Water

Incident Response & Collections Recovery Procedures

November 19, 2013

Contents

l.	Primary Emergency Procedures	3
II.	Emergency Numbers Quick Reference	4
III.	Area Recovery Operations	8
IV.	Materials Recovery Operations	10
VI.	General Treatment	13
VII.	Preparing Materials for Transfer	16
VIII.	Special Materials Treatment	19
IX.	Treatment and Transfer Guidelines for Special Materials	25

I. Primary Emergency Procedures

Remain Calm Human Safety Comes First

This manual is for recovering collections after a disaster.

For events involving:

- Threats to Personal Safety
- Fire
- Earthquake
- Hazardous Materials

Follow all instructions in the UBC red flip guide:

Emergency procedures & information

UBC Dept. of Health, Safety & Environment

(May 2007)

http://emergency.ubc.ca

A. For Major Events Involving Water

Do not enter a flooded area until maintenance and service electricians have disconnected the electricity—there is extreme danger of shock and eloctrocution.

This usually involves more than 200 volumes.

Initial Steps:

- 1. Evacuate patrons and staff from affected areas to ensure everyone's safety.
- Notify Building Operations Service Centre Maintenance Requests (604-822-2173).
 - a. Describe the situation, give the exact location of the problem (including room number, stack range numbers), and assist as much as you can when they arrive.
 - b. They will alert your building's Facility Manager.
- 3. Contact the Library Facilities Coordinator (**Error! Reference source not found.**Error! Reference source not found.Error! Reference source not found.).
- 4. Notify the Director of Emergency Operations (Jean-Paul Eidsvik 604-822-5903).
- 5. If necessary, notify Campus Security (**604-822-2222**) and ask for assistance in securing the area.

B. For Minor Events Involving Water

The following steps should be taken in the event of a water emergency that can be handled on the premises and does not pose a threat to human safety.

This usually involves fewer than 200 volumes.

Initial Steps:

- 1. Notify Building Operations Service Centre Maintenance Requests (604-822-2173).
 - a. Describe the situation, give the exact location of the problem (including room number, stack range numbers), and assist as much as you can when they arrive.
 - b. They will alert your building's Facility Manager.
- 2. Contact the Library Facilities Coordinator (**Error! Reference source not found.**Error! Reference source not found.Error! Reference source not found.).
- 3. Notify Collections Recovery Coordinator (Alvan Bregman 604-822-).
- 4. Report the incident on the Preservation Incident Form: http://techserv.library.ubc.ca/divisions/preservation/preservation-forms/preservation-incident-form/

Water from above: Water from below:

- 1. Cover the stacks with the plastic sheeting from your emergency supplies. Extend cover to protect nearby items that might be affected if the condition spreads.
- 2. Remove items from shelves to clean, dry area.
- 1. Remove items from affected or threatened shelves—including higher and nearby items that might be affected if the condition spreads—to a clean, dry area or to higher shelves.

Emergency Numbers Quick Reference

Building Operations and Construction

Building Operations Service Centre

Emergency Tel: 604-822-2173

Non-emergency online customer request form:

http://wapi.lbs.ubc.ca/cr/customer%20request/customerrequest.aspx

Campus Security

Emergency Number and Dispatch

Tel: 604-822-2222

Non-emergency: 604-822-8609

Fax: 604-822-3541

Collections Recovery Coordinator (CRC)

Alvan Bregman

Librarian, Preservation & Collection Management Programs Tel: 604-822-5038

Cell: TBA

Email: Alvan.bregman@ubc.ca

Director of Emergency Operations (DEO)

Jean-Paul Eidsvik

Interim Director, Finance and Facilities

Tel: 604-822-5903

Cell: TBA

Email: jean-paul.eidsvik@ubc.ca

[Deputy Director:]

Richard Moore

Facilities Coordinator Tel: (604) 822-3858

Cell: TBA

Email: richard.moore@ubc.ca

Facilities Managers (contacts for all building related inquiries)

Rob MacDonald

<u>David Lam Library</u> Education Library

I.K. Barber Centre

Koerner Library

Law Library

Xwi7xwa Library

Tel: 604-822-8832 Cell: 604-916-7584

Fax: 604-822-2334

Email: rob.macdonald@ubc.ca

Mike Devolin

Woodward Biomedical Library

Tel: 604-822-0072 Cell: 604-240-3676 Fax: 604-822-2334

Email: mike.devolin@ubc.ca

Chris Skipper

Asian Library Music Library

Tel: 604-822-1940 Cell: 604-341-1408

Fax: 604-822-2334

Email: chris.skipper@ubc.ca

III. Area Recovery Operations

Once the primary procedures have been completed, begin the secondary procedures with the assistance of the building's facility manager.

