

Disaster Recovery For Collections

*Addendum to the Museum of
Nature & Science Emergency
Procedures Manual*

2008

Introduction

This addendum is designed to provide recovery information for Collections and Research Department staff in the event of a disaster.

You will find information on how to organize collection staff, assess the status of the collections, prevent further damage to collection items, and provide instruction for recovery for the collections.

Disaster situations include, but are not limited to:

- Natural disasters such as flooding, earthquakes, fires, and tornadoes.
- Toxic chemical spills in or near the Museum.
- Terrorist acts such as bombs.
- Criminal action such as vandalism and robbery.

This document was derived from similar documents from peer institutions such as the Museum of Texas Tech University, the Library of Congress, and the National Park Service.

Recovery Procedures

Getting Started

The Head of Collections gathers staff off-site to assign tasks and review salvage priorities. If only a portion of the Museum is affected by the emergency, this gathering can be done at a location inside the Museum but away from the emergency site.

1. A command center is established by Security with office equipment (e.g., computers, copier) and communication devices (e.g., walkie-talkies, cell phones).
2. A secure salvage area is created by the Head of Collections with locks, fans, tables, shelves, plastic sheeting, drying materials, clean water, camera, pencils and paper, and any other equipment relevant to the emergency.
3. Museum Administration notifies emergency officials and relevant departments of the extent of the damage.
4. Peer museums, professional groups, and commercial providers are consulted by the Collections Manager for assistance.
5. Media enquiries are directed to the Director of Marketing.
6. Available financial resources are verified by the Chief Executive Officer to cover cost of recovering from the emergency, such as Museum and divisional budgets, insurance, state and federal assistance and other outside sources of funding.
7. Service providers are contracted with by the Museum's Chief Financial Officer for such emergency services as generators, freeze-drying, and refrigerated trucks.

Stabilize the Building and Environment

Some building contents may be contaminated. Personnel should not enter the building without current tetanus shots and appropriate personal protective equipment (e.g., gloves, overalls, dust mask, respirator mask, or hard-hat).

1. Structural hazards are identified and repaired; walls and shelves braced; debris removed from the floor.
2. Temperature and relative humidity are stabilized as soon as possible to 50% RH and 70°F by City of Dallas Equipment and Building Services staff. Fluctuations are minimized first, then work progresses towards obtaining the ideal. If warm outside, air conditioning is used. If cold outside, heaters are used only for human comfort or to prevent freezing. Fans are used to circulate the air unless mold already is present.

3. Standing water is removed, items containing water are emptied, and wet carpets and furnishings are removed.
4. Needed supplies are purchased.

Documentation

Once it is safe to enter the Museum, a preliminary tour of all affected areas is made and protective clothing is worn.

1. No objects or collections are moved without documenting their condition.
2. A digital camera, video camera, or Polaroid-type camera is used to record the condition of objects and structures. Images must illustrate clearly the damage. Supplement with additional images as necessary.
3. Notes and voice recordings are made to accompany images.
4. Staff is assigned by the Head of Collections to keep notes of salvage and retrieval decisions and activities. The Collections Manager keeps notes on contacts with insurance adjusters and other investigators.
5. Visual, written, and voice recordings are made by staff for each step of the salvage procedures.

Retrieval and Protection

Undamaged collections and objects are left in place if the environment is stable and secure. If it is not, collections are moved to a secure, environmentally controlled area.

1. If no part of the Museum is dry, all objects not in enclosed cabinets are protected with loose plastic sheeting.
2. When moving collections, give priority to undamaged objects and objects that are most vulnerable to damage from unstable conditions. Separate undamaged objects from damaged objects.
3. Until salvage begins, each group of material is maintained in the same condition as found; i.e., keep wet items wet, keep dry items dry, keep damp objects damp.
4. All pieces of broken objects are retrieved and labeled.
5. Objects are checked daily for mold. If mold is found, objects are handled with extreme care and isolated.

Damage Assessment

The Collections Manager notifies the insurance representative or risk manager of the damage that has occurred. An on-site evaluation of the situation by such entities may be necessary before salvage action is taken.

1. A rough estimate is made of the types of materials affected and the extent and nature of the damage. Too much detail should be avoided so that recovery activities are not slowed.
2. Threats to objects and to staff and other worker safety are checked daily. The status of security systems and procedures is determined.
3. Evidence of mold is checked daily. Length of time materials have been wet and the current temperature and relative humidity are noted.

Salvage Priorities

Contact a conservator as soon as possible.

1. Salvage priorities are established by groups of materials not item by item. High priority collections areas are addressed first.
2. In general, objects that cannot be dried within 48 hours are frozen.
3. Protection and salvage work is focused first on the following:
 - a. Vital Museum institutional information;
 - b. Collections that most directly support the Museum's mission;
 - c. Collections that are unique, most used, most vital for research, most representative of subject areas, least replaceable or most valuable;
 - d. Objects most vulnerable to continued damage if not treated;
 - e. Objects/materials most likely to be salvaged successfully;
 - f. Objects on loan.

