After the Event: Response, Stabilization, and Salvage of Photographic Collections

DYANI FEIGE AND BARBARA LEMMEN

CONSERVATION CENTER FOR ART & HISTORIC ARTIFACTS

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DON'T
PANIC

Responders:
What they're thinking

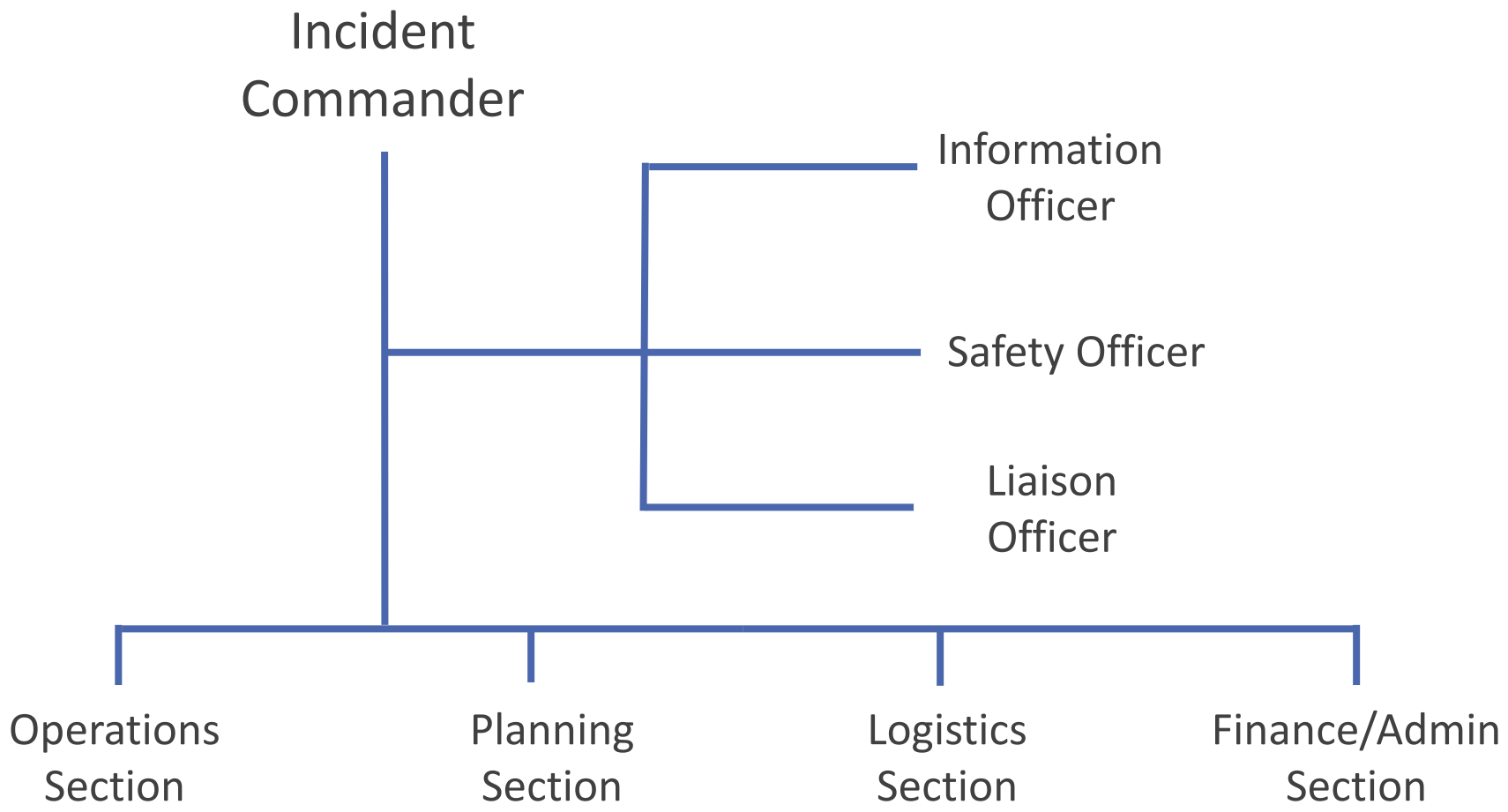
- Life/Safety
- Incident Stabilization
- Property protection

➢ Don't get distracted by non-professionals

➢ Organize for efficient response

Incident Command System

How they organize



1. Human health and safety!
2. Assess the situation
3. Prevent further damage
4. Collection salvage
5. Return to normal

Personal Protective Equipment (PPE)

Are you equipped with the appropriate PPE?

apron, boots, gloves (nitrile), goggles, hard hat, respirator, or particulate mask (N95 or P100)

Site Assessment

Safety First!

Communication is key

Remember - *This is* ***not*** *about salvage and recovery.*

The initial re-entry is to identify the location, type, and scope of the damage.

Be prepared to not have electricity.

Salvage in-house or call a vendor?

How many items are affected?

What types of items are affected?
Books with coated paper, objects, photographs, etc.

How wet are they?

Has mold set in?

Do you have the time/money/space/staff to do it yourself?

What kind of facilities and equipment do you have available?
Freezers, vacuums, dehumidifiers, etc.

Working with Commercial Recovery Services

What should a disaster recovery company do?

- Listen
- Assess damages
- Consult / advise
- Perform recovery and rebuild services

What should they **NOT** do?

- Take over
- Establish client priorities

Image courtesy of Belfor

Prevent Further Damage

This may include: draping shelves, removing items from a compromised structure, segregating moldy items, setting up dehumidifiers or air conditioners, etc.

Triage

The most vulnerable materials (parchment, photographs, etc.)

The collection(s) of greatest importance/value.

The size of the collection(s) involved.

Items which are *physically* the most readily accessible.