A. Determining Source of Water

In dealing with any situation involving water, it is important to determine the source of the water involved.

Different types of water cause different types of damage and pose different degrees of threat to both Library staff and materials. Water may also obscure live electrical equipment or circuits in the affected area.

Treat all incidents involving water with suspicion. Do not act until you are sure that the area is safe.

The following table illustrates the likely sources of water in a library building and their attendant hazards:

Water Source	Heat	Dirt	Sewage	Other Contaminants
Domestic Water				
Domestic Sewer				
Heating System				√

Fire Sprinkler			√
Leaks (Rain)	√		
Groundwater	√	1	√

If dealing with a contaminated water situation (dirt, sewage or other contaminants), wear protective clothing when handling affected materials.

B. Control the Environment

- Make every effort to reduce the temperature of the affected area to 18°C (65°F) or lower.
 - a. Open doors and windows if necessary.
 - b. Turn off the heat unless there is a danger of water pipes freezing.
- 2. Pump out standing water.
- 3. The relative humidity (RH) in the area should be 50% or lower. Try to reduce the humidity using dehumidifiers (See Collections Disaster Recover Manual Appendix B: Dehumidifiers).

Note: Raising the temperature will not reduce the humidity.

- 4. Ensure that air circulates.
 - a. Use fans and remove plastic sheeting from shelves once the water hazard has passed.
 - b. Custodial Assistance (via "Building Operations Service Centre Maintenance Requests"), can supply fans and begin clean-up.
- 5. Obtain thermometers and hygrometers to monitor the environment (See Collections Disaster Recover Manual Appendix B: Humidity Sensors).

IV. Materials Recovery Operations

Once the water has been contained begin these disaster recovery operations.

A. Process Overview

The disaster recovery process will follow four basic steps:

- 1. Remove materials from stacks to a safe, dry area.
- Decisions on retention and treatment of affected materials.
- 3. Initial and in-house treatment.
- 4. Transfer or discarding of materials as applicable.

B. General Guidelines

- Materials should be removed from standing water as soon as possible.
 - Paper-based items will incur further damage as water wicks into the paper.
 - Also, removing wet materials will help to reduce the relative humidity.
- Clear the floor first and then go to the top-most affected shelf.
 - Move in order of top to bottom for each bay and left to right for each shelf and range.
- After following the removal order in Section IV C (Removal of Damaged Materials), treat the wettest materials first and then the partially wetted, followed by the damp.
 - If materials higher up on the Disaster Triage List (See Collections Disaster Recover Manual Appendix F) are affected, these items may need to be given first priority.

- Treatment of wet paper-based items should be given priority over wet film or magnetic tape (except if the film or tape has been contaminated by sewage, mud, sea water, etc.)
- Wet coated paper must not be allowed to dry.
 - These items must be frozen immediately in order to be salvaged (See Section VI for further treatment information).
- Wet photographs and magnetic tapes must not be allowed to dry (See Section VI for further treatment information).
- Wet items should not be piled or stacked as the excess weight caused by the water will damage the materials further.
- Do not write directly on wet materials.
 - Also, do not use staples, paper clips, adhesives or pressure-sensitive tapes.

Note: Portions of this section were taken from An Ounce of Prevention by Wellheiser and Scott.

C. Removal of Damaged Materials

Remove first:

- Materials at the head of the Disaster Triage List for the affected area.
- Wet materials lying on the ground.
- Wet or damp materials on shelves unless mould is forming (See Mould Incident Response Procedures).
- Undamaged materials likely to be at risk if left in that environment:
 - Leather, parchment and vellum-bound materials.
 - Artifacts, manuscripts, prints, drawings, maps, and books with watersoluble components (e.g. inks, watercolours, etc.).

