



Introduction to Preservation

Digital Stewardship Curriculum

- These slides provide an introduction to preservation, environment, and storage of physical and analog materials.

“Preservation” Defined

- Activities that aim to *prolong* the life of a record
- Trying to *slow* decay of materials
- Passive steps to preserve materials

- Preservation is a series of activities to try to slow inevitable decay

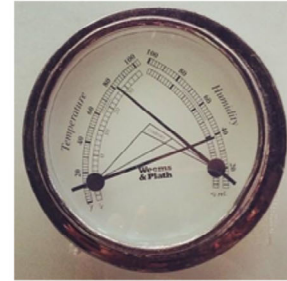
“Conservation” Defined

- *Treatment and repair* of an item
- Taking action to *restore* an item
- Intervening
- Active steps to conserve materials

- Conservation is more active, preservation is more passive

Environmental Controls

- Environment is key in preservation
- **Temperature:**
 - 65-68 degrees fahrenheit (paper)
 - 40-55 for (film and photography collections)
- **Humidity**
 - Relative humidity (RH) 30-50%
- **Fluctuations** are damaging over time



- High temp and high/low RH are damaging, and so are fluctuations
- Light - accelerates deterioration of library and archival materials. It leads to weakening and embrittlement of cellulose fibers and can cause paper to bleach, yellow, or darken. It also causes media and dyes to fade or change color, altering the legibility and/or appearance of documents, photographs, art works, and bindings.
- Vaults in darkness, windows covered, lights low, incandescent lighting, lights on timers. Display very shortly or display copies.
- Pollutants - can be gaseous like sulfur dioxide, nitrogen oxides, peroxides, and ozone OR particulates like soot, dust, smoke - air exchange should be clean, windows closed, think about pollutants coming from indoors too (paint, storage, cleaning supplies). If there are serious concerns, there are measures like "molecular traps".

Controlling and Monitoring Temp and RH

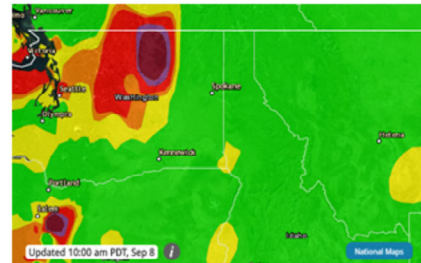
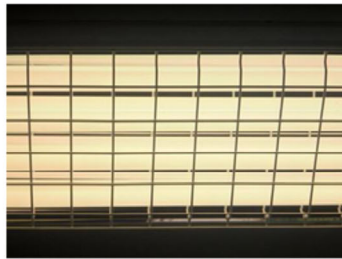
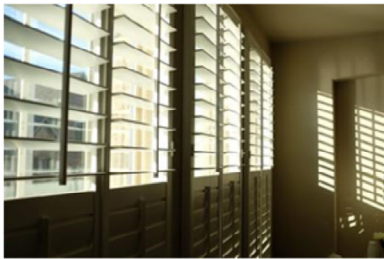
- Measure to monitor levels, notice fluctuations
- Information can tell you how to better control your environment



- Can monitor over time
 - Snapshot - taking readings at certain times
 - Continuous - monitor at all times
- Show fluctuations that would be hard to notice otherwise
- Tell you how to better control environment, show that there is a problem
 - <https://www.nedcc.org/free-resources/preservation-leaflets/2.-the-environment/2.2-monitoring-temperature-and-relative-humidity>
 - <https://www.imagepermanenceinstitute.org/education/publications.html>
- Image: CC Kai Hendry Attribution 2.0 Generic (CC BY 2.0)
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Other Environmental Threats

- Light: UV rays are damaging
 - Sunlight, lightbulbs
- Air Quality: Pollutants
 - Smoke, for example



