at WAGDA.
What: These discs contain digital aerial photography for much of Washington State. Anyone with a library card can check out the CDs. A paper index of our holdings is on top of the main CD case. On WAGDA there is also an online version of the index.
How to use: You can use our GIS lab, or you can check the discs out. Use ArcView, ArcInfo or other GIS/imagery software to view these photos. To format the images so they are viewable, read these instructions.

USFS (Forest Service) Digital Orthophoto Quads (DOQs)
Call No: G4281.A4 s40 US and online at WAGDA.
What: Digital aerial photography for much of the forest land of Washington State. A paper index of our holdings is on top of the main CD case. On WAGDA there is also an online version of the index.
How to use: You can use our GIS lab, or you can check the discs out. Use ArcView, ArcInfo or other GIS/imagery software to view these photos.

Digital Raster Graphics (DRGs)
Call No: G4281.C2 svar G4 and online at WAGDA.
What: These are scanned USGS topographic maps, at all three scales (1:24K, 1:100K, 1:250K), for Washington State. The items are georeferenced, which means they are ready to be used in GIS software. They can also be used in image software such as Photoshop. It is public domain data.
How to use: You can use either computer in our GIS lab, or you can check the discs out. Use ArcView, ArcInfo or other GIS/imagery software to view these photos. There is also viewing software included on the CD. The images are already in viewable format.

Geology
Census Data Extraction & Mapping products
Call No: Available in both the Map Collection and in Government Publications, unless noted below.
CensusCD Blocks: HA201 1990 .C42 1999 (only in Maps)
CensusCD 2000 Long Form: HA201 122 .C36 2002
CensusCD 2000 Short Form: HA201 123 .C46 2001 (only in Government Publications)
StreetCD98: G701.A25 1999 J4
What: This software extracts Census data into .dbf files and shapefiles for use in GIS software or statistical software (including Excel).
How to use: The software already installed on computers in the GIS lab. Guidebooks are available on the software manual shelf in the GIS lab (call numbers of the CDs and the guidebooks are the same). A brief tip sheet on integrating the data into a GIS project is also available. A list of Census variables is in a black binder in the GIS lab.
You can either use the software yourself to get the data you need, or you can set up an appointment with the GIS staff (email gis@lib.washington.edu) to help you.

Websites
Washington State Geospatial Data Archive (WAGDA)
This site includes data for King County, City of Seattle, Washington geology, Washington digital elevation models (DEMs) and digital line graphs (DLGs). Some of this data is restricted to use by UW students, faculty, and staff. These data sets are clearly marked as UW restricted.

Access Washington
This is the place to start when looking for geospatial data produced by Washington state agencies. Examples of agency GIS sites include:

- WA Dept of Ecology
- WA Dept of Natural Resources (DNR)
- WA Dept of Natural Resources Forest Practices
- WA Dept of Transportation (WSDOT)

The National Map (USGS)
This website "provides public access to high-quality, geospatial data and information from Federal, State, and local partners."

**Washington State Geospatial Clearinghouse**

This site is a node on the National Spatial Data Infrastructure. Use this site to search descriptions of datasets created nationwide. Dataset descriptions contain contact information for acquiring the data. This site also contains a form to create and maintain FGDC-compliant metadata records.

**ESRI**

A wealth of software and technical support, data, training, and general GIS information. Includes the GIS dictionary below.

- **GIS dictionary (ESRI)**
  
  A dictionary of terms used in the context of Geographic Information Systems.

**Maps/GIS Resource Page (University of Washington Libraries)**

This is a collection of websites for cartographic information, organized by geography, which have been selected by UW librarians. See the "Datasets" category for links to sources of geospatial data.

Last modified: Tuesday November 08, 2005

Questions? Comments? Please email us at maplib@u.washington.edu
Cartographic Collections:

Maps, Charts, Digital Geospatial Data, & Aerial Photos

Maps

Topographic | Soils | Geology | Land Use/Land Cover | Other

The Robinson Map Library maintains a comprehensive
collection of general and political maps for all parts of the
world, thematic maps, historical and special interest maps, and
maps of major cities. The library also has an extensive
collection of highway maps for the US and travel maps from
around the world. In total, the map collection consists of about
275,000 items.

Some of the most highly used maps in the collection are those
that depict topography, soils, geology, and land use/land cover
for all areas of the world.

