

# Photograph Preservation, Selection, and Digitization Planning

Gina Rappaport and Lotus Norton-Wisla

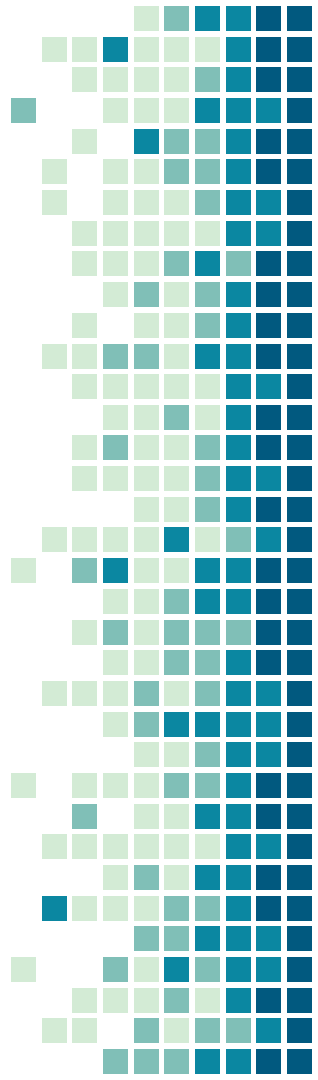
Tuesday, October 8th, 9am-4pm

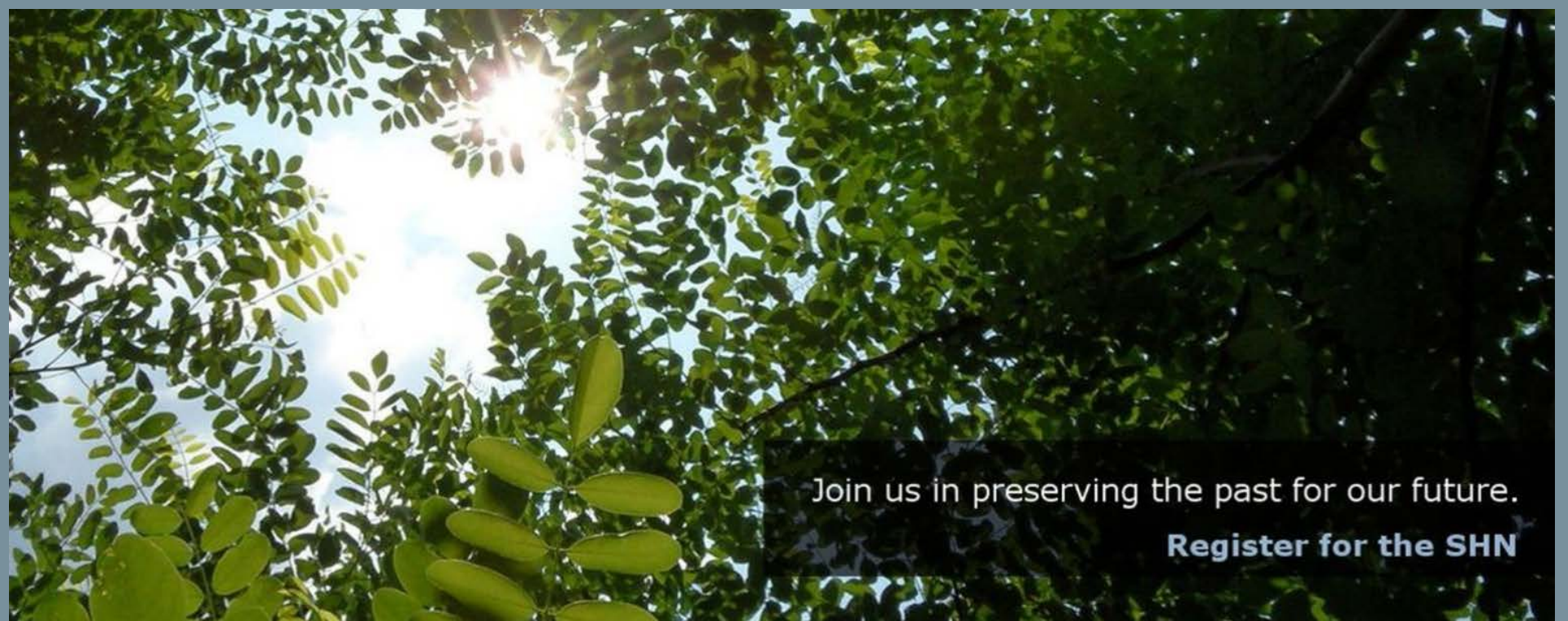
2019 International Conference of Indigenous Archives, Libraries, and  
Museums (ATALM)