- Light coming in through windows, light from lightbulbs
- Easy and more advanced ways to block rays
- Consider risks when displaying
 - Display copies whenever possible
- Also air quality - for example - wildfires in WA and ID last year, smoke can be very damaging
- Light coming in through windows, light from lightbulbs
- Easy and more advanced ways to block rays
- Consider when displaying
- Also air quality - for example - smoke can be very damaging, air quality from nearby wildfire, or a fire in or near building
- Amer Khalid www.chaosplay.com Attribution 2.0 Generic (CC BY 2.0) <https://www.flickr.com/photos/amerkhalid/44386293164/>
- Classroom Camera (Cascade Canyon School) Attribution 2.0 Generic (CC BY 2.0) <https://www.flickr.com/photos/155535822@N07/39902868275/>
- Air Quality Map www.airnow.gov

Handling

- Learn proper handling techniques
 - Train staff and users
- Clean hands, gloves (sometimes)
- Touch edges of items, pages, books
- Supports available
 - Book rests, book snakes, page turners
- Digitization

- Learn proper techniques for handling different formats
- Clean hands
 - Encourage hand washing and hand hygiene - no lotions
 - Sometimes gloves are required - certain types of photographs and negatives, and film, that is especially sensitive to oils in hands
- Always touch **edges** of materials
- Depending on what is in your collections, support materials may be useful (available from archival suppliers)
- Digitization
 - Overhead scanners are best for bound volumes
 - Cameras for researchers
 - Always do a thorough risk assessment to make sure that digitization will not endanger the item.
 - Have a procedure for digitization projects so you don't lose the original order of the collection.

Reading Room or Research Area

- **Clear rules or guidelines for handling and preservation**
 - Post or include in sign in process
- **Examples**
 - Only pencils used, no pens/markers
 - Users sign in at desk
 - Hang up coats, bags, backpacks in hall
- **Remind and educate users**

- **Make sure your rules and guidelines are clear and understandable**
 - Can post rules
 - Can educate new users as you orient them
 - Make sure they are followed and enforced by you and other workers
- **Examples: No pens, sign in, no backpacks**
- **Think of how and when you will provide**
 - Education and notice of rules and practices for research
 - Reminders if people forget

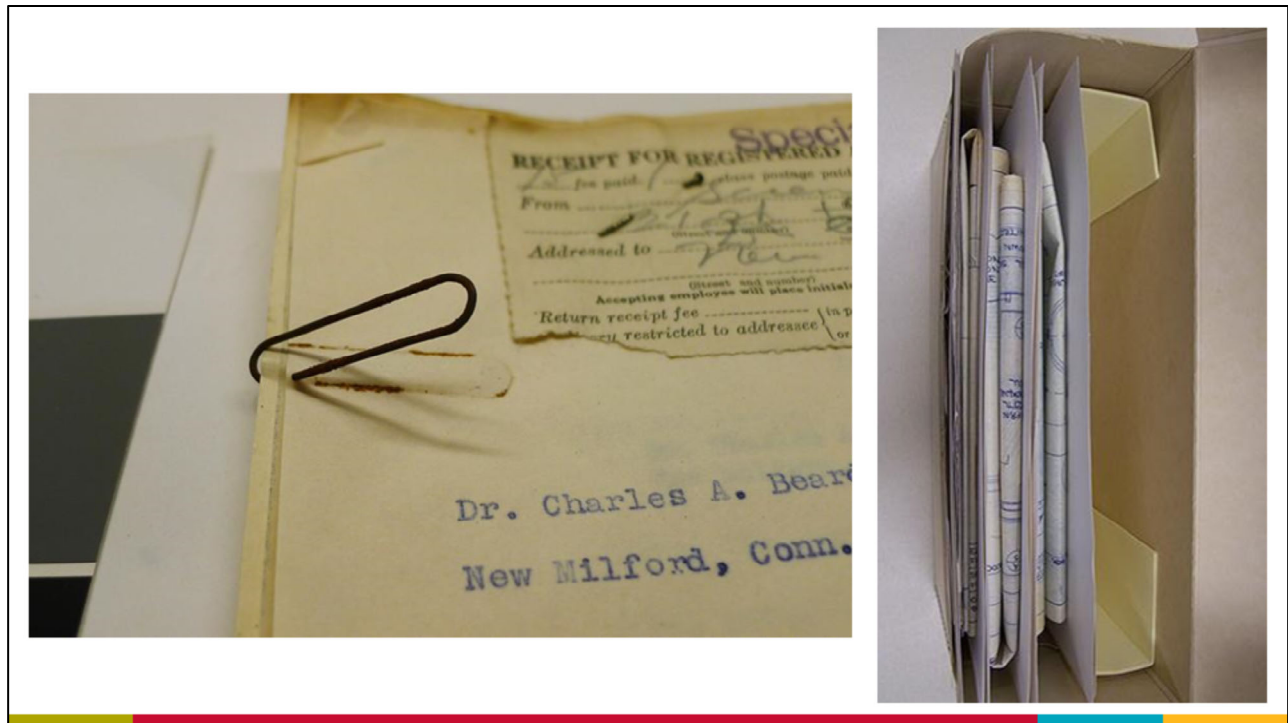
Housing and Storage: Papers and Documents

