

RECOVERY PROCEDURES FOR LIBRARY MATERIALS

Read and understand all steps thoroughly before undertaking recovery procedures below.

DAMP OR WET BOOKS

CAUTION:

- **All air drying MUST take place in a cool, dry place.** Warm humid air encourages mold growth, which can be more damaging than the original emergency. Try to keep the temperature below 70° and the relative humidity below 55%. Use dehumidifiers if necessary and fans to keep air circulating.
- Before starting any recovery procedures, know what the damaged materials are. **Coated** glossy papers (magazines, art books, etc.) are not salvageable after 5-6 hours in water as the pages become irrevocably stuck together. Move on immediately to concentrate on salvageable material. **Leather and vellum bindings are extremely fragile and should be rescued early.** Seek professional conservation treatment to address recovery efforts for leather and vellum bindings and coated paper.
- If more than **20** books are **WET**, books should be **vacuum freeze dried** by a Disaster Recovery Service; immediately contact the Salvage Coordinator. Vacuum freeze drying dries the material with the least distortion as the water goes directly from the liquid to gaseous state without passing through the solid state -- ice never forms. Commercial and household freezers allow ice to form and are inadequate, resulting in distortion.
- Minimize handling of water damaged books. They are extremely fragile and must be handled carefully as pages can easily fall out and covers can separate from the text block.
- If spines or covers are detaching, place book in bag. Bag individually any book with dye leaching from water.
- Never try to reshape damp volumes, as this will cause harmful distortion. They can be treated **AFTER** drying.
- Sponge off mud and debris using clean water but **ONLY** if material does not have water soluble components such as watercolors, runny inks and dyes. Instead, air dry materials and brush off debris when completely dry. Test a small, inconspicuous area if unsure of solubility of inks.

PROCEDURES:

1. **Keep a record of what books are drying where.**
2. Stand **DAMP** books upright on clean, dry absorbent paper with covers opened at a 60–90° angle. A book is completely dry when it is no longer cool to the touch.
3. While air drying, the pages of larger books may start to pull out of their covers under the extra water weight. If this is the case, turn books over (head to toe, toe to head) every 30 minutes.
4. **WET** books can be interleaved to remove additional excess moisture. Place unprinted, clean flat paper towels every 20 or 30 pages; be sure to change toweling and alternate pages every 15 minutes to prevent distortion.
5. Some books will dry distorted and misshapen. This can be greatly reduced **AFTER** completely drying by placing volumes under light pressure or, in extreme cases, rebinding.

IF BOOKS MUST BE PACKED UP AND MOVED TO DRYING AREA OR FOR PROFESSIONAL RECOVERY SERVICES:

1. Remember, **coated** glossy papers are not salvageable after 5-6 hours in water as the pages become irrevocably stuck together. Move on immediately to concentrate on salvageable material.
2. Keep a written record of what volumes are in which box (by floor, range number and call number) and clearly label each box.
3. Use Rescubes or 1 x 1 cubic foot, 200 test lb. cardboard boxes for pack-out. These boxes will hold about 15 volumes and weigh about 50 pounds when loaded.
4. Wrap each book in a piece of unprinted newsprint to prevent colors bleeding into one another.
5. Pack books **SPINE SIDE DOWN IN A SINGLE ROW** on the bottom of the box. **Do not stack books or other materials on top in box. Water damaged materials will sag and distort, especially under pressure, causing permanent deformities.**
6. Seal box with packing tape and label contents with marker on all four sides as well as the top.

MICROMATERIALS, MOTION PICTURE FILM AND PHOTOGRAPHIC NEGATIVES

In most cases of fire, the extreme heat of the flames will melt film, damaging it beyond repair. Smoke and water damaged materials, however, can be salvaged. Microfilm and motion picture film are very difficult to handle and are best handled by a photographic film reprocessing company (see Appendix B). **Film must be shipped submerged in water in sealed containers usually provided by the reprocessing company.**

CAUTION:

- **Never let water-damaged film dry out.** Wet film should be packed in a container lined with plastic bags to keep it wet until treatment. If boxes are wet, use rubber band or string around box with microfilm enclosed.
- Handle wet films very carefully, touching only the edge of the film. When wet, the emulsion layer of film softens and can be easily separated from the film base or damaged.
- Deteriorated acetate film has a low recovery rate. Move on to polyester-based film. If the acetate-based film is unique and irreplaceable, immediately contact the Salvage Coordinator for shipping to a photographic film reprocessing company.

DAMP OR WET PAPER

1. Before starting any recovery procedures, know what the damaged materials are. **Coated** glossy papers (magazines, art books, etc.) are not salvageable after 5-6 hours in water as the pages become irrevocably stuck together. Move on immediately to concentrate on salvageable material.
2. Air dry **DAMP** paper materials flat as individual sheets.
3. Do not unfold or separate individual **WET** sheets. Air dry in small piles up to 1/4" thick. Interleave with white paper towels, replacing when damp.
4. If there are too many items to be air dried at once, immediately contact the Salvage Coordinator, who will schedule professional recovery services.

IF PAPERS MUST BE PACKED UP AND MOVED TO DRYING AREA OR FOR PROFESSIONAL RECOVERY SERVICES:

1. Remember, **coated** glossy papers are not salvageable after 5-6 hours in water as the pages become irrevocably stuck together. Move on immediately to concentrate on salvageable material.
 2. Keep a written record of what material is in which box (by collection or call number) and clearly label each box.
 3. Use Rescubes or 1 x 1 cubic foot, 200 test lb. cardboard boxes for pack-out. Interleave (by groups or individually) with freezer or waxed paper.
 4. Pack papers and/or files **supported** and **standing upright in containers**. **Pack containers only 90% full.**
 5. Seal box with packing tape and label contents with marker on all four sides as well as the top.
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PHOTOGRAPHIC PRINTS

In most cases of fire, the extreme heat of the flames will melt the emulsion layer of photographs. Smoke and water damaged materials, however, can be salvaged.

CAUTION:

- If you must freeze wet photographs, **DO NOT use a freezer made for home or commercial use**. Freeze them using a **blast freezer** instead, which will freeze quickly forming much smaller small crystals, which cause less damage in the drying process. (See Appendix B for Freezer locations.)
- Always handle wet photographs by their edges, as water will cause the emulsion layer to soften and damage easily.
- If a small number of photographs are water damaged, they can be treated in-house; if the situation is more serious, seek the assistance of a professional photo conservator.

PROCEDURES:

1. Carefully remove from frames or plastic enclosures only if emulsion layer is not stuck to the enclosure. Retain all bibliographic information. If emulsion has adhered, seek the assistance of a professional photo conservator.
2. Gently separate photographs from one another **only** if the emulsion layers (image sides) are not sticking to each other.
3. Rinse with cool, clean water if necessary. Do not blot surface of photographs. If unable to immediately air dry or blast freeze all of the wet photographs, keep them immersed in water in plastic garbage containers. Most non-color photographic processes can withstand immersion in water for up to 72 hours without serious damage. Color photographs can only be immersed in water up to 48 hours before the colors start to separate. Remove and treat as soon as possible.
4. Remove photograph from water and place it **IMAGE SIDE UP** on a rigid support like plexiglass, glass, or stiff cardboard. Tilt the photograph on the support to allow excess water to run off.

5. Spread the photographs out face up on clean blotting paper or paper towels to air dry in a clean dry area. Some photographs will curl when drying. Do not weigh down; these can be treated after drying.
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PHONOGRAPH RECORDS

Not much can be done to save fire- or water-damaged records and LPs. The heat from the fire will melt the records quickly and prolonged exposure to water will warp them beyond repair.

However, undamaged records with surface dirt can be cleaned carefully. This cleaning should be performed by a sound conservator. Seek professional conservation treatment. Only under extreme circumstances should the following procedures be followed.

CAUTION: Always handle phonograph records by the edges and wear white cotton gloves to avoid fingerprints.

PROCEDURES:

1. Remove from album covers and separate from any enclosures.
2. Rinse dirty phonograph records with clean, cool (preferably distilled) water. Use a soft brush to dislodge particles if necessary.
3. Place on a vertical rack, such as a dish rack, and let dry slowly, away from heat.

IF RECORDS MUST BE PACKED UP AND MOVED TO DRYING AREA OR FOR PROFESSIONAL RECOVERY SERVICES:

1. Pad inside of 200lb box with bubble wrap, bubble-side down, to reduce shock during transport.
 2. Supporting records, pack vertically. Do not overfill box.
 3. Mark box as fragile – records.
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MAGNETIC TAPE MATERIALS

Magnetic tape materials include audio and video cassettes, reel-to-reels and computer floppy disks.

Most magnetic tape material is fairly heat resistant, able to withstand up to 1 hour at 200° F without severe damage. Prolonged exposure to water, however, is very damaging as it causes leaching of the chemicals that adhere the tape to the film base. It is possible but very difficult to clean a dirty, damaged tape and the quality will be severely sacrificed. Instead, contact the Salvage Coordinator, who will schedule professional reprocessing services.

CAUTION: Never try to run a wet, damp, or water-damaged magnetic media on a regular mechanical drive. Wet magnetic media must be hand dried and stored for 48 hours in a stable environment before running or winding using a machine.

PROCEDURES FOR WATER-DAMAGED MAGNETIC TAPES:

1. Move out of standing water. Quickly open, check and drain any water that may have entered the tape canisters.
2. Rinse dirty tapes, still in cases or wound on reel, in clean, cool (preferably distilled) water.

PROCEDURES FOR WATER-DAMAGED FLOPPY DISKS:

1. Remove any screws on the jacket, pry the jacket open and remove the disk.
 2. Rinse disk in clean, cold distilled water.
 3. Gently dry with lint free towels.
 4. Insert dry disk into new case and copy.
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DVDS, CDS AND CD-ROMS

1. Open, check and drain any water that may have entered the cases. Remove discs from cases.
2. Rinse discs with clean, cool (preferably distilled) water.
3. **DO NOT RUB** discs -- any dirt in the water will scratch disc, resulting in loss of data. If necessary, wipe gently with a clean, soft, lint-free cloth using a radial motion (straight line from the center to the outer edge). **Do not wipe in a circular motion.**
4. Air-dry vertically on monofilament line run through the center hole or in a rack. Air dry cases and paper inserts separately