- Materials printed on coated paper which could congeal.
- Other sensitive or fragile materials.

Procedure:

- 1. Starting from the nearest accessible point, remove materials to the designated sorting/packing area (to be determined by the Collections Recovery Coordinator).
- 2. If possible, remove materials in the exact order and condition in which they were found.
- 3. Use extreme care in handling materials to avoid causing further damage:
 - a. Do not close an open book or open a closed one.
 - b. Do not roll, fold, flatten or separate loose, single sheet or oversize materials.
- 4. All materials should be moved by a combination of human chains and each chain should consist of:
 - a. A team of removers.
 - A team of sorters directed by a knowledgeable bibliographer who will divert materials for treatment on the basis of type and extent of damage (Collections Recovery Coordinator or Library Branch Head).
 - c. A team of record keepers led by the Documentation Coordinator.
 - d. The number of people in each team should be balanced to create an even workflow and prevent bottlenecks.

VI. General Treatment

A. Air Drying

Air drying of wet materials is possible if numbers are modest and a large number of staff is available. Desirable drying conditions are 30 – 35% relative humidity with a temperature of 21 - 25°C (70 - 77°F). Mechanical air circulators should be kept running constantly.

- 1. It is preferable to dry books by carefully opening them and standing them on their ends.
- Sheets of blank newsprint may be placed between the fly-sheets and covers, which usually contain the most moisture. Elsewhere interleaving should be commenced initially about every 25 pages, the sheets changed as often as thought necessary. Interleaving should not exceed one-third the total thickness of the book.
- If book jackets have been laminated and attached to volumes for cosmetic purposed they should be removed and discarded. Undetected amounts of moisture they may harbour can cause later warping and moulding of the book covers.

B. Vacuum Drying

This is a possible treatment both as a first process or following freezing. It is time consuming and therefore a costly procedure and should not be used for water logged material as too rigorous water extractions may be damaging.

UBC has used the firm of Belfor in the past (See Collections Disaster Recover Manual Appendix B: Emergency flood & fire restoration).

C. Cleaning & Washing

Ideally, cleaning should be done before freezing occurs. However, it should be postponed if freezing the bulk of the affected material is delayed.

- Mud deposits on material which will not be further damaged by water may be washed off in clean, cool running water, but must not be attempted with opened books.
- 2. Do not use force to remove difficult dirt; this is better left until the books have been dried. Instead, hold each volume in turn under water, removing as much mud/soot as possible with a sponge using a gentle, dabbing motion.
- 3. If a more thorough cleaning procedure is required, a series of 6-8 tanks (possibly garbage cans) each with its own source of running water should be set up in a well-drained area.
- 4. Books should be passed from tank to tank with the same gentle sponging operation being repeated in each tank.
- 5. They should then be rinsed with a fine spray of clean water.
- 6. After the books have been washed, some of the excess water may be squeezed out manually. **Use your hands only do not use mechanical presses.**

D. Freezing

Freezing is an effective way of suspending mould growth and the diffusion of watersoluble components in books. For minor events, books can be frozen in freezers in Irving K. Barber Centre and then sent for conservation treatment.

If the quantity of wet library books is larger than can be completely salvaged within the next 12 hours, it should be frozen without delay. Priority will be given to the most valuable items.

General Priority for Freezing:

- Materials which have already developed mould
- Leather and vellum-bound volumes
- Materials on coated stock

- Photographic prints
- Journal and monograph volumes

VII. Preparing Materials for Transfer

A. Wrapping Books



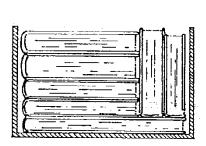
- Wrap bound volumes in freezer paper, wax paper, plastic wrap, or silicone paper so that the books won't stick together. Volumes can then be placed in freezer bags.
- 2. Keep sheet material (e.g. manuscripts, records, unframed prints and drawings etc.) in sections no more than 2" thick with a base support (.128 board).

