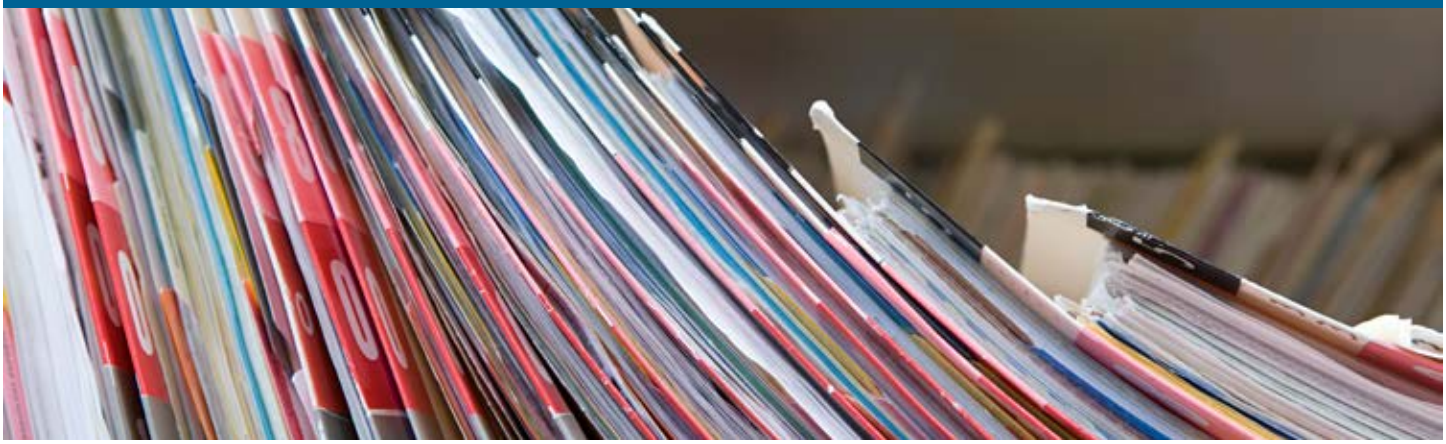
North Carolina
Manufacturing Extension Partnership

# Paper-Based Document Recovery



## Paper-Based Document Recovery

The following steps serve as a guideline for recovery of water-damaged, paper-based materials. If the water is sewage-contaminated, call in a professional recovery service immediately; do not deal with the salvage in-house.

**Top priority is prevention of mold** (follow safety guidelines when working where mold is present; use personal protective equipment, etc.). Ink migration and page adhesion also play a role in deterioration of wet paper.

### Get Environment Under Control

- Keep temperature level low, below 70 degrees F, much lower if possible.
- Reduce humidity levels, preferably below 50% relative humidity and get the air circulating.
- Get all documents that are not in air-tight containers out of the area where carpet, walls, furniture, etc. are soaked or move all unaffected materials to airtight containers (make certain that nothing that goes into the container is damp).
  - Moisture from soaked wall boards, carpet, etc. will continue to humidify the air and that moisture will be absorbed by any paper-based items.
  - Try to keep dry materials separate from wet materials.
  - If the space is warm enough, humidity levels are high enough and air is not circulating, materials that were not damaged can still grow mold, especially if what they are housed in can wick-up water, like cardboard or wood.

### Freeze Documents

- Allows time to make decisions on best course of action.
- **Be Careful** if using food storage freezers; place books or folders of documents in freezer storage bags to prevent contamination and everything from becoming a solid block.
- Wipe down freezers with dilute isopropyl alcohol or bleach before returning any food item.
- Materials can be transferred to a vendor once a vendor can be contacted or thawed and dried in small batches.


*Publication Number: F-0918-0073.00*

### Air-drying

If manageable amount of materials and space, time and people are available, air-drying works.

- Move materials to a clean and dry work space with lots of tables or flat surfaces.
- Keep temperature and relative humidity low. Use fans to keep air circulating and dehumidifiers.
- Cover absorbent surfaces (e.g., wood) with butcher paper.
- Fan books open (standing on end) and take paper documents out of boxes/file cabinets. Spread materials out on blotter or non-printed newsprint and keep the air circulating.
- Constantly change out the blotter/newsprint/paper toweling.
  - Frequency is dependent on how wet materials are; basically they need to be changed when they have absorbed as much as they can.
  - The more frequently they are changed, the faster drying will happen, but this takes a lot of people to keep this going.
- If materials and books are muddy, they can be rinsed off in clean water by holding the book tightly closed and simply rinsing in a bucket of cool, clean water. Wiping the outside with your hands if necessary.
- Be careful with documents since inks may bleed (including signatures).
- Keep in mind that ultimately copies of everything damaged will need to be made. Once dried, paper-based materials will be warped and cockled.

### Six Tips for Saving Wet Books

1. Insert a paper towel about every 50 pages.
2. Stand the book on end on several sheets of toweling.
3. Open only the covers.
4. Frequently turn the book over, so that the top and bottom are reversed, and replace the paper toweling when wet.
5. Make sure that there is good ventilation. A fan is a big help.
6. After the book dries, put weights on top of the book to flatten it out

If too much material to deal with, start looking for freezers and/or document and restoration specialists. Freezing will allow time to make decisions on best course of action.

### Document Recovery and Restoration Specialists

Depending on the quantity and types of materials, it is best to contact a recovery and restoration company specializing in wet documents. They can bring in refrigerated trucks to take documents to their facility to have them freeze-dried, as well as work with you to clean, dry and restore documents.

**NCMEP** is administered by NC State Industry Expansion Solutions (IES) and is joined by partners from the North Carolina Community College System, NCWorks Customized Training; the Economic Development Partnership of NC; the Polymers Center of Excellence; the Manufacturing Solutions Center; North Carolina A&T State University; and UNC Charlotte.



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