Gateways to Research:
A Study of Nine Smithsonian Institution Libraries

Smithsonian Institution

A study prepared by the
Smithsonian Office of Policy and Analysis for
Smithsonian Institution Libraries and
Smithsonian Office of Facilities Engineering and Operations

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Preface

The Office of Policy and Analysis (OP&A) was pleased to undertake the third, and final, study of Smithsonian libraries that examined current practices and future projections of use of library spaces. These studies were conducted for the Smithsonian Institution Libraries (SIL) and Smithsonian Office of Facilities Engineering and Operations (OFEO). In fall 2006, our inquiry looked at the National Museum of American History – Behring Center (NMAH), the National Museum of Natural History (NMNH), and the Smithsonian Institution Service Center (SISC). The second inquiry examined the libraries that support the Smithsonian's art activities in the Cooper-Hewitt, National Design Museum, Hirshhorn Museum and Sculpture Garden, National Museum of African Art, Arthur M. Sackler Gallery, Freer Gallery of Art, National Portrait Gallery, and Smithsonian American Art Museum. This study examined the nine remaining libraries: Anacostia Community Museum Library, Museum Studies and Reference Library, Museum Support Center Library, National Air and Space Museum Library, National Museum of the American Indian Library, National Postal Museum Library, National Zoological Park Library, Smithsonian Environmental Research Center Library, and Smithsonian Tropical Research Institute Library.

The core data for the report came from interviews, conversations, and emails from staff, fellows, and interns of the museums and research institutes, SIL and OFEO staff, individuals from external organizations, and private researchers and scholars. SIL librarians were especially helpful in making suggestions to our descriptions of their spaces. As we found throughout these studies, from users contacted, to those located in the building in which OP&A has offices to a scientist conducting fieldwork in China, were unanimous in stressing the criticality of the library and its services to their work and in praising the SIL collections. We appreciate users' participation in the study, and their constructive comments and criticisms.

I would like to thank OFEO and SIL for their assistance and guidance in the course of the study. Within OP&A, Zahava D. Doering and Andrew Pekarik were responsible for the data collection, analysis, and report preparation. OP&A spring interns, Bianca Yip and Marilynn Reis, who had worked on the art library study, helped with interviewing, transcription, contacting selected external organizations, and ensuring a smooth transition to a summer intern, Hilary Friedman, who helped in the production of this report. Whitney Watriss's helpful criticism and insights were very much appreciated by the study team.

Carole M. P. Neves
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Executive Summary

INTRODUCTION

This study is the third in a series of three studies investigating patterns of use at Smithsonian Institution Libraries (SIL) in support of a comprehensive master plan for SIL as a whole. It focuses on nine libraries:

> Anacostia Community Museum Library (Anacostia),
> Museum Studies and Reference Library (MS&RL),
> Museum Support Center Library (MSC),
> National Air and Space Museum Library NASM),
> National Museum of the American Indian Library (NMAI),
> National Postal Museum Library (NPM),
> National Zoological Park Library (NZP),
> Smithsonian Environmental Research Center Library (SERC), and
> Smithsonian Tropical Research Institute Library (STRI).

Data for this report was collected through interviews (in-person and by telephone) and correspondence with internal and external users of one or more of the libraries, as well as with senior managers of the museums, senior Smithsonian officials, external experts, and librarians.

FINDINGS

Current Usage.
The nine libraries primarily serve Smithsonian staff, which includes scientists, historians, curators, and other professionals. The libraries also serve people working at the Smithsonian for limited periods, such as interns, fellows, and researchers collaborating with Smithsonian staff, as well as people with no Smithsonian affiliation, such as independent scholars, researchers from other institutions, students, and, in a few cases, the general public. The degree to which an individual library serves these diverse audiences differs according to the size and nature of the library and its geographic location and architecture.

Services, Materials and Facilities.
Library users expressed appreciation for the assistance of librarians, especially their role in helping to find materials for researchers. Other important dimensions of the libraries included Interlibrary loans, electronic data bases, references, vertical files, equipment, and the physical space the libraries provide for reading and research.

Access Methods and Use Patterns.
This study distinguishes three major patterns of use:

1. **Virtual use** - Access to materials through SI electronic gateways and databases or non-SI electronic gateways and databases.
2. **Intermediary use** - Access to materials through inter-library loan (ILL)
3. **Physical use** - In-person use of library space (at their museum's location or elsewhere).

For many researchers, these three patterns of use represent stages of access. Typically the first effort in search of materials is to check the digital catalogue and obtain electronic versions directly. When that is not possible, an ILL request is made. When researchers cannot wait for an ILL to be processed and delivered, or need access to materials available only at a specific location, they often go to other libraries within SI or elsewhere to obtain the materials they need.

These patterns, almost by definition, affect the frequency and duration of use of the library's spaces and determine the importance (to the user) of the physical space. In the course of these interviews, the study team encountered individuals whose use of the library is limited primarily to just one of these patterns. Even when researchers demonstrate multiple patterns, one is usually dominant.

VIRTUAL USE
These researchers access the library resources frequently through their computers, with some indicating daily or weekly use. They state that "I mainly access journals on line and do not need to go to the library." Dedicated virtual users expressed little or no interest in the physical space of the library. But a number of them were very concerned about two matters that seriously affect their usage:

- Access to electronic materials, including electronic books

  One of the major themes in the interviews with predominately virtual users is the frustration of staff that is eager to use electronic journals but cannot get access to them through SIL due to cutbacks in digital subscriptions and limited resources.

  Sometimes users interpret limited library resources as reflecting the value SI places on research and express their dismay with sarcasm. Some of the virtual-use interviewees made it clear that they would rather see money spent on additional electronic access than on improved physical facilities.

- Access from home

  The ideal for many virtual library users is access to full-text journal databases directly from their home computers, not just their office computers. Some have gone through the process of establishing a direct connection, but not all researchers who wanted this access realized that it was available or knew how to go about requesting it.

INTERMEDIARY USE

For some interviewees the library is an important intermediary in obtaining articles and books that they are unable to access directly (either because SIL does not have the material or because SIL is storing it offsite). This intermediary function includes elements of virtual use (finding the reference but not the material itself), and physical use (visiting the library either to make the request or pick up the material).

Among these interviews the study team identified several issues regarding this intermediary function:

- The Ordering process and Delivery times

  While this service is critical for many interviewees, a number noted that the typical delivery times can cause problems. Interviewees recognize that this is more a matter of the urgency of their need than of the library's failure to deliver. Their typical solution is to physically visit the library that has the material they need.

  Opinions differ as to what is a reasonable delivery time for materials not available online or in the library. The range is generally from one week to same day, with many choosing 1-3 days.

- Efficiency: on-site compared to ILL or off-site

  Interviewees noted that It was beneficial and efficient to be able to walk from one's office to the library, do a critical bit of research, and then walk back and continue a project. They felt that the time lost in servicing a request for information, the cost increase (computing hourly salary) wasted on travel to wherever materials reside have not been properly considered.

PHYSICAL USE

Just as there are interviewees who nearly exclusively use SIL online, and others who heavily rely on SIL to obtain material not in their libraries or online, there are those for whom the physical library is of paramount importance. They use it for a number of expressed reasons:

- To keep up-to-date on the field
- To access materials not available elsewhere
- To study materials in ways not possible with electronic versions
- To consult the librarian
- To browse the stacks for new ideas
- To work in a quiet atmosphere
- To hold meetings

In all of the libraries in this study -- even in those where the physical facility is difficult to use and virtual users dominate (such as the NZP Library), there are interviewees for whom the physical library is still very important.

Needs for the Future.
An interviewee's perspective on the needs for the future depends on the use pattern that is most important to that individual.

In the case of virtual users, the need is obvious – more access to electronic databases, full-text journals and electronic books, and easier access from home.

For those who frequently use the libraries as an intermediary to obtain books and articles, the most commonly expressed need is for simpler requesting methods, quicker delivery times when needed, and, perhaps in the future, sending hard copy materials in digitized formats.

For those for whom the physical library is important, there were a number of key issues:

ACCESSIBILITY
Interviewees spoke of the importance of having the physical library as close as possible. This is a problem at NZP where most researchers are not near the library. In the discussion of offsite shelving there was concern about proximity (the closer, the better), content (how decisions would be made about what is kept offsite), and retrieval (the faster, the better).

USER SPACES
According to interviewees, the user spaces at four of the libraries (Anacostia, MSC, NPM, and STRI) are functioning well and are adequate to present needs.

Some interviewees (e.g., Anacostia, and NMAI) would like to see some improvements and others foresee changes in public use that might affect user needs and call for expanded or revised user spaces. At the other libraries there were calls for significantly improved user spaces, most strongly at NZP.

MATERIALS
Although these interviewees seem generally to agree that researchers will probably use more electronic materials in the future, a number said that they would continue to need materials in the physical library.

When interviewees spoke of the expansion of physical materials, they primarily discussed the addition of archival materials. This was true at NASM, NMAI, SERC, and NPM, and was such a common theme that it may also be an issue at other libraries among staff who were not interviewed.

SHELVING

Although the future development of electronic collections might suggest that shelving for physical materials would either increase very slowly or stay the same in the future, the movement to incorporate new, unique materials, such as expanded vertical files and archives, may call for some kind of shelving growth either in the libraries themselves or in offsite locations. Only STRI interviewees spoke of a specific plan to expand shelf space in the near future. Anacostia has the space, but does not need to expand shelf space at the moment.

STAFF

The impact of library staff shortages affects the patterns of access at several libraries, most notably NMAI (since stacks are closed to staff without a librarian being present).

EQUIPMENT

The most common equipment request among interviewees was better network access, such as WiFi, especially for laptops. A few other types of equipment were either praised or requested (e.g., color copiers, and better scanning equipment).

DISCUSSION AND RECOMMENDATIONS

Overall Space Considerations.

Although these libraries differ in size and subject matter, the problem of determining the right size for the physical space is apparent in a number of these libraries. Three factors are the prime drivers of size:

- First, a need for a physical library nearby the researchers is strong, because some staff prefer and/or need physical access to materials and because some materials are unique and cannot be borrowed.