The problem(s) with water

Expansion/contraction
- Tears and detachment during event
- Warping after drying

Weakness and additional weight

Solubilization and Redepositing
- Media, adhesives, discoloration

Embedding
- Grime, soot, foreign particles

Corrosion: metal objects and components

Contamination: sewage, toxins

Mold

Water Damage

Air dry now.

Freeze now, air dry later.

Blast freeze now, vacuum freeze dry later.

To Freeze or Not to Freeze

Freeze

- books
- paper
- anything with coated paper (books or individual flat objects)
- vellum and parchment
- most photographs and negatives
- most textiles

Do Not Freeze

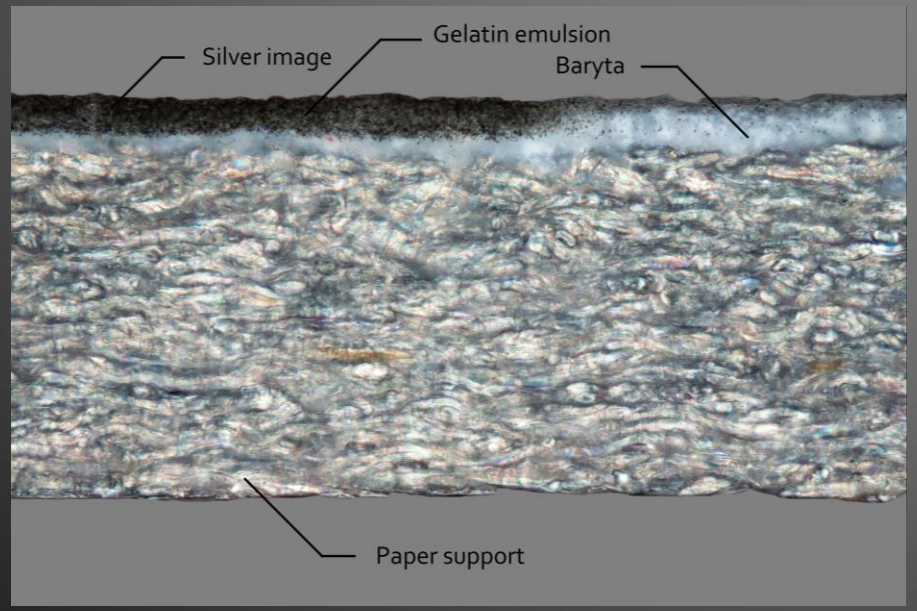
- cased photographs
- glass plate negatives
- magnetic and optical media
- anything with layers (varnished maps, paintings on canvas, thick paints on paper)
- organic objects (bone, shell, ivory, basketry, wood)
- inorganic objects (ceramics, metal, stone, glass, beadwork)

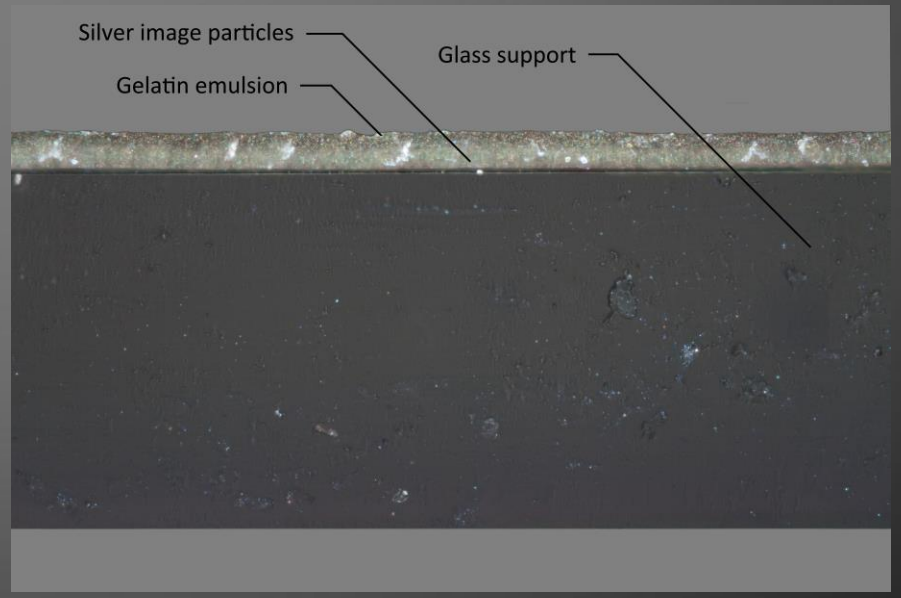
AFTER THE EVENT: Response, Stabilization, and Salvage of Photographic Collections

Barbara Lemmen ▪ CCAHA

Vulnerabilities of photographs

- Laminate structure
- Mix of materials
- Hygroscopic components
- Food source for mold
- Housing and inscriptions





Courtesy of Graphics Atlas

The problems with water + photos

- Contamination
- Expansion/contraction
- Weakness and additional weight
- Solubilization and Redepositing
- Blocking
- Corrosion of metal and glass components
- Mold

