



Conserve O Gram

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Emergency Treatment For Water-Soaked Furniture And Wooden Objects

Water damage to furniture and wooden objects in museum collections can occur as the result of natural disasters, broken pipes, leaking roofs, or the quelling of fire. No matter what the cause, timely and appropriate actions taken after the disaster occurs can significantly mitigate damage. Water damage typically includes surface mold growth, splitting and deformation of wood members, lifting of veneers, staining of finishes, and failure of glue joints.

In most cases, a conservator will ultimately be needed to treat water-soaked furniture and wooden objects. The following recommendations are intended as a guide for the curatorial staff before contacting a conservator.

Moving the Objects

The first step is to move the objects from contact with water into an area where they can be cleaned and dried. Moving furniture, if not done carefully, can cause additional damage. Wood, upholstery, and wood finishes are more susceptible to damage in handling when they are water-soaked.

In certain instances, it may be preferable to block up large pieces of furniture from the floor rather than attempt to move them to another area and risk damage during the process. This would be the case, for example, when water from broken pipes has formed shallow puddles on the floor and the cause of the leak has been rectified.

If it is necessary to move furniture, first think through the entire process and ensure there is ample help available. In general, a piece of

furniture should be moved by its lowest structural member; never lift by grasping the top board or original handles. Lift tables by their aprons. Lift non-upholstered chairs by their seat rails rather than arms or crest rails. Lift upholstered chairs by their legs to avoid touching the water-soaked upholstery (this will require two people). Chests and other case pieces should be lifted by their bottom rails. If possible, remove drawers to lighten the load.

Drying the Objects

Remove water from the surfaces of the objects by blotting with clean cotton cloths or absorbent paper toweling. Because flood water is likely to contain abrasive contaminants, it is especially important to blot rather than scrub the surface.

Promote even air circulation around all surfaces to remove pockets of moist, stagnant air. Circulation can be increased by opening doors, lifting lids, and removing drawers. Case pieces which have short legs or sit directly on the floor should be placed on trestles or blocked up. Fans can help in increasing air circulation. If fans are used, do not aim the air flow directly at the objects.

It is important that furniture and other wooden objects not be dried out too rapidly. Rapid drying and the resultant stresses can cause splitting and deformation of the wood members. If possible, use hygrometers or hygrothermographs to monitor relative humidity (RH). The humidity should be allowed to fall slowly over the course of days to approximately 55%. Attempt to limit the fall in RH to about 10% per day. For objects particularly sensitive to

changes in RH, such as furniture with inlaid or veneered surfaces, a slower drop in RH is preferable. Portable dehumidifiers and humidifiers can help control the RH. If it becomes apparent that the RH is falling too rapidly, furniture can be temporarily covered with polyethylene sheeting to retard evaporation. Smaller objects can be placed in perforated polyethylene bags.

Mold

One problem that can arise as the result of the saturation of organic materials is the growth of mold. Mold is a type of fungus that thrives under conditions of high relative humidity and temperature levels between 24°C and 32°C (75°F and 90°F). It lives primarily on the surface of wood and, unlike most other types of fungus, does not destroy the cell structure. Mold will, however, deteriorate fabrics made from organic materials such as silk and wool. Upholstered furniture is therefore quite susceptible to damage from water-soaking and mold.

The safest and quickest means of controlling mold on water-soaked furniture is to lower the ambient temperature. Mold growth slows below 21°C (70°F) and will cease entirely below 4.4°C (40°F). In an emergency, therefore, it is advisable to turn down the heat in winter and to air condition in summer and use a dehumidifier if condensation on walls occurs. Consider placing upholstered furniture in cold storage.

Removal of Hardware

Iron hardware once wet can quickly oxidize and stain wood and other surfaces (e.g., fabrics, rugs) that it contacts. This is particularly true of woods with a high acid content such as oak. It is advisable, therefore, to remove iron hardware from water-soaked furniture if it can be done without damage. Be sure to record the original

location of each individual piece of hardware. Immediate removal of brass, bronze and copper hardware is generally not necessary.

Loose Pieces

Many pieces of period furniture were originally constructed with protein-based glues such as hide and fish glue. These glues are, to a varying extent, soluble in water. One can expect, therefore, that joints, veneer and appendages may come loose if an object is water-soaked.

If a piece does become detached, place it in a sealable polyethylene bag. Label the bag with the catalog number of the object and the date. Whenever possible, keep the bag with the object. Do *not* use any type of adhesive tape to attach loose pieces to the object.

Particularly Sensitive Objects

Certain types of objects like gilt frames and furniture, polychrome sculpture, and objects with inlaid surfaces are extremely sensitive to water damage. The gesso layer in gilt and polychrome surfaces is hygroscopic. If wetted, it can swell and exfoliate from the wood substrate. Thin wood veneers change dimensionally quite rapidly in response to changes in RH or the presence of water. Moreover, water can dissolve the hide glue which typically adheres veneer and inlay to the solid wood substrate. Therefore, in case of water damage it is prudent to handle these objects as little as possible. If they must be moved, try to avoid touching the damaged surfaces.

Alan Levitan
Furniture Conservator
Division of Conservation
Harpers Ferry Center
National Park Service
Harpers Ferry, West Virginia 25425

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