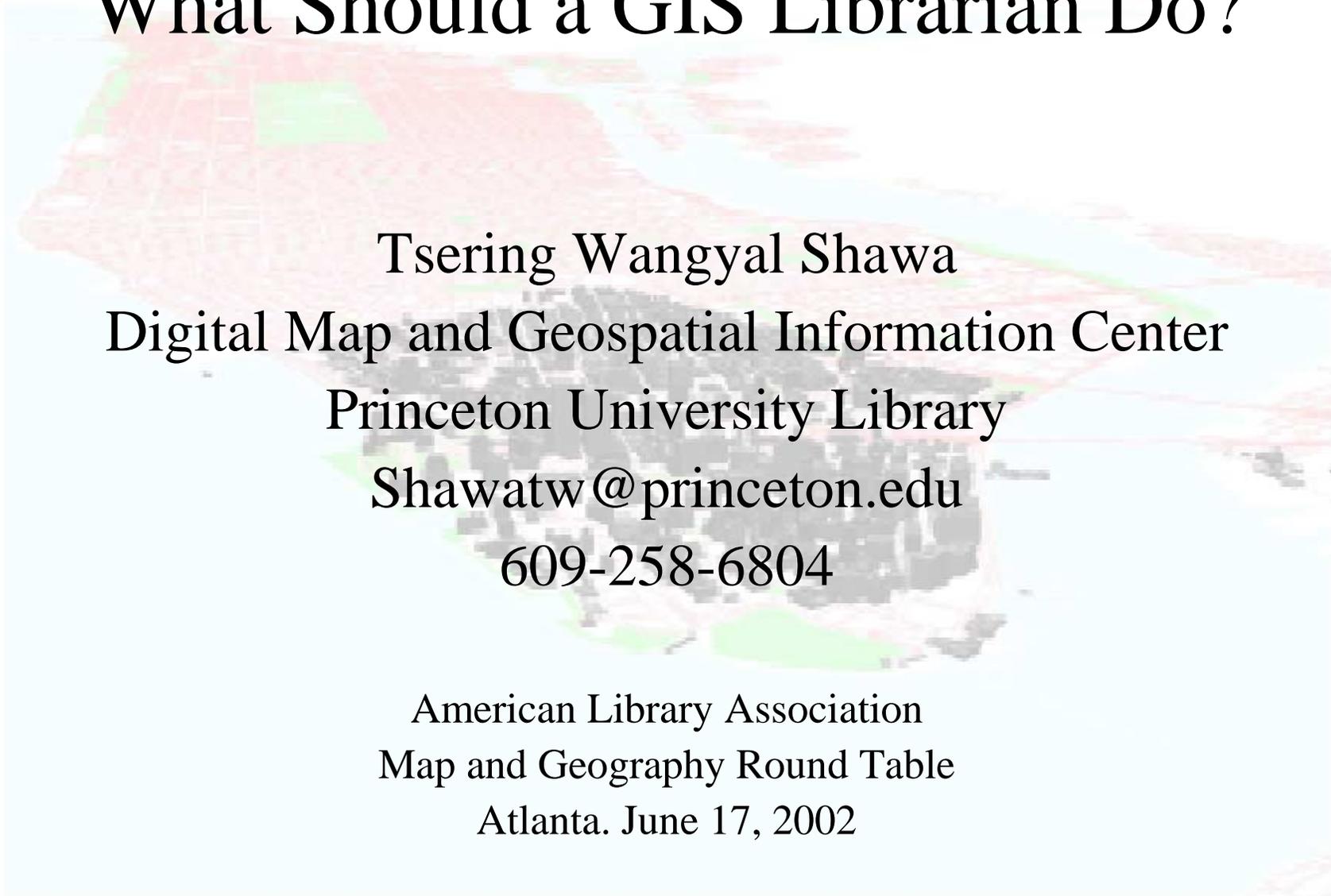


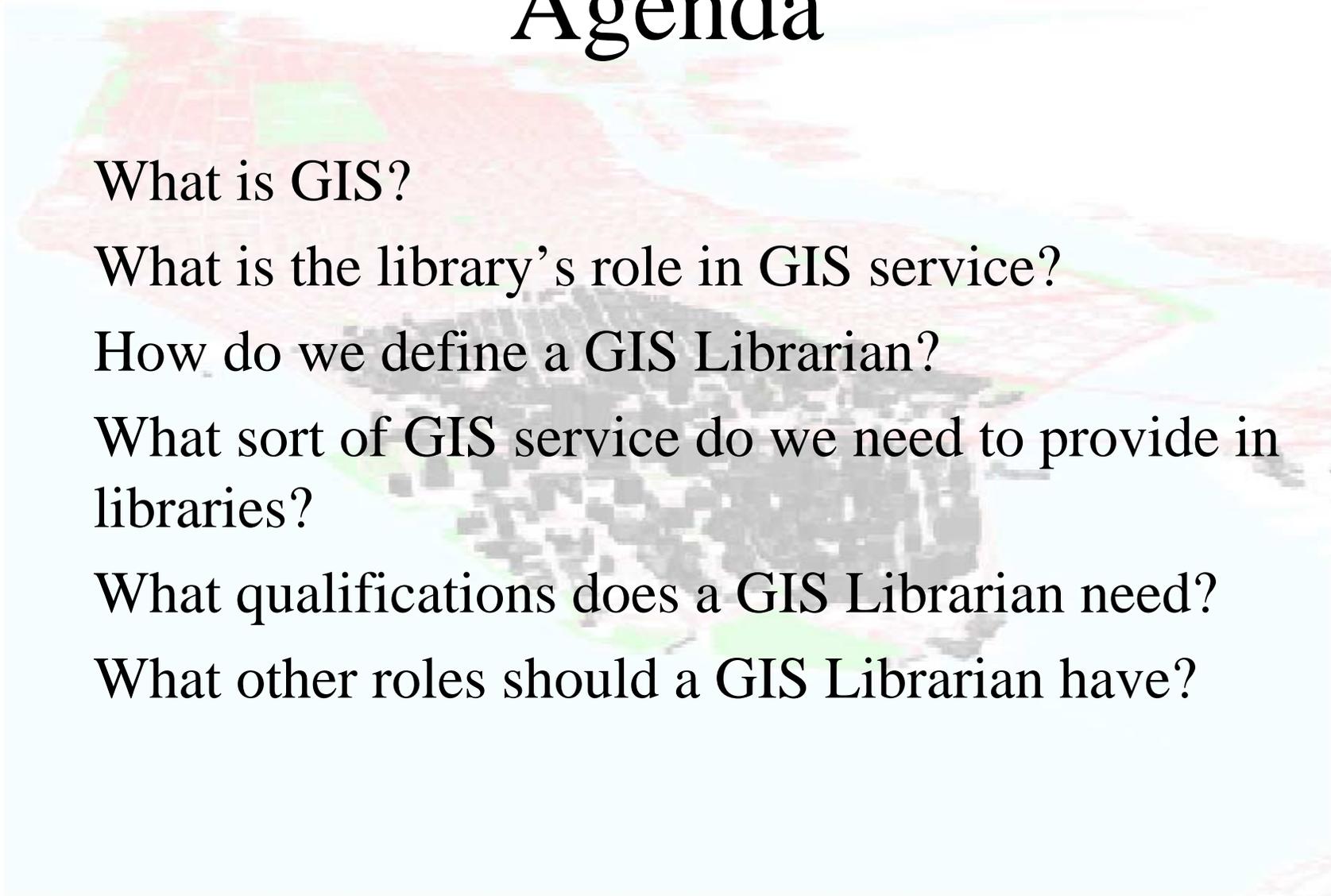
What Should a GIS Librarian Do?



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Agenda



What is GIS?

What is the library's role in GIS service?