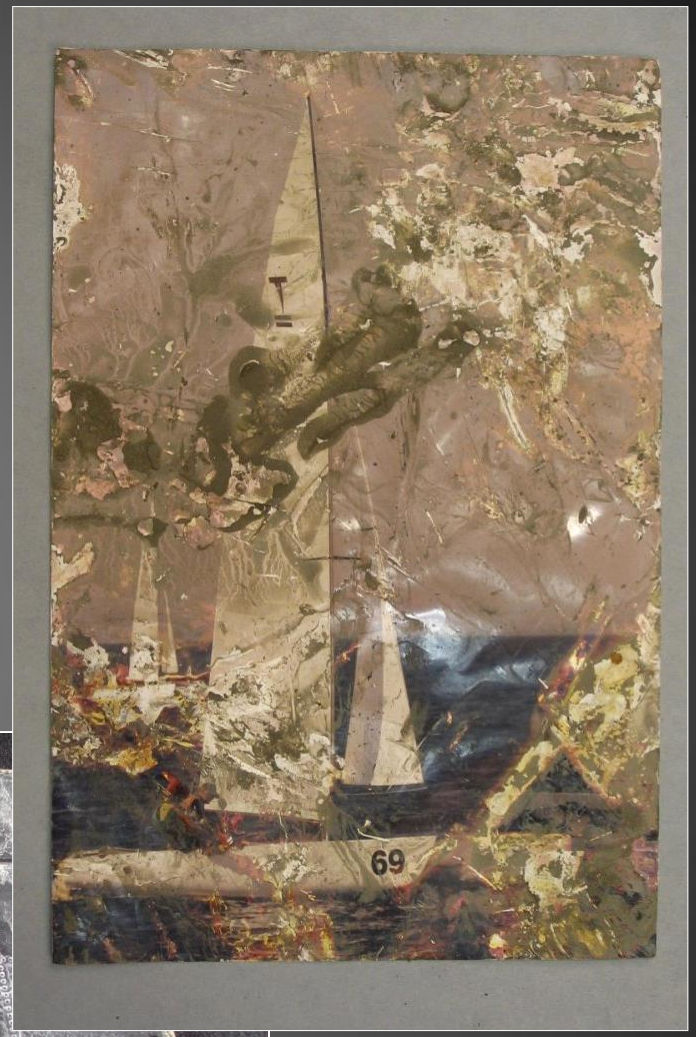
Contamination

Hazardous, Chemically active, or Inert

Issues

<u>Sources</u>

- Water - chemical, biological, organic, inorganic, "black water"
- Fire decomposition products
- Debris
- Mold growth
- Enclosures/packaging/frames



Courtesy of private clients

Expansion/Contraction or Heat = distortion

Courtesy of Debbie Norris

Courtesy of a private client

Solubilization

- Gelatin emulsions or coatings
- If very vulnerable and/or wet too long
  - May stick to plastic enclosures
  - May not grow mold

Courtesy of private client

Image Deterioration

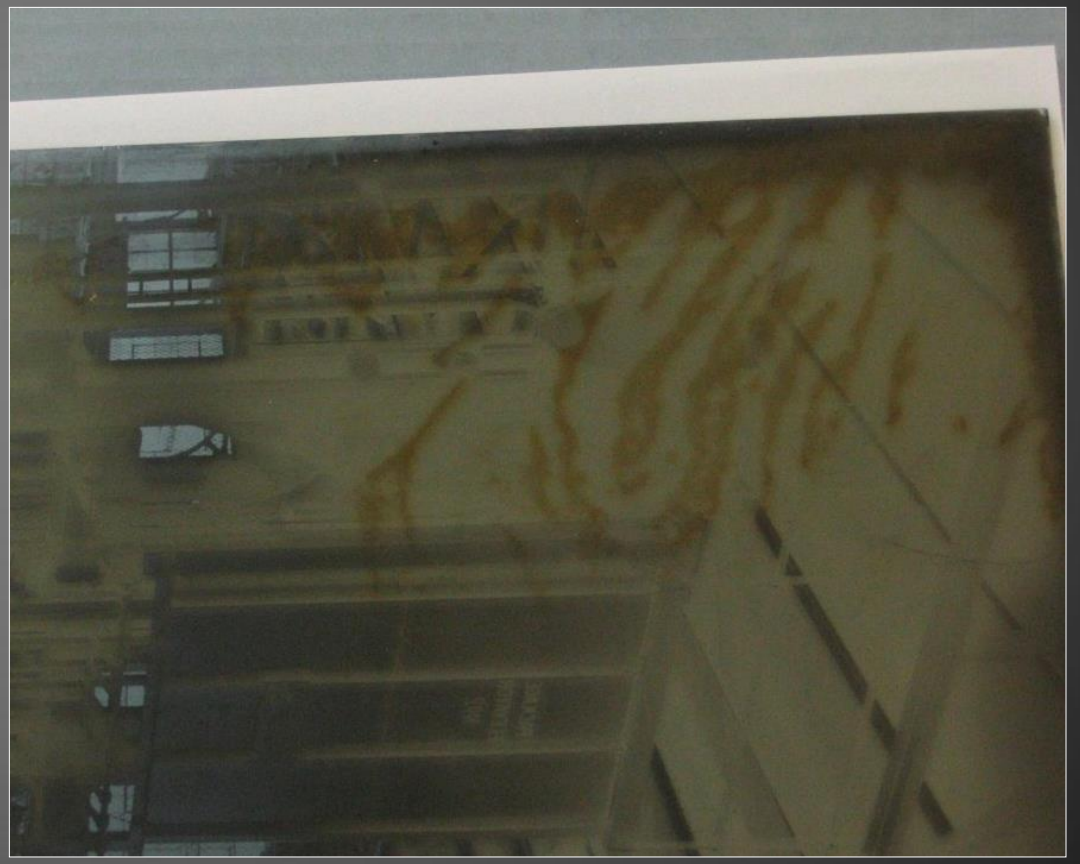
- Fading
- Loss of density and detail
- Color change

Panorama of the campus, late 19th c. 6x52” ©Robert W. Woodruff Library of the Atlanta University Center