- Acid free folders and boxes
- Properly fit boxes, folders, and enclosures to material
- If papers are acidic or damaging other materials around them...
 - Separate, or
 - Interfile sheets of blank acid free paper

- Fitting housing to material - boxes or folders should not be too full, OR not full enough, use spacers if needed
- No labels, post its, stickers, any adhesives.
 - Some places use book plates with water soluble adhesives.
- Stick to pencils.
- Making housing the right size is really important, weight on items over time can a large and negative impact



- Archival Boxes by Digital Game Museum under Attribution 2.0 Generic (CC BY 2.0) <https://www.flickr.com/photos/digitalgamemuseum/6657723575/>
- VPHS Boxes by Taber Andrew Bain under Attribution 2.0 Generic (CC BY 2.0) <https://www.flickr.com/photos/andrewbain/2570462624/>
- SA Police History Museum by South Australian History Network under Public Domain <https://www.flickr.com/photos/communityhistorysa/7196285130/>



- It may be necessary to intervene if something like a rusty paperclip is affecting materials around it
 - Can remove carefully using a micro spatula or other tool
 - Other examples might be rusty staples, gummy rubber bands, or old and yellowing tape
 - You may not always have time to do such detailed preservation work for each and every item in every collection
 - Try to catch when you can
- Spacers (folded up acid free board) can be very helpful if a box is not quite full
 - Supports papers/materials
- Rusty paperclip by Smithsonian Institution Archives Attribution-NonCommercial 2.0 Generic (CC BY-NC 2.0)
<https://www.flickr.com/photos/siarchives/8075168549/>
- <http://www.loc.gov/preservation/about/conserv/storage/images/detail-archive4.jpg>

Housing and Storage: Oversize Materials


- Maps, posters, prints, artwork, etc.
- May need a separate housing and storage space
 - Link to rest of collection in descriptive information
- Drawers if needed
- Consider a large table or other surface to pull out oversize materials

- Oversize materials like maps, posters, other large documents, prints, or artworks
- Separate from regular sized collections
- Map storage/oversize storage drawers if you have enough content
- Might need a large surface to work on



- Rare books
 - Books on a shelf next to each other should be of a similar size, too much variation in size causes unequal pressure on books
 - You can use acid-free inserts/bookmarks to list call numbers or other information, to avoid using glue or tape on rare books
 - If book binding is fragile, or cover or spine is separating
 - A box is a good way to preserve the book
 - Another option might be the use of cloth ties to keep it together
- <http://bookriotcom.c.presscdn.com/wp-content/uploads/2012/08/metal-bookend.jpeg>
- <http://fisher.library.utoronto.ca/sites/fisher.library.utoronto.ca/files/bindery.JPG>
- <http://belmontabbey.s3.amazonaws.com/wp-content/uploads/2013/12/rarebooks.jpg>

Housing and Storage: Photographs

- Envelopes, enclosures, folders, boxes - acid and lignin free
- Paper or mylar sleeves, or encapsulation
- Especially sensitive to light, temperature - cold storage for some formats
- Photographic Activity Test (PAT)  PASSED P.A.T.

