**SALVAGE PROCEDURES** for **General Handling Procedures** during water recovery of library materials

<table>
<thead>
<tr>
<th>1 HANDLING</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Wear plastic, form-fitting gloves (surgical type).</td>
</tr>
<tr>
<td>• If MOLD PRESENT also wear N95 respirator and protective clothing; work in ventilated air-filtered area, otherwise outdoors protected from the elements.</td>
</tr>
<tr>
<td>• Avoid touching or handling the front of photos or documents and posters (possible tacky surfaces and soluble inks).</td>
</tr>
<tr>
<td>• Support items on polyester film or webbing with hands underneath or holding by edges — wet paper and thin photographs are easily torn.</td>
</tr>
<tr>
<td>• Drain off excess water where applicable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 PHOTOGRAPHS, COATED PAPERS, SOLUBLE MEDIA—KEEP MOIST UNTIL SALVAGED</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Use plastic sheeting or bags to keep photos and coated papers wet, and items with soluble inks moist, until the items can be frozen or air-dried. Photographs and coated papers will fuse together or to adjacent materials as they dry out.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3 REMOVING PLASTIC ENCLOSURES FROM WET COLLECTION ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Prior to air drying, remove plastic enclosures from damp or wet items. Sit the sealed edges of the enclosure. Remove the top sheet by lifting (make sure the item does not stick) or by Peeling/rolling back slowly at a sharp angle. Use the bottom plastic sheet as support while handling.</td>
</tr>
</tbody>
</table>

**MAINTAIN ORIGINAL ORDER!!**

• Keep box contents in original order with an identifier placed before each box grouping. Retain file folders/subject dividers in original order.  
• Save original labels or transfer cataloging info/box info as needed to a new label or paper insert.  
• Dry out intact boxes that are sturdy enough for re-use and replace damaged boxes.  
• Keep books organized in shelf order where possible.  
• Each person should handle only their batch to ensure consistent approach and maintain order.
### SALVAGE PROCEDURES for Air drying DAMP AVERAGE SIZE vellum/parchment, rare OR fragile books

<table>
<thead>
<tr>
<th>1</th>
<th>DRAIN OFF EXCESS WATER</th>
</tr>
</thead>
</table>
|   | Hold the closed book vertically at spine and let excess water drain off.

<table>
<thead>
<tr>
<th>2</th>
<th>INTERLEAVE PAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insert freezer paper between the covers and the text block to prevent the covers from staining the pages.</td>
</tr>
<tr>
<td></td>
<td>To wick moisture from volumes with plain paper text blocks, insert polyester webbing, or plain paper towels between sections of pages. Interleaving should be cut slightly larger than the book.</td>
</tr>
<tr>
<td></td>
<td>Avoid stressing spine with too much interleaving. Do not insert sheets deep into spine area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>DRY STURDY BOOKS IN UPRIGHT POSITION AND FAN OPEN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>If the book and its cover are sturdy enough to stand upright (ex. edge wet): fan open, stand vertically. Place items on a covered horizontal surface, plastic drying rack, available carts, counters, or tables. Do NOT stand wet books that slump or have no covers.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>DRY FRAGILE BOOKS FLAT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Books with saggy, floppy cases or with weakened loose sewing should be dried flat.</td>
</tr>
<tr>
<td></td>
<td>Replace interleaving periodically as book dries out.</td>
</tr>
<tr>
<td></td>
<td>Insert dry interleaving in a NEW page, working through the book as it dries.</td>
</tr>
<tr>
<td></td>
<td>Support the covers when opening book to avoid stressing the spine.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5a</th>
<th>FINAL DRYING TO REDUCE DISTORTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>When pages are dry, remove the interleaving.</td>
</tr>
<tr>
<td></td>
<td>Close the book and square up.</td>
</tr>
<tr>
<td></td>
<td>Stack horizontally with several other books of similar size, and place under a pressing board and weight.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5b</th>
<th>Alternate Weighting Method WEIGHTING BOOKS THAT CAN NOT CLOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wrap spine and covers in spun polyester webbing.</td>
</tr>
<tr>
<td></td>
<td>Open partially in “L” shape with one cover/text block on a flat surface, the other cover upright.</td>
</tr>
<tr>
<td></td>
<td>Support the raised cover on the outside using a weight, block or bookend.</td>
</tr>
<tr>
<td></td>
<td>Place a corrugated board flat on top of the text block; put a small weight on top.</td>
</tr>
<tr>
<td></td>
<td>Flip the book occasionally to flatten other cover.</td>
</tr>
</tbody>
</table>