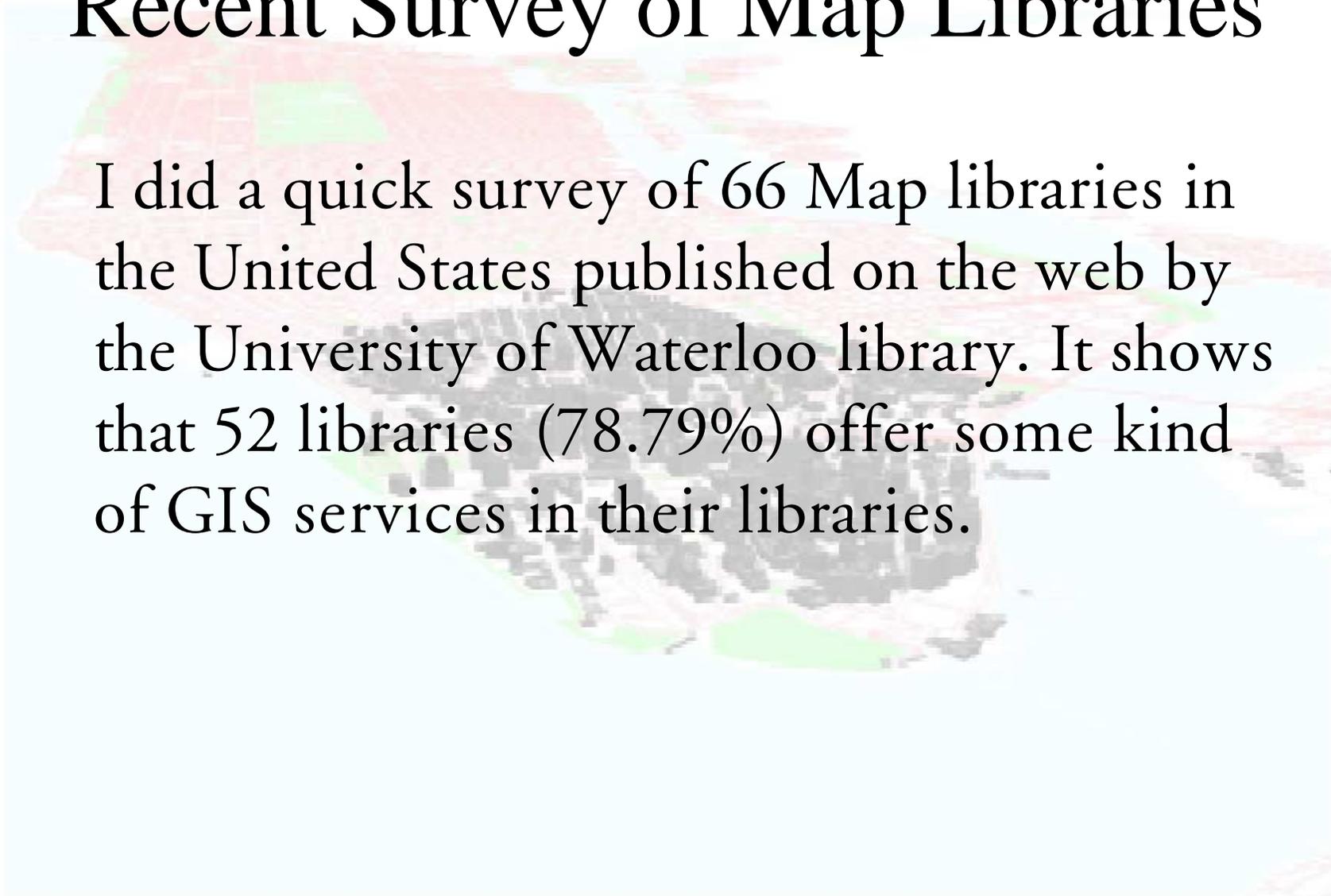
How do we define a GIS Librarian?

What sort of GIS service do we need to provide in libraries?

What qualifications does a GIS Librarian need?

What other roles should a GIS Librarian have?

Recent Survey of Map Libraries



I did a quick survey of 66 Map libraries in the United States published on the web by the University of Waterloo library. It shows that 52 libraries (78.79%) offer some kind of GIS services in their libraries.

GIS Services in Libraries

The services range from a simple GIS service (a general access to GIS data on CDs and some GIS software packages) to a more in-depth GIS consultation service (GIS reference service, data searching, data conversion, GIS analysis and mapping). These services are provided by librarians and non-librarians with different job titles.

Personal Observations

- The first conclusion I can draw from this and other observations I made before, was that there is no clear consensus on what sort of GIS service needs to be provided in the library.
- Second, it seems that GIS service is not given priority by the library administrators.
- Third, many of the GIS services are provided by librarians without proper knowledge and training in GIS.

What is special about GIS?