B. Packing Books

Books should be boxed either flat or spine down to minimize damage to binding and costly repairs. Pack books of the same size next to one another to minimize warping. Do not stack boxes over three high as they tend to collapse once the cardboard box absorbs water from the wet books. Shrink wrap the stacked boxes onto skids to minimize transit damage.

Example of how books should be packed:

Wet books should be packed flat or spine down

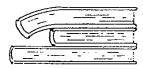






Example of how books should NOT be packed:









Do not pack wet books like this. Wet books will sag causing permanent damage. Spine up also causes the binding to sag.

C. Crating & Boxing Books

- 1. Use plastic milk crates or, if not available, strong cardboard boxes such as library book bindery boxes.
- 2. Pack books FLAT or SPINE DOWN.
- 3. Do not pack too tightly. Allow for air circulation.
- 4. Put an identification mark on each container.

D. Transportation of Books

- 1. When boxed, put material immediately into refrigerated trucks.
- 2. If this is not possible, pack dry ice around the material or keep as cold as possible.
- 3. Transport to the freezing facility without delay.

VIII. Special Materials Treatment

A. Leather & vellum bindings

- Immediately dry; or freeze if there are many books.
- Do not open or close, do not separate covers.
- Separate with freezer paper and pack spine down in a milk crate or a cardboard box, one layer deep.
- Air dry.

B. Books & periodicals with coated papers

- Immediately freeze or dry.
- Do not open or close, do not separate covers.
- Keep wet and pack spine down in containers lined with garbage bags.
- Freeze drying is preferred. Air dry by fanning pages and interleaving.

C. Salvage at a Glance

	Material	Priority	Handling Precautions	Packing Method	Drying Method
Pap	er Documents	& Manuscripts	3	_	-
	Stable media	Freeze or dry within 48 hours.	Don't separate single sheets.	Interleave between folders and pack in milk crates or cartons.	Air, vacuum, or freeze dry.
	Soluble inks (felt pens, coloured pens, ball point pens)	Immediately freeze or dry.	Do not blot.	Interleave between folders and pack in milk crates or cartons.	Air or freeze dry.
Maj	ps & Plans				
	Stable media	Freeze or dry within 48 hours.	Use extra caution if folded or rolled.	Pack in map drawers, bread trays, flat boxes, on heavy cardboard or poly covered plywood.	Air or freeze dry.
	Soluble media Maps and plans by photoreproductive processes Hand coloured maps	Immediately freeze or dry.	Do not blot.	Interleave between folders and pack as above.	Air or freeze dry.
	Drafting linens	Immediately freeze or dry.	Avoid pressure - inks can smear away.	Pack like maps in containers lined with plastic.	Air or freeze dry. Air dry by separating sheets and interleaving.
	Maps on coated papers	Immediately freeze or dry.		Pack like maps in containers lined with plastic.	Freeze drying preferred.
Boo	ks				
	Books and pamphlets	Freeze or dry within 48 hours.	Do not open or close, do not separate covers.	Separate with freezer paper, pack spine down in milk crate or cardboard box 1 layer deep.	Air, vacuum, or freeze dry.
	Leather and vellum bindings	Immediately dry; or freeze if many books.	Do not open or close, do not separate covers.	Separate with freezer paper, pack spine down in milk crate or cardboard box 1 layer deep.	Air dry.
	Books and periodicals with coated papers	Immediately freeze or dry.	Do not open or close, do not separate covers.	spine down in containers lined with	Freeze drying preferred. Air dry by fanning pages and interleaving.