**SALVAGE PROCEDURES** for Air drying OVERSIZED intact, general collection books (stable media/plain paper)

<table>
<thead>
<tr>
<th><strong>1 DRAIN OFF EXCESS WATER</strong></th>
<th><strong>2 INTERLEAVING PAGES</strong></th>
<th><strong>3 AVOID STRESSING SPINE WITH TOO MUCH INTERLEAVING</strong></th>
</tr>
</thead>
</table>
| • Hold the closed book vertically at spine and fore edge and let excess water drain off. | • Insert freezer paper between the covers and the text block to prevent the covers from staining the pages.  
• To wick moisture from volumes with plain paper text blocks, insert interleaving, (spun-bonded polyester webbing, or paper towel) between pages or sections.  
Interleaving should be cut slightly larger than the book.  
(Books with coated papers or soluble inks should be interleaved only with polyester webbing or freezer paper to prevent sticking or ink transferring.) | • To avoid stressing or breaking the binding, do NOT insert interleaving deep into the gutter or add too much interleaving bulk. |

<table>
<thead>
<tr>
<th><strong>4 LAY FLAT TO DRY</strong></th>
<th><strong>5 PAGES ARE DRY</strong></th>
<th><strong>6 FINAL DRYING TO REDUCE DISTORTION</strong></th>
</tr>
</thead>
</table>
| • Place the book flat on plastic shelves, carts, counters or tables covered with plastic or blotter.  
• Replace interleaving as it becomes damp or as sections of the book dry out working through the book as it dries. | • When all pages are dry, remove interleaving.  
• Close the book and square up. | • Stack horizontally with several other books of similar size.  
• Place spun polyester and blotter on each side of closed book, and place under a pressing board and weight. |

**SALVAGE PROCEDURES** for **Vertical Air Drying** single paper sheets up to 11x14 using Plastic Shelf Rack system

1. **DRAIN OFF WATER; BLOT AND INTERLEAVE IF APPROPRIATE**
   - Each person should handle only his/her batch start to finish maintaining document order.
   - Drain off excess water.
   - Remove plastic enclosures from damp or wet items.
   - If feasible, lightly blot any wet items having non-soluble media with an absorbent material; **DO NOT BLOT ITEMS WITH SOLUBLE MEDIA OR TACKY SURFACES**—wick off water from by touching a tip of absorbent material to the edge of any pooled water.

   • To aid moisture wicking, place interleaving or absorbent material such as blotter, corrugated board, or between every inch or so in a group of items. Also, place freezer paper, silicon paper or spun polyester webbing against photos and coated papers that are sticking or against any items with bleeding soluble inks.

2. **PLACE ITEMS VERTICALLY ON DRYING RACK, SUPPORT TO PREVENT SLUMPING**
   - Place items in order, vertically on the plastic shelf rack for drying:
   - To provide vertical support for the documents on the plastic shelf rack system, place corrugated board at a slight angle against the PVC poles or dowels. Place photos and folders of paper documents resting vertically on their long edge leaning against the corrugated support.

3. **REPLACE DAMP INTERLEAVING WITH DRY; FINAL DRYING IN BLOTTER STACKS TO REDUCE DISTORTIONS**
   - Replace interleaving as it becomes damp or as section of items dries out; insert dry interleaving in another location within stack working through the section of papers.
   - As the items begin to dry out to a damp state, place in a blotter stack, using 2 blotters or sheeting placed directly between each item. Place polyester webbing or freezer paper against the surfaces of photographs, coated papers, or soluble media to avoid sticking or transfer of media to blotters.

**SALVAGE PROCEDURES** for Horizontal Air Drying paper/photo sheets with Drying Screen Rack or on flat surfaces

<table>
<thead>
<tr>
<th>1 DRAIN OFF WATER, BLOT AND INTERLEAVE AS APPROPRIATE</th>
<th>2 AIR DRYING: SINGLE ITEMS FACE UP OR FANNED OUT IN SHALLOW STACKS ON ABSORBENT MATERIAL</th>
<th>3 REPLACE DAMP INTERLEAVING WITH DRY; FINAL DRYING IN BLOTTER STACKS TO REDUCE DISTORTIONS</th>
</tr>
</thead>
</table>
| - Each person should handle only his/her batch start to finish maintaining document order.  
  - Drain off excess water.  
  - Remove plastic enclosures from damp or wet items.  
  - If feasible, lightly blot any wet items having non-soluble media with an absorbent material; DO NOT BLOT ITEMS WITH SOLUBLE MEDIA OR TACKY SURFACES--wick off water from by touching a tip of absorbent material to the edge of any pooled water.  
  - To aid moisture wicking, place absorbent interleaving sheets such as blotter or corrugated board between groups of items (up to 10 items). Place freezer paper or spun polyester webbing against any photos and/or coated papers that are sticking or any items with bleeding inks. | - Place the items face up on top of an absorbent material on a flat surface such as counters, table tops, plastic-covered dry hallways and aisle floors.  
  - Stack slightly wet or damp plain paper items 3-10 deep if needed. Or fan out small documents in a shallow stack, leaving an inch of each document exposed for drying.  
  - DRYING SCREEN RACKS  
    - For compact drying, lay out items singly or in shallow stacks on the drying screen racks used with the baker’s trolley (more compact drying surfaces for sizes not exceeding 30x36). | - As the items begin to dry out to a damp state, place in a blotter stack, using 2 blotters placed directly between each item. Place polyester webbing or freezer paper against the surfaces of photographs, coated papers, or soluble media to avoid sticking or transfer of media to blotters. |