- Second, few researchers spend extended periods of time in the library. Thus, no matter how important the library may be to an individual, this library face-time will not be a significant amount of time.

- Third, when the staff of the organization is not large, the library will appear unused most of the time.

When outside observers perceive that the library is not heavily used, it may seem logical and natural to want to reallocate space for other purposes. Such changes, however, set in motion a chain of reactions that seriously diminishes library use. As the user space shrinks, the physical library no longer is able to function well for those who need it for its space features, such as a quiet place to read and think.

At the <u>beginning</u> of the process, the library has a user space and shelving that is near ideal. Among the nine libraries in this study, STRI, Anacostia, NPM and MSC perhaps come closest to that condition. But because the space is not in constant, crowded use, there can arise a sense that the library space is underutilized and should allow other purposes.

Under this type of pressure, when space compromises are being made throughout the facility or new programs are undertaken by the museum (e.g., NMAI and STRI) the library is obliged to give space to the museum, at least theoretically on a temporary basis.

Several libraries in the study (in particular NMAI and NASM) have reached the next stage, where significant library space is shared with offices or archives. As long as the user space is comfortable, the library remains under pressure to relinquish space.

This situation leads to dissatisfaction from users, who, reasonably, are less inclined to use it, as at NMAI.

Eventually, the user space is so reduced that the use of the physical library is minimal for most researchers. Physical usage is drastically reduced. This is most evident at NZP and MS&RL.

Finally, as at NZP, the situation is so bad that the need for a new library becomes evident.

Metaphorically, this development of the physical library can be compared to the development of the kitchen in the domestic household. Kitchens were once the primary source for cooked food. Eventually, in our time, fast food and ready-to-eat food is ubiquitous and the kitchen is no longer the essential center for food preparation and consumption.

But as their critical importance diminished, the average size of kitchens has been growing, due to the fact that the kitchen has come to be recognized as a location that provides more than just the basic food required for survival. Similarly, physical libraries may not be strictly necessary today. But the fact that one could survive without them does not mean that the elimination or shrinking or de-emphasizing of either kitchens or libraries is advisable or productive. Both still play important roles.

Additional Observations

THE DIGITAL ENVIRONMENT.
Everyone interviewed – researchers, scientists, interns, managers, librarians, etc. – recognized that the expanding world of digital materials and technologies is

changing the nature of libraries and that the change will only increase in the future. At the same time, it was evident from these interviews that, although the development of digital systems and the availability of digital images and information are likely to increasingly aid research, they are not likely to replace the need for access to monographs and other non-digital materials in the near future.

OFFSITE SHELVING.
From the point of view of researchers interviewed in this study, the more material that is removed from locations with convenient access, the more difficult some research tasks become. If materials need to be moved offsite, direct access will continue to be important. It is likely that user involvement in the choice of what to move offsite, subsequent accessibility to shelving, and fast delivery of digital imagery on-demand, would make offsite locations palatable to most researchers.

FUTURE SPACE NEEDS OF THE NINE LIBRARIES.
Of the users in the study, the research staff of NZP (both in Washington, DC and in Front Royal, VA) seems to have the most immediate needs for improved/relocated facilities. The ninth library, MS&RL, is unique in that its clientele includes both Smithsonian researchers and colleagues in the larger museum community. At the present rate of growth, it will face space needs in the future.

The findings show, as did previous study, interviewees have criticisms of the way that many of the libraries are physically set up and whether they are physically accessible. It is taken as a given that these libraries should be accessible to people with physical disabilities and, where they are not, remedies are called for.

RECOMMENDATIONS

- **Offsite Shelving. It is important to establish a state-of-the-art offsite location for SIL libraries.**

- **Design. In designing/redesigning library spaces, SIL should emphasize functionality and flexibility for all workspaces, and review the services provided to both external and users with special attention to standardizing regulations.**

- **Public access. While the primary role of these libraries is to support and enhance Smithsonian research, the study team suggests, as a space planning principle, exploring the possibilities of increased use of the physical libraries by the general public and specialized interest groups.**

- **NZP Needs.** Relocate the present library at NZP and establish library service at CRC.

- **Accessibility.** Ensure that all libraries are fully accessible to users with physical disabilities. While this is especially evident at SERC, an overall review should be undertaken of the libraries included in the study as well as other SIL facilities.

- **Guidelines.** Establish guidelines and make possible optimal user space that encourages scholarly activity. Such guidelines may mean removal of offices in space previously allocated to the library or relocation of the library.

Introduction

This is the third in a series of three studies conducted by The Office of Policy and Analysis (OP&A) on library use at the Smithsonian Institution. The studies began with a request from the Smithsonian Institution Libraries (SIL) to the Smithsonian Office of Facilities Engineering and Operations (OFEO) to develop a master facilities development plan for the libraries Smithsonian-wide. Although SIL appears in the master plans for several facilities, there has been no comprehensive master plan for SIL as a whole. At the time of the first OP&A study (March 2006), comprehensive facility master planning had been recently conducted at the National Museum of American History – Behring Center (NMAH), and was in process at the National Museum of Natural History (NMNH). In both instances these plans involved the future disposition of SIL space within the facilities. At the same time, major renovations were planned or underway at both museums that would more immediately affect SIL space, and plans were being developed to relocate the Smithsonian Institution Service Center (SISC), currently located at 1111 North Capitol Street.

OP&A was asked to undertake phased studies to help inform the SIL master planning effort and to respond to immediate needs. The initial study focused on NMAH, NMNH, and SISC (OP&A 2007a). The second phase (OP&A 2007b) focused on art libraries. This final phase focuses on the remaining nine libraries:

        Anacostia Community Museum Library (Anacostia),
        Museum Studies and Reference Library (MS&RL),
        Museum Support Center Library (MSC),
        National Air and Space Museum Library NASM),
        National Museum of the American Indian Library (NMAI),
        National Postal Museum Library (NPM),
        National Zoological Park Library (NZP),
        Smithsonian Environmental Research Center Library (SERC), and
        Smithsonian Tropical Research Institute Library (STRI).

Like its predecessors, the purpose of this third study is to provide input to both SIL and OFEO as they work together to develop master plans for library spaces and eventual replacement of SISC. The emphasis is both on the present and the future – to describe the current use of these nine libraries and to address questions of how these libraries can continue to support the Smithsonian research community twenty years in the future, the timeframe of the master plans. In addition, this study considers various options to reconfigure the separate library spaces as well as to address offsite shelving needs for library collections.

Since Smithsonian research is conducted in collaboration with the broader academic and museum communities, and many of its facilities and resources are available to outside researchers, OP&A also solicited comments and opinions outside the Smithsonian on the current use and future development of research libraries and the attendant space implications.
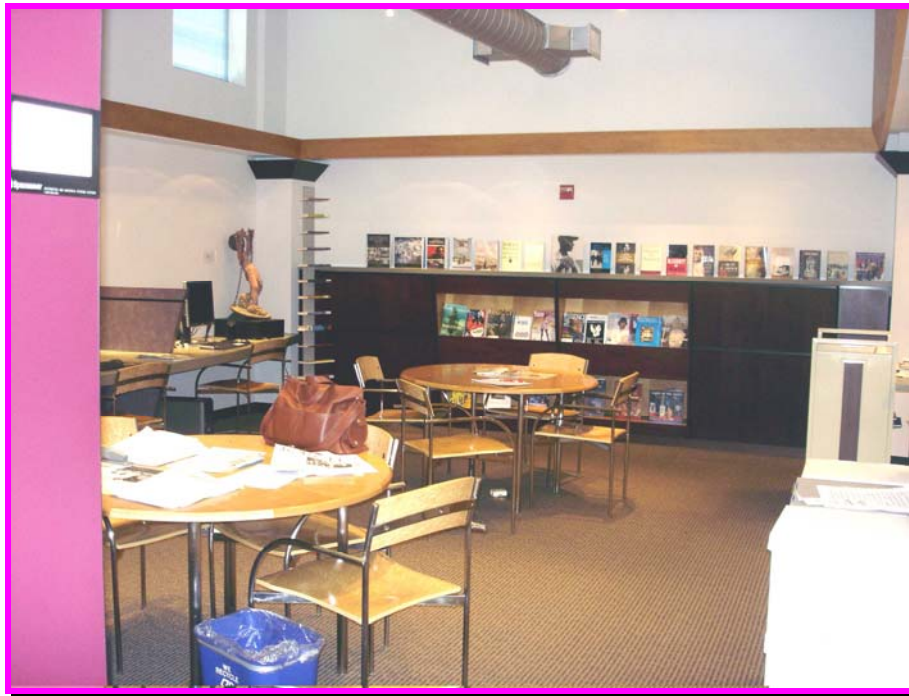
OVERVIEW OF THE LIBRARY SPACES INCLUDED IN THE STUDY

The nine libraries included in this study are described below.

Anacostia Community Museum Library (Anacostia Library)
The Anacostia Library, located on the second floor of the museum's building in southeast Washington, DC, has existed since the museum's founding in 1967. Initially it was a small, informal resource center supporting the staff. Space for the current library, including space for future growth, was acquired as part of the renovation of the current Anacostia Community Museum building in 2001. The Anacostia Library became part of SIL in 1991.

The library occupies approximately 1566 square feet, including an enclosed librarian's office, a service desk, and a reading room. The reading room, adjacent to the open compact shelving, has two round tables for users and three public computer terminals, an exhibit book stand for paperback books, and a display shelf with new additions to the collection.

The library's collection has over 5,000 books and close to 100 periodical titles in various formats. It actively collects materials relating to the history and culture of the African diaspora in the Western hemisphere. Subject area strengths include African American experience in the "upper south", African American women, slavery, religion, and African American communities. There is also a growing collection of African American children's books (now about 100). The library supports work on all aspects of the history and culture of the African diaspora in the Western hemisphere, including contemporary issues, such as the culture and politics of the hip-hop community, inquiries into genealogy, and questions about inherited treasures. The library's main foci are to support the research, exhibitions, and public programs of the Anacostia Community Museum as well as the staff of the future National Museum of African American History and Culture.