1. GIS databases are not the same as databases that many librarians are familiar with, such as Lexis-Nexis, MEDLINE, GeoRef., Chemical Abstracts etc. All of these databases are readable, i.e. text-base databases.

What is special about GIS?

2. GIS databases are not simple text-based databases, but are organized according to different data structures, such as vector (shapefile, coverage, DLG, TIGER, SDTS, VPF, DXF, DWG, MIF etc), Raster (GRID, MrSID, BIL, GeoTIFF, IMG, etc.), and numerical data (GPS etc.) and therefore are much more complex than normal library databases.

What is special about GIS?

3. The majority of professional librarians are trained in Information and Library schools to search and understand text-based databases. However, GIS concepts, skills, and data structures are not taught in Information and Library schools, except to librarians who decide to take special courses in GIS and teach themselves GIS.

What is special about GIS?

4. GIS has a fairly steep learning curve and therefore a Librarian without proper training or experience with GIS data may not provide an effective GIS service. A person needs to learn GIS concepts and skills in school, or take training or workshops to understand complex data structures and other issues associated with GIS.

What is Special about GIS?

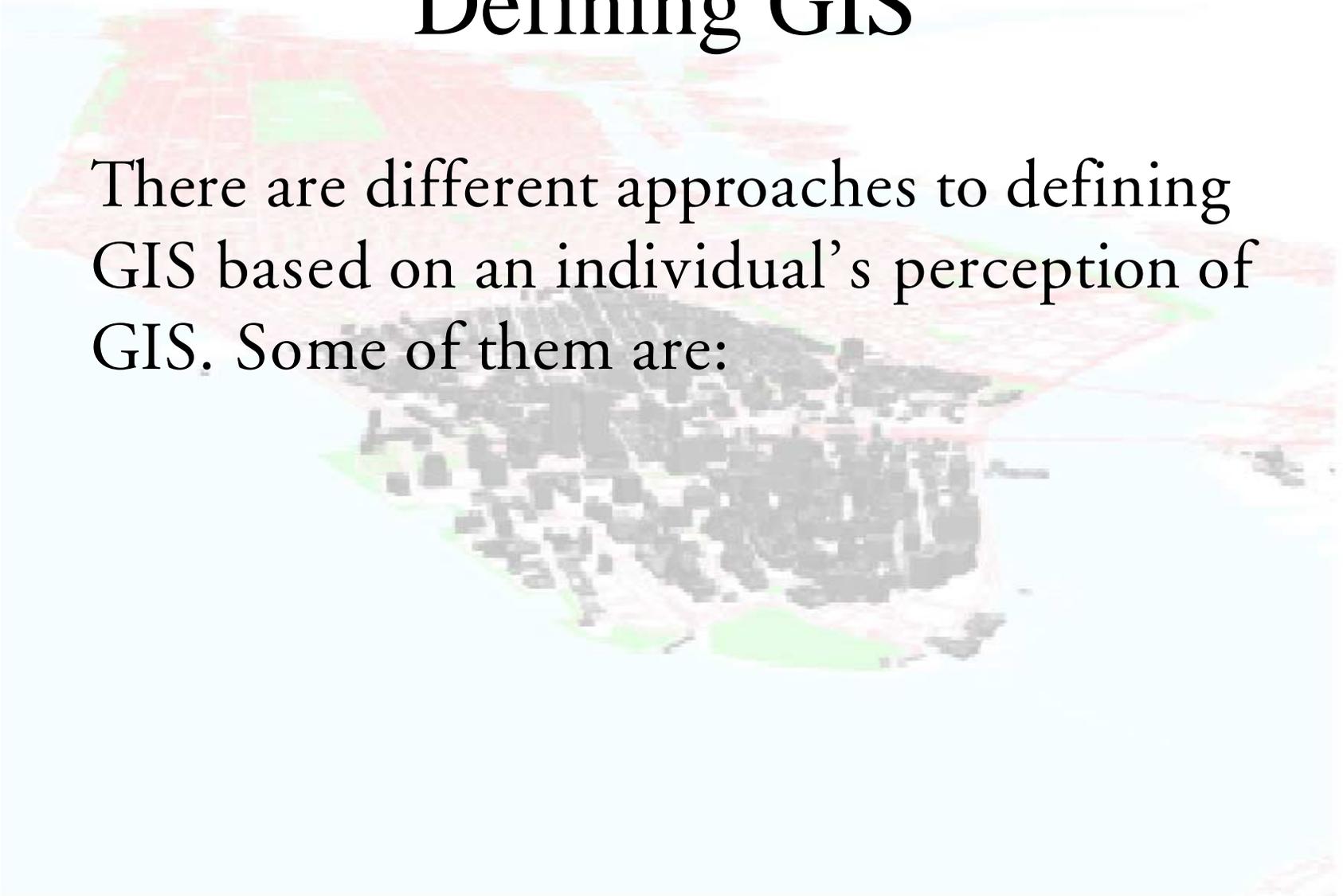
5. GIS is not just data, but is data comprised of two components (spatial or Geospatial and attribute) based on a map view of the world tied to the notion of an absolute space. This data could be visualized in map form and therefore, a person needs to have a good understanding of cartography (art and science of map making).

