National Heritage Responders

TIP SHEET

*See Tip Sheet "**The First 48 Hours**" for information on how to get started in a range of emergencies.*

RECOVERY GUIDELINES FOR TEXTILES AND CLOTHING IN FLOODING OR WATER-RELATED DISASTERS

Wet textile materials need the quickest response during recovery to prevent mold or other more complicated damage from developing.

Note: You have 48 hours to dry wet textiles before mold becomes an issue. Wet and especially aged fibers are more fragile than dry textiles.

Step 1: **Define Your Challenge**

- Determine the degree of exposure.
- How many textiles are wet?
- Has the exposure been mostly from the atmosphere (high humidity), or are there saturated objects?
- Are there wet storage boxes that are saturated and collapsing or with pooled water sitting on top?
- Are there textiles, clothing, or accessories in drawers that have standing water?
- Are there textiles on display in a gallery?
- Clothing on mannequins or dress forms and framed or mounted textiles can present different challenges and require special care, especially if the mount/mannequin is also wet.
- Is there sufficient space to set up a work area in the building, or do you need to create one?

Step 2: **Identify Your Objects and Risks**

- Are you working with large tapestries, carpets, embroideries, garments, and/or accessories?
- It is essential to keep in mind that wet, dyed fibers can bleed color into the surrounding area and further damage the textile or any material in direct contact. Though many dyes are stable or somewhat stable in water, it is safest to assume they are not. Have supplies ready to separate layers of wet textiles. In an emergency, a few carefully placed paper towels or a layer of flannel can help mitigate the cross-contamination.
- If the exposure has been extreme and resources are limited, it may be necessary to triage the collection items based on need, importance, or additional criteria.

Step 3: **Make a Plan**

- Time is always crucial when working with wet fibers, but first, take a breath and come up with a plan of attack. Having a plan will help you use your resources, both human and material, effectively. It will also bring a sense of control to an otherwise overwhelming situation.

- Do you have a relatively safe, clean, dry space to work? This may be inside or outside, but set up a space where objects can be safely left to dry for at least eight hours.
- Do you have tables, blotting materials, fans (if you have electricity), and sheets of plastic to cover work surfaces? Additionally, gather towels, sheets, cotton flannel, paper towels, and other drying/blotting materials.
  Note: Sheets and towels made of cotton are more absorbent than those made of polyester.
- To help with managing the workspace, keep in mind that the drying time needed for an object depends on its construction as well as both the fiber and auxiliary materials (e.g. A pile carpet could take several days to dry out while a flat weave carpet might dry overnight, even though they are made from the same fiber. A garment constructed of several layers will take longer to dry than a lace blouse.

Step 4: **Stabilize the Environment**

- Choose a work area that is free of debris and as clean as possible.
- If there is electricity, set up fans to keep air circulating within the area. **Fans should not be directed at objects.**
- If fans are not possible, open windows to get cross-current air movement. It is important to remember that the dryer the ambient air is, the faster the objects will dry. Light air movement will help to pull the moisture away from the object/artwork. If moist air is not vented somehow, the relative humidity in the room will rise and drying will become slower.
- Mold will become active within 48 hours if conditions are right. Keep in mind that mold needs a balance of moisture and warmth to grow. Monitoring temperature and humidity is important to identify the existing environment and make a plan to mitigate it if necessary. Reducing the temperature to less than 72 degrees and the relative humidity to below 60% will pause mold growth.

General Guidelines for the Handling of Wet Textiles and Clothing

- Assume all textile materials are fragile.
  - Note: New cotton fibers are stronger wet than dry.
- Damp and wet textiles need support when moved. Always use a support when handling all textiles and garments. Supports can include cut fabric like muslin or cotton flannel, Reemay, Mylar, plastic sheeting, or even a covered, painted wooden drawer or board will work in an emergency.
- Limit handling to that which is essential to get the object to safety and placed to dry.
- Blot both textiles and clothing with sheets and towels to remove excess water.
- If transfer of color is visible, add extra blotting material or separate layers.
  - If there are more textiles or clothing than available time and/or space, freeze drying should be considered as an alternative.* Freezing allows time to plan, prepare, and treat collections in manageable numbers.

- If there is electricity and a large enough manual-defrost freezer (do not use automatically defrosting freezers for this application). Wrap the object completely with blotting material and keep folds to a minimum before placing it in boxes in a freezer. Remember that mold growth can begin in 48 hours, and time could be of the essence.

***** Consult a collections or conservation professional for proper freezing instructions to avoid additional damage. In advance of an emergency, it is advisable for institutions to engage a disaster mitigation vendor specializing in freeze-drying operations and, in particular, museum collections to be on call to assist with salvage.

Handling of Flat Textiles and Suggestions for Drying

- If textiles are saturated, the first step is to blot out as much water as possible. Remember that textiles materials are generally weaker when wet.
- Place the blotted textile on a flat surface to dry. Optimally, with at least a cotton sheet or fabric under it and another on top. If possible, these should be switched out when they become wet if possible.
- If transfer of color is visible, roll or interleave with absorbent material such as cotton flannel.
- If textiles are framed and water is visible, remove the framing system. If a textile has been mounted to a padded board, and the board/padding is wet, cut the display fabric away from the board; do not try to remove the attached textile. Lay them out together to dry. Wait to remove the artifact from the display fabric until after the two pieces are dry.
- Textiles mounted on a strainer (rigid frame) when wet could be under stress due to tension caused by the strainer fabric; if there are signs of stress (pulling, distortion, etc.) on the object, release the tension by cutting the mounting fabric away from the strainer and laying the textile out to dry.
- Textiles can become unstable due to the weight and the effect of the water. Always handle carefully with a full, solid support when moving.

Handling and Drying of Clothing and Accessories

- Assume that the clothing is fragile, and the added weight of the water will cause further damage.
- If the garments are saturated, the first step is to blot them dry with clean sheets or absorbent cotton fabric to remove excess water.
- Once the excess moisture is removed, the clothing should be laid out on a screen or mesh support if possible.
- Assess the condition of clothing for damage such as structural distortion, dye bleed, and general stability. Note the garment's surface design and construction, including fiber type, weave structure, and any decorative elements, which may require special attention. For example: Place a barrier between metal buttons and the textile, or add extra blotting material to the interior of a bodice that has metal boning.

- Once the excess moisture is removed, the textile can be carefully unfolded or the layers separated. Use nylon net or tulle to lightly fill out the shape of the garment, such as inside the sleeves.
- If transfer of color is visible, the clothing's layers should be interleaved with absorbent material and a layer of blotting material placed over the surface.
- Accessories require special attention as some, like shoes and handbags, can distort when drying. Blot carefully and as thoroughly as time/resources permit. Stuff the shoes with paper towels (replace these at least once during the drying process). Shoes tend to distort at the heel and at the toes when drying. Use nylon net or another breathable material in the crown of hats and handbags to help hold their shape.
- Clothing dressed on mannequins and forms should be blotted before attempting to take them off. If time allows, it may be possible to dry them with the use of a hairdryer on medium heat or warm setting and with a diffuser if available. Most importantly, they should not be removed until they are safe to handle, as aged fibers are weaker when wet.
- The more effort put into maintaining the correct shape of the clothing or textile while drying, the more likely it is to survive the disaster.