Staining

- Transfer from mounts, housing, and inscriptions

Courtesy of private clients



Blocking to framing glass

Portrait of a man by Ellis, early 20th c.,
courtesy of Heather Brown and WUDPAC

Blocking to framing glass

Portrait of a man by Ellis, early 20th c.,
courtesy of Heather Brown and WUDPAC

Blocking of prints

Courtesy of private clients

Delamination or Flaking

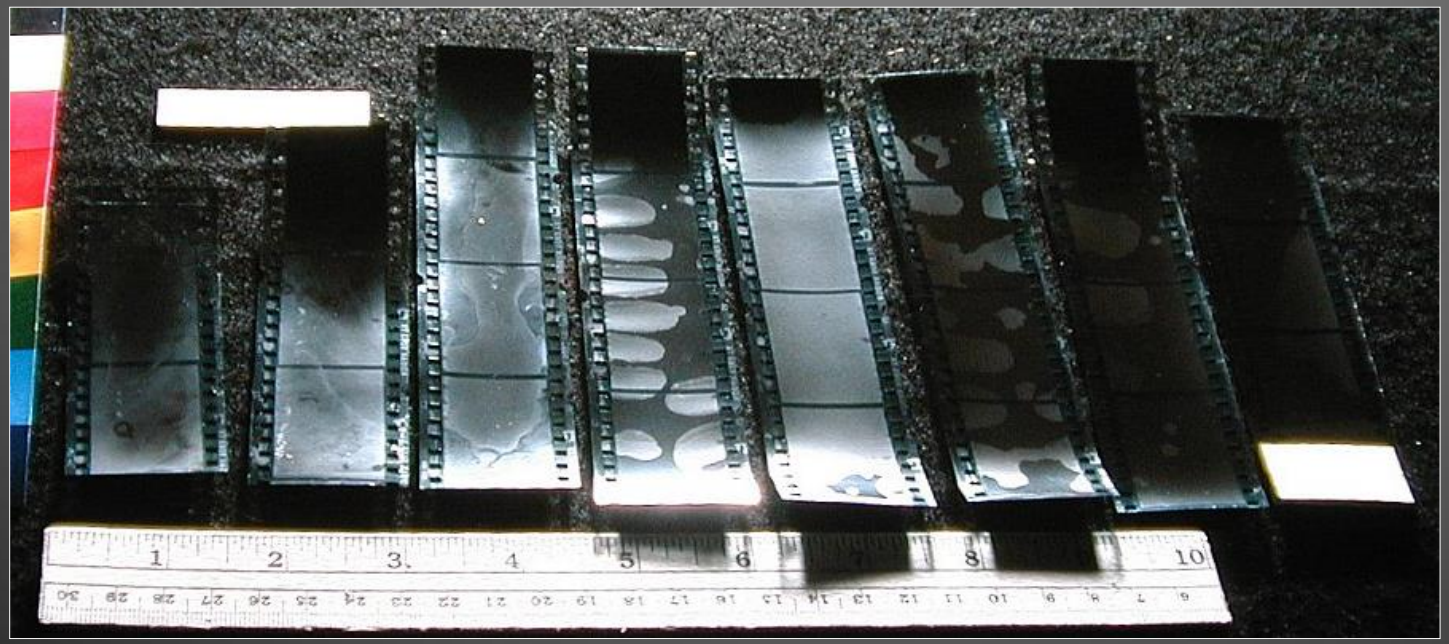
- Differential expansion of layers

PreservationEquipment.com

Courtesy DP3project.org

Changes in surface gloss

- Local wetting
- Drying in contact with enclosures



Courtesy of private clients

Mold

- Staining, weakness, loss of information

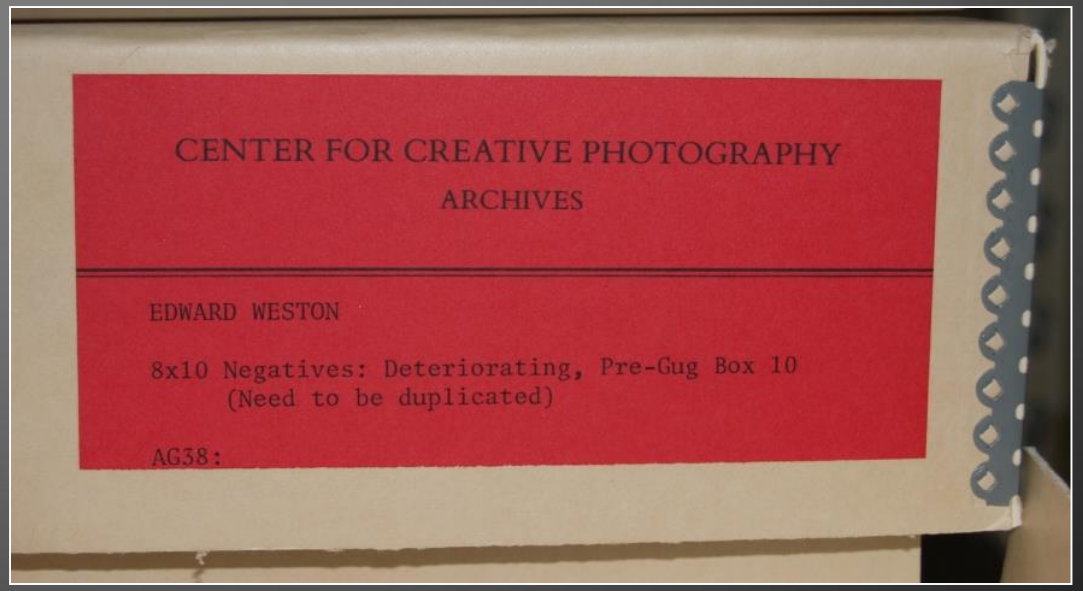
Courtesy of Debbie Norris

PLANNING

Courtesy of Debbie Norris

Plan

- Protect most vulnerable
- Label
- Stock supplies
- Know conservator's role



Courtesy of Lisa Duncan and CCP

Protect the "Do Not Get Wet List"

Courtesy DP3project.org

- Cased objects
- Wet plate collodion negatives
- Degraded cellulosic film
- Additive color plates
- Stabilized b/w prints
- Less common color processes
- Some digital prints

SALVAGE

Variables for stability + Salvage method

Level of preparation, training, staff available

Volume of material

Type of disaster

<u>Conditions</u>

- How wet?
- Exposure time
- Temperature
- Water quality
- Contaminants

Basic Salvage Steps

1. Evaluate Health and Safety aspect
2. Prepare work area and supplies
3. Maintain organization
4. Move unaffected PM away from high humidity
5. Dry or prepare to freeze wet materials