Water Damage Recovery

Salvage priorities by materials type

1. Inorganic materials
 - a. Identify ceramic type and consult a conservator on drying procedures. If ceramic is broken, place in clean, transparent polyethylene bag until it can be treated. Seal the bag and monitor for mold.
 - b. If a stone object is smooth-surfaced, blot gently and air dry. If a stone object is rough-surfaced, or has an applied finish, do not blot. Air dry slowly under controlled conditions.
 - c. Rinse or sponge with distilled water and blot metal objects. Air dry. If a metal object has an applied finish, do not clean. Air dry slowly under controlled conditions. Keep flaking surfaces horizontal.
2. Organic materials
 - a. Rinse and sponge leather and rawhide objects with clean distilled water. Drain and blot to remove excess water. Pad with cotton toweling or acid free neutral paper to maintain shape. Air dry slowly under controlled conditions. Manipulate tanned fur and skins during drying to keep flexible.
 - b. Rinse baskets with clean distilled water. Drain and blot to remove excess water. Stuff with clean acid-free buffered paper or cotton sheets to retain shape and absorb stains. Cover with clean cotton towels and air dry slowly under controlled conditions. Change blotting material regularly.
 - c. Rinse bone, shell, and ivory with clean distilled water. Drain and blot to remove excess water. Place on blotters on non-rusting screens. Air dry slowly under controlled conditions.
3. Natural History Specimens
 - a. Avoid direct handling of study skins and taxidermy mounts. Air dry slowly under controlled conditions or freeze.
 - b. Rinse botanical specimens with clean distilled water only if necessary. Interleave with acid-free lignin free paper and air dry herbarium specimens under controlled conditions; use presses if possible. Open specimen boxes and air dry slowly under controlled conditions.
 - c. Place fluid-preserved collections in sealed polyethylene boxes with a small amount of alcohol.
 - d. Rinse with distilled water and air dry geological specimens slowly under controlled conditions. Check with a conservator, as some geological specimens must be dried quickly.
 - e. Rinse with distilled water and air dry paleontological specimens slowly under controlled conditions. Fragile specimens and those with old repairs should be held together with ties during drying. Pad ties with acid-free buffered paper.
4. Framed Artworks

- a. Remove paintings from frames in a safe, dry place. Do not separate paintings from their stretchers. Keep wet paintings horizontal and paint side up with nothing touching the surface.
 - b. Remove art on paper or photographs with glass fronts from frames in a safe, dry place, unless art is stuck to the glass. If stuck to the glass, leave it in the frame and dry glass-side down. Otherwise, dry artwork slowly under controlled conditions, image-side up with nothing touching the surface.
5. Photographs
- a. Remove from plastic/paper enclosures or frames. Save all information about the photograph. Carefully rinse with clean, cool distilled water as necessary. Do not touch or blot surfaces. Air dry under controlled conditions. Hang with clips on non-image areas or lay flat on absorbent paper. Keep photographs from contact with adjacent surfaces or each other.
 - b. If too many photographs exist that need immediate attention, either keep photos (except for historic photos) in a container of clean distilled water no more than 48 hours and air dry under controlled conditions OR freeze and, if possible, interleave with freezer or waxed paper; do not freeze glass-plate negatives.
6. Books and Paper
- a. If it is necessary to rinse, do so with distilled water and keep book held closed. If book is partially wet or damp, stand the book on top or bottom edge with covers open at a 90° angle and air dry slowly under controlled conditions. If book is very wet, lay flat on a clean surface and interleave less than 20% of the book with absorbent material and replace interleaving when damp.
 - b. If too many books to air dry in 48 hours, wrap in freezer or waxed paper, pack spine down in sturdy containers, and freeze.
 - c. Air dry paper as individual sheets or small piles up to 0.5cm deep. Interleave, and replace interleaving when damp. Do not unfold or separate wet sheets.
 - d. If too many papers to air dry in 48 hours, interleave (by groups or individually) with freezer or waxed paper, pack papers or files supported and standing up in sturdy containers packed only 90% full, and freeze.
7. Electronic Records
- a. Wear gloves when handling electronic media to avoid scratching surfaces. Do not use magnetic tools or scissors. When copying, clean drive heads frequently to protect the copying equipment.
 - b. Tape casings keep tapes clean and dry, but if the case is damaged, disassemble and remove tape. Rinse dirty tapes, still wound in reel, in clean lukewarm distilled water. Support vertically in blotting paper to air dry slowly under controlled conditions, then reassemble and copy.
 - c. Remove diskettes from casing and rinse in clean distilled water. Dry with lint-free cotton towels. Insert diskette into new casing and copy.
8. Textiles
- a. Provide adequate physical support when moving heavy textiles. Do not unfold delicate wet fabrics. Do not stack wet textiles.

- b. Rinse in distilled water, drain, and blot items with clean cotton towels or sheets to remove excess water. Block and shape each damp textile to its original form. Slowly air dry textiles using fans under controlled conditions. If textiles cannot be dried within 48 hours, separate them with freezer or waxed paper to prevent dye transfer, then pack flat, and freeze.
9. Furniture
 - a. Gently rinse or sponge the surfaces of wood furniture with distilled water to clean. Blot and air dry slowly under controlled conditions. Inspect painted surfaces. If paint is blistered or flaking, air dry slowly under controlled conditions without removing dirt or moisture. Hold veneer in place with weights or clamps while drying slowly under controlled conditions. Pad weights and clamps. Finishes may develop a white haze.
 - b. Rinse dirt from upholstered furniture with distilled water. Remove cushions, lift-out seats, and other separate pieces. Wrap upholstered materials in cotton towels or sheets to air dry slowly under controlled conditions, and replace cotton towels or sheets when damp. Blot wood sections with cotton towel and air dry slowly under controlled conditions.

Data Management

1. It is important that all data associated with damaged specimens is retained. Keep all identification tags with the specimens at all times.
2. Condition reports should be kept on all specimens throughout treatment and repair, and kept on file once completed so that damage can be monitored in the future. Note incident, damage and changes to specimens in database.

Final Disposition

1. Track location of all specimens during treatment. Once returned to permanent storage, note location in the database.
2. If specimens are determined to be too damaged to be kept as part of the permanent collections, they must go through formal deaccession procedures. Final disposition must be noted in the specimen records of the database.