Topographic Maps

Topographic map series at various scales include:

- United States at 1:24,000 (2 complete sets for
  Wisconsin)
- United States (select areas) at 1:62,500
- United States at 1:100,000
- United States at 1:250,000
- Africa at 1:250,000 and 1:500,000
- Canada at 1:50,000, 1:250,000, and 1:500,000
- Parts of Western Europe at 1:50,000
- Parts of Central America at 1:50,000
- Other areas at 1,500,000, 1:1,000,000, or 1:12,500,000

Soils Maps

In addition to the bound volumes of detailed Wisconsin Soil
Surveys published by county, the Map Library has soil maps
from around the world. These include:

- General soil maps for United States regions (i.e. Middle
  states, Northeastern states, Southwestern states etc.)
- General soil maps - Europe, Central America, South
  America
- Provincial soil landscapes - Canada
- Soil association maps by state - United States

Geologic Maps

The Map Library has an extensive collection of geologic maps
that cover the world and its regions:

- Detailed geology - Wisconsin
- General geologic maps by state - United States
- Canadian Geologic Survey maps - Canada
- General geology - Africa (and more detailed coverage
  for select countries)
- General geology - Antarctica
- General geology - Asia (and more detailed coverage for
  select countries)
- General geology - Australia
- General geology - Europe (and more detailed coverage
  for select countries)
- General geology - South America (and more detailed coverage for select countries)

Land Use/Land Cover Maps

Land use/land cover maps are abundant within the collection, and include multiple copies of some of the most popular Wisconsin maps such as Robert Finley’s Map of the Original Vegetation Cover of Wisconsin.

The Robinson Map Library also holds Finley’s original hand-painted 3.5ft x 4ft map of the Original Vegetation Cover of Wisconsin that accompanied his Ph.D. thesis from the University of Wisconsin-Madison in 1951.

The library has an extensive collection of land use maps produced by the US Forest Service, the US Geological Survey, the US Department of Agriculture, the Natural Resources Conservation Service (formerly the Soil Conservation Service), and the Bureau of Land Management.

The historic aerial photography collection at the Map Library is also an excellent resource for land use/land cover analysis.

Other Thematic Maps

A thematic map shows the spatial distribution of one or more specific data themes for standard geographic areas. The map may be qualitative in nature (e.g., predominant farm types) or quantitative (e.g., percentage population change).

The maps described on this page (topographic, soils, geologic, land use/land cover) are all examples of different types of thematic maps. However, the Robinson Map Library holds many other unique thematic maps including those that show population, economic characteristics, transportation, climate, food, fuel and energy, water, elevation, cartography (map projections, etc.) and cultural history.
What is GIS?

"A GIS is a powerful set of tools for collecting, storing, retrieving at will, transforming, and displaying spatial data from the real world for a particular set of purposes."

-P.A. Burrough and R.A. McDonnell

Geographic Information Systems (GIS)

There are five public GIS workstations available for browsing geospatial data and/or using GIS software. Map Library staff is available to assist users with GIS software. Appointments can be made for one-on-one consultations conducted by the Map/GIS Librarian. Consultations include those related to assistance with GIS software, locating geospatial data, and general GIS project management.

To make an appointment for GIS help, contact Jaime Martindale:
Email: martindale@wisc.edu
Phone: (608) 262-1471

Software in the Map Library

ArcGIS 9.3
ArcView 3.2

Digital Geospatial Data Collection

The digital geospatial data collection is currently made up of items collected from federal, state and/or local governments, as well as some proprietary sources. Some of the datasets currently held within the collection include:

General:
- Conterminous US AVHRR 1998
- Conterminous US AVHRR Biweekly Composites 1995
- Delorme/Street Atlas USA
- Delorme TopoUSA
- ESRI ArcUSA
- ESRI ArcWorld
- ESRI Data and Maps for ArcGIS (2003)
- ESRI StreetMap
- LandView II & III
- National Geographic: Topographic Maps of the United States
- NIMA Vector Map
- TIGER/Line Census Tract Street Index
- USGS Digital Data Series
- USGS Digital Orthophoto Quadrangle data (DOQs)
- USGS Digital Raster Graphic Series
- USGS Digital Line Graph Series
- USGS Global GIS Database

Wisconsin Department of Natural Resources:
- Wisconsin DNR 1:24,000 scale Hydrography
- Wisconsin DNR Geodisc 4.0
- Bear Management Zones
- Deer Management Units
- Turkey Management Units
- Geographic Management Units
- Digital elevation model and hillshade image
- DNR Watersheds
- WISCLAND land cover grid
- Native American lands
- Open water
- Original vegetation cover
- PLSS sections and townships
- 12k, 24k, 100k, and 250k quad indexes
- Rivers and shorelines
- Roads