The collection also includes a vertical file of special and emerging topics in African American history and culture, such as the history of the Anacostia community. The library maintains this file to ensure that this type of rarely published information is also readily available for the library users

The library is open and staffed fom Monday—Friday, 8:30 am - 5:00 pm, although Anacostia Museum staff has access 24/7 with their badges. It is open to the public by appointment. A microfilm reader and scanners are located at the back of the library, but they are rarely used since many researchers bring in portable scanners and use available copiers in the museum.

Museum Studies & Reference Library (MS&RL)
MS&RL is one of the largest sources of library, information, and bibliographic services for museum professionals and researchers in the United States. An information center and library, it offers information resources on all aspects of museum operations and a comprehensive reference collection to support

scholarly research relating to the Smithsonian's programs. Subject areas include museum operations, organization, administration and management, programs, education, and research in museology. The MS&RL collection also contains the most recent editions of reference works. When MS&RL was established in 2002, it integrated collections formerly known as the Museum Reference Center and the Central Reference & Loan Services.

MS&RL is located on the ground floor and mezzanine of the National Museum of Natural History building. Its entrance is on the same corridor as the main offices of SIL. The ground floor contains a reference librarian's desk, a service desk, three public use computer terminals, a printer, and current periodicals.

The mezzanine houses the more than 28,000 books, over 280 periodical titles, multi-media material, and the locked "Smithsoniana Collection" of books by and about the Smithsonian Institution from its creation in 1846. It also contains all of the serial publications of SI (e.g., Proc. of the United States Nationl Museum and Smithsonian Contributions to Earth Science). Also on the mezzanine are two tables, one computer terminal, and two desks for library users. The total library space is about 2,665 square feet. Stairs and an elevator provide access to the mezzanine. All of the materials are stored on standard shelving, with the exception of some materials in file cabinets (e.g., some reports), which are easier to access.

All MS&RL materials, except reference books and Smithsoniana, can be checked out by Smithsonian staff. Books may be borrowed by permanent staff for six months, subject to recall, with renewal by telephone or in person. Library materials that circulate are available to the public through the interlibrary loan system provided by public, special, business and academic libraries (Interlibrary loan link). The library is staffed Monday - Friday, 9:00 am - 5:00 pm, although Smithsonian staff has access at other times.

Museum Support Center Library (MSC Library)
MSC, opened in 1983 and located about six miles southeast off the National Mall, is a museum collections management facility designed for collections storage, research, and conservation. In its laboratory and office areas, the MSC houses the Smithsonian's Museum Conservation Institute (MCI), the Laboratories of Analytical Biology (LAB), and a conservation laboratory for the National Museum of Natural History's (NMNH) Department of Anthropology. The National Anthropological Archives (NAA) and the Walter Reed Biosystematics Unit (WRBU) are also located at MSC. In addition, other departments from the NMNH maintain substantial storage and laboratory facilities at MSC (including the new Pod 5).

The MSC Library serves the research needs of all staff at the MSC facility. Its collection includes over 30,000 volumes of books and journals, and it maintains current subscriptions to over 100 scientific publications. The Library is located in a large space (about 4000 square feet) on the second floor of MSC's unique zigzag shaped building.

The library reading room contains 10 work tables and 4 private study carrels, with seating for as many as 20 users. Reference books are on standard shelves in one section of the library and on accessible compact shelving in another. The room overlooks the Suitland campus. The library houses the MSC's Computer User Center, which supplements the library's two public workstations and printer with 3 workstations and 2 printers, including space for training people on library database use. Two microfilm reader-printers and a photocopy machine are available for users. At least one librarian and/or one library technician provide services during normal hours (8:45 am – 5:15 pm) during the week.

National Air and Space Museum Library (NASM Library**)**
The NASM Library, now one of the largest branches of SI, the library evolved from the historical working collections of the museum, which were originally housed in the Smithsonian's Arts and Industries Building. The collections were organized into a library in 1972. Its main purpose is to support the specialized research, exhibitions, and public programs of NASM and other museums and offices within the Smithsonian. Research at the library covers a wide range of topics including, but not limited to, the scientific, historical, and technological development of aerospace engineering, as well as the psychological and societal impact of aerospace technology and space exploration.

The library holds an extensive collection of monographs, serials, microfilms, and CDs, including technical documents, flight manuals, and complete runs of early 20th century periodicals. The NASM Library houses more than 29,000 books, 11,000 bound serials, and a microform collection. The scope of the collections covers aeronautics and astronautics, the history of aviation and space flight, astronomy, and Earth and planetary sciences.

Contemporary materials include a major donation from the Institute of Aeronautical Sciences Library, the William H. Burden Library, and the National Space and Aeronautics Administration (NASA) (e.g. the Bellcomm Library on Space Sciences and Exploration). The Civil Aeronautics Board (CAB) and the Federal Aviation Administration (FAA) are another long-term source of donations (ongoing for nearly 25 years); the materials focus mainly on civil aviation and air transportation (see the FAA Finding Aid) and transfers from The Air Transportation Association.

The Ramsey Room, named in honor of Admiral DeWitt Clinton Ramsey, an early naval aviator, houses the Library's collection of rare materials on aeronautics and space flight. William Burden's Library of works on early ballooning and the Bella Landauer collection of aeronautical sheet music are also housed in this room. In addition, there are a large number of important first editions, many of them autographed by the pioneers of flight.

The library is located at the west end of the third floor of the NASM building and occupies approximately 3,200 square feet. Surrounding the open-access manually operated compact shelving are offices for the Library and other NASM staff (Archives, Exhibitions, and public programs) and a service desk. Beyond the stacks is the NASM Archives Division, which is administered by the museum.

The archival materials are shelved separately from the library stacks. The Ramsey Room and a large reading room are adjacent to the library. An additional 35,000 items are held in off-site storage at 1111 North Capital Street. These materials are largely comprised of the FAA's gift to the NASM Library.

The reading room houses the reference collection of monographs and serials, as well as atlases, dictionaries, and current issues of several periodicals.
In addition to eight work tables and one public-use computer, the reading room includes comfortable lounging chairs and a small sofa adjacent to the current periodicals. The library's windows face west, overlooking the National Mall. Photocopiers, microfilm reader/printers, and video-printers are available to users.

External researchers working in the NASM Library reading room also have ready access to the Archives. This co-location of the NASM Library with the NASM Archives provides a unique research center dedicated solely to the study of the history of aerospace science, technology, and engineering unparalleled in the U.S. or the world.

The NASM Library is staffed Tuesday - Friday, 8:45 am - 5:15 pm, but NASM personnel have 24/7 access to the open shelves. The library is open to outside researchers by appointment. The staff includes two librarians and two technicians.

National Museum of the American Indian Library (NMAI Library)
The NMAI Library, opened in 1999, is housed in the Cultural Resource Center (CRC), Suitland, Maryland. Researchers, exhibition and program staff of the National Museum of the American Indian on the Mall, the Cultural Resource Center, and the George Gustave Heye Center (GGHC), a major exhibition facility located in the U.S. Custom House, Manhattan, New York, are all supported by the NMAI Library and its staff.

The NMAI Library's growing collection currently consists of around 20,000 volumes, including periodicals. The Library collects comprehensively in all areas relating to the indigenous peoples of the Western Hemisphere and Hawaii, including history, ethnology, religion, art, oral tradition, education, language, literature, biography, archaeology, and contemporary issues. Also collected are current publications, e.g., newspapers and newsletters, produced by Native groups.

The library space includes SIL and NMAI staff offices, a small conference room, private and group study rooms, a circular service desk, both staff and public photocopying areas, a reference room, and a rare books room. At present, two NMAI/CRC staff members occupy offices in the library space, due to constrained space elsewhere in the CRC building. Additional space (e.g., a study room) is also scheduled for use as staff offices. A library work room and the Microfiche/AV room previously became the photo archive and a staff office. There are three tables in the reference room and one in the rare book/room for user use.

Access to the library's compact shelving is restricted for security reasons, because the museum's archive collection is housed in the same space and a barrier between library and archives does not currently exist. The compact shelving was designed for 40,000 volumes plus room for growth; at present, about a third of the shelves are in use.

The library is open and staffed from Monday—Friday, 9:00 am - 5:00pm, and is open to the public by appointment. There is no after hour access.

National Postal Museum Library (NPM Library)
The National Postal Museum (NPM) is located on the lower level of the historic City Post Office Building, next to Union Station, which was constructed in 1914 and served as the Washington, D.C., post office from 1914 through 1986. NPM occupies 75,000 square feet of the building, with 23,000 square feet devoted to exhibition space and 6,000 square feet to the research library. NPM was created by an agreement between the Smithsonian Institution and the United States Postal Service in 1990 and opened to the public in 1993. The collections were previously housed in the National Museum of American History.

Stamps are considered a valuable source of information on contemporary social, political, and cultural climates. The NPM Library supports postal history and philatelic research with an extensive collection of books, journals, catalogues, and archival documents, making it among the world's largest postal history and philatelic research facilities. The Library contains more than 6,000 books, 7,000 serials, manuscripts, photographs and many auction and stamp catalogues. Examples of its archival holdings are the files of the Third Assistant Postmaster General, Highway Post Office, Aerial Mail Service, and Panama Canal Zone Post Office. The rare book collection includes the J.W. Scott & Co. Monthly Price List, annotated copies of the Catalogue of the Philatelic Library of the Earl of Crawford, K.T., and the Catalogue of the Royal Philatelic Collection.

Although the resources at the National Postal Museum Library focus on the postal history and philately of the United States, the collections are international in scope. The library is particularly strong in materials from the British Commonwealth, France, and Germany. The library also supports exhibition development, public education programs, and outreach, as well as research.

Although situated on a lower level, the library space has a very high ceiling (18 feet), windows near the ceiling (i.e., at street level), and a secured stairway leading down from the street. At one end of the space are a librarian's office, a media room, a service desk, workroom, and two public-use computers. Along the length of the space is compact shelving and numerous file cabinets housing vertical files. The Library's archival collection is in locked compact shelving (occupying about one third of the shelves). A large reading room contains three tables with electrical outlets for computers and seating for about eighteen users, as well as eight easy chairs. NPM staff occupies offices at the far end of the library, in space that was formerly part of the Library.

