

What is mold? Mold (and mildew) is a general term for a very large family of fungi that depend on other life forms for survival. Mold reproduces by disseminating airborne spores that travel to other areas. Dormant spores are all around us, all the time, but only germinate under the right conditions – high humidity, warm temperatures, stagnant air – and if they have access to food sources, like cultural heritage collections. Mold damages collections by eating away at organic materials like paper, leather, and cloth, altering, weakening, and staining them, and it can be a major health hazard for people.

So, what do you do if there's a mold bloom in your collections?

First, remember that health and safety come first. If you know you have a sensitivity to mold, do not investigate a suspected mold outbreak. Notify your supervisor or a colleague or **reach out to VACDaRN.**

Before investigating a suspected mold bloom, don your personal protective equipment (PPE): gloves, an N95 (or comparable) mask or respirator, protective eyewear, and an apron or lab coat.

Next, identify if mold is active or inactive.

- Active – the mold is wet, often fuzzy, or hairy. It smears when touched. There is a musty or earthy smell.
- Inactive – the mold is dry, powdery. There may be a musty smell.

Be aware that what you think is mold might actually be another kind of reaction to high humidity: foxing (reddish brown spots) or efflorescence (a white, crystalline dusting). It might also be permanent staining from a previous mold bloom.

If you aren't sure if you are dealing with mold or not, **reach out to VACDaRN.** We will either come to assess it in person or by reviewing photographs.

Note that the State of Vermont has a [contingency contract with Polygon](#), a disaster recovery vendor. Cultural heritage repositories in Vermont are covered under this contract, which includes an approved statement of work and set price list for services.

Next, deal with the active mold bloom (or if the mold is inactive, move to the cleaning inactive mold section below).

1. Notify the person responsible for the building that there is an active mold outbreak. They will need to determine if it is safe for people to be in the building and together you can decide if the mold can be addressed in-house or if you need to call a mold remediation vendor, like Polygon, for assistance.
2. If you proceed with in-house remediation, wear personal protective equipment (PPE).
3. Isolate the affected items and/or area.

- a. Freeze wet or actively moldy items for at least 24 hours and until cleaning can be done. This will stop further mold growth and make active mold go dormant. DO NOT freeze photographs, audio-visual materials, parchment, vellum, or leather.
 - b. If you do not have immediate access to a freezer or have materials that were adjacent to wet or moldy materials that you need to move out of the space so it can be cleaned, quarantine them in a clean area with low humidity. If desired, wrap items in paper or clean boxes to avoid the transfer of mold spores during the move. DO NOT place materials in sealed plastic bags if they won't be frozen – this will create a microclimate that will encourage more mold to grow.
 - c. If it is a large outbreak that can't be feasibly moved somewhere else, seal the entire area off from the rest of the building and disconnect from the rest of the building's air circulation. Work with a vendor for remediation.
4. Determine the cause of the mold outbreak. Is there a leak? Problems with the HVAC causing high humidity? Lack of environmental control?
 5. Fix the cause of the outbreak and get the storage environment to proper levels – ideally humidity below 50% and temperature below 70°F. Bring in dehumidifiers, if necessary. Bring in fans for air circulation and open the windows (unless humidity outside is higher).
 6. Once mold has been deactivated by a stint in a freezer, clean the materials using the procedure below.

Then, clean inactive mold.

1. Wear personal protective equipment (PPE).
2. Move the items to a well-ventilated area with a ducted fume hood, or with an open window and a fan that draws air outside; or work outside (weather permitting).
3. Use a HEPA vacuum with a soft brush attachment to vacuum the mold. [The Vermont Historical Records Program has a HEPA vacuum](#) you can borrow. If you use a regular vacuum, you must work outside. Otherwise, you will just exhaust the spores and re-contaminate the space.

Finally, clean the space where the materials were stored and make sure it is dry. Return materials to the affected area and continue to monitor the environment. Take regular readings of temperature and humidity levels and regularly check materials to make sure there is no new mold growth.

Remember: after dealing with active and inactive mold, make sure that all PPE and other cleaning supplies are sealed in plastic trash bags before being thrown away.

This checklist was developed from the Northeast Document Conservation Center's *Preservation Leaflet 3.8: Emergency Salvage of Moldy Books and Paper*. For a more detailed description of all of these steps (and photographs!), please consult the leaflet: <https://www.nedcc.org/free-resources/preservation-leaflets/3.-emergency-management/3.8-emergency-salvage-of-moldy-books-and-paper>.