WISCONSIN COUNTIES:

- Lincoln County vector GIS dataset
- Lincoln County 2001 spring orthophotos
- Milwaukee County Automated Mapping and Land Information System dataset (MCAMLIS)
- 2 foot contour topographic data
- detailed planimetric data
- geodetic control
- Milwaukee County 2000 orthophotos
- Portage County 2000 spring orthophotos

Federal Digital Orthophotography:
(1 meter resolution)

USGS (various years of coverage) and USDA-NAIP (2004) digital aerial photography for Wisconsin is available from the WisconsinView.org website.

About WisconsinView:
WisconsinView became a full member of the AmericaView Inc. consortium in April 2004. WisconsinView is built on a partnership between the University of Wisconsin - Madison's Environmental Remote Sensing Center (ERSC), and the State Cartographer's Office (SCO). The WisconsinView consortium is growing and has enlisted a number of key players in geospatial and information technology.

Wisconsin Online Data Sources:

WISCLINC - The Wisconsin Land Information Clearinghouse

WISCLINC is a clearinghouse effort in Wisconsin maintained by the Wisconsin State Cartographer's Office. WISCLINC is part of a network of NSDI nodes which contribute to the progress of federal initiatives such as Geospatial One-Stop and The National Map. WISCLINC pulls together records of geospatial data, land records websites and statewide land information inventory survey.

Wisconsin Landcover (WISCLAND) - Wisconsin Landcover data.

WISCLAND is the Wisconsin Initiative for Statewide Cooperation on Landscape Analysis and Data, a partnership of public and private organizations seeking to facilitate landscape GIS data development and analysis.

Wisconsin Department of Natural Resources - List of Interactive Web Mapping Applications:

- Air Monitoring Network
- Water Quality Trends Status Map
- Digital Water Quality Downstream
- Digital Orthophoto Tracker
- Digital Water Quality
- DNR WaterView
- Map search and Closed Remediation Sites
- National Heritage Inventory Online Database
- Surface Water Data Net
- Watershed Management - DNR Watershed Management
- Watershed Management - FDEP Mapping
- Watershed Management - EPA Mapping
- Watershed Management - FEMA Maps

WisconsinView - UW Madison Environmental and Remote Sensing Center (aerial photography and satellite imagery of Wisconsin available for download)
SELECTED RESOURCES
Books and Journal Articles


**General GIS Web Sites**

ALA Map and Geography Round Table
http://magert.whoi.edu/

ARL/ESRI GIS Webcast: Libraries and Digital Mapping in the 21st Century
http://www.arl.org/training/webcast/gis/index.html

ARL GIS Literacy Project
http://www.arl.org/info/gis/index.html

ESRI. GIS for Libraries and Museums
http://esri.com/industries/libraries/index.html

GIS.com: The Guide to Geographic Information Systems
http://www.gis.com/index.html

GIS Day 2005
http://www.gisday.com/
Library Map and GIS Web Sites

University of California, Santa Barbara. Map & Imagery Laboratory
   http://www.sdc.ucsb.edu/

Case Western Reserve University. Center for Statistics and Geospatial Data
   http://library.case.edu/ksl/csgd/

University of Chicago. Map Collection
   http://www.lib.uchicago.edu/e/su/maps/

University of Colorado at Boulder. Map Library
   http://ucblibraries.colorado.edu/map/index.htm

University of Florida. Map & Imagery Library
   http://web.uflib.ufl.edu/maps/

University of Illinois at Urbana-Champaign. Map and Geography Library
   http://www.library.uiuc.edu/max/

University of Iowa. Map Collection
   http://www.lib.uiowa.edu/maps/

University of Kansas. Thomas R. Smith Map Collection
   http://www.lib.ku.edu/mapscol/

Université Laval. Données Géospatiales
   http://geospatial.bibl.ulaval.ca/

Louisiana State University. Cartographic Information Center
   http://www.cic.lsu.edu/

University of Louisville. Map Collection
   http://library.louisville.edu/ekstrom/collections/maps.htm

McMaster University. Lloyd Reeds Map Collection
   http://library.mcmaster.ca/guides/maps-2.htm

University of Manitoba. Data Library Services
   http://www.umanitoba.ca/libraries/units/datalib/

University of Michigan. Map Library
   http://www.lib.umich.edu/maplib/
University of Minnesota. John R. Borchert Map Library  
http://map.lib.umn.edu/