Misconceptions about the role of a GIS Librarian

I believe that many library administrators and librarians may not have a clear idea about what GIS is, what a GIS Librarian should do, and why we need to provide GIS service in the library.

Defining GIS

There are different approaches to defining GIS based on an individual's perception of GIS. Some of them are:



Toolbox based definition

- "Set of tools for collecting, storing, retrieving at will, transforming and displaying spatial data from the real world for a particular set of purposes" (Burrough, P. A., 1986).

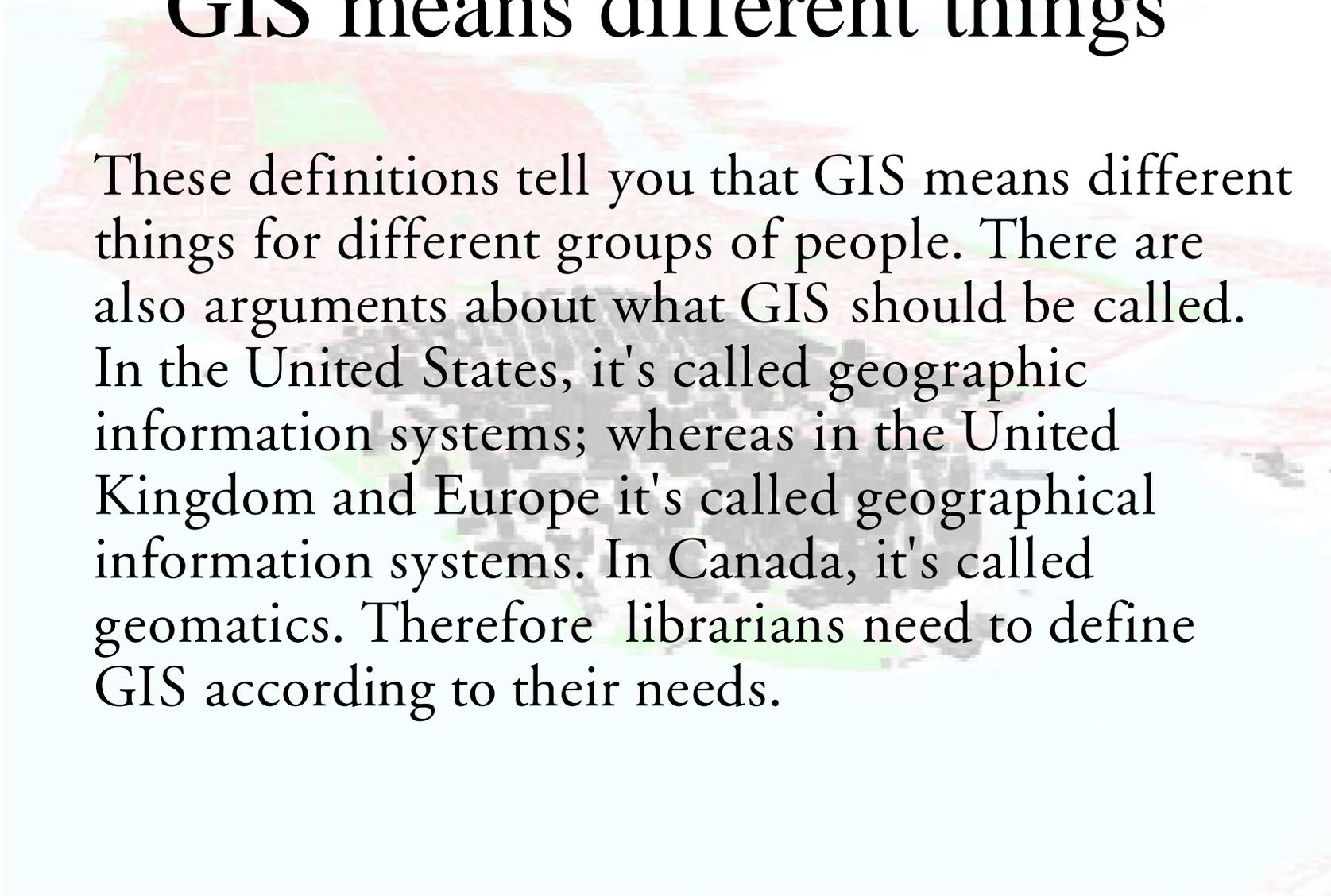
Information System based definition

- “Geographic information systems are information systems which are based on data referenced by geographic coordinates” (Curran, J.P.1984).
- “Geographic Information is information about geography, that is, information tied to some specific set of location on the Earth’s surface”. (Paul A. Longley, Michael F. Goodchild, David J. Maguire, and David W. Rhind).

ESRI definition

- “An organized collection of computer hardware, software, geographic data, and personnel designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information”. (Understanding GIS: The ARC/INFO Method, (Redlands, CA: Environmental System Research Institute, 1990)

GIS means different things



These definitions tell you that GIS means different things for different groups of people. There are also arguments about what GIS should be called. In the United States, it's called geographic information systems; whereas in the United Kingdom and Europe it's called geographical information systems. In Canada, it's called geomatics. Therefore librarians need to define GIS according to their needs.

Some Librarians' view of GIS

Many library administrators think that providing some access to GIS data on CDs and access to GIS software is all that constitutes GIS service.

Therefore, they believe that these services can be provided by map and government document librarians (who are familiar with maps), without giving them enough time and resources to train them in GIS.

Some Librarians' view of GIS

Some administrators think that GIS service in the library means providing access to GIS data, software, and complex GIS analyses help. They believe that these services can be provided more effectively by a so-called GIS specialist who has no library background, but knows how to use GIS data and software.

Inconsistent GIS services in libraries

The misunderstandings of what constitutes GIS service have contributed to ineffective GIS services in many university libraries. I think it is important to understand the primary mission of libraries when introducing GIS service in a library, and also to define the role of GIS Librarians and outline their primary job responsibilities.

Primary Mission of Library

One of the primary missions of the library is to provide access to materials that we collect. However, providing access to materials doesn't mean providing complex GIS analysis help. Librarians should understand their missions, as well as strengths and limitations in providing GIS services in the library.

Focus of Library GIS services

The focus of library GIS services are collection, management, preservation and dissemination of Geospatial data (location data related to earth) or geographically referenced data. I also believe that libraries should provide help with GIS reference questions, converting different data structures , and simple GIS analysis help such as overlays, buffers, spatial joins, and digital map production.