- Acid free and lignin free
- Advantages and disadvantages to paper vs. plastic
 - Plastic protects from atmospheric conditions, able to view. However, it can trap in harmful chemicals released by the photo, can trap moisture, difficult to write on, need extra support at times.
 - Paper is cheaper, and “breathes” more, but is not see-through, so must be removed to view photo
- Cold storage, esp film negatives
- Choose materials that have passed the PAT test (companies usually will list this on websites or in catalogs, or you can ask a sales representative) - <https://www.imagepermanenceinstitute.org/testing/pat>
- For more information, see SHN resources about image and photograph care, preservation, and identification



Wide variety to fit your needs

- Archival Products www.archival.com
- Gaylord Archival www.gaylord.com

Audio, Film, Video

- Very volatile media, won't last like paper/photographs (top priority for digitization)
- Specific problems to look out for based on format, get to know formats in your care
- Cold storage
- Store flat, in plastic, vented cans
- Make sure pack is properly wound

- Types of issues may be
 - Tears or scratches
 - Chemical damage- nitrate decomposition, Vinegar syndrome in film (shrinking, cupping),
 - sticky shed in magnetic media
- Cold storage is best, if possible
- Storing flat in vented cans is best - to allow for air circulation
- Make sure pack is properly wound
- For more information, see SHN resources about film and care, preservation, and identification, and audio resources on the same subjects



- Good storage conditions - shelves with no more than one or two reels on each, vented plastic or paper box enclosures
- http://www.nyu.edu/tisch/preservation/media/images/2005_02_dc/0502dc-smithsonian27.JPG
- <http://www.filmpreservation.org/preservation-basics/>

Preservation Assessment Resources

- If you are just starting out, consider a “preservation assessment”
- University of Illinois at Urbana-Champaign - [Preservation Self Assessment Program](#)
- American Institute for Conservation and the Foundation for Advancement in Conservation [Conservation Assessment Program](#) and other opportunities
- American Alliance of Museums [Museum Assessment Program](#)

- A preservation assessment can be a great first step to find the areas you should be paying attention to and taking action on (can be preventative action)
- University of Illinois at Urbana-Champaign- in addition to a free online self-assessment, this website offers a format ID guide and glossary <https://psap.library.illinois.edu/about>
- AIC and FAC <https://www.culturalheritage.org/about-us/foundation/programs/heritage-preservation>
- American Alliance of Museums <https://www.aam-us.org/programs/accreditation-excellence-programs/museum-assessment-program-map/>

Other Resources

- North Eastern Document Conservation Center [NEDCC Leaflets](#)
- Conservation Center for Art and Historic Artifacts [CCAHA](#)
- [Sustainable Heritage Network](#)
 - Category of “Preservation” or
 - Categories based on material format
- NEH [Preservation Assistance Grants](#) for Smaller Institutions

- More grants with preservation components - NEH Preservation Assistance Grant



Discuss or Reflect

- What materials in your collections are you **most** concerned about?
- Of these priorities, do materials need:
 1. Better environment or storage conditions for preservation?
 2. An intervention of a conservation treatment?
 3. Immediate digitization or transfer to be usable in the future?

- If possible, discuss in a small group, otherwise, reflect on your own and take notes
- Triage - think through the priority steps, and what they might involve.
 - What materials in your collections are you most concerned about?
 - Think about two or three items or collections that you have immediate concerns about
 - Of these materials, do materials need:
 - Better environment or storage conditions for preservation?
 - An intervention of a conservation treatment?
 - Immediate digitization or transfer to be usable in the future?
 - From there, what can you do to learn more about what you need?
 - Research on grants?
 - Research on proper environmental conditions?
 - Research on conservation help or services available in your area?
 - Digitization resources?

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