The Library is open and staffed by a librarian and part-time technician from 10 am - 4:30 pm Monday – Friday, although NPM staff have 24/7 access. It is open to the public by appointment only. A photocopy machine and a microform reader/printer are available in the media room for users.

National Zoological Park Library (NZP Library)
The NZP library, one of the Smithsonian's oldest, was established in 1898. It supports the research, exhibition, and public programs staff of the National Zoological Park (NZP). The Library houses a collection of more than 5,000 books and 185 serial titles on zoos and aquariums, animal behavior, husbandry, veterinary medicine, pathology, genetics, nutrition, wildlife conservation, biodiversity, and horticulture.

The library also has a special collection (called the Zooiana Collection) of publications from other zoos and aquariums, such as animal collection inventories, annual reports, guidebooks, and miscellaneous pamphlets and ephemera. Many of these publications are over 100 years old and contain photographs and illustrations that provide historical documentation of zoos.

The library is located in NZP's Visitor Center Building and currently occupies about 1065 sq. feet. The majority of the space is devoted to steel shelving, with a librarian's desk and one user carrel along one side. Until recently, the library included a reading room, with tables, chairs and sofas. It was partitioned into the library and an NZP staff office in 2006. Another small collection of about 680 books related to animal disease and diagnosis and veterinary medical care is located in the Pathology and Animal Hospital building. An additional collection of about 4,000 books and serial items, supporting research in such subjects as reproduction, species conservation, and biodiversity monitoring is located at the Conservation & Research Center (Front Royal, VA).

Library service to users, both SI and non-SI is mainly provided electronically, such as articles available online. Most communication is done using email, often with articles supplied as attachments. The library is staffed two days a week, 8:00 am - 4:30 pm. NZP staff can arrange to enter the library at other times. The public is welcome to use the collection by appointment.

Smithsonian Environmental Research Center Library (SERC Library)
The SERC Library is located in Edgewater, Maryland. It primarily serves SERC researchers and the resident Chesapeake Research Consortium (CRC), and other Smithsonian staff, fellows, and research associates. The library was founded forty years ago (1977) at the Chesapeake Bay Center for Environmental Studies (CBCES) to support the Center's research and education programs. The CBCES was renamed the Smithsonian Environmental Research Center (SERC) in 1986 when the Smithsonian Radiation Biology Laboratory (SRBL) in Rockville, MD was closed and there was a partial merging of staff and collections.

The SERC Library collections support research in both the laboratory and the field. With collections of books and periodicals on global change, environmental

biology, estuarine land/water interactions, landscape ecology, and the dynamics of terrestrial and aquatic biological populations, and an emphasis on the Chesapeake Bay and its surroundings. It also supports the education staff, which develops programs based on SERC research on the human impact on the environment to the public (particularly for children in grades K-12).

The library contains approximately 12,500 monographs and bound journals, and over 110 current scientific journal subscriptions. All monographic materials (including a substantial percentage of technical reports, working papers, proceedings, etc., that are not commercially published) related to the Chesapeake Bay and its surrounding areas comprise a separate "Chesapeakiana" collection. Most materials are in hardcopy format, though, increasingly, back issues of journals and dissertations are being collected in microfilm or microfiche formats. Appropriate videos and monographs accompanied by CDs are also collected. At present, the library also has the SERC corporate archives.

The SERC Library is housed on the second floor of Mathias Building, at the West end of the SERC campus. It was originally on the first floor of the Mathias Building, in smaller space, and moved into the present location in 1986. It is reached via a staircase, as no elevator is available. The library occupies approximately 1,600 square feet, and, in addition to the open standard shelving, has photocopy machines, a single work table and public use terminals. The building's floors will not support compact shelving. Although the library is open and staffed during weekdays (8:00 am – 4:30 pm), SERC personnel have 24/7 access.

Smithsonian Tropical Research Institute Earl S. Tupper Library
(STRI Library)
STRI, located in the Republic of Panama, was established to further the understanding of tropical nature and its significance to the world at large, to train students in tropical research, and to promote conservation by making the public aware of the beauty, importance, and fragility of natural settings in the tropics. STRI is served by the extensive collection of the Earl S. Tupper Library. The STRI Library collects research-oriented, academic, and highly technical materials in: animal behavior, anthropology, archaeology, biodiversity, bioprospection, bryology, canopy studies, conservation of the tropics, coral reefs, ecotourism, educational and outreach programs, entomology, evolution, geology, global change, herpetology, history of natural history, indigenous groups, long-term monitoring projects, mammology, marine invertebrates, molecular biology, nature legislation, neurobiology, ornithology, paleoecology, pharmacognosy, plant physiology, plant taxonomy, phycology, primatology, natural and protected areas, research policy, soils, the Panama Canal and its watershed, and Panamanian history.

There are over 32,000 monographs, 28,000 serial volumes, 500 maps, and 6,000 microfiche/microfilms. Since 1983, the collection has been housed in its own building; a 1994 renovation increased the space to 1,900 square meters (20,451

square feet). At present, another renovation is underway that will refurbish the public areas, including a bathroom facility for the disabled, install WiFi, provide space for 11 on-line public access catalogs, and create more windows for increased natural light in the reading area and a suitable Reference/Circulation to assist patrons. The Restricted Use Collection protects over 600 monographs and one serial title from the late 19th century/ beginning of the 20th century. The library also has smaller collections at Barro Colorado Island (350 volumes), Bocas del Toro Station (300 volumes) and the Galeta Research Station (500 volumes). The library's ability to serve its clients is enhanced through exchange agreements with external libraries located throughout Latin America and agreements to provide service to external users (e.g., university students).

The building has four floors, with the library occupying the main floor and the closed stack area occupying four floors. The stack area was added as part of the 1994 renovation. The collection is stored on three floors in standard, i.e., noncompact shelving. In addition to the librarian's office, a workroom and reference/circulation desk, the main floor includes 4 offices, the reading area, and a meeting room. The reading room has 13 tables, each with four chairs. A total of 5 public use computers are available. The casual reading area has 2 sofas, 8 reading chairs and 5 small coffee tables. Users also have access to a xerox machine, a multifunctional copier, scanning equipment, a microfiche/microfilm digital reader/printer, 5 map cases, and vertical files.

The library's staff (two librarians, two library technicians, and library aide) serves the public six days a week, in addition to Smithsonian scientists, visiting scientists, and graduate students working in STRI laboratories and field stations across Panama. It also serves any STRI staff and affiliated researchers at any of their field posts around the world electronically.

METHODOLOGY AND ORGANIZATION OF THE REPORT

This report is based primarily on data collected through interviews (in-person and by telephone) and correspondence with internal and external users of one or more of the libraries, as well as with senior managers of the museums, senior Smithsonian officials, and external experts. Smithsonian users include scientists, curators, museum specialists, research assistants, collections management staff, fellows, interns, and volunteers. External users include scholars, academicians, and graduate students. The initial lists of both internal and external users were obtained from the librarians at each of the libraries, who were asked to identify frequent users. Additional names were obtained or recommended by respondents in the course of the initial interviews, In addition, some staff members heard about the study and asked to be included. The result of this process means that the interviewees do not constitute a representative sample of staff or external users. The study team also interviewed all nine librarians, most of their assistants, SIL managers, and a number of OFEO staff. Secondary data include memos and reports provided by OFEO and participating libraries. A total of 214 individuals participated in the study.

This report does not contain a literature review. The materials reviewed for the two predecessor reports were considered current and applicable to the issues involved here; bibliographies of those materials appear in each report.

The Findings section reflects the main points that emerged from the study. Interview data were analyzed with the help of content analysis software (NVIVO7). The Discussion and Recommendations sections reflect the study team's deliberations.

Part A. Findings

CURRENT USAGE OF THE NINE LIBRARIES

Users of the Libraries

As in previous studies in this series, the nine libraries serve a mix of users. Primarily they serve Smithsonian staff, which includes scientists, historians, curators, and other professionals (such as grant writers, editors, educators, etc.). The libraries also serve people working at the Smithsonian for limited periods, such as interns, fellows, and researchers collaborating with Smithsonian staff, as well as people with no Smithsonian affiliation, such as independent scholars, researchers from other institutions, students, and, in a few cases, the general public.

The degree to which an individual library serves these diverse audiences differs according to the size and nature of the library and its geographic location and architecture. At libraries such as NZP or MSC, users are almost entirely Smithsonian researchers. At the STRI Library, half of its users are high school and university students, non-governmental organizations, and private citizens. MS&RL serves as the *de facto* museum studies library to the two graduate programs at George Washington University (GWU) (Museum Education and Museum Studies), since GWU libraries do not collect in the areas of museology. At some libraries (e.g., NASM and MSC), the architecture of the spaces provides these users with comfortable work space, while others offer limited, uncomfortable work space (e.g., NZP and MS&RL). Nonetheless, all nine of these libraries were designed as research libraries and exist to facilitate the professional activities of Smithsonian staff.

At the NPM and Anacostia libraries, several interviewees would like to see the libraries be more available to the general public. They acknowledge, however, that the current location of the spaces and access issues make such use difficult.

SERVICES, MATERIALS, AND FACILITIES

Librarian Services

As in the other studies, most users valued the assistance of professional, experienced reference librarians. Librarians orient new staff members, interns, students, and fellows and frequently are the interface between the materials and the users.

There was appreciation for the critical role that librarians play in searching for materials and in helping researchers get materials they cannot obtain easily on their own.

> *[The librarian] keeps us up to date with searching and materials. […] keeps up with what's going on within the library community and reports back to us. This place would collapse without someone like [the librarian].*
>
> *****
>
> *I'd just like to say that I received spectacularly good service (by e-mail and snail mail) from [the librarian] and could not have been happier with the way my questions were handled.... I received wonderful material, including some I hadn't even been aware of, and prompt and personalized service. I understand how much work goes into that kind of reference service, and I was very impressed (and grateful!).*

Interlibrary Loans

The reference librarians frequently assist with interlibrary loans, and the libraries serve as staging areas for the receipt and return of interlibrary loans by researchers.