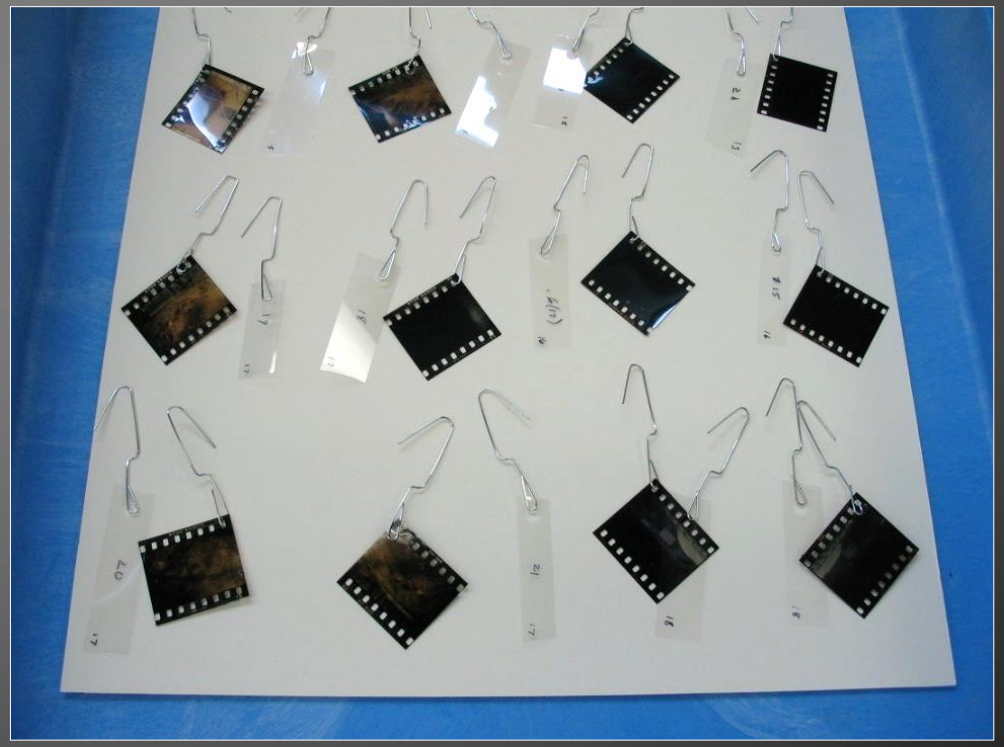
Courtesy of Debbie Norris

Maintain Order and Track Information

Often most time consuming part of a project

Options

- Maintain enclosures with objects to transcribe info
- Digital documentation of each page
- Polyester tags for washing
- Waterproof marking of objects



Salvage Priorities

	SALVAGE PRIORITY			*RINSE?*	*DRYING METHOD*				**NOTES*
PROCESS	1st	2nd	3rd		Air-dry flat	Air-dry Hanging	Freeze/ Thaw/ Air dry	Vacuum Freeze Dry	
CASED PHOTOGRAPHS	X			NO	YES*		NO	NO	Do not disassemble prior to air drying.
COLLODION GLASS NEGATIVES	X			NO	YES		NO	NO	
ADDITIVE COLOR ON GLASS - autochromes	X			NO	YES*		NO	NO	Do not disassemble prior to air drying.
DETERIORATED CELLULOSIC NEGATIVES	X			NO		YES	YES	NO	
COLOR – less common processes	X			YES	YES		NO	NO	
DIGITAL – Dye Inkjet, swellable supports	X			NO	YES		NO	NO	
DIGITAL – inkjet, EP, dye sub		X		YES	YES		YES	YES	
COLOR PRINTS - ch		X		YES	YES		YES	YES*	*Do not freeze-dry prints on resin coated paper
PRINTS – 19TH c. and 20th c. b/w			X	YES	YES		YES	YES*	*Do not freeze-dry prints on resin coated paper
GELATIN GLASS NEGATIVES			X	YES	YES		YES	NO*	*Possible with special attention
LANTERN SLIDES			X	YES	YES*		YES	NO	Disassemble prior to air drying
NEGATIVES and POSITIVES on FILM			X	YES		YES*	YES	YES	Disassemble glass mounted slides prior to air drying

1st = *Immediate Attention*

- "Do Not Get Wet" List
- Anything blocking or sticking together

2nd and 3rd = *Salvage or freeze in 48 hrs*

- Everything else
- General rule – color before b/w and prints before film
- 72 hours until mold

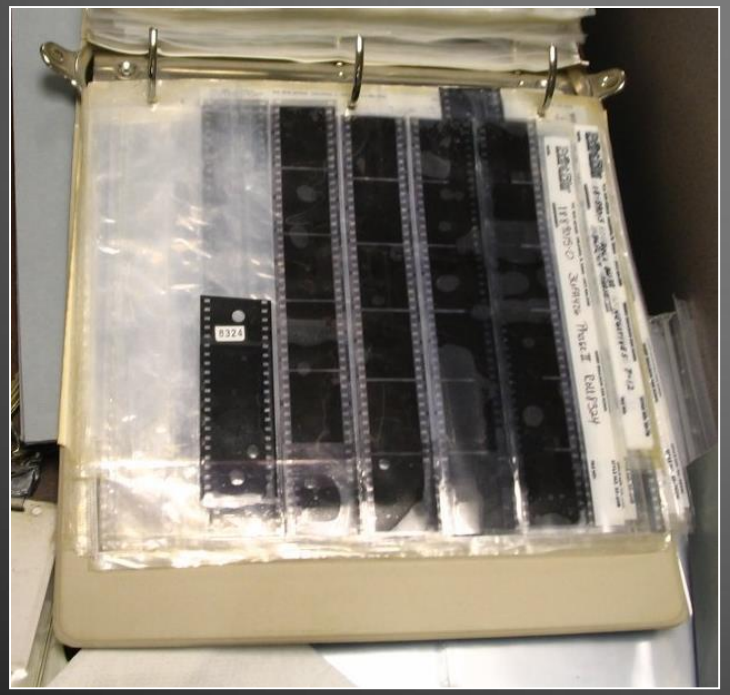
Remove from housing

Caution! - hard to evaluate condition while in enclosures

- may be delaminating, mushy and stuck
- distortion may occur when removed
- consider duplicating in sleeve

