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Disaster Preparedness:
An Essential Function of Libraries and Archives

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For much of Oregon, 1996 was the wettest year on record. Heavy rainfall and snowmelt produced the worst flooding in more than 30 years, putting some of Oregon's libraries and archives at risk. A few repositories experienced flooding, including the Oregon State University Archives. The threat of disaster and the actual events resulted in a number of archives and libraries updating their disaster plans or, in some cases, creating them for the first time. However, the impetus for disaster preparedness should not be the event itself or the threat of one.

Disaster preparedness is a process that involves periodic review and update of disaster plans, staff training, and inspections. It is based upon the premise that something can and, eventually, will go wrong. "Disasters are events whose timing is unexpected and whose consequences are seriously destructive, like fire, floods, earthquakes, tornadoes, and terrorist actions."[1] Library and archives staff members must be able to respond to situations quickly and correctly. Disaster preparedness, including creation of a disaster plan and continual staff education, is essential for effective disaster response.

Disaster preparedness consists of three components: planning, prevention, and response and recovery. Planning is the organization and action needed to carry out the other two components. Prevention is the action taken to reduce the need for disaster response and recovery and to lessen the severity of disasters that do occur. Response is the action taken during the emergency, and recovery is the action taken after it is brought under control to return the situation to normal.[2]

Disaster Planning

The formation of a disaster planning committee is an excellent way to begin the disaster planning process. Such a committee can have a number of assignments:

- identifying possible causes of disasters and resulting effects of each type upon various materials
- preparing a floor plan of the building or floors within the building showing the location of smoke, fire, and water detectors and fire extinguishers, sprinklers, and other fire suppression equipment
- preparing a floor plan showing stacks and other materials storage areas and color coding salvage priorities in each area
- formulating, reevaluating, and revising the disaster preparedness and recovery plan
- establishing disaster prevention and disaster recovery teams
- meeting and consulting campus or local police personnel, fire department personnel, and building maintenance personnel.[3]

The disaster plan is a vital component of disaster preparedness. All libraries and archives should have a disaster plan; even a rudimentary plan is better than no plan. A good disaster plan will include these items:

- evacuation procedures for users and staff
- recovery priorities
- recovery methods based upon the type of damage
- lists of where to obtain necessary equipment and instructions for using it
- lists of recovery supplies on hand or sources for those that are easily obtainable
- a list of key staff members, conservators, and people with expertise in various aspects of disaster recovery (this list should also be visibly posted);
- instructions on relocation and treatment of damaged materials
- procedures for replacing non-salvageable items

The plan should be reviewed and updated periodically, particularly after a disaster.[4]

A number of excellent disaster plans have been developed by Oregon libraries and archives. In September 1996, the city of Portland's Stanley Parr Archives and Records Center finalized a comprehensive disaster plan consisting of 11 major sections and more than 100 pages. Section 10 is an extensive bibliography of sources pertaining to all aspects of disaster preparedness.[5] OSU's Valley Library has developed a useful disaster manual. Although not as detailed as the Portland Archives' manual, it is set up in an easy-to-use outline form that contains most of the same sections found in the Portland plan.[6]

Disaster Prevention

Prevention includes actions taken to reduce the possibility of disasters and to make those that do occur less severe. One of the most significant actions is the installation of detection and prevention equipment, such as heat, smoke, and water detectors (the latter especially in areas prone to natural flooding, situated near exposed water pipes, or protected by a sprinkler system); fire extinguishers and fire suppression systems; security systems (theft is certainly considered a disaster); and emergency lighting. Other means for fireproofing include use of fire-resistant drapes and carpeting and installation of book returns outside the facility or away from stack areas. Installation of shelving with bracing that will reduce the possibility of collapse in an earthquake should also be considered in areas subject to seismic activity.[7]

Another important preventive action is periodic inspection of the facility and the prevention equipment. Many of these inspections can be performed by the disaster prevention team, especially those inspections not already carried out by the fire mar-

shal or the institution's physical plant. Daily checks should ensure that doors and windows are locked after hours, that fire doors are closed, that evidence of water leaks is reported, and that electrical equipment is unplugged when not in use. Fire extinguishers; fire, smoke, and water alarms; flashlights and emergency lights; and fire suppression systems should be inspected at least annually. Electrical wiring, particularly in older buildings, should be periodically inspected by an electrician. Emergency supplies[8] should be inventoried and hallways and aisles should be checked to make sure they are not blocked. A checklist of items to be inspected can be formulated and incorporated into the disaster plan.[9]

Fire and evacuation drills and staff awareness and training are other components of disaster prevention. Fire exits and escape routes should be clearly marked. Each area of the library or archives should have a map indicating clearly marked fire exits and escape routes posted in a conspicuous place. Staff members must be aware of potential disasters; know the location of emergency supplies, first aid kits, fire extinguishers, and alarms; understand how fire suppressions systems work; and be trained in the use of fire extinguishers. Staff training should be addressed in the disaster plan.[10]

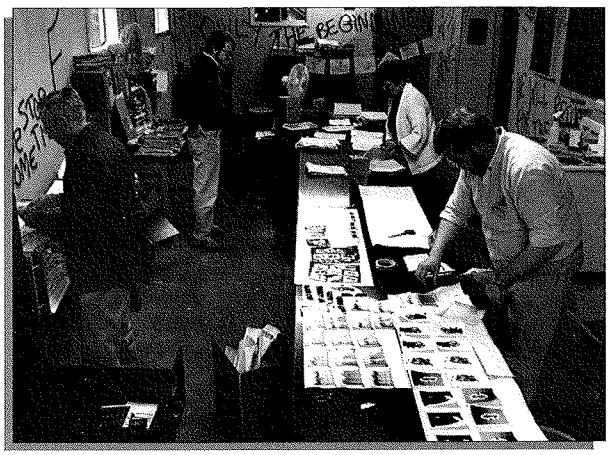
Other preventative measures include eliminating voids in shelving (fire traverses voids more rapidly than shelves filled with materials); storing cellulose-nitrate based film materials in a separate storage area (preferably at cool temperature), in fireproof cabinets, or duplicating and destroying the originals; storing materials in flood-prone areas off of lower shelves; and depositing security microfilm, especially of vital records, in an off-site storage facility, such as the Security Copy Depository maintained by the Oregon State Archives.[11] Good public relations can promote awareness of the need for disaster prevention and will make the implementation of preventative measures (especially inspections) much easier.

Response and Recovery

In any emergency, the primary concern should be for people inside the facility. As mentioned previously, clearly marked fire exits and escape routes are essential. If a disaster occurs when the facility is unoccupied (as most disasters do), do not enter the building until the fire marshal or another official indicates it is safe to do so.[12]

An effective recovery operation consists of four phases: assessing the damage, stabilizing the environment, activating the in-house disaster recovery team, and restoring the area. In the assessment phase, the extent and kind of damage is determined, as well as the types of materials damaged. Extensive notes in pencil should be taken (ink may run). Photograph areas to document the damage. Contact insurance carriers and sources of supplies and services.[13]

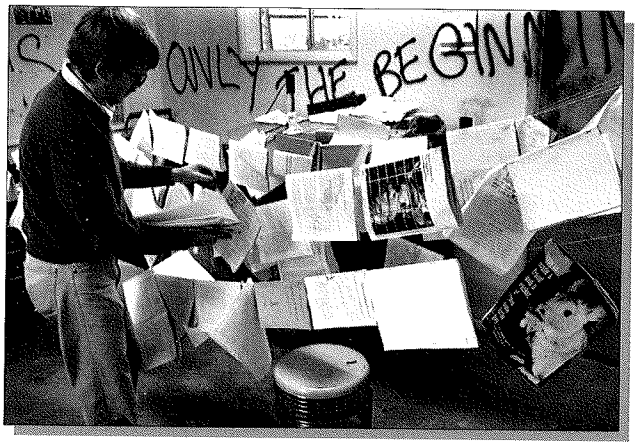
Before recovering materials, the facility's environment must be stabilized, especially if the area has been water damaged. Ideal environmental conditions to prevent mold growth in water damaged areas are approximately 65 degrees F. and 50 percent relative humidity. Equipment useful in stabilizing a damp or wet environment includes portable generators (in case of a power failure); pumps and wet-dry shop vacuums for removing water; fans to circulate air; and thermometers, hygrothermographs, etc. to monitor temperature and humidity.[14]



Oregon State University Archives staff recovering materials after the University's Mink Farm was vandalized in June 1991. ***(Photo by Mark Floyd, OSU News & Communication)***

As recovery begins, the disaster recovery team members should have clearly defined responsibilities, and salvage actions should be approved by the team leader. The disaster and recovery areas should be off limits to the public.[15] Many salvage procedures can be carried out by the disaster action team. Small quantities of damp books, paper documents, and photographic prints can be air dried: Books should be interleaved, and documents and photographic prints can be dried on monofilament line. Large quantities of wet materials must be frozen within 48 hours to reduce the possibility of mold growth. Frozen materials then can be dried as time permits. Knowing the location of large commercial freezers is an important element of the disaster plan. Institutional and commercial food operations often have large freezers that can be used for emergency purposes.[16] Wet materials, especially those with coated paper, can also be vacuum freeze dried, although this recovery method is expensive. Oregon Freeze Dry in Albany has had some experience in freeze drying books.[17]

Film negatives, microfilm and motion picture film should be immersed in clean, cold water and then air-dried or sent within 48 hours to a film processing lab. Freezing and freeze-drying photographic materials should only be done as a last resort.[18] New copies of microfilm can be generated from the security master should use copies be unsalvageable. Magnetic tapes should be removed from cassettes, washed in distilled water, and air-dried or dried with cheesecloth. LP sound recordings should also be



The author using monofilament line to air dry damp documents. *(Photo by Mark Floyd, OSU News & Communication Services)*

washed with clean water and dried with a soft lint-free cloth.[19]

Wet and damp materials that are not dealt with within 48 hours are at considerable risk of developing mold. Materials that develop mold should be separated from non-affected materials in an area with well circulated air. Mold, when dry, can be removed with a vacuum or brushed off. Always wear a particulate mask and protective clothing when working with moldy materials. Large quantities of moldy materials should be fumigated, which is best left to conservators or commercial disaster recovery firms.[20]

After recovery operations are complete, restoring the area should begin. Walls, floors, ceilings, furniture, shelving, and equipment should be thoroughly cleaned. Carpeting and underlying pads must be dried. Removal of odors and any fungicide treatment should be done by professionals.[21] Discussion of causes of the disaster, reports written on the disaster, review and update of the disaster plan, and letters of thanks sent to persons and groups that assisted during the disaster should take place after recovery.[22]

Disaster preparedness is an essential part of the operation of a library or archives, especially in Oregon, which is susceptible to flooding, mud slides, and earthquakes. We hope we will never have to implement our disaster plans. Pre-planning will not stop disasters from occurring, but it will enable us to react quickly and begin to salvage materials within the critical time frame of the first 48 hours. Q

NOTES

1. Hilda Bohem. *Disaster prevention and disaster preparedness*. Berkeley, Calif.: University of California, Task Group on the Preservation of Library Materials. 1978, p.1.

2. Canadian Council of Archives, *Basic Conservation of Archival Materials: A Guide* (Ottawa: Canadian Council of Archives, 1990), p. 43.

3. Ibid., p. 43; John Morris, *The Library Disaster Preparedness Handbook* (Chicago and London: American Library Association, 1986), p. 66

4. Canadian Council of Archives, *Basic Conservation*, p. 44; Morris, *Library Disaster Preparedness Handbook*, pp. 66-67.

5. City of Portland Records Management Division, "City of Portland Stanley Parr Archives and Records Center Disaster Preparedness Plan," September 1996. Copies of this plan are available from the City of Portland, Records Management Division, 1220 SW 5th, Room 401, Portland, OR 97204.

6. Oregon State University Valley Library, "Disaster-Preparedness and Recovery Manual," undated. Contact the Valley Library, Oregon State University, Corvallis, Oregon 97331 for copies of the manual.

7. Mary Lynn Ritzenthaler, *Archives and Manuscripts: Conservation*, SAA Basic Manual Series (Chicago: Society of American Archivists, 1983), p. 37; *Canadian Council of Archives, Basic Conservation*, p. 45; Morris, *Library Disaster Preparedness Handbook*, pp. 48 & 53; Claire England and Karen Evans, *Disaster Management for Libraries: Planning and Process* (Ottawa: Canadian Library Association, 1988), p. 25. A $35, battery-operated water detector was responsible in part for saving the OSU Archives from extensive flood damage during the November 1996 floods.

8. The OSU Archives maintains a milk crate container filled with commonly used emergency supplies; most are water related, as flooding and water leakage have been regular occurrences. The crate contains plastic sheeting and trash bags, cloth and paper towels, disposable gloves, particulate masks, a flashlight and extra batteries, nylon rope, an extension cord, and an 11 qt. bucket. Several pair of rubber slip-on boots and a 12 gallon wet-dry shop vac are also part of the Archives' emergency supplies. Commercially prepared kits for libraries and archives are available from Emergency Supplies for Collections, P.O. Box 3902, Seattle, WA 98124-3902. REACT PAKS are available from University Products, 517 Main Street P.O. Box 101, Holyoke, MA 01041-0101; Gaylord Bros., Box 4901, Syracuse, NY 13221-4901; and other library and archives supplies vendors.

9. Toby Murray, *Basic Guidelines for Disaster Planning in Oklahoma* (Tulsa: University of Tulsa Libraries, 1990), pp. 5-6.

10. Canadian Council of Archives, *Basic Conservation*, p. 45; Morris, *Library Disaster Preparedness Handbook*, p. 53.

11. The Oregon State Archives' Security Copy Depository consists of two vaults for the storage of

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Survey

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tions, perceives a need for preservation, and seeks solutions to the problems of deteriorating materials. Providing information to staff members may be the most cost-effective way for libraries to tackle preservation, which has a reputation for being expensive. There are many inexpensive techniques for preventing or reducing damage to library collections, such as covering windows, using bookends, and shelving oversized books with adequate support, but the information needs to be widely disseminated and accepted by institutions to effect change in procedures and priorities.

Grant funds have been available in the past for statewide preservation planning and for statewide disaster planning, but no Oregon institution is now in a position to put forward a grant proposal for a statewide project that would require widespread coordination and cooperation from many institutions. The Oregon Newspaper Project (Refer to page 14.), part of the U.S. Newspaper Access and Preservation Program of the National Endowment of the Humanities, which is now underway at the University of Oregon Library, may usher in a new era of cooperative preservation projects for Oregon libraries. As sparse resources continue to dwindle, Oregon libraries are becoming more cooperative, more creative, and increasingly reliant on shared resources and activities. Preservation could be a beneficial outcome of these fiscal hard times.

In Oregon, library consortia such as Portals and Orbis have the potential for fostering cooperative preservation. Establishing a successful preservation network will require institutional commitments for support, and governmental support and potential assistance would substantially increase the likelihood of success. Above all, some group of library directors needs to say, "Let's do it."

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security microfilm of public records. One vault is for records with a retention period of 10-99 years; the second is for records with a retention period of 100 years or more. For additional information, contact the Oregon State Archives, 800 Summer Street NE, Salem, OR 97310.

12. Murray, *Basic Guidelines*, p. 12.

13. Ibid., p. 12.

14. Ibid., pp. 12-13.

15. Ibid., p. 13.

16. Ibid., pp. 15-20; Canadian Council of Archives, *Basic Conservation*, p. 46.

17. Oregon Freeze Dry, Inc., is located at 525 25th Ave. SW, Albany, OR 97321; 541-926-6001.

18. Canadian Council of Archives, *Basic Conservation*, p. 46; Klaus B. Hendricks and Brian Lesser, Disaster Preparedness and Recovery: Photographic Materials, *American Archivist* 46 (Winter 1983): 65-66.

19. Murray, *Basic Guidelines*, pp. 21-22.

20. Murray, *Basic Guidelines*, p. 22; Canadian Council of Archives, *Basic Conservation*, p. 49. Companies that specialize in removal of mold from library and archival materials include Disaster Restorations, Albany, 541-928-7267, and BMS CAT, 303 Arthur Street, Ft. Worth, Texas 76107.

21. Murray, *Basic Guidelines*, p. 13.

22. OSU Valley Library, "Disaster-Preparedness and Recovery Manual," p. 7.