![Image](https://www.nlm.nih.gov/hmd/preservation/index.html)
**SALVAGE PROCEDURES** for Air Drying Photographic Media: prints, film negatives and microfiche

1. **WEAR PLASTIC GLOVES, AVOID TOUCHING TACKY PHOTO SURFACES; REMOVE PLASTIC ENCLOSURES; RINSE OR SOAK SOILED, WET ITEMS IN COLD WATER**
   - Each person should handle only his/her batch start to finish maintaining document order.
   - Wear plastic gloves and avoid touching the front or image side of prints, films, slides or glass plates.
   - Remove damp or wet items from their plastic enclosures by slitting the seams and peeling back the sheeting on front and back. **Do not remove if stuck.**
   - If items are sticking, covered in debris, or were exposed to dirty water, rinse by immersing in clean cold water in a plastic tub or under a gentle slow water stream. Drain excess water.

2. **DRYING METHODS: LINE DRYING**
   - Fiber based prints 8x10 in. or smaller, films and RC prints 16x20 in. or smaller, can be hung to dry using clothes or fish lines and small clips attached to one or two corners. Prior to hanging, rinse if necessary; drain excess water; wick pooled water from edges with absorbent material.

   **FLAT DRYING**
   - As space allows, separate and place the items face up on top of an absorbent material on a flat surface such as counters, table tops, or plastic-covered hallway and aisle floors. As the front dries out, turn over to dry the other side (replace any wet, absorbent material or wipe dry wet surfaces).
   - For compact drying, lay out items singly on drying screen racks used with the baker's trolley.

3. **FINAL DRYING IN BLOTTER STACKS TO REDUCE DISTORTIONS OF PAPER PRINTS**
   - As the items begin to dry out to a damp state, place in a blotter stack, using 2 blotters placed directly between each item. Place polyester webbing on any tacky image surfaces to avoid sticking to blotters.

   **BATCH DRYING - Vertical**
   - Slightly damp 8x10 or smaller photographic prints interfiled with paper documents can be dried vertically using the plastic shelf rack system (place freezer paper or spun polyester webbing against any tacky photo surfaces that are starting to stick to adjacent materials). Vertical supported rack drying also can be used for glass plates.
**SALVAGE PROCEDURES** for Air drying DAMP AVERAGE-SIZE intact general collection books (stable media/plain paper)

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
</table>
| **1** | **FAN OPEN AND STAND UPRIGHT**  
- Do NOT force open if binding resists. Do NOT open if book is falling apart. Do NOT open if this damages illuminations. If air drying can not be started within 24 hours, freeze the volume. (Air drying preferred for illuminated/gilded books).  
- Insert freezer paper between each cover and the text block to prevent the covers from staining the pages.  
- Stand intact books upright on flat surface and fan pages open, if possible.  
- Very gently separate pages with a thin spatula.  
- Use weights, blocks or bookends as supports.  
- If the book is not drying after 24 hours, then consider freezing. |
| **2** | **INTERLEAVE FANNED BOOK**  
- If the volume can be opened safely, place non-absorbent interleaving sheets (freezer paper or smooth spun polyester webbing) between pages with illuminations, gilding, or soluble colorants/inks. Do NOT use absorbent interleaving (such as paper) in contact with soluble colorants/inks!  
- To avoid stressing the binding, do NOT insert polyester webbing deep into the gutter or add too much interleaving bulk. |
| **3** | **REPLACE/MOVE DAMP INTERLEAVE, MOVE THROUGH BOOK AS PAGES/SECTIONS DRY**  
- Replace interleaving as it becomes damp or that section of the book dries out; insert dry interleaving in another location working through the book as it dries. |
| **4** | **CLOSE/SQUARE UP WHEN NEARLY DRY**  
- When almost completely dry, close the book and square up as much as possible; do NOT force the book closed— use alternate method in #5b for books that do not close with ease.  
- If interleaving causes stress on binding when the book is closed, remove selected sheets until the book closes easily. |
| **5a** | **WEIGHT TO REDUCE DISTORTIONS IN BOOKS THAT CAN BE CLOSED**  
- Wrap spine and covers in spun polyester webbing  
- Continue interleaving until completely dry  
- Sandwich between sheets of corrugated board  
- Stack horizontally with several other books of similar size, place under a pressing board and weight |
| **5b** | **Alternate Weighting Method**  
**WEIGHTING BOOKS THAT CAN NOT CLOSE**  
- Wrap spine and covers in spun polyester webbing.  
- Open partially in “L” shape with one cover/text block on a flat surface, the other cover upright.  
- Support the raised cover on the outside using a weight, block or bookend.  
- Place a corrugated board flat on top of the text block; put a small weight on top.  
- Flip the book occasionally to flatten other cover. |