Université de Montréal. Données Numériques et Géospatiales  
http://www.bib.umontreal.ca/SS/num/

University of New Mexico. Map and Geographic Information Center  
http://elibrary.unm.edu/maproom/

University of Oregon. Map and Aerial Photography (MAP) Collection  
http://libweb.uoregon.edu/map/

Pennsylvania State University. Maps Library  
http://www.libraries.psu.edu/maps/

Purdue University. EAS Map Room  
http://www.lib.purdue.edu/eas/inmaps.html

Rice University. GIS/Data Center  
http://www.rice.edu/fondren/gdc/

University of Texas at Austin. Perry-Casteñeda Library Map Collection  
http://www.lib.utexas.edu/maps/

University of Utah. The Map Collection  
http://www.lib.utah.edu/science/maps.html

Washington University in St. Louis. Geospatial Information Systems and Science (GIS)  
http://gis.wustl.edu/

University of Waterloo. University Map Library  
http://www.lib.uwaterloo.ca/locations/umd/index.html

University of Western Ontario. Serge A. Sauer Map Library  
http://publish.uwo.ca/~mapref/serge_a.htm

Note: All URLs accessed November 22, 2005.
SP291 Spatial Data Collections & Services
SP290 Access Services
SP289 Managing Large Projects
SP288 Scanning Services for Library Users
SP287 Instructional Improvement Programs
SP286 Collab for Dist Learn Info Lit Instr
SP285 Lib Svs in Non-Library Spaces
SP284 Security in Special Collections
SP283 Grant Coordination
SP282 Managing Electronic Resources
SP281 The Information Commons
SP280 Library User Surveys
SP279 Evaluating Library Instruction
SP278 Library Patron Privacy
SP277 Lib Pub Acc Workstation Auth
SP276 Recruitment and Retention
SP275 Laptop Computer Services
SP274 Data Mining & Warehousing
SP273 Chat Reference
SP272 Insuring & Valuing Res Lib Coll
SP271 Lib Systems Office Organization
SP270 Core Competencies
SP269 Integrating Preserv Activities
SP268 Reference Statistics
SP267 User Authentication
SP266 Staffing the Library Website
SP265 Instructional Support Services
SP264 Extended Library Hours
SP263 Numeric Data Services
SP262 Preservation & Digitization
SP261 Post-Tenure Review
SP260 Interview Process
SP259 Fee-based Services
SP258 Corporate Annual Reports
SP257 MLS Hiring Requirement
SP256 Changing Roles of Lib Pros
SP255 Branch Libs/Discrete Collects
SP254 Managing Printing Services
SP253 Networked Info Services
SP252 Supprt Staff Classifictn Studies
SP251 Electronic Reference Service
SP250 TL10: Educating Faculty
SP249 Catalogng of Resrcs Digitized
SP248 Licensing of Electronic Prodscts
SP247 Management of Lib Security
SP246 Web Page Devel & Managmnt
SP245 Electronic Reserves Operations
SP244 TL 9: Renovation & Reconfigur
SP243 TL 8: Users with Disabilities
SP242 Library Storage Facilities
SP241 Gifts and Exchange Function
SP240 Marketing and PR Activities
SP239 Mentoring Programs in ARL
SP238 ARL GIS Literacy Project
SP237 Managing Food and Drink
SP236 TL 7: E-Theses/Dissertations
SP235 Collaborative Coll Management