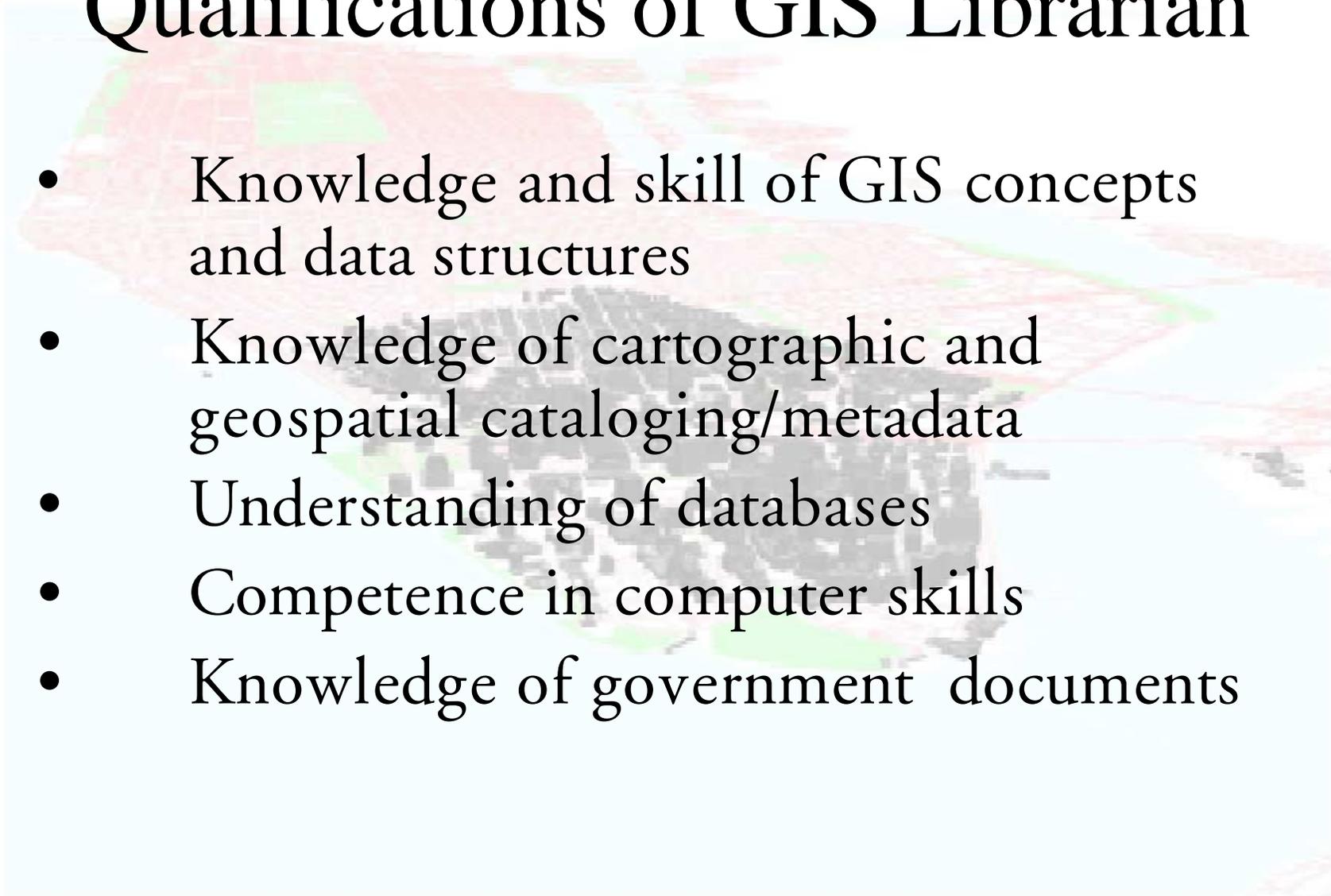
Focus of Library GIS Services

Providing simple access to GIS data on CDs may not be considered as GIS service. GIS service in the library is much more than that. A library needs to provide software to view data, provide professional help to understand what those data mean (accuracy, relevance, source of data), and provide GIS reference help.

Definition of GIS Librarian

A GIS Librarian is a library professional with knowledge of GIS data models, concepts, techniques, technologies, and information and library science, and who can apply this knowledge in collecting, organizing, disseminating, and preserving geographically referenced data, providing general help in GIS reference and in displaying geospatial data.

Qualifications of GIS Librarian



- Knowledge and skill of GIS concepts and data structures
- Knowledge of cartographic and geospatial cataloging/metadata
- Understanding of databases
- Competence in computer skills
- Knowledge of government documents

Other roles of the GIS Librarian

- The GIS Librarian could be a bridge to the future Map Library.
- The GIS Librarian and the traditional Map Librarian could help each other in moving from just a paper map collection to a digital map or geospatial information center.
- The GIS Librarian could help the Map Librarian to convert static analog maps to digital georeferenced maps and give patrons endless possibilities of using digital maps.

