LIBRARY ISSUES

BRIEFINGS FOR FACULTY AND ADMINISTRATORS

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Natural Disasters in the Academic Library

by William Miller

Sooner or later, almost every library will be affected by a natural disaster—a flood, fire, earthquake, mold infestation, or hurricane. Some natural disasters are localized, such as a burst pipe in a defined location, or a trashcan fire which causes smoke damage; others are massive and affect not only the library but also the entire institution of which it is a part, and the surrounding geographic area. It is human nature to hope that such situations will never strike, but such wishful thinking is no substitute for planning, which could ameliorate some of the worst aspects of disasters, even catastrophic ones.

Cultural repositories such as libraries and museums are particularly vulnerable to the effects of natural disaster; many of their collections are impossible to replace, and cannot easily be safeguarded while yet remaining available for public use. Sprinkler systems are a Sword of Damocles, and the collections are at the mercy of deranged individuals as well as Mother Nature. We must accept the probability that some loss is inevitable; however, the severity can be limited with proper measures.

Preplanning is a Necessity

The onset of a disaster is no time for the initiation of RFPs and bids, and no time to realize that there is no record of where staff live, what their phone numbers are, what equipment the library owns, what its valuable collections consist of, what insurance coverage exists, where major mechanical systems are located, etc. Such information must be readily available before disaster strikes. A service agreement should already be in place with a disaster recovery firm for fire, flood, and mold amelioration. Printed lists of staff addresses and phone numbers, who is responsible for what, and disaster procedures should be widely distributed. A common error involves leaving such documentation online; in a disaster, online access may not exist, and cell phones may not work.

For controllable or manageable problems, procedures should be well known in advance. For instance, the library should have plastic sheeting stockpiled to deal with leaks, and supplies such as blotting paper to deal with limited situations such as a leak which has inundated a small number of books, and staff should already be trained and ready to respond promptly. Small incidents are best dealt with promptly, and library staff are normally able to respond to contained situations.

Libraries need the help and cooperation of facilities/physical plant staff to prevent some disasters from happening. The regulation of temperature and humidity is crucial. Long-term humidity will inevitably result in major damage to paper-based materials (you know there is a problem when the stacks smell like a musty basement), and hasten the demise of microforms (you know there is a major problem when the microforms area smells strongly like vinegar). By the time one observes mold or fungus growing on the books, and realizes that the microfilm is fused together, expensive mitigation or discarding of affected items are the only alternatives.

Coming Soon —

Library's Role in Student Retention

Noise in the Library

Dealing with Sudden Disaster

For major incidents, however, internal institutional resources will not suffice. Outside help is required, and it should be prompt. Mold spores already exist in your library, and they need only a few days of moist conditions to bloom. Expert help can avert what might otherwise be a major and unrecoverable disaster. Every effort should be made to waive normal bureaucratic procedures, including crime scene strictures that could keep staff and contractors from dealing promptly with problems.

In a major disaster, those libraries which do not already have assistance arranged with an outside vendor will be at a distinct disadvantage, and may even be unable to save collections which might otherwise have been saved. Commercial freeze-drying and extensive treatment of books and control of the library's environment can greatly reduce the long-term damage.

Libraries should already have a clear idea of what their most valuable collections are and where they are, and these should be marked or clearly identified on maps, for the use of staff and contractors engaging in triage. The library's most valuable and irreplaceable collections must be dealt with first, and saved where possible. They should also be separately insured, which may involve supplemental commercial coverage that could offset the cost of salvage.

In a major disaster, the bulk of the collection may have to be sacrificed. It may be inordinately expensive to attempt to save everything, prohibitively so at a large institution, and the reality is that much money and effort will be wasted if priorities are not implemented, because a company will not be able to distinguish between valuable material and low-priority items such as back volumes of journals which the library was planning on discarding or putting into storage because the preferred method of access is now electronic.

Just as important as the library's physical collections are its computer equipment, data, and online accessibility. After a major disaster, online access is essential for the library's users. Data should be backed up and available from an alternate location, and an inventory of all essential equipment should be available so that operations can be restored as quickly as possible. The library's users will expect to be able to conduct their virtual activities much as they have always done, even when they understand that physical items are unavailable, and libraries will want to be substantially accessible online, even when they are physically closed.

Recognizing the Consequences of Major Disaster

In the aftermath of a major hurricane, fire, or flood, much of the "legacy" collection of paper-based materials will be lost forever, and the possibility of reconstituting the collection as it formerly existed is doubtful.

"When disaster strikes, immediate action is essential, and bureaucracy must be waived. Staff must be empowered to act, and prior planning can make a big difference in an institution's ability to react."