SP234 TL 6: Distance Learning
SP233 ARL in Extension/Outreach
SP232 Use of Teams in ARL
SP231 Cust Service Programs in ARL
SP230 Affirmative Action in ARL
SP229 Evaluating Acad Libr Dir
SP228 TL 5: Preserving Digital Info
SP227 Org of Doc Coll & Svcs
SP226 TL 4: After the User Survey
SP225 Partnerships Program
SP224 Staff Training & Development
SP223 TL 3: Electronic Scholarly Pubn
SP222 Electronic Resource Sharing
SP221 Evol & Status of Approval Plans
SP220 Internet Training
SP219 TL 2: Geographic Info Systems
SP218 Info Technology Policies
SP217 TL 1: Electronic Reserves
SP216 Role of Libs in Distance Ed
SP215 Reorg & Restructuring
SP214 Digit Tech for Preservation
SP213 Tech Svcs Workstations
SP212 Non-Librarian Professionals
SP211 Library Systems Office Org
SP210 Strategic Planning
SP209 Library Photocopy Operations
SP208 Effective Library Signage
SP207 Org of Collection Develop
SP206 Faculty Organizations
SP205 User Surveys in ARL Libs
SP204 Uses of Doc Delivery Svcs
SP203 Reference Svc Policies
SP202 E-journals/Issues & Trends
SP201 E-journals/Pol & Proced
SP200 2001: A Space Reality
SP199 Video Collect & Multimedia
SP198 Automating Preserv Mgt
SP197 Benefits/Professional Staff
SP196 Quality Improve Programs
SP195 Co-op Strategies in Foreign Acqs
SP194 Librarian Job Descriptions
SP193 Lib Develop & Fundraising
SP192 Unpub Mats/Libs, Fair Use
SP191 Prov Pub Svcs Remote User
SP190 Chang Role of Book Repair
SP189 Liaison Svcs in ARL Libs
SP188 Intern, Residency & Fellow
SP187 ILL Trends/Staff & Organ
SP186 Virtual Library
SP185 System Migration
SP184 ILL Trends/Access
SP183 Provision of Comp Print Cap
SP182 Academic Status for Libns
SP181 Perf Appr of Collect Dev Libn
SP180 Flexible Work Arrangements
SP179 Access Services Org & Mgt
SP178 Insuring Lib Colls & Bldgs
SP177 Salary Setting Policies
SP176 Svcs for Persons w/Disabilities
SP175 Scholarly Info Centrs
SP174 Expert Systems
SP173 Staff Recognition Awards
SP172 Information Desks
SP171 Training of Tech Svc Staff
SP170 Organization Charts
SP169 Mgt of CD-ROM
SP168 Student Employment
SP167 Minority Recruitment
SP166 Materials Budgets
SP165 Cultural Diversity
SP164 Remote Storage
SP163 Affirmative Action
SP162 Audivisual Policies
SP161 Travel Policies
SP160 Preservation Org & Staff
SP159 Admin of Lib Computer Files
SP158 Strategic Plans
SP157 Fee-based Services
SP156 Automating Authority Control
SP155 Visiting Scholars/Access
SP154 Online Biblio Search
SP153 Use of Mgt Statistics
SP152 Brittle Books Program
SP151 Qualitative Collect Analysis
SP150 Bldg Security & Personal Safety
SP149 Electronic Mail
SP148 User Surveys
SP147 Serials Control/Deselection
SP146 Lib Dev Fund Raising Capabilit
SP145 Lib Publications Programs
SP144 Building Use Policies
SP143 Search Proced Sr LibAdmin
SP142 Remote Access Online Cats
SP141 Approval Plans
SP140 Performance Appraisal
SP139 Performance Eval: Ref Svcs
SP138 University Copyright
SP137 Preservation Guidelines
SP136 Managing Copy Cataloging
SP135 Job Analysis
SP134 Planning Mgt Statistics
SP133 Opt Disks: Storage & Access
SP132 Library-Scholar Communication
SP131 Coll Dev Organization
SP130 Retrospective Conversion
SP129 Organization Charts
SP128 Systems File Organization
SP127 Interlibrary Loan
SP126 Automated Lib Systems
SP125 Tech Svcs Cost Studies
SP124 Barcoding of Collections
SP123 Microcomp Software Policies
SP122 End-User Search Svcs
SP121 Bibliographic Instruction
SP120 Recruitment and Retention
SP119 Catalog Maintenance Online
SP118 Unionization
SP117 Gifts & Exchange Function
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<td>SP116</td>
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<td>SP077</td>
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<td>Staff Development</td>
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<td>Preservation Education</td>
<td>SP074</td>
<td>Fees for Services</td>
<td>SP035</td>
<td>Preservation of Lib Materials</td>
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<td>SP112</td>
<td>Reg of Tech and Pub Svc</td>
<td>SP073</td>
<td>External User Services</td>
<td>SP034</td>
<td>Determin Indirect Cost Rate</td>
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<td>SP111</td>
<td>Cooperative Collection Dev</td>
<td>SP072</td>
<td>Executive Review</td>
<td>SP033</td>
<td>Integrat Nonprint Media</td>
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<td>Local Cataloging Policies</td>
<td>SP071</td>
<td>User Surveys; Eval of Lib Svc</td>
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<td>Prep, Present Lib Budget</td>
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<td>Preservation Procedures</td>
<td>SP031</td>
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<td>Support Staff, Student Assts</td>
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<td>SP106</td>
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<td>SP067</td>
<td>Affirm Action Programs</td>
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<td>Gifts &amp; Exchange Function</td>
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