Parchment & Vell	um Manuscrin			
rarenment & ven	Immediately freeze or dry.		Interleave between folders. Pack oversize materials flat.	Air or freeze dry. Do not freeze dry gilded or illuminated manuscripts.
Works of Art on P	aper			
Prints and drawings with stable media	Freeze or dry within 48 hours.	Don't separate single sheets.	Interleave between folders and pack in milk crates or cartons.	Air, vacuum, or freeze dry.
	Freeze or dry within 48 hours.	Use extra caution if folded or rolled.	Pack in map drawers, bread trays, flat boxes, on heavy cardboard or poly covered plywood.	Damp - air or freeze dry. Wet - freeze drying preferred.
Framed prints and drawings	Freeze or dry within 48 hours.	Handle with care - glass.	Unframe if possible, then pack as above.	Once unframed and unmatted, air or freeze dry.
Soluble Media Watercolors, soluble inks, and hand colored prints	Immediately freeze or dry.	Do not blot.	Interleave between folders and pack in milk crates or cartons.	Air or freeze dry.
Coated papers (e.g., posters)	Immediately freeze or dry.		Keep wet in containers lined with garbage bags.	Freeze drying preferred. Air dry by separating pages and interleaving.
Paintings				
	Immediately dry.	Drain and carry horizontally.	Face up without touching paint layer	Air dry. See Instructions.
Computer Media				
Tapes	Immediately rinse off tapes soaked by dirty water. Dry within 48 hours if paper boxes and labels; otherwise, tapes can stay wet for several days. Do not freeze.	Do not touch magnetic media with bare hands. Handle open reel tapes by hubs or reel.	Pack vertically in plastic crate or tub.	Air dry or test vacuum drying without heat.
Floppy Disks	Immediately pack. Do not freeze.	Do not touch disk surface with bare hands.	Keep wet. Pack vertically in plastic bags or tubs of cold water.	Air dry.
Compact Discs &	CD ROMs			
	Immediately dry discs. Dry paper enclosures	Do not scratch the surface.	Pack vertically in crates or cardboard cartons.	Air dry.

	within 48 hours.						
ound and Video Recordings							
Sound and Videotapes	Immediately rinse off tapes soaked by dirty water. Dry within 48 hours if paper boxes and labels; otherwise, tapes can stay wet for several days. Do not freeze.	Do not touch magnetic media with bare hands.	Keep tapes wet in plastic bags. Pack vertically in plastic crate or tub.	Air dry or test vacuum drying without heat.			
Shellac and Acetate Discs	Immediately dry. Dry enclosures within 48 hours.	Discs are very fragile. Hold discs by their edges. Avoid shocks.	Pack vertically in ethafoam-padded crates.	Air dry, preferably with a record cleaning machine.			
Vinyl Discs		Hold discs by their edges. Avoid shocks.	Pack vertically in ethafoam-padded crates.	Air dry, preferably with a record cleaning machine.			
Black & White Pri	nts						
Albumen prints	Freeze or dry within 48 hours.	Do not touch binder with bare hands.	Interleave between groups of photographs.	Air dry; thaw and air dry.			
Matte and glossy collodion prints	Freeze or dry within 48 hours.	Avoid abrasion. Do not touch binder with bare hands.		Air dry; thaw and air dry; or freeze dry.			
Silver gelatin printing out and developing out papers	Freeze or dry within 48 hours.	Do not touch emulsion with bare hands.	Keep wet. Pack in plastic bags inside boxes.	Order of preference: 1) Air dry, 2) thaw and air dry, 3) freeze dry. Do not vacuum dry.			
	Immediately freeze or dry.	Handle carefully - swelling of binder.	Horizontally.	Air dry or thaw and air dry.			
Photomechanical	Freeze or dry within 48 hours.	Do not separate single sheets.	Interleave every 2" and pack in boxes or crates.	Air dry or freeze dry			
Color Photographs							