Do not slide items out - cut away enclosures

If sticking, treat individually or consider freezing



Unframe

- If still wet, may come apart easily
- Disassemble face up

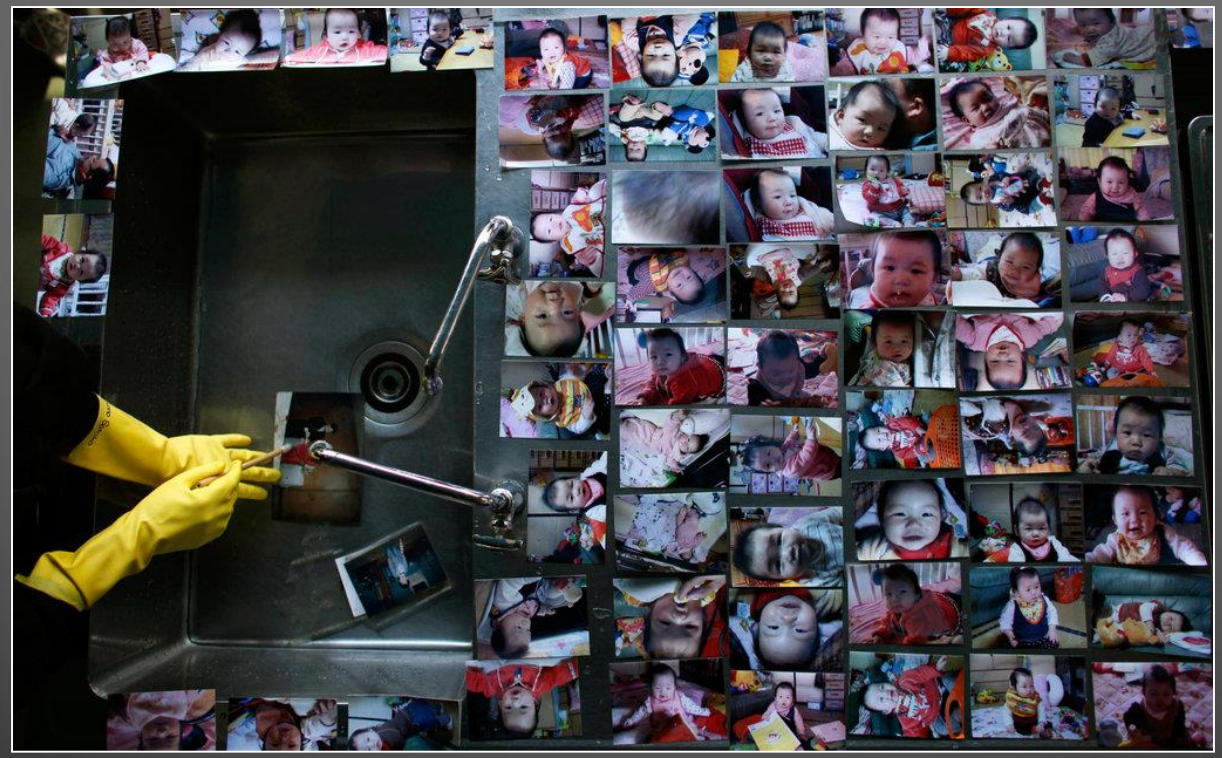
Courtesy of Debbie Norris

- Once dry, treatment may be necessary - success depends upon stability of object

Rinse

If time allows

- To reduce debris and contaminants
- To keep wet and prevent from sticking when frozen
- Wetting agent with film reduces water spotting



Courtesy NYTimes
https://www.nytimes.com/2011/04/13/world/asia/13japan.html?_r=2&scp=6&sq=April%2013%%20202011%20todays%20paper&st=cse%20http://www.nytimes.com/images/2011/04/13/nytfrontpage/scan.jpg

Air Dry Prints

Courtesy of S. Watkins

Hang Film to Dry

- Create tag or keep identifying materials with item
- Keep slides in mounts
- Clip at margin

Courtesy of Debbie Norris

Air Dry Glass Plate Negatives

- Dry flat or in vertical racks, e.g. plastic or metal CD racks

Courtesy of Freestyle Photographic Supplies

Albums

Dry with non-woven interleaving between pages, preserving shape of binding as possible

or Disbind; treat pages and cover separately

or Remove photos; treat photos and bound album separately

Freeze

- For future thawing/air drying or vacuum freeze-drying
- Freezing is safe for most photographs
- Possible negatives effects of freeze-drying =
  gloss changes or surface deposits could affect printing
- Thawing and drying – consult a conservator

Exceptions for Freezing

- Wet collodion negatives
- Tintypes
- Ambrotypes
- Daguerreotypes

Courtesy Library of Congress

- Instant prints, e.g. Polaroids
- Additive color processes

Kuriositas.com

- Some albums?

