



Water Damage to Paper Records

South Carolina Department of Archives and History
Archives and Records Management Division

Introduction

Water damage to public records can occur during natural disasters such as flooding or hurricanes as well as from man-made incidents like broken pipes and water leaks. The following information provides basic salvage procedures in the event of water damage to paper records, including information related to mold remediation that may be necessary after a water event. It is highly recommended that government offices compile a list of vendors who can assist with salvage and recovery **prior to an incident** and keep it on hand for water-related emergencies.

Basic Air Drying

- Materials that can't be air dried in 48 hours should be frozen to inhibit mold growth.
- Fans should be positioned to provide air circulation throughout the room but should not be blowing directly on wet items.
- Blotting materials (blotter paper, unprinted newsprint paper, paper towels, rags, mattress pads, used dryer sheets, etc.) must be clean and absorbent.
- Screening materials such as window screens can be stacked to create compact drying racks as long as adequate space is left between each screen.

Water Damage to Documents

- Air dry flat as individual sheets (preferably) with blotter materials on the top and bottom.
- If drying individual sheets is not possible, air dry in small piles (no higher than ½ inch).
- Interleave blotter materials between pages and change when the blotter becomes damp.
- DO NOT unfold wet pages.
- If there is too much damage for air drying, prepare for freezing by:
 - Interleaving documents with freezer paper or waxed paper, if they can be separated.
 - Packing in papers/files firmly (no slumping) in clean boxes.
 - Wrapping boxes in trash bags.

Water Damage to Books and Volumes

- If sediment is present, hold book closed and rinse under running water.
- Place blotter material between the text block and front and back covers.
- Insert blotter materials intermittently between the pages; every 15 to 30 pages. Be sure that the text block is not distorted by the addition of the blotters.
- Stand books up and fan open to allow for thorough air drying.
- Replace blotter materials regularly as these become damp.
- If there are too many books to air dry or the materials are soaked through, prepare for freezing by:
 - Wrapping in freezer paper, trash bags or waxed paper.
 - Packing spine down in sturdy, clean boxes.
 - Be sure that the volumes are secured between rigid boards to inhibit distortion.

Mold Outbreaks

- Isolate the items that have been contaminated with mold.
- Ensure that quarantine areas maintain a relative humidity below 55%.
- In the case of a large outbreak, seal the affected area off from the rest of the building and post signs warning of mold growth.
- Determine the cause of the mold growth (such as water leaks, malfunctioning HVAC systems, poor air circulation, etc.) and schedule corrective repairs as soon as possible.
- Bring in fans to circulate air and set up dehumidifiers.
- Make sure that humidity and temperature monitoring equipment are in good working condition and are accurately recording the measurements.
- Implement safety precautions for all staff working with or coming into contact with moldy items.
 - Staff should wear disposable nitrile gloves, protective clothing like disposable Tyvek suits and lab coats, goggles, and N95/N100 masks whenever they are in the same area as contaminated materials.
- Deactivate the mold growth by storing in a freezer for at least 48 hours.
- Be sure materials are wrapped in freezer paper, trash bags or waxed paper and are taped shut to prevent contamination.
- Clean affected items when mold is dormant (dry and powdery) - avoid cleaning when still active (soft and fuzzy) as it facilitates new growth and causes staining.
- Work outside if possible when cleaning dormant mold.
- Clean moldy materials by vacuuming with a variable speed vacuum with a HEPA filter starting from the middle or the center, working outwards.
 - DO NOT put nozzle directly on the item; this damages weak objects and causes abrasions. Hover over the object instead.
 - DO NOT vacuum fragile items directly - use a fiberglass window screen on top of the item or covering the vacuum nozzle with cheese clothe.

- Moldy items can also be cleaned by using a soft brush (such as a watercolor brush) to lightly brush the mold off the surface of the item into a vacuum nozzle.
- Thoroughly clean and dry the area where the mold outbreak occurred and the quarantine space.
- Wipe down shelves and walls with bleach, Lysol, or a similar solution.
- Once the decontaminated area is dry, return the items to their proper locations.
- After the mold outbreak has been resolved, continue to monitor the area.
 - Mold forms roots within its host, so it is never really gone. It relies on moisture meaning severe fluctuations in the relative humidity can reactivate it.

For additional questions regarding treating water damaged materials, contact Conservation Archivist Kathryn Graham at 803-896-5563 or KGraham2@scdah.sc.gov.