Data Bases, Reference Books, Monographs, Serials, Vertical Files

As with users of the other libraries, the Smithsonian Institution Research Information System (SIRIS) is the most fundamental and most used databases. Certainly compared to researchers in the art libraries, the science researchers rely more heavily on electronic data bases and serials.

Equipment

As found in the other studies, users in the libraries have access to a range of equipment that includes computers (both for catalogue access and e-mail), photocopiers (color and black & white), scanners, microfilm/microfiche readers, video/audio equipment, and fax machines.

Space in the Libraries

Along with materials, equipment, and services, the nine libraries provide a location for reading, conducting research, and sometimes meeting. In connection with these uses, researchers mentioned carrels, desks or tables and comfortable seating, electrical outlets for laptops, and a quiet place removed from laboratories, shared offices, telephones, distractions and interruptions.

ACCESS METHODS AND USE PATTERNS

On the basis of interviews conducted for this and the previous studies for SIL, the use of the libraries can be divided into three major patterns:

1. **Virtual use** - Access to materials through SI electronic gateways and databases or non-SI electronic gateways and databases (i.e., through friends or colleagues at universities, access as alumni, etc.).
2. **Intermediary use** - Access to materials through inter-library loan (ILL)
3. **Physical use** - In-person use of library space (at their museum's location or elsewhere)

For many researchers, especially those in the sciences, these three patterns of use represent stages of access. Typically the first effort in search of materials is to check the digital catalogue (SIRIS), if necessary, and obtain electronic versions directly through SI or via other means. When that is not possible, an ILL request is made, which, in some cases, is submitted in person at the library. The material comes to the requestor either as the original source, a photocopy, or a PDF file. When researchers cannot wait for an ILL to be processed and delivered, they often go to other libraries within SI or elsewhere to obtain the materials they need.

These patterns, almost by definition, affect the frequency and duration of use of the library's spaces and determine the importance (to the user) of the physical space. In the course of these interviews the study team encountered individuals whose use of the library is limited primarily to just one of these patterns. Even when researchers demonstrate multiple patterns, one is usually dominant.

Virtual Use

At one end of the spectrum are researchers who mostly use electronic materials, seldom come to the library to pick up a book, and never spend time in the library doing research. These researchers access the library resources frequently through their computers, with some indicating daily or weekly use. They state that "I mainly access journals on line and do not need to go to the library."

One scientist described both present practice and a forward look:

> *I anticipate increasing reliance on electronic materials. This has already made a huge difference, especially now that we have access to ISI Web of Science though SI, which is perhaps the most important advance in SI libraries in recent years. I can now review a topic on line (via Google Scholar and Web of Science), get some of the major papers electronically, and be significantly more knowledgeable about a topic the same day. This makes it much easier to access information and develop ideas, which is especially important when developing grant proposals. I expect this activity will only increase, but it does not reduce the need for access to historic resources when conducting reviews of a topic. My research has*

always been a combination of tight data papers and large in-depth reviews, and especially for the latter the access to library resources is indispensable. Thus I expect my day-to-day reliance on electronic media to increase, but this will never replace the need for periodic intensive library activities.

As noted earlier, the interviewees for this study <u>do not</u> constitute a representative sample of all staff or external users. Hence it is impossible to say what proportion of library clients primarily uses the library through its electronic resources. It does seem from the interviews, however, that science researchers (many of whom primarily rely on current journals) are more likely to be among this group than historians or educators (many of whom primarily rely on books), even though there are notable exceptions among both groups.

Among the nine libraries, NZP seems to have a high proportion of virtual users, both because its clientele includes many science researchers, and because its location and lack of workspace discourages users. The clientele of the NASM Library include both scientists and historians who either use the physical library extensively or access it virtually almost entirely. In contrast, NPM Library users rely mostly on the physical library, since there are limited electronic journals in the philatelic field, and since the library contains many unusual resources for researchers.

The dedicated virtual clients expressed little or no interest in the physical space of the library. But a number of them were very concerned about two matters that seriously affect their usage:

- Access to electronic materials, including electronic books
- Access from home

ACCESS TO ELECTRONIC MATERIALS

One of the major themes in the interviews with predominately virtual users is the frustration of staff that is eager to use electronic journals but cannot get access to them through SIL due to cutbacks in digital subscriptions and limited resources. The more that a researcher is a virtual user, the more that individual is affected by subscription cutbacks. Even among the most dedicated users of electronic journals, there was some dissatisfaction with SIL's policy of not having physical journals in more than one library.

There have been cutbacks in holdings and subscriptions, and we are often very reactive to that and asked "What six journals are you going to cut?"

***

[Electronic access] is crucial, and increasingly, because of the absence of many important journals that have been cut, it is having a very negative effect on my scholarship here at SI. I often learn of important journal articles from colleagues outside of the SI... . This slide downward has certainly affected my research and ability to carry out my mission to the Institution.

23

***

> *I use them [electronic resources] a lot, but the SI system is*
> *DESPERATELY limited in its access to databases. Why do we not have*
> *access to EBSCO [databases] or Sage journals? And so many other*
> *journal databases that are commonly available to major universities? This*
> *is a serious hindrance to my research, at the least.*

The criticism is sometimes mixed with high praise, e.g., "The Web of Science
with citations and articles is fabulous." The science research community
recognizes that SIL is not to blame for this situation and appreciates that SIL is
trying to do a good job under difficult circumstances and is forced to cut back on
various journal subscriptions.

> *[The] Library gets a certain amount of funding and does the best it*
> *can....[Our librarian] is good about talking to us about journal situation –*
> *economics dictate cuts, and the question is where. The high expense of*
> *current materials hurts....The Lbrary serves well within the constraints they*
> *have, and not near the resources most academic departments have. We*
> *work around the limited resources and include funds [for] access for*
> *electronic journals in grants [proposals].*

And a few interviewees pointed out ways that their organizations try to help out
the library when they can (e.g., by giving the library end-of-year funds).

> There is a real sense of ownership [of the library] in the department.
> Library has a bake sale which many people in the department bake for,
> and then people in the department buy it. It's wonderful, but it's pathetic.

Sometimes users interpret limited library resources as reflecting the value SI
places on research and express their dismay with sarcasm. Some of the virtual-
use interviewees made it clear that they would rather see money spent on
additional electronic access than on improved physical facilities.

> *I expect that all SI Libraries will be consolidated in the most remote*
> *location possible, all journals will be canceled, and half of the staff will be*
> *lost through attrition. Isn't this the Smithsonian way?*

***

> *If [we] get additional money, [investing it in] electronic access throughout*
> *SI is going to be more helpful than solving more physical problems.*

A number of interviewees found alternative ways to get access to electronic
journals by subscribing individually, e-mailing authors for PDF files of their
articles, using university libraries to which they had access, relying on family
members who work at universities, and asking interns who still had access to
their university libraries to get articles for them. The alternative to these methods
is to request an ILL, discussed further below.

Although most interviewees spoke of electronic databases and journals, a few interviewees mentioned electronic books as an important direction for future growth of the electronic resources of the library and wanted to see the acquisition of electronic books become more commonplace as their availability increases.

ACCESS FROM HOME

The ideal for many virtual library users is access to full-text journal databases directly from their home computers, not just their office computers. Some have gone through the process of establishing a direct connection, despite the difficulties. But in the course of some interviews it also became apparent that not all researchers who wanted this access realized that it was available or knew how to go about requesting it.

> *… I wouldn't force it [access from home] on anyone because of the hassle and all the software installation and passwords, but if someone wanted it they should be able to have it.*
>
> <div align="center">***</div>
>
> *I would like to have it from home; I didn't know how to get that access until the meeting today.*

Intermediary Use

For some interviewees the library is an important intermediary in obtaining articles and books that they are unable to access directly (either because SIL does not have the material or because SIL is storing it offsite). This intermediary function includes elements of virtual use (finding the reference but not the material itself), and physical use (visiting the library either to make the request or pick up the material).

> *I know that [the librarian] frequently has to scan items for me, which is time-consuming (and I cannot tell her how much I appreciate it!) These are articles from conference proceedings, book chapters, journals that are not on line or to which SI does not hold an on-line subscription, or older issues of journals that have not been scanned to an electronic database. In the past year I have probably requested somewhere around 100 articles. I expect to continue to use the resources of the Smithsonian libraries in this manner.*

In some cases researchers email their ILL requests to their librarian or call them; in other cases they make requests online; and in other cases they prepare paper requests and take them to the library. The study team noted that researchers tended to develop a customary approach and sometimes failed to realize that there were easier ways to make ILL requests.

Among these interviews the study team identified several issues regarding this intermediary function:

- The Ordering process and Delivery times
- Efficiency: on-site compared to ILL or off-site

THE ORDERING PROCESS AND DELIVERY TIMES

As noted above, users utilized various means for ordering materials. The study team often had the impression that users were not well-versed in alternative ordering methods and that in many cases, if they were better informed about the options, the process could be simpler (and speedier) for them.

While this service is critical for many interviewees, a number noted that the typical delivery times can cause problems. Interviewees recognize that this is more a matter of the urgency of their need than of the library's failure to deliver. Their typical solution is to physically visit the library that has the material they need, although this can be inefficient and annoying. Another solution is to buy the books.

Opinions differ as to what is a reasonable delivery time for materials not available online or in the library, i.e. available either through ILL, from another SI library, or from an off-site location. The range is generally from one week to same day, with many choosing 1-3 days. However, some researches argue that since they often work under very short deadlines, having as much on site as possible would be best. Some interviewees note that different kinds of materials should have different delivery times.