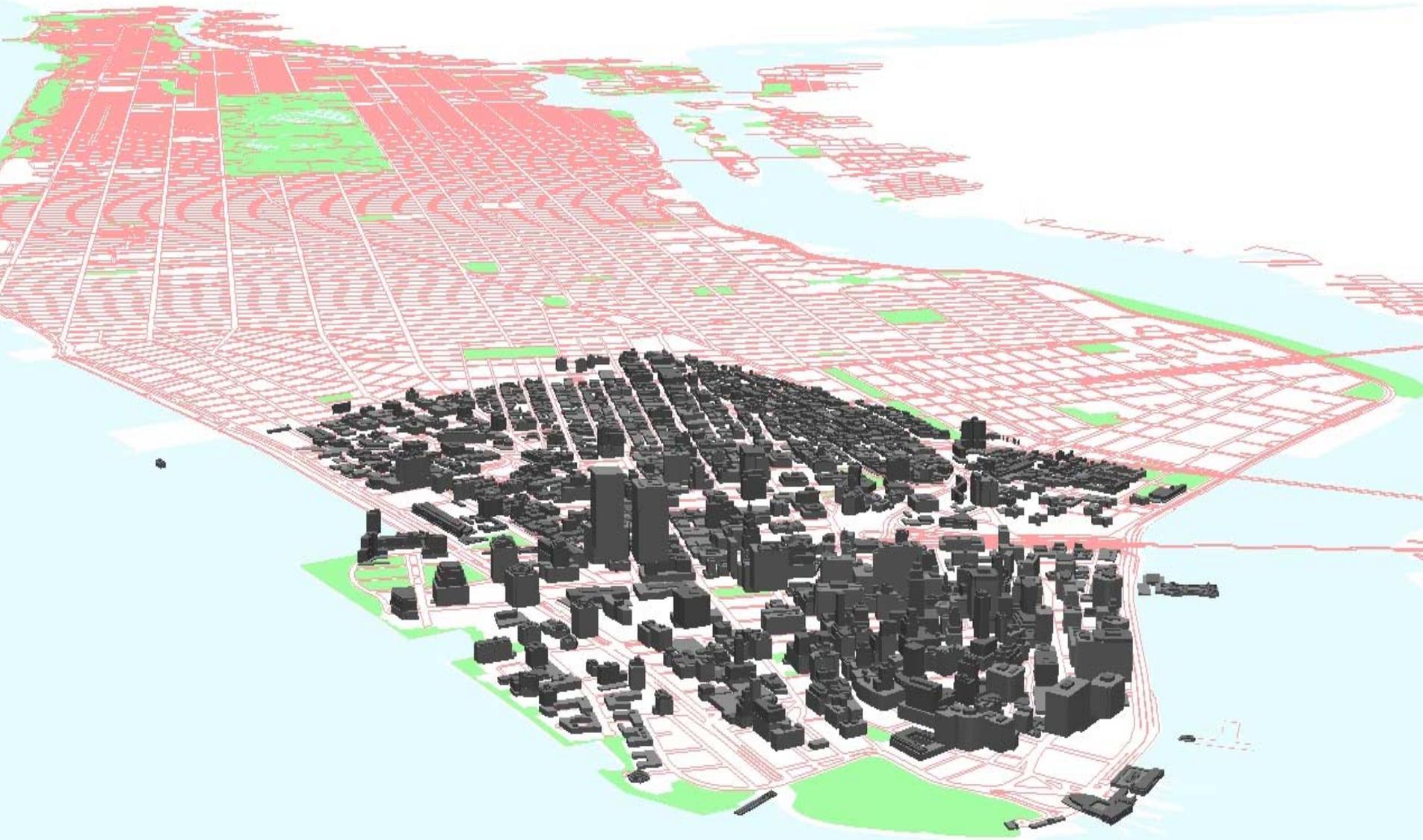
Future of GIS and Map collection

I believe that a transition from paper map collections to digital map or geospatial data collection is inevitable.

- Many of the traditional map makers and publishers are creating maps in digital formats. Therefore, they will have fewer maps in paper format.
- Maps in digital format are more flexible and more powerful. Hence patrons in the future will demand more digital maps.
- Many Map libraries are facing a shortage of physical space. Digital maps will solve the space issue.

Future title of GIS Librarian

I believe that a GIS Librarian should be called a Geographic Information Librarian. In the future, a GIS Librarian will not only deal with GIS data, but also with other geographic information, such as paper and scanned maps, gazetteers, and different kinds of location-based information.



Thank you for your attention