	·	Package to prevent damage - recovery rate is poor. Immediately dry.	Do not touch emulsion.	Transport horizontally.	Air dry face up.	
prin	omogenic its and atives	Freeze or dry within 48 hours.	Do not touch binder with bare hands.	Keep wet. Pack in plastic bags inside boxes.	Order of preference: 1) Air dry, 2) thaw and air dry, 3) freeze dry. Do not vacuum dry.	
Cased 1	Photograph					
	brotypes notypes	Recovery rate is low. Immediately dry.	Handle with care - glass supports and extremely fragile binder.	Horizontally in a padded container.	Air dry face up. Never freeze.	
Dag	uerreotypes	Immediately dry.	Handle with care - fragile surface, cover glass.	Horizontally in a padded container.	Air dry face up. Never freeze.	
Tint	ypes	Immediately dry.	Handle with care - fragile binder.	Horizontally.	Air dry. Never freeze.	
Negativ	ves					
Wet plate	collodion glass es	Recovery rate is low. Immediately dry.	Handle with care - glass supports and fragile binder.	Horizontally in a padded container.	Air dry face up. Never freeze.	
	atin dry plate s negatives	Freeze or dry within 48 hours.	Handle with care - glass.	Keep wet. Pack in plastic bags, vertically in a padded container.	Air drying preferred; or thaw and air dry; freeze dry.	
nitra	eriorated ates with ble binders	Immediately freeze or dry. Recovery rate may be low.	Do not blot.	Horizontally.	Air dry; thaw and air dry; test freeze drying.	
Dete acet	eriorated ates	Immediately freeze or dry. Recovery rate is low.	Handle carefully - swelling of emulsion.	Horizontally.	Air dry; thaw and air dry; test freeze drying.	
film, acet	vester based , nitrates and ates in good dition	Freeze or dry within 48 hours.	Do not touch emulsion with bare hands.	Keep wet. Pack in small plastic bags inside boxes.	Order of preference: 1) Air dry, 2) thaw and air dry, 3) freeze dry. Do not vacuum dry.	
Transp	oarencies		=	_	_	
	tern slides, er gelatin	Freeze or dry within 48 hours.	Handle with care - loose binding tapes and glass.	Vertically in a padded container.	Air drying preferred; thaw, and air dry.	
Color 7	Color Transparencies					
tran		damage - recovery	Handle with care - loose binding tapes and glass.	Horizontally in a padded container.	Air dry. Never Freeze	

	Autochromes, Agfacolor, Dufaycolor	Immediately dry.			
	Chromogenic color transparencies Mounted color slides and sheet films	Freeze or dry within 48 hours.	Handle by mounts or edges.	Keep wet. Pack in plastic bags inside box.	Order of preference: 1) Air dry in mounts if possible, 2) thaw and air dry, 3) freeze dry. Do not vacuum dry.
Mo	tion Pictures				
		Rewash and dry within 48 hours.		Keep wet. Pack in plastic pails or cardboard cartons lined with garbage bags.	Arrange with a film processor to rewash and dry.
Mic	roforms				
	Microfilm rolls	Rewash and dry within 48 hours.	Do not remove from boxes; hold carton together with rubber bands.	Keep wet. Pack (in blocks of 5) in a cardboard box lined with garbage bags.	Arrange with a microfilm processor to rewash and dry.
	Aperture cards	Freeze or dry within 48 hours.		Keep wet. Pack in plastic bags inside boxes.	Air dry, or thaw and air dry.
	Jacketed microfilm	Freeze or dry within 48 hours.		Keep wet. Pack in plastic bags inside pail or box.	Air dry, or freeze, thaw and air dry.
	Diazo and vesicular microfiche	Freeze or dry within 48 hours.		Interleave between envelopes and pack in milk crates or cartons.	Air dry, or freeze, thaw and air dry.

[©] Province of British Columbia 1997.

All rights reserved. Do not reproduce without permission from the author.

Published as an insert to the WAAC Newsletter, Vol. 19, No. 2 (May 1997), Carolyn Tallent, Editor.

Reprinted with the permission of the author: Betty Walsh, archival conservator at the Royal BC Museum.

IX. Treatment and Transfer Guidelines for Special Materials

A. Manuscripts and Archival Materials

Manuscripts and archival materials, in particular those collections and fonds housed at Rare Books and Special Collections, pose two considerable problems for disaster recovery. First, their component materials may be very diverse. Archival holdings may, potentially, contain any known type of medium (see above sections) including paper, parchment, photographs, video and film, artifacts, etc. Second, the order in which they are stored must be maintained (principle of original order), and after a fire or flood, this may be nearly impossible. Every attempt should be made to keep original order when handling archival materials. If this is not possible, an accurate log or record book should be kept as the materials are removed or handled.

For these reasons, it is essential that only staff members who are familiar with a collection or fonds (both its content and arrangement) be allowed to work with the damaged materials.

Perhaps the most critical documents relating to archival fonds are the finding aids.