> *Again, the early journals are key to my work and I refer to them on a regular basis. Not having those at hand would definitely hinder my work. If things were off site, a few days, maybe 2-3, would be reasonable retrieval time to me.*
>
> ***
>
> *If there is a space crunch, current and last year issues of professional journals, and books published within the last five years should be at hand and others should be available within two business days or less.*

*EFFICIENCY: ON-SITE COMPARED TO ILL*

Although ILL service is critical in filling the gap between what is available through virtual and physical use of the library, one interviewee questioned its cost effectiveness. In particular, a lot of trouble can be expended obtaining materials that at one glance reveal themselves to be not needed after all. The volume of 'browsing' requests may be considerable, as at least one interviewee regularly used the service to its maximum allowed capacity, at his SIL library, of five per day.

The cost of access to electronic databases and journals are easily identifiable, but what is more difficult to calculate is the cost of access to these materials when they are not available online, especially when the user resorts to ILL in browsing mode. While a few individuals are sensitive to the effort this requires, others are either unaware or unconcerned. Several commented on the frustration and inefficiency of waiting to get a reference that would take only a few minutes to assess its utility.

Interviewees noted that there was something quite beneficial and efficient about being able to walk from one's office to the library, do a critical bit of research, and then walk back and continue a project. They felt that the time lost in servicing a request for information, the cost increase (computing hourly salary) wasted on travel to wherever materials reside have not been properly considered.

The process of obtaining materials, <u>as discussed in these interviews</u>, is illustrated schematically in Figure 1.

Figure 1
Schematic Diagram of the Process for Obtaining Research Materials
[Based on Interviews]
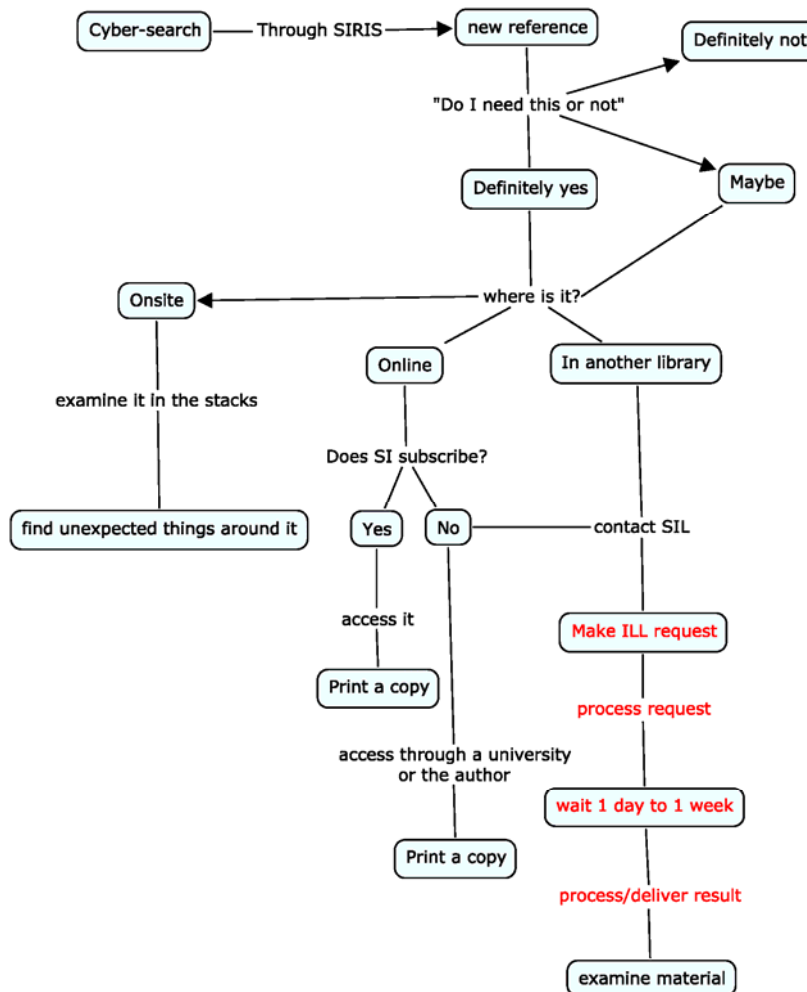
Physical Use

Just as there are interviewees who nearly exclusively use SIL online, and others who heavily rely on SIL to obtain material not in their libraries or online, there are those for whom the physical library is of paramount importance. They use it for a number of expressed reasons:

- To keep up-to-date on the field
- To access materials not available elsewhere
- To study materials in ways not possible with electronic versions
- To consult the librarian
- To browse the stacks for new ideas
- To work in a quiet atmosphere
- To hold meetings

Each of these purposes calls for different physical attributes and facilities, many of which have also been raised in earlier reports in this series.

It is noteworthy that in all of the libraries in this study -- even in those where the physical facility is difficult to use and virtual users dominate (such as NZP), there are interviewees for whom the physical library is still very important.

TO KEEP UP-TO-DATE ON THE FIELD

In some cases, researchers use the physical library to keep up-to-date with what's happening in their field of study by easily accessing new publications, recent journals, etc.

> *Physical access is vital so the connection between the resources and the research is maintained.*

> ***

> *People like to browse real serials and materials that they are not likely to find electronically*

TO ACCESS MATERIALS NOT AVAILABLE ELSEWHERE

Interviewees appreciate the convenience of having the books and journals they need close at hand, but in some cases the physical library contains materials that are not available in any other way, such as reference works, rare items, unique editions, etc.

TO STUDY MATERIALS IN WAYS NOT POSSIBLE WITH ELECTRONIC VERSIONS

As the study team found with users of the other libraries some of the interviewees emphasized their need to see materials in their printed original

formats, not just in electronic form. Here this phenomenon was most prominent among historians, especially at NASM and NPM, but it is also true for some users at other libraries, as well.

> *Historians want print issues to look at. They want to be able to look at serials and follow a lead by issue- and you can't do that with digital.*

TO CONSULT THE LIBRARIAN

A common theme in these interviews, discussed earlier, is the importance of the librarian. In-person contact with the librarian is one way that researchers use the library to facilitate their work.

> *One thing that really makes the library wonderful is the librarian's expertise in terms of really understanding the discipline and guiding people to things. I go in there and think I'm a great researcher and just talking to librarian for five minutes I have five more things I wouldn't have thought of. And the librarian knows what people need and want and will call them and talk to them and let them know about new things.*

TO BROWSE THE STACKS FOR NEW IDEAS

A number of interviewees' spoke of the benefits they derive from being able to browse items in the physical library. This semi-random access process stimulates new ideas and connections. It occurs in all the libraries, and is a matter of personal style. Although some interviewees spoke of it as a generational preference, in fact proponents were both young and old.

> *I like the serendipity of the library. It's a 'proximity thing,' you find a book and the one to the right could be completely irrelevant while the one to the left could be great. You can't do this online right now. Browsing therefore is a significant search method. This happens with journals and books. With journals I've picked up the wrong volume or the citation was wrong but it's a jackpot. I wish the library had more physical materials.*
>
> *****
>
> *Off-site storage is a real disservice to patrons because they can't browse the shelves and discover useful works through serendipity.*

TO WORK IN A QUIET ATMOSPHERE

A few researchers use the physical library because of deficiencies or distractions in their office space or an attraction to its tranquil atmosphere.

> *The library also functions as an open space where you can have a private conversation. People can congregate there. It is a de-stressed area....The library has carpet that muffles sound and comfortable chairs. You can sit and contemplate. It is a great space for that.*

I go to the library to get away from the phone, visitors, people who stop by, and find that if I spent a couple of hours, I have access to materials. Sometimes I take my own books.

TO HOLD MEETINGS

Only a few of these libraries are used for meetings, most prominently NPM, which has a large open space. The Anacostia Museum library is also a site for meetings and some educational activities.

NEEDS FOR THE FUTURE

An interviewee's take on the needs for the future depends on the use pattern that is most important to that individual.

In the case of virtual users, the need is obvious – more access to electronic databases, full-text journals and electronic books, and easier access from home.

My main request for improved library services would be greater access to electronic journals (more journals and more years of coverage per journal). I think SI is behind Universities and some other institutions in providing comprehensive electronic access.

For those who frequently use the libraries as an intermediary to obtain books and articles, the most commonly expressed need is for simpler requesting methods, quicker delivery times when needed, and, perhaps in the future, sending hard copy materials in digitized formats. Some also wanted to be able to order through ILL without the librarian as intermediary.

Interviewees noted a much more varied set of needs for the physical library. They can be divided into the following key elements:

- Accessibility
- User spaces
- Materials
- Shelving
- Staff
- Equipment

Accessibility

The first level of accessibility is the distance between staff offices and the library. Interviewees spoke of the importance of having the physical library as close as possible. This is a problem at NZP where most researchers are not near the

library. In the case of researchers in Washington, DC, the library is some distance from most research offices and laboratories, for those located in Front Royal, VA, the issue of distance is more severe. And, of course, physical availability of certain materials is also an issue whenever offsite shelving is discussed.

The near-term concerns about offsite shelving, for this set of libraries, were essentially limited to users of NASM, NZP, MS&RL and NPM. Users of the other libraries, (Anacostia, MSC, NMAI, SERC, and STRI) saw offsite shelving in the distant future, if at all. As in the other two studies, in the discussion of offsite shelving there was concern about proximity (the closer, the better), content (how decisions would be made about what is kept offsite), and retrieval (the faster, the better).

> *It would be more difficult to do research if materials are offsite. Nowhere else in the world could I, e.g., go through historic journals. Often I can't identify what I want and need. I saw this resource [materials] and have taken advantage of it. This […] is the first time anyone has compiled a history of […] that's why it's criminal to see what's been done to the library.*

As regards hours of access, it seems that, according to these interviewees, the current systems for off-hours staff access are working well (with the possible exception of one or two libraries on weekends). Interviewees noted, however, that one library is inaccessible to those unable to climb stairs (SERC), and that researchers with physical limitations can have difficulties in many of the library stacks.

Staff at NMAI does not have access to stacks because of the presence of archives in the same room. An exception was made, however, for researchers whose offices are actually inside the library. Interviewees understood the issue and felt that a barrier was needed to separate the archives so that the library stacks would be fully accessible to researchers.

There are also accessibility issues deriving from the unavailability of library staff (rather than the collections) during certain periods, due to the rotation of these staff among libraries. This issue will be discussed under Staff, below.

User spaces

According to interviewees, the user spaces at four of the libraries (Anacostia, MSC, NPM, and STRI) are functioning well and are adequate to present needs. NASM received universally positive comments about its space, although several users commented on the heat from the roof on some summer days. For example,

> *I really like the work tables out front – good space to spread out, good lighting, a place to plug in my laptop – who could ask for more? [NASM]*

***

The workspace in the NPM library is very nice. There are large tables, electrical plugs for laptops, lamps for closer reading, and natural light from the higher windows. This library is definitely a nice place to spend a day.

Some interviewees (e.g., Anacostia, and NMAI) would like to see some improvements and others foresee changes in public use that might affect user needs and call for expanded or revised user spaces. At Anacostia, a museum initiative to increase use by the general public might necessitate changing the current configuration. At NMAI, an increase of space used as offices might lead to pressure on current work spaces.

At the other libraries there were calls for significantly improved user spaces, most strongly at NZP. The user space at NZP in DC has been mostly turned into office space, and a library at CRC is nonexistent. At SERC, users felt that the lack of access for people with disabilities must be addressed. MS&RL users appeciated the library's space constraints, through no fault of its own, but felt that the physical space is inadequate and more cramped than most libraries. Specific attention is given to this issue in the section below, titled: What is the right size?

I believe that "libraries are more than places to go and get a book, have quiet space, do a little bit of reading, etc. It is a place to be, to work, to think." In the case of CRC, we just need a place that would be cleaned up, put computer terminals down there, in an atmosphere that is conducive to thinking.

Materials

Although these interviewees seem generally to agree that researchers will probably use more electronic materials in the future, a number said that they would continue to need materials in the physical library. Interviewees at the Anacostia Library indicated an interest in developing collections in new areas, and those at several museums, e.g., Anacostia and NMAI, spoke of the need for funds to buy books. For most libraries, however, the main area of growth that interviewees discussed was archives and other unique materials.

From the researcher perspective, archival and library materials are nearly identical resources in the role they play in scholarship, and the ownership of the material is unimportant compared to access. As one interviewee said,

I use the books in the library stacks, the technical files (I believe that this feature may actually be part of the archives, but it's all source material to me!), and the microfilm collections.

Several of the libraries in this study house separately administered archives, presumably because of similar space needs, a lack of alternative space, and the convenience of researchers. Most prominent among these is NASM. The inclusion of archives in the library space has both advantages (e.g., ability to use

the materials together, shared workspace, etc.), as well as disadvantages (e.g., limits on stack access), as discussed previously.

When interviewees spoke of the expansion of physical materials, they primarily discussed the addition of archival materials. This was true at NASM, NMAI, SERC, and NPM, and was such a common theme that it may also be an issue at other libraries among staff who were not interviewed.

Shelving

Although the future development of electronic collections might suggest that shelving for physical materials would either increase very slowly or stay the same in the future, the movement to incorporate new, unique materials, such as expanded vertical files and archives, may call for some kind of shelving growth either in the libraries themselves or in offsite locations. Only STRI interviewees spoke of a specific plan to expand shelf space in the near future. (As noted above, several libraries have growth space.)

> *There is bound to be growth in collections like FAA. So, SIL may be taking on special libraries, becoming the keeper of record of original documents, and this could or would lead to merging of libraries and archives.*

> *****

> *The next 5-10 years will be busier because [the library's] name will get around and because we will be adding to archives. We are getting some of the scholars who are giving part of their collections to the library.*

Staff

The impact of library staff shortages affects the patterns of access at several libraries, most notably NMAI (since stacks are closed to staff without a librarian being present). Some interviewees spoke of recruiting more library volunteers (Anacostia). Others regretted the system that rotates librarians among libraries.

Equipment

The most common equipment request among interviewees was better network access, such as WiFi, especially for laptops. A few other types of equipment were either praised or requested. For example, color copiers, and better scanning equipment.

> *The one feature missing from ALL of our libraries is comfortable space and comfortable chairs for reading. In this respect, every SI library is far worse than my little hometown library (which also has WiFi).*

Part B. Discussion and Recommendations

OVERALL SPACE CONSIDERATIONS

Although these libraries differ in size and subject matter, the problem of determining the right size for the physical space is apparent in a number of these libraries. Three factors are the prime drivers of size:

- First, as these interviews demonstrate, a need for a physical library nearby the researchers is strong, because some staff prefer and/or need physical access to materials and because some materials are unique and cannot be borrowed.

- Second, few researchers spend extended periods of time in the library (except for external researchers or interns who have no office space). Thus, no matter how important the library may be to an individual, and no matter how often that person visits the library; this library face-time will not be a significant amount of time.

- Third, when the staff of the organization is not large, the library will appear unused most of the time, especially when it is not heavily used by outside researchers or the public, either due to its limited accessibility to those audiences, to their lack of awareness of the facility, or to the nature of its materials.

When outside observers perceive that the library is not heavily used, it may seem logical and natural to want to reallocate space for other purposes.

Such changes, however, set in motion a chain of reactions that seriously diminishes library use. As the user space shrinks, the physical library no longer is able to function well for those who need it for its space features, such as a quiet place to read and think. As archives take more shelf space and access becomes limited, staff can no longer use the library for its browsing function as easily. As library staff is less available and is rotated among libraries, the relationship between researcher and librarian becomes less close.

This process is a natural consequence of changing conditions and space constraints.

At the beginning of the process, the library has a user space and shelving that is near ideal. Among the nine libraries in this study, STRI, Anacostia, NPM and MSC perhaps come closest to that condition. Each of these libraries was designed to meet user needs when it was designed and was designed with user input and adequate resources. But because the space is not in constant,

crowded use, there is a sense that the library is underutilized and should allow other purposes.

> NPM
> *The museum is so short on space it needs offices. This could be prime space. At the same time, it's nice for the researcher to have this space to do research. However, the researcher isn't using it!*
>
> *The library is not used a great deal and it's a huge space. Its clear staff like it, but it could be used better.*
>
> NZP
> *The space issue has to do with the need for office space at NZP. FONZ is growing and administration offices are growing. They are really crammed and keep bringing people on. Library was seen as prime real estate and everyone had the sense that the library was not being used that much.*

Under this type of pressure, when space compromises are being made throughout the facility or new programs are undertaken by the museum (e.g., NMAI) the library is obliged to give space to the museum, at least theoretically on a temporary basis.

> STRI
> *STRI needed space where they could temporarily put visitors for short-term. In a nutshell, STRI is using [the library] as swing space. Presumably, by next year, we'll get the space back.*
>
> MSC
> *Interns use the library space because there isn't office space elsewhere.*
>
> NASM
> *I often walk through the library there is seldom anybody there. I would venture to say that it is not used much. The collection is absolutely superb.*

At this early stage in the process, it is possible to miss the overall trend as user space is taken away. As one MSC researcher said, "By comparison, the main NMAH Library is cramped and not conducive to research. But it is better to have cramped space with books than great space with no books." Such a position misses the point that a significant loss of user capability can seriously affect the usage of the entire physical library eventually.

Several libraries in the study (in particular NMAI and NASM) have reached the next stage, where significant library space is shared with offices or archives. As long as the user space is comfortable, the library remains under pressure to relinquish space.

> NMAI
> *In the Audio Visual room they recently got ST200… . They are buying it because the AV room is being taken away to become a researcher's*

office; a new project at NMAI is affecting the library space. Private and group study rooms are also becoming offices.

<div align="center">***</div>

They originally had a work room but it became photo archives.

<div align="center">***</div>

NASM
If I could get [the librarian] more space, I would. The reading room used to be Library only and now is Library and Archives. Offices were given to CEPS when the building was being finished, so it was not space 'taken' from library.

This situation leads to dissatisfaction from users, who, reasonably, are less inclined to use it.

NMAI
There is almost no seating space in library and people with offices [there] further need that space. That is a big problem with the library… pretty unsatisfactory.

Eventually, the user space is so reduced that the use of the physical library is minimal for most researchers. Physical usage is drastically reduced. This is most evident at NZP and MS&RL.

NZP
The zoo library used to have couches and easy chairs and the latest issues of everything in the library. As they needed more office space, they took half the library.

<div align="center">***</div>

The reading room has become an office. User space is down to a reading carrel.

<div align="center">***</div>

My hope that if there was a space that was attractive to utilize, comfortable to use and work, it would be used. People stopped going there when the space was cut in two.

<div align="center">***</div>

In the future, I probably will use NZP less because it is impossible to browse. It requires the kind of effort that will be difficult for many. I expect to rely more on the NMNH library.

The fact that users were able to adapt by avoiding the now-hard-to-use physical library was taken as evidence that it wasn't needed in the first place.

NZP
There is never anybody in there. They either come in and get books and leave or get materials some other way. I know we downsized it and nobody said "we can't use it because of space."

Finally, as at NZP, the situation is so bad that the need for a new library becomes evident.

NZP
The Conservation Biology building is one option [for a new library]. Three-five years ago, scientists invited SIL to visit CB building and that move didn't happen. I personally think that there comes a threshold point where the library is becoming less and less useful.

***

Better to have a library in a research building in DC and it could serve multiple purposes. There is space in Conservation Biology that is underutilized. It was built for animal holding, lots of other purposes. Now, big rooms are being used as storage space for junk. It is possible.

The same is true for the small library at Front Royal.

CRC
We have this library at the Zoo [DC], and the library has been cut in half and we don't have a solution of where to put the library, here at CRC we have a library that has become a storage facility, it is not very inviting. I was hoping to keep our libraries intact and better meet the demands of our users.

***

I certainly would like to see some movement fairly soon, especially down here at Front Royal. If we are not going to use it, I might as well consider using it for something else –

In a diagram of this process (as shown in Figure 2), it is clear that each of the nine libraries exists at a stage in this cycle, and, as the comments of interviewees above indicated, there is pressure to move that library to the next point in the sequence.