Much of the destroyed material, even when not rare or expensive individually, will be out of print and extremely difficult and costly to acquire and process. Wherever possible, therefore, libraries will prefer to replace such items, when it replaces them at all, with an electronic surrogate. Insurance companies and FEMA, which sometime predicate reimbursement on replacement of identical items, will need to understand that such replacement would be a practical impossibility, and not even always desirable in the 21st century.

In the case of regional disasters such as floods and hurricanes, libraries typically take on a broad mandate, if they have not been destroyed themselves, being one of the few institutions available that may have computers freely available and necessary for people whose houses have been destroyed to apply for insurance and FEMA assistance, contact loved ones in other areas, etc. Administrators, especially at private institutions, will need to extend their facilities to the general community and broaden their horizons of what the library's functions should be during unusual times.

Preparing for the Inevitable

References to the destruction of the original library at Alexandria are now a cliché, and we have certainly lost the bulk of ancient Greek literature and countless other cultural treasures over the centuries. The availability of digitization offers the hope that we can arrest such loss for the future, and individual libraries are certainly well advised to digitize for preservation those items which are rare and irreplaceable, including institutional history and other records, along with rare books not already available electronically, and to be sure that back-ups of such digital surrogates are available.

The bulk of the legacy collection itself is certainly vulnerable to sudden cataclysm, and the physical items will be damaged over time. However, natural disaster, when it occurs, can often be controlled by knowledgeable staff, and major disaster to a physical collection can often be headed off through prompt action by library staff, physical plant/facilities staff, and outside contractors. When disaster strikes, immediate action is essential, and bureaucracy must be waived. Staff must be empowered to act, and prior planning can make a big difference in an institution's ability to react.

For those institutions which have not yet begun to plan, tools are available, including the online template dPlan (http://www.dplan.org), a "free online tool that will help you simplify the process of writing a disaster plan." An excellent bibliography of resources is the Southeastern Library Information Network's "Disaster Preparedness and Recovery: Selected Bibliography" (http://www.solinet.net/emplibfile/disasbib.pdf). An ounce of planning beforehand will well repay the effort required, as academic libraries prepare for the inevitable. —*William Miller <miller@fau.edu>*

Vignettes from the Real World

The accounts of various library damage are based on articles by Terry Gugliotta, Lynn Ann Davis, Nancy E. Kraft, and Robert E. Skinner in the forthcoming Haworth Press book, *Dealing with Natural Disasters in Libraries*, ed. William Miller and Rita M. Pellen.

Mold Outbreak at the University of Iowa

In the summer of 2002, a mold outbreak occurred at the rare book room of the University of Iowa Law Library. On a Friday, the staff noticed relative humidity in the room at 80 percent, set up dehumidifiers, and went home for the weekend. By Tuesday the staff noticed mold and contacted the library's Preservation Department, which enlisted the help of a senior staff member in the Facilities area of the university to help by-pass bureaucratic delays. A remediation company was called in to help assess the situation.

A mold-remediation team consisting of key individuals from the library and other relevant areas was formed and discussion centered on remediating the mold without spreading contamination to other areas of the building. In order to vent the room, which had no direct access to the outside except through the library's overall HVAC system, extra filtration was added and the positive/negative airflow was adjusted. Exemption was requested from energy-saving shutdowns which the university had arranged with the local utility, so that the cooling system would not be periodically shut down.

The remediation company, with which an agreement was swiftly concluded, sealed off the room and placed a large dehumidifier in the space. The relative humidity continued to increase, so a larger dehumidifier was brought in, and the humidity dropped. During the course of investigating the facility, it was discovered that the HVAC system was being run incorrectly, because the reheating had been turned off several years before in response to a directive to save money and energy, and had never been turned on again.

Other mechanical problems with the system were also discovered and addressed.

After several days, the RH had dropped from 76 percent to 42 percent, conditions in which mold does not grow. The books had to be removed individually and cleaned, which meant vacuuming and wiping with a dry sponge. The mold had not penetrated the interiors of the books, so only external treatment was necessary. The shelves and walls were sponged with phenolic biocide, which was not used on the books because it leaves a residue which could damage the books.

The total cost of the remediation was $50,000.

Hurricane Damage to Academic Libraries in New Orleans

Hurricane Katrina hit the Gulf Coast on August 29, 2005. Libraries of all types were severely damaged or completely destroyed, including 8 of the New Orleans Public Library's 12 branches, and every public library on the Mississippi Gulf Coast. A summary of damage at academic libraries in New Orleans alone is sobering:

- **Delgado Community College:** major damage from flood waters; collection in storage until renovations are completed.
- **LSU Medical Center:** escaped flooding but collections were removed for restoration and the library was closed for more than 4 months; Dental School Library, on a satellite campus, remains closed.
- **Dillard University:** Library flooded on the ground floor, with leakage onto the second floor. Entire collection removed to a storage facility in Texas while renovations take place.
- **New Orleans Baptist Theological Seminary:** leaking from wind damage caused major mold infestation.
- **Nunez Community College:** library received flooding to a depth of eight feet; clean-up operations continuing.
- **Our Lady of Holy Cross:** received no flood or wind damage, so was used as a service center for National Guardsmen and New York City firefighters; the library was pressed into service as a dormitory. Collection suffered mold damage.
- **Southern University of New Orleans:** severe flood damage. Library operations being housed in a double-wide trailer. Most of the collection was destroyed by mold, and renovations have not yet begun.
- **Tulane:** basement storage area, housing microforms, newspapers, an important government documents collection, and an internationally-known music collection, was flooded, and damages to the collection are estimated at $30-35 million. About seventy-five percent of the books and scores in the music collection have been rescued through freeze-drying; other materials deemed unsalvageable have been discarded.
- **University of New Orleans:** escaped major flooding, but wind damage to the roof, vandalism by evacuees, and inadequate work by recovery personnel led to mold infestation of furniture, computer equipment, and library materials.
- **Xavier University:** library experienced flood damage, with the ground floor receiving two feet of water, requiring gutting and reconstruction of the floor.Quick action by the recovery firm prevented mold infestation. Campus damage estimated at $50 million.

Fire and Flood at the University of New Mexico Library

On April 30, 2006, a fire broke out in the basement of the UNM main library, destroying 30,000 volumes of periodicals along with equipment and shelving. The books were both burned and doused with water from the sprinkler system. Because of a previous flood at the campus's science and engineering library, a disaster plan was already in place, but the staff could do nothing for the first week, while the fire department declared the building off-limits and an arson investigation proceeded; the time delay exacerbated the damage considerably.

Soot covered the walls of several floors, having been distributed through the ventilation system, and the smell of smoke was strong in parts of the building. The library was able to hire a company which specialized in disaster recovery to remove the debris and pack up the salvageable items, decontaminate the HVAC system, and clean the materials which could be salvaged. The packing process lasted two weeks; staff examining which items warranted salvaging had to wear mining helmets with headlights because the electrical system had been damaged.

Workers had to clean the entire library to address the smoke damage. All ceiling tiles were replaced, and cleaning included all furniture, floors, fixtures, and windows. Carpeting and fixtures were discarded; concrete walls were chipped to remove smoke odor, and then sealed with primer.

Seventeen semi-trailers full of materials were trucked out for cleaning and storage. The process was handled as efficiently as possible, but damage was approximately $15 million, not counting staff time.

In November of 2007, just as the basement renovation was nearly finished, a pipe burst, flooding the entire space with six inches of water, and damaging some books, which will need conservation yet again. The anticipated January, 2008 reopening of the space was indefinitely postponed.

Flash Flood and Roof Leaks at the University of Hawaii at Manoa

In October of 2004, a flash flood caused by torrential rain hit the main library at the University of Hawaii at Manoa. Water nine feet high rushed through the building, causing complete havoc to books and equipment and bringing huge amounts of mud and debris into the building. Affected were the Acquisitions, Serials, and Cataloging departments where materials were being processed, and the Government Documents department. The library's computer server was also destroyed, and library science students taking a class at the time had to break through a window to escape the rushing water. Salvage efforts centered on the Government Documents department, which contained irreplaceable maps of Hawaii and the Pacific region.

Moving quickly, staff moved map drawers containing 60,000 maps and 70,000 aerial photographs directly into freezer containers, which were frozen within 72 hours (before mold could grow). Card catalogs for these and other unique collections were also frozen.

To protect the bulk of the library and its collections from mold, air ducts were installed on all 5 floors and temporary generators powered the distribution of cool, dry air, along with temporary lighting because the library's electrical system was destroyed. The bulk of the library's collection was available for paging of materials within a week of the disaster.

Staff worked with the recovery firm to establish protocols for treatment of the materials, such as the map drawers which were coated with mud. Rinsing and freeze-drying enabled the library to recover 50,000 maps, along with a large number of books. The library developed its own paper conservation and digitization resources to help address the preservation problems; the library has treated approximately 8,000 maps itself. At this writing, the future of the aerial photographs is unclear, though it seems that mud damage is confined to the edges so restoration may be possible.

Work is continuing on restoration of the materials damaged in the flood. Meanwhile, in November of 2007, a roof leak after heavy rains damaged many additional items on an upper floor of the library, including rare Tibetan manuscripts. The leaking roof is a problem of long standing, and a reroofing is scheduled for next summer. As in the flooding disaster, thousands of waterlogged items have been frozen to prevent mold growth and await remediation.

The initial flood damaged $34 million in materials, and a $30-million renovation project on the basement is set to begin shortly. In February of 2006, UH received $21.2 million from FEMA to help cover damage costs.

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