Courtesy swiss-miss.com

Freeze

1) Separate by process, then by size
2) Rewet if materials starting to dry out
3) Rinse and pour off excess water
4) Wrap in or interleave with wax paper, if needed
5) Seal shallow groups in polyethylene bags
6) Pack in sturdy boxes

Vacuum Freeze-dry

Pros

- Save time/money
- Save original housing

Cons

- Distortion may be created – pack carefully
- Contaminants will be locked in
- Gloss and density changes likely

Exceptions

- Stacks of RC prints
- Deteriorated film
- Lantern slides
- Glass plate negatives*

Belfor Property Restoration, Exton, PA
VFD takes 4 weeks at -45F and 40 torr

RECOVERY

Treatment after drying

Goals

- Improve chemical stability
- Reduce surface soil and mold
- Even out surface gloss
- Separate blocked items
- Reduce distortion

Possible Techniques

- Surface cleaning
- Washing
- Mold reduction
- Stain reduction
- Mending and flattening

Courtesy of Debbie Norris

Before

After

Mold reduction

MOLD

RESTRICTED USE

MOLD CONTAMINATION DETECTED IN THIS ITEM
USE IS SUBJECT TO PERMISSION FROM THE HEAD OF THE READING ROOM

Staff_____

Date_____ Treated: Yes_____ No_____

MOLD

READER ALERT

READER ALERT – MOLD CONTAMINATION DETECTED

Although the Ransom Center has treated this material for mold contamination by aspiration and/or dry cleaning, mold spores and mold metabolic parts may still be present. For health reasons, patrons sensitive to mold may consider wearing gloves and a dust/mist respirator while handling this material. If needed, request protective gear from Reading and Viewing Room staff.

Staff_____ Date_____

MOLD ODOR

READER ALERT

READER ALERT– STRONG MOLD ODORS

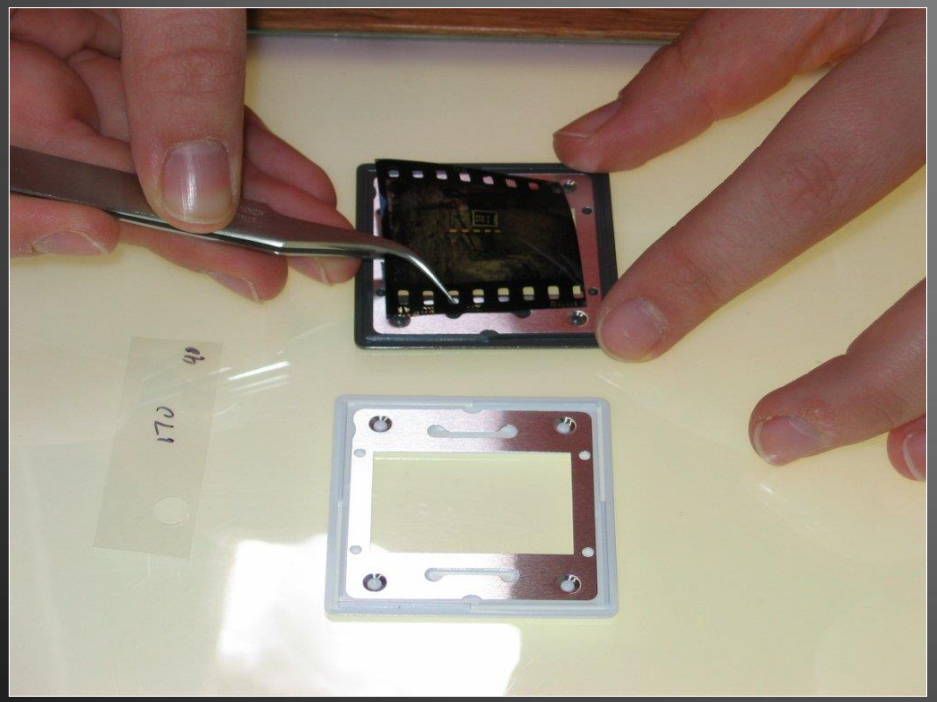
Although the Conservation Department has not *detected* mold contamination in this material, strong mold odors are present. For health reasons, patrons who could be sensitive to mold odors may consider wearing a dust/mist respirator to *reduce* the odor. If needed, request this safety gear from Reading Room staff.

Staff_____ Date_____

Courtesy of Olivia Primanis

Rehouse

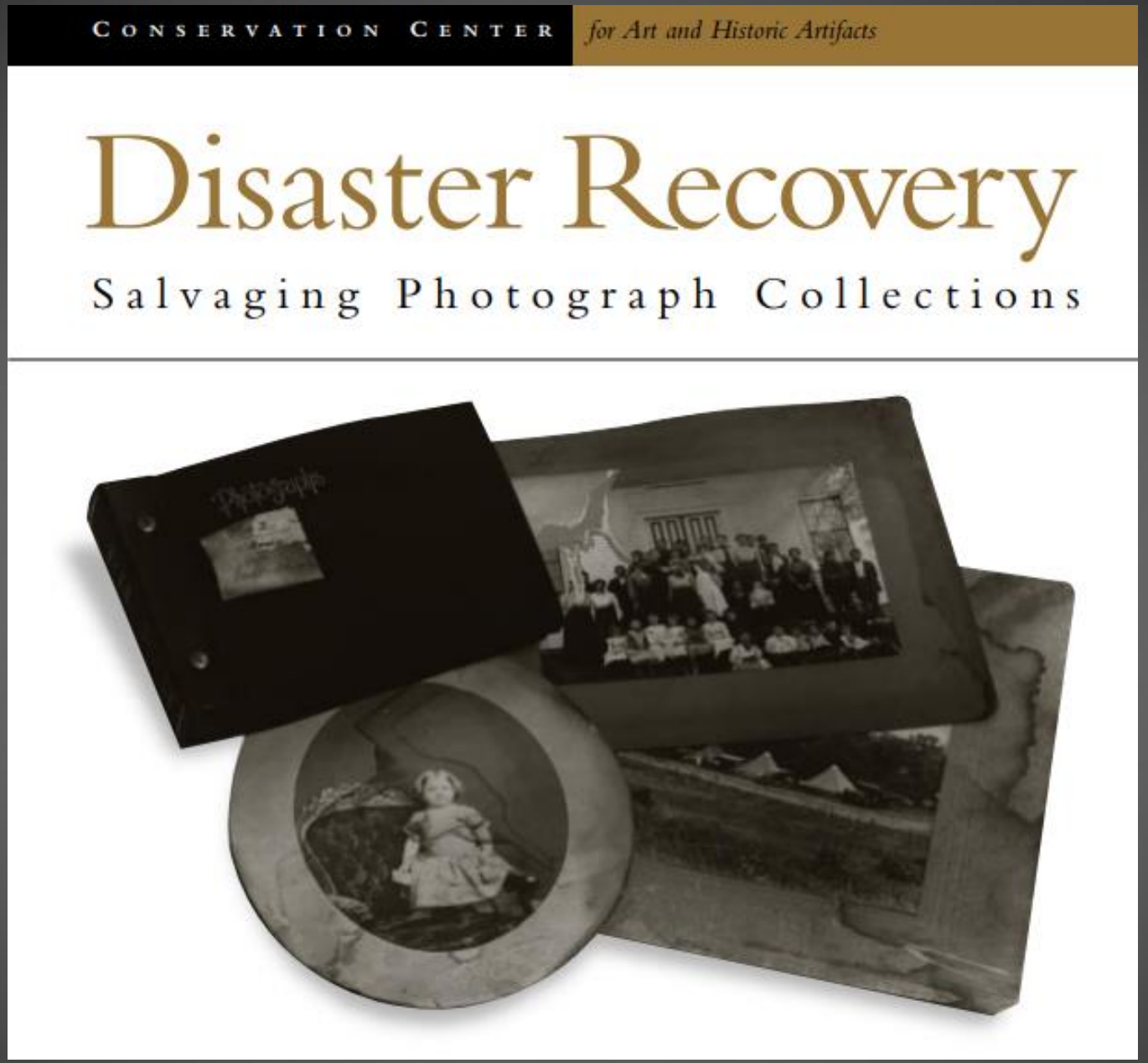
- Labeling and organization need to be tailored to the client's needs
- Recreating original formats: slide mounts, albums, frames
- May also function for odor reduction
- Time consuming



Reduce Odor

- Smoke Smell vs. Volatile Organic Compounds (VOC's)
- Ozone use unsafe for photographic materials
- Address odors with treatment and/or housing
- Zeolite containing paper and paperboards work very well

Courtesy of Ebay.com



https://ccaha.org/sites/default/files/attachments/2018-07/technical-bulletin-salvaging-photographs.original.pdf

Hurricane Ivan, 2004. Photos by Mike Cheney.

A Consumer Guide for the Recovery of Water-Damaged Traditional and Digital Prints

Created by Image Permanence Institute with support from Creative Memories

Disasters caused by fire and water threaten the preservation of photographic prints. Fire often results in the complete destruction of photographs, with no chance of recovery.[1] The only practical way to reduce the chances of fire loss is to equip the storage area with adequate fire protection, such as sprinklers, or to store records in fire-protection safes. Water damage is another story and is the focus of this publication.

Problems caused by water are fairly common. They may result from relatively minor disasters like spills, leaky roofs, burst water pipes, plumbing leaks, and sewer backups. They also may result from major disasters, such as extinguishing a fire, a broken water main, earthquake, and flood.

When a home is flooded, many problems must be addressed, such as the removal of possible health hazards, home cleanup, utilities restoration, and the like. These are discussed in some detail in an American Red Cross publication, *Repairing Your Flooded Home*.[3] Recovery of water-damaged papers, books, and photographs is another important concern. These materials can sometimes be saved by taking prompt and appropriate action.

GENERAL RECOMMENDATIONS

While there has been considerable experience with the salvage of photographic prints and paper, little has been reported regarding the salvage of digital prints. Some water-damaged digital prints from home computer printers or commercial photofinishers behave very differently from traditional photographic prints. Recent laboratory investigations at the Image Permanence Institute have shed some light on the relative susceptibility to water damage of ink jet, dye diffusion, and traditional photographic prints and on their recovery. What was learned from these investigations can provide general guidance for the home consumer but should not be taken as definitive for all products and circumstances. Regardless of the nature of the print, the following basic rules apply.[4-11]

Start Treatment as Soon as Possible

This is the most important action you can take. The longer prints remain wet, the more susceptible they will be to permanent damage. Delay may result in loss or blurring of the image as well as disintegration of the paper support. Mold is a major concern if prints remain wet for more than two or three days.[12,13] Mold eventually will destroy all pictorial information. If mold is already present, dry the material before further treatment. (See

PREVENTING WATER DAMAGE

Because water damage to photo albums is likely to be catastrophic, the best defense is prevention. Strategies include the use of appropriate printing technologies, journaling supplies, and album materials; the creation of image file backups or duplicate prints; and the selection of proper storage locations within the home.

The Right Storage Materials

Store photographs in enclosures made from materials that conform to ISO Standard 18902.[2] Meeting this standard doesn't mean that the materials themselves are flood-resistant. It does mean that they will not be chemically reactive with enclosed photos, even when wet. Use journaling pens and colored papers that are made with pigment colorants and that are waterproof, so their colors will not bleed onto prints.

Duplicates

Keep backup images in a separate location. Having backups in the form of original negatives or on electronic storage media such as CD-Rs is important.

Storage Location

Determining a storage location for your albums is simple. In general, if an area in your home feels comfortable year round, then it will be comfortable for your albums. Don't store albums and photographs under water pipes or directly on the floor. Closed cabinets may offer more protection than open shelving. Never store your photos in the basement. Even if your basement feels dry, water will collect there first in a major water emergency. If you live in a flood-risk area, have a general flood response plan that includes your photos and albums. This may simply mean keeping your photos and albums on high shelves or on the second floor of your home. During a flood watch, move valuables to higher areas of the house.

https://www.imagepermanenceinstitute.org/webfm_send/314

Courtesy of Debbie Norris

Thank you
for your attention

Questions ?

To contact Barbara

blemmen@ccaha.org

215-545-0613 ext. 308