Figure 2
A Diagram of the Process of Library Space Development [Based on Interviews]
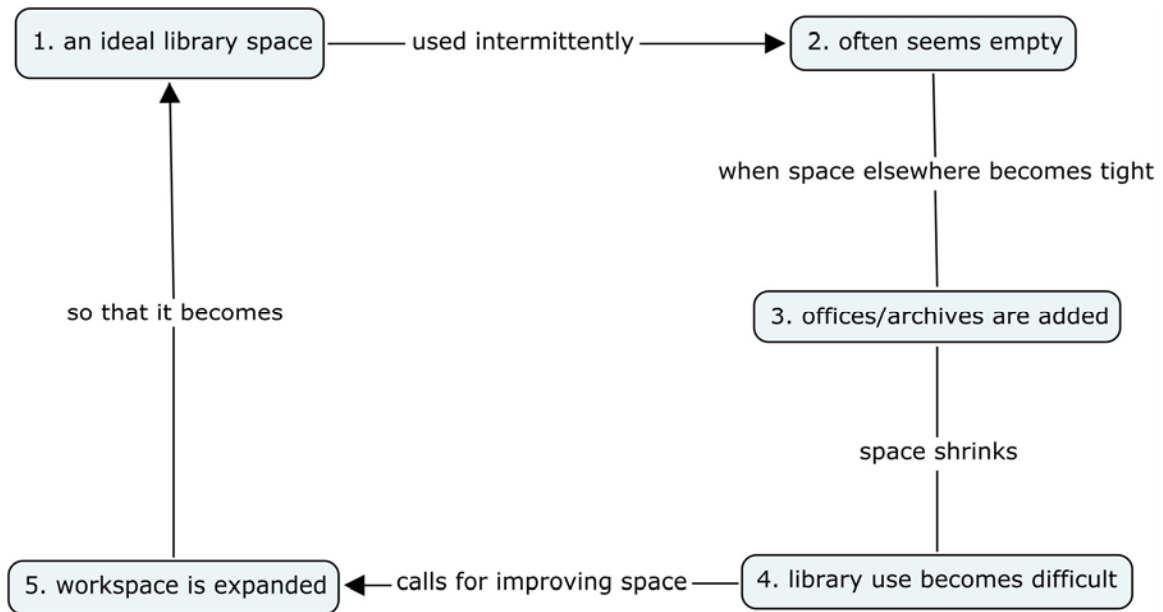
This process is taking place in part because libraries are in transition (and, in fact, have always been in transition). Originally the physical on-site use of the library was the sole use. In the 19th century loan practices began to develop, and in the early 20th century the intermediary function took off with organized inter-library loans. In the late-20th century, as virtual use developed, electronic materials were available first in the library, then in the office, and then at home.

This development of the physical library could be compared to the development of the kitchen in the domestic household. There was a time when the kitchen was the primary source for cooked food and most meals were prepared and eaten there. As packaged and prepared foods developed with the advent of refrigeration, the kitchen was used less for preparation. Eventually, in our time, fast food and ready-to-eat food is ubiquitous and the kitchen is no longer the essential center for food preparation and consumption.

One might expect then, that kitchens would get ever smaller (or even be eliminated) as their critical importance diminished, but that has not been the case. In fact the average size of kitchens has been growing, due to the fact that the kitchen has come to be recognized as a location that provides more than just the basic food required for survival. The environment and the act of preparation and consumption have come to be appreciated as an important component of the eating experience.

Similarly, physical libraries, like kitchens, may not be strictly necessary today. No one would starve without a kitchen, just as few would be unable to do research without the physical library. But the fact that one could survive without them does not mean that the elimination or shrinking or de-emphasizing of either kitchens or libraries is advisable or productive. Both still play important roles.

In fact, some interviewees already perceive the library in a much broader perspective than merely as a tool for researchers. The library, for them, is something larger and more promising.

> *It may not be true for young researchers, but the older people have a concept of what a library is – a place for browsing, developing ideas, reflecting on the state of the natural world, etc. Journals, periodicals, magazines, monographs have an impact that the web just doesn't have.*

> *****

> *I like to go to the library one time per month at least to search information and maybe 'breathe' the space, maybe because my generation … grew up academically in the libraries.*

One interviewee even believes that increasing virtual use has the potential to expand physical use: "People coming into the library will grow exponentially with increased digitization; [increased digitization] doesn't fill the appetite, it just whets it more."

The physical library also plays a symbolic function for some interviewees, in which the state of the physical library represents the regard for scholarship.

> *As you know, they cut back the space considerably and took out all the magazine racks, journals, etc. so we can't browse. It's criminal and disaster and a strong message that scholarship is not important – being administrator is more important. Couches and comfortable space is gone. I used to page through various journals, now it's crammed, crowded.*

The conflict between the "practical" view and the "symbolic" view is exemplified in the question of whether a new NZP library should be in the Administration Building (where it is now) or in the Conservation Biology building, close to researchers.

> *Also, for everyone in the Conservation Biology building the library is too far away, it is difficult to walk there and certainly to find parking. I don't understand why they have kept it there, since no research goes on in the admin building*

> *Moving the library to Dept of Conservation Biology would be bad message – the beauty of having it in the Administration Building is to say that this is a scientific institution.*

Individuals very familiar with the history of each of the nine libraries in this study could undoubtedly provide individual interpretations different from the one

presented here. It is offered, however, as a conceptual frame against which the study team wants to present conclusions and make library specific recommendations.

ADDITIONAL OBSERVATIONS

The Digital Environment

As was the case with the previous studies, everyone interviewed – researchers, scientists, interns, managers, librarians, etc. – recognized that the expanding world of digital materials and technologies is changing the nature of libraries and that the change will only increase in the future. The change has already led to a pressure on SIL for increased efficiency of access to electronic materials, and to improved retrieval and delivery of materials, including interlibrary loans.

Many scientists and researched interviewed for this study often stressed the importance of monographs to their research and the value of having those materials readily available nearby their workspaces. At the same time, they saw increased use of digital resources. Nevertheless, as some interviewees made clear, there are many materials that are not likely to be digitized and others -- especially monographs -- that are not being published in electronic formats.

It was the study team's impression that much of the discussion about digital resources and the physical library could be attributed to differences in area of study and differences in the age of the researchers. In some areas of specializations, e.g., astrophysics, there is extensive reliance on serials available in electronic formats; in others, e.g., space history, source documents are available only in paper formats. This gap will undoubtedly narrow over time – imaging technologies continue to improve and become more affordable, as computer systems improve, and as researchers have access to better equipment.

Thus, although the development of digital systems and the availability of digital images and information are likely to increasingly aid research, they are not likely to replace the need for access to monographs and other non-digital materials in the near future.

An interviewee early in the study made a distinction between "digital natives" and "digital immigrants." The former are younger users who were born into the digital environment and who rely on it extensively; the latter are older users who have had to change and adept the way they conduct research and think about published resources or original documents.

Offsite Shelving

As stated in the previous studies, the issue of proximity of materials and offsite shelving is linked to the decision of where best to apply limited resources. From

the point of view of researchers interviewed in this study, the more material that is removed from locations with convenient access, the more difficult some research tasks become. If materials need to be moved offsite, direct access will continue to be important.

It was clear that any moves would require that the offsite locations be fitted with the latest digitizing equipment, capable of quickly producing images of high quality.

It is likely that user involvement in the choice of what to move offsite, subsequent accessibility to shelving, and fast delivery of digital imagery on-demand, would make offsite locations palatable to most researchers.

The Future Space Needs of the Nine Libraries

The rationale for examining these libraries together was one of convenience, rather than any inherent factor that united them. Three of the history libraries, Anacostia, NASM, and NPM, radically varied in size of the collection, research focus and physical space. The institutions in which they are housed have members of the general public as visitors and as current users. The fourth history library, NMAI/CRC is located apart from the public spaces and housed with the researchers and the collection. Three of the science libraries, are in research institutes (SERC, MSC, STRI) with very disparate user populations. None seem to have outgrown its available space.

Of the users in the study, the research staff of NZP (both in Washington, DC and in Front Royal, VA) seems to have the most immediate needs for improved/relocated facilities. The ninth library, MS&RL, is unique in that its clientele includes both Smithsonian researchers and colleagues in the larger museum community. At the present rate of growth, it will face space needs in the future.

The findings show, as did previous study, interviewees have criticisms of the way that many of the libraries are physically set up and whether they are physically accessible. It is taken as a given that these libraries should be accessible to people with physical disabilities and, where they are not, remedies are called for. While there are clearly good reasons for differences in hours of access and form of access (open or closed stackes), it would be beneficial to review the rules that currently govern the access of both staff and non-staff users.

RECOMMENDATIONS

The study team makes the following recommendations with the assumptions that any plans for individual libraries will need to be made within a context of system-wide planning for SIL as a whole and within the framework of the individual strategic and master plans of the museums and research institutes.

Two recommendations made in the OP&A study of art libraries are applicable here and bear repeating:

- **It is important to establish a state-of-the-art offsite location for SIL libraries.**

Such a site, although seemingly impractical for several libraries in this study, whether independent or co-located with other libraries, would need to allow direct researcher access to the stacks, and would have to minimize the inconvenience of its location by providing timely access to materials through delivery service of books or digitization of materials.

Realistically, such an offsite location is needed, even if library spaces are reconfigured. This need is most evident for NASM and NPM as collections expand.

- **In designing/redesigning library spaces, SIL should emphasize functionality and flexibility for all workspaces, and review the services provided to both external and users with special attention to standardizing regulations.**

The following specific recommendations would enhance the research and scholarship capabilities in the decades to come.

- **While the primary role of these libraries is to support and enhance Smithsonian research, the study team suggests, as a space planning principle, exploring the possibilities of increased use of the physical libraries by the general public and specialized interest groups.**

- **Relocate the present library at NZP and establish library service at CRC.**

- **Ensure that all libraries are fully accessible to users with physical disabilities. While this is especially evident at SERC, an overall review should be undertaken of the libraries included in the study as well as other SIL facilities.**

- **Establish guidelines and make possible optimal user space that encourages scholarly activity. Such guidelines may mean removal of offices in space previously allocated to the library or relocation of the library.**