Temecula, CA

# Introductions

- Gina Rappaport
  - [rappaportg@si.edu](mailto:rappaportg@si.edu)
- Lotus Norton-Wisla
  - [lotus.norton-wisla@wsu.edu](mailto:lotus.norton-wisla@wsu.edu)
- Sustainable Heritage Network
  - [www.sustainableheritagenetwork.org](http://www.sustainableheritagenetwork.org)





Join us in preserving the past for our future.

**Register for the SHN**



# Sustainable Heritage Netw



Hands-on  
Workshops



Open Educational  
Resources



Members,  
Communities and  
Workbenches

# Hands-on workshops





## THE SUSTAINABLE HERITAGE NETWORK



Photographs and Images



Film and Video



Audio Recordings



Artifacts and Objects



Books and Documents



General Processing



Language Documentation



GIS, CMS, and Databases

## SHN Workshops

### SHN Workshops

#### DESCRIPTION:



The Sustainable Heritage Network Workshops are collaborative events set up by organizations or individuals in their local communities. The goal of these workshops is to promote collaborative stewardship, share knowledge, encourage curiosity, and provide tutorials on all aspects of the digital lifecycle. These gatherings pool the resources of communities and bring together experts to provide hands-on skills on topics ranging from intellectual property rights to preservation standards to digitizing endangered languages.

#### DIGITAL HERITAGE ITEMS:

### 2017 Pre-ATALM SHN Workshop Image Digitization on a Budget

**Community:** Sustainable Heritage Network

**Category:** Photographs and Images, Workshop, Digitization Planning



### 2017 U. Manitoba Digitization Basics and Mukurtu CMS Workshop

**Community:** Sustainable Heritage Network

**Category:** Photographs and Images, Workshop, Databases and GIS, Digitization Planning, Audio Recordings



UNIVERSITY  
OF MANITOBA

## 2017 U. Manitoba Digitization Basics and Mukurtu CMS Workshop



UNIVERSITY  
OF MANITOBA

Access image

IMAGE METADATA

#### DESCRIPTION:

In partnership with the University of Manitoba, the SHN will hold a two day hands-on workshop on digitization basics and Mukurtu CMS on February 2-4, 2017. The workshop, led by Lotus Norton-Wells, Tribal Stewardship Cohort Program Curriculum Coordinator and Michael Wynne, Digital Applications Librarian both at Washington State University, Gaita Shankar, Folklife Specialist at the Library of Congress' Folklife Center, and Jeannine Nault, Digital Imaging Specialist at the National Anthropological Archives, will cover digitization planning, metadata, digital preservation, hands-on strategies for the digitization of audio materials and images and an introduction to Mukurtu CMS. Participants will be encouraged to work together and will be provided with demo materials for hands-on sessions. The workshop's materials will be available here as a reference for attendees and others not able to attend the sessions in person.

#### RELATED ITEMS:

### 2017 U. Manitoba Digitization Basics SHN Workshop: Digitization Planning and Metadata



**Community:** Sustainable Heritage Network

**Category:** Workshop Session, Digitization Planning

### 2017 U. Manitoba Digitization Basics SHN Workshop: Image Digitization



**Community:** Sