

DISASTER MANAGEMENT IN LIBRARIES

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What is Disaster?

A disaster is a sudden, unexpected event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. Though often caused by nature, disasters can have human origins



Disaster -

A disaster can be defined as an occurrence either nature or man made that causes human suffering and creates human needs that victim cannot alleviate without assistance.

(American Red Cross)

Natural Disasters

Meteorological

Topographical

Environmental

Man made Disasters

Technological

Industrial

Warfare



Technological

- Transport failure
- Public place failure
- Fire

Industrial

- Chemical spills
- Radioactive spills

Warfare

- War
- Terrorism
- Internal conflicts
- Civil unrest
- CBRNE

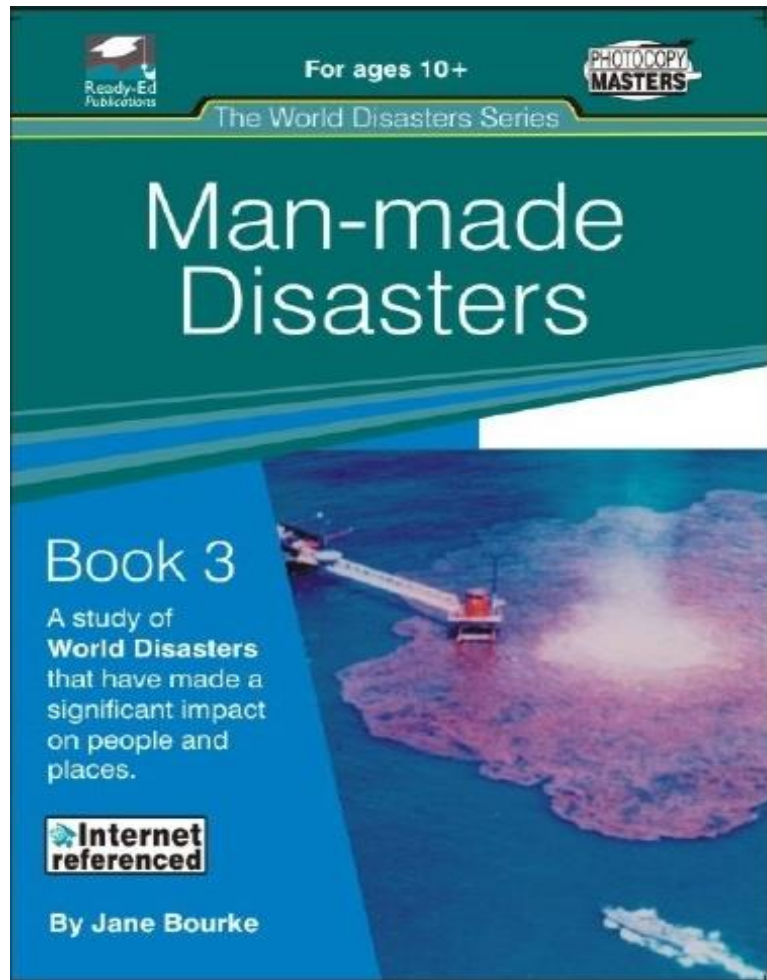
Causes of Disasters



Natural causes

- Earthquakes
- Fires
- Floods
- Typhoons
- Volcanic eruptions





Causes of disasters

Man-made

- Biological contamination
- Chemical spill
- Civil disturbance and terrorism
- Construction failure
- Electrical power failure
- Electronic computer failure
- Explosions (bombs)
- Fire (arson)
- Gas leak

Causes of disasters

Man-made



- Human error and carelessness
- Nuclear disasters
- Robbery
- Sewage overflow
- Sprinkler activation (accidental)
- Strikes
- Toxic fumes
- Vandalism
- War
- Water overflows



Library Disasters

- 95% of disasters result in water damage; even fire damage is accompanied by water damage.
- Libraries must be prepared for all disasters, natural and man made, that may occur at their institution.
- The cost of not being prepared may be loss of life, loss of the materials, or, ultimately, the loss of the total business of the Institution







Disasters in
Libraries ?



**Image of damaged books from the
Restoration Sciences web site**









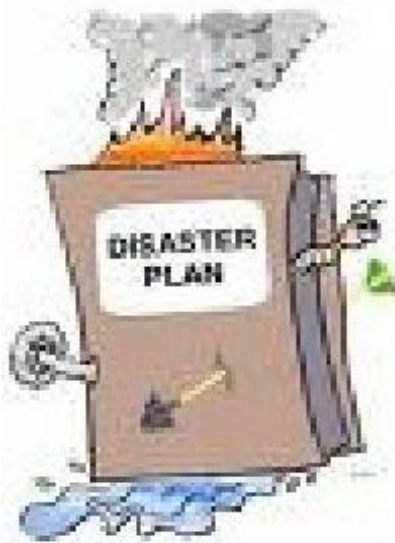


Ruined books



Objectives of Disaster Planning in Libraries

- To protect people, libraries and materials
- To avoid a disaster by being pro-active
- To reduce possibility of a disaster and to reduce effects if a disaster happens
- To expedite response and recovery efforts in an organized and systematic manner



Stages in Disaster Planning

Disaster preparedness and prevention

- Disaster response
- Disaster recovery
- Disaster follow-up and planning update

First Stage - Prevention

- **good housekeeping**
- **good monitoring** (smoke, heat and water) and fire suppression systems
- **regularly scheduled inspections** of detection or fire suppression systems, fire safety equipment, electrical and plumbing systems, etc
- **review of facilities structure/design**

Preparedness against water damage

- Remind staff to **turn off water** pipes
- **Inspect & repair** roofs and flashings regularly
- **Have gutters and drains cleaned** frequently
- Don't store materials under water pipes, steam pipes, lavatories, mechanical air-conditioning equipment, etc.
- **Store materials at least 4 inches off the floor**
- **Install water-sensing alarms** in basement

Disaster Preparedness involves these activities...

- **Assess collections and assign priorities for salvage**
- **Identify disaster recovery resources**, including institutional assistance, vendors, consultants, conservators
- **Secure a budget** for supplies and training activities
- **Purchase and distribute in-house supplies** (which should be inventoried)





Disaster Preparedness - more activities...

- **Review** policies and procedures for disasters and/or emergencies
- **Write the disaster plan**, distribute, or better, put on the website
- **Secure offsite backups**
- **Train staff**
- **Conduct pre-planned tests** of the plan
- **Review and report every emergency**
- **Modify plan** from drills and experience
- **Update plan** regularly



Five steps to risk assessment



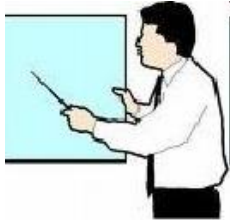
Risk Assessment

2- The conclusion of the Assessment should be to know:

- Where are my biggest risks?

3 - Take preventive actions or regularly monitor or "alarm" those risks.

What can we do to minimize or reduce the risks?



Risk Assessment

Category Probability and Effect

1 **High probability- High Effect**

Examples

Fire, typhoon
flood, roof leaks

2 **High probability- Low Effect**

theft, vandalism

3 **Low probability- High Effect**

earthquake,
nuclear war,
tsunami,
explosion

4 **Low probability- Low Effect**

collapse of
bookshelf,
collapsed ceilings



How to create a
Disaster Plan?



Elements of a Disaster Plan

- 1- Quick Reference Guide
- 2-Basic Information
- 3-Disaster Team
- 4-Collection Priorities
- 5-Disaster Scale and Recovery Operations
- 6-procedures for Disaster Recovery

5- Disaster scale and recovery operations

Level 1: Emergency

- Minor incidents that do not interrupt library operations
- Handled by minimal staffing in less than 4 hours
- Any damaged materials are handled in-house

Level 2: Small disaster

- Limited to isolated area
- Damages of less than 100 items
- Requires 1-3 staff members
- Disruptions resume within a day
- Supplies available in-house
- Damaged materials treated in-house

Level 3: Medium disaster

- Damages of less than 500 items
- Service operations resumed within 48 hours
- Outside vendors may be needed

Level 4: Major/large scale disaster or wide-area disaster



6- Procedures for disaster recovery

- General Guidelines
- Recovery of mold materials
- Freezing of materials
- Air drying of materials
- Guidelines for paper based materials





Disaster Response

The speed and manner of disaster response is often critical to the recovery, rehabilitation and final outcome



Checklist of First Response

- Step 1 – **Make sure people are safe.**
- Step 2 – **Make a rapid assessment** of the situation.
- Step 3 – **Protect the collections** from further damage.
- Step 4 – Notify, or verify **notification of, people and programs** that are designated to respond in an emergency.
- Step 5– Work with Facilities staff members to **stabilize the environment.**
- Step 6 – Do a **comprehensive assessment of damage** to the collections.

Step 6 – assessment of damage

- Identify the types of materials damaged, and estimate quantities:

Bound volumes, Unbound paper

Microforms

Photographic prints and negatives

Videotape, audio tape, Motion picture film

Others

- Identify the nature of the damage, materials might be:

Damp, Wet, Smoke-damaged

Fire-damaged, Dirty

Contaminated by bacteria or other dangerous substances

- Photograph affected areas.





Checklist of First Response

Step 7 – Determine if an outside commercial response service is required.

Step 8 – If an outside service is not required, implement salvage activities.

- Step 9 - Keep detailed records of:
 - Areas affected
 - Items affected
 - Locations of items being salvaged
 - Salvage methods



General Emergency Guidelines

- Use common sense
- Know the location of emergency exits
- Know the location of building alarms, how and when to use them
- Locate the Disaster Response Kit
- When the emergency is over, record and report the incident



Disaster Response

1- Assess the situation

- Conduct the walk through
- Look for structural damage
- Level of damage to the collections?
- Provide documentation and photographs
- Review service areas and other patron accessible areas
- Review staff /work areas



2- Stabilize the environment

- Control the temperature & humidity
- Increase ventilation
- Turn on air conditioning if possible to retard mold
- Safety or security problems?
- Arrange for environmental testing
- Continue environmental monitoring of the whole building



Disaster Response

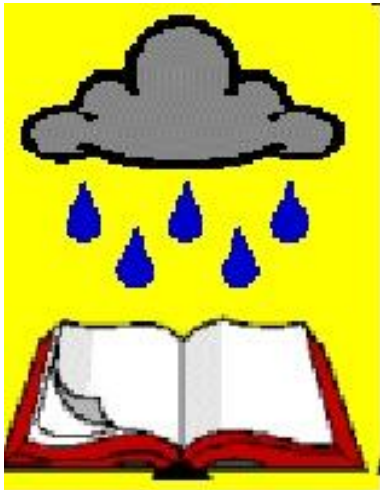
3- Estimate time of reoccupation or need for relocation site

4- Perform initial recovery preparations

- Identify staging area for collection recovery
- Setting up a command center and/or off-site recovery area

5- If necessary, activate the disaster plan

Disaster Response



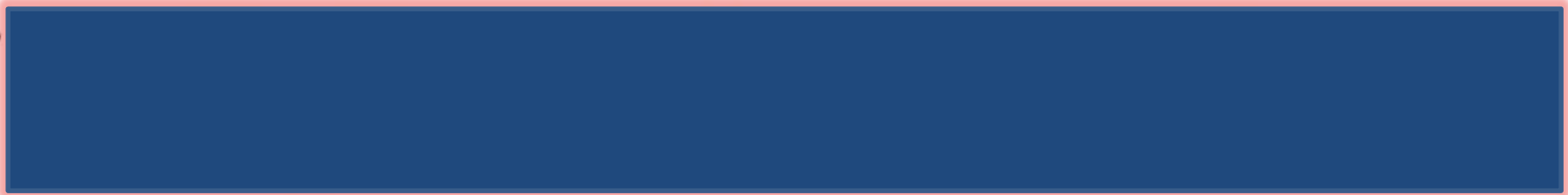
DO NOT

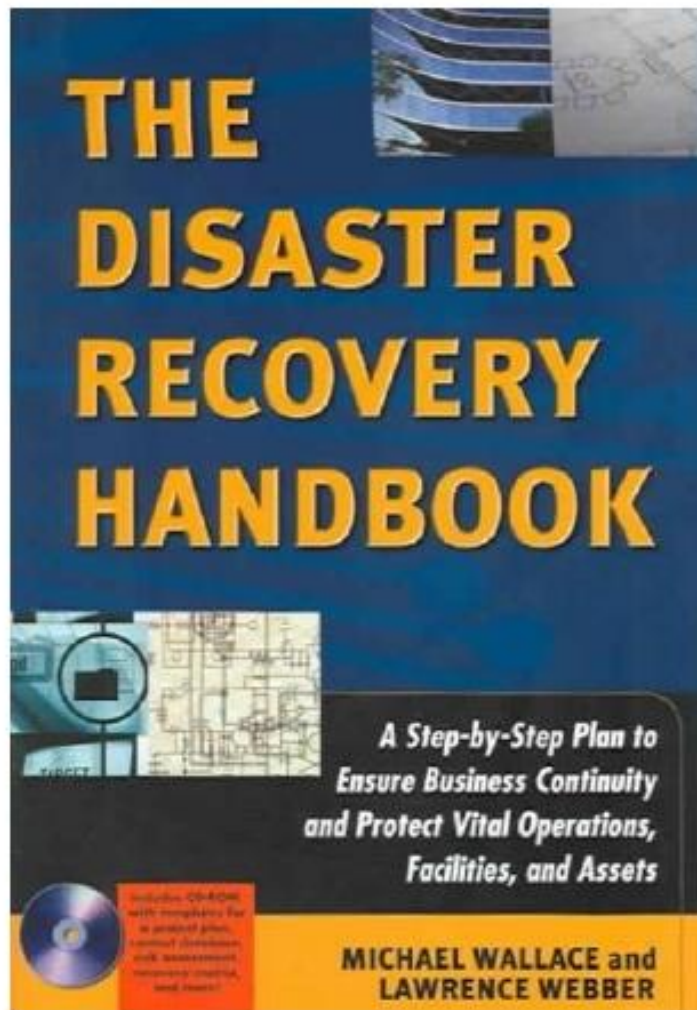
- touch anything electrical
- remove collection items from the disaster area
- enter the area until Security determines it is safe to do so

Initial Response Guidelines for water-damaged materials:

DO NOT ...

- expose books to dry under the sun
- open or close books
- separate single sheets
- press wet books
- wipe off mud or dirt
- remove book covers or separate materials.





Disaster Recovery

- Time for recovery may be as short of a few hours or up to several years.
- Whatever the damage, the collection will never be exactly the same.



Disaster Recovery

1- Provide
continuity
of service for:

- Reference
- Circulation
- Interlibrary Loan
- Computer access to online catalog and electronic resources
- Other patron services, i.e., children's story hour

Disaster Recovery



- 2- Restore the collection
 - Gather data on the collections
 - Type of materials
 - Status of online database
 - Record of holdings
 - Typical information the insurance people might ask for
 - Decide the immediate action plan
 - Salvage priorities
 - Instructions for special formats
 - Availability of supplies and equipment
 - Vendor or in-house recovery



Disaster Recovery

3- Create and implement a plan for processing materials back into the collection



- Books should be sorted out based on the amount of salvage work needed as well as level of priority. It is generally more efficient to work on the least damaged than on the wettest materials.
- Review options: restoration, repurchase, gifts, discard and start anew, alternate format
- Review specifications, staffing, budget, space, supplies, etc.
- Determine the role of experts or consultants

Salvaging books...



- Freeze or dry within 48 hours to avoid mold growth and to minimize distortion.
- Immediately freeze books with coated paper, keeping them wet until they can be frozen.
- Work first on books that have fallen on the floor, coated paper, the wettest materials.
- If books are wet & dirty, they should be cleaned before being dried. Use either running water or a cycling process with about 4-8 wash basins filled with water for closed books. Don't use brush; use sponge to clean. And books should not be rubbed. The water should be doing almost all of the cleaning.
- Do not open volumes, or close those that have fallen open.
- Handle one item at a time, using both hands.
- Do not press water out of wet books-the paper will be too fragile when it is wet



Salvaging documents, unbound paper, and photographs

- **Stable materials** - freeze or air-dry within 48 hours to avoid mold growth
- **Soluble inks and pigments** - immediately freeze or air-dry
- **Coated paper** - immediately freeze or air-dry
- Do not try to separate single sheets (except to air-dry)
- **Keep documents in order** and retain documentary information
- **Do not blot surfaces** of documents that have soluble media



Recovery Methods:

Air-drying

- Stand books on their heads
- Interleave absorbent paper every 25-50 pages
- Use fan to keep air circulating
- Keep temperature below 65 degree F
- When dry, lay books flat but not stack up together

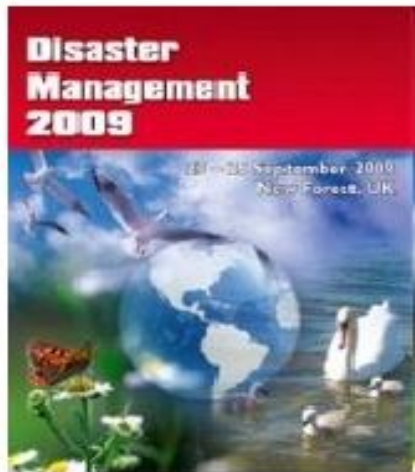


Frozen water-damaged X-ray files are easily loaded into the drying chamber.

Recovery methods : Vacuum-drying

Recovery Methods for **Wet Paper-based Materials**

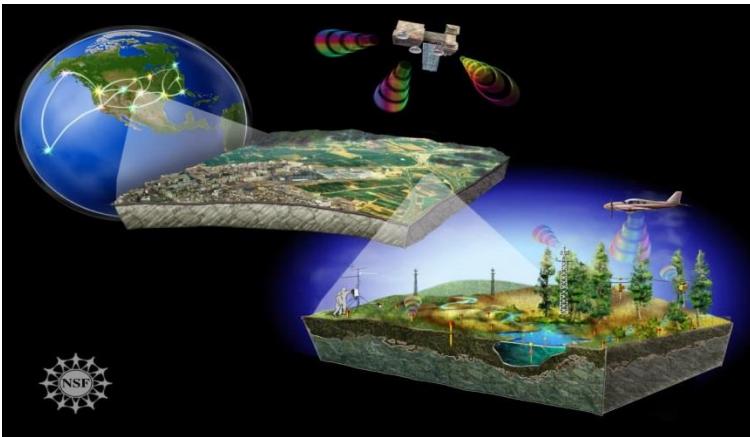
- **Dehumidification** - Materials are dried in their place on shelves by large commercial dehumidifiers that are brought on site. Temperature and relative humidity in the area should be controlled. Books distort more than when vacuum freeze dried. Use for **moderately wet** books.
- **Freezer Drying** - Materials are put in a freezer for months. Over time moisture sublimates out of the materials. Use for **a few wet books**



Disaster Follow-up

All activities performed to mitigate another disaster, including:

- Revision of the disaster plan
- Change in policies and procedures
- Review of the disaster management team
- Retraining of staff
- Modification of the facilities
- Assessment of risk management needs
- Review of insurance needs



Following technologies can be helpful in the reduction of damage by a disaster:

- 1. Remote Sensing Technology,
- 2. Geographic Information System,
- 3. Global Positioning System,
- 4. Forecasting and Warning System,
- 5. Communication Technology,
- 6. WWW and Internet.



Remote Sensing technique can be helpful to read possible threats of any weather disturbances through its weather and other observation satellites. It helps in gathering data by means of radiation from electro-magnetic spectrum.

Geographic Information System integrates stores, edits, analyzes, and shares geographically referenced data and is helpful during floods, landslides, earthquakes.

Global Positioning System is a technology by means of which one can pinpoint the exact place where disaster has struck. The exact damage site then can be visited to start rescue operations. This can be very effective for search and evacuation of displaced people or people buried under debris.

Warning and Forecasting System plays a vital role in determining the possible action of a disaster. The potentially affected area can be evacuated and people can be moved to safer places even before the disaster. It is effective for floods, cyclones.

Earthquake Warning System is being used these days to warn people against its possible strike. Communication Technology is particularly effective in mitigation, preparedness, response and recovery. Internet, Fax, Mobile phones, E mail, Radio and Television can all be used to spread and share information relevant during and before any disaster.

WWW and Internet provide a global platform for instant and automatic sharing of information regarding a disaster and its management. The latest tools, methods, technologies, weather forecasting, satellite images and other relevant data can be put on web for sharing and exchange.



Measures Taken by Govt.of India



National Disaster Management Authority (ndma.gov.in). Earthquakes, floods, river erosion, cyclones, tsunamis, landslides, avalanches and forest fires are included under natural disasters and nuclear & chemical destructions, mine disasters, biological disasters, cyber terrorism and environmental disasters are covered under reasons because of human activities or interventions. 20 guidelines have been issued from time to time since 29.6.2009 by NDMA covering natural & man-made disasters.

Another institution **National Institute of Disaster Management (NIDM)** functions as nodal center for human resource development in the area of disaster mitigation and response. Capacity development, with other institutions is one of the major concerns of NIDM. Besides this training, research, documentation and development of a national level information base also comes under NIDM. It is expected to network of other knowledge based institutions and closely work with them.

India Disaster Resource Network (IDRN)

Inaugurated on 1st September 2003. Web-enabled, centralized database for quick access to resources to minimize response time. Updated every year ,at District & State level. 226 items, 69,329 records in 545 districts uploaded.

Web portal for knowledge collaboration, maps, networking, emergency contact information system .Goal - easy to use unified point of access to disaster management ,mitigation and response.

IDKN is a part of South Asian Disaster Knowledge Network (SADKN).