**SALVAGE PROCEDURES** for Air drying DAMP OVERSIZE vellum/parchment, rare OR fragile books

### 1 SUPPORTED HORIZONTAL DRYING
- Do NOT force open if binding resists. Do NOT open if book is falling apart. Do NOT open if this damages illuminations. If air drying cannot be started within 24 hours, freeze book. (Air drying preferred for illuminated/gilded books).
- Insert freezer paper between each cover and the text block to prevent the covers from staining the pages.
- Very gently separate pages with a thin spatula.
- Start interleaving with absorbent material.
- Invert book every few hours.

### 2 INTERLEAVE
- If the book can be opened safely, place non-absorbent interleaving sheets (freezer paper or smooth spun polyester webbing) between pages with illuminations, gilding, or soluble colorants/inks. Do NOT use absorbent interleaving (such as paper) in contact with soluble colorants/inks!
- To avoid stressing the binding, do NOT insert polyester webbing deep into the gutter or add too much interleaving bulk.
- Invert book every few hours.

### 3 REPLACE DAMP INTERLEAVE, MOVE THROUGH BOOK AS PAGES/SECTIONS DRY
- Replace interleaving as it becomes damp or when sections of the book dries out; insert dry interleaving in another location working through the book as it dries.
- Invert book every few hours.

### 4 CLOSE/SQUARE UP BOOK WHEN DRY
- When completely dry, close the book and square up as much as possible; do NOT force the book closed—use alternate method in #5b for books that do not close with ease.
- If interleaving causes stress on binding when the book is closed, remove selected sheets until the book closes easily.

### 5a WEIGHT TO REDUCE DISTORTIONS IN BOOKS THAT CAN BE CLOSED
- Wrap spine and covers in spun polyester webbing.
- Sandwich between sheets of corrugated board.
- Stack horizontally with several other books of similar size, place under a pressing board and weight.

### 5b Alternate Weighting Method
WEIGHTING BOOKS THAT CAN NOT CLOSE
- Wrap spine and covers in spun polyester webbing.
- Open partially in “L” shape with one cover/text block on a flat surface, the other cover upright.
- Support the raised cover on the outside using a weight, block or bookend.
- Place a corrugated board flat on top of the text block; put a small weight on top.
- Flip the book occasionally to flatten other cover.

---

### Salvage Procedures for Freezing Wet Vellum/Parchment, Rare or Fragile Books

1. **Drain Off Water**
   - Hold closed book at spine and fore edge.
   - Allow water to drain off.
   - Do NOT compress while draining.

2. **Close and Square Up the Book**
   - Do NOT open if this damages illuminations and/or pages.
   - Close and square up the book as much as possible; do NOT force the book closed—use alternate method in #5b for books that do not close with ease.

3. **Wrap Covers**
   - Wrap freezer paper across front cover, over spine and across back cover leaving extra paper at ends as a “handle”. The freezer paper will keep books from sticking together when frozen.

4. **Pack in Cartons or Boxes**
   - Pack spine down, one layer deep in polyethylene box or carton.
   - Pack so that books support each other and are snug, but do NOT compress. Insert a corrugated board or crumpled paper to fill out the extra space, and keep books upright and snug. The shape of vellum/parchment books as packed will become its shape after freezing!

5. **Packaging Oversize Books**
   - For oversized books that do not fit in the standard carton or polyethylene box, proceed with step #1-3, then:
   - Support both covers by sandwiching the book between corrugated boards and strapping with tape or cotton twine/ribbon.
   - Place books flat in shallow stacks inside polyethylene boxes (line with corrugated board and plastic to prevent sagging from weight/moisture).
   - Large, unwieldy books are best frozen individually prior to packing in order to retain their shape.

5b **Alternate Packing Method**
   - For books that do not close with ease or are distorted, do NOT force closed.
   - Pack in crate spine down in partially open, expanded shape, using corrugated board or crumpled freezer paper to support covers and fill voids between books.

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NIH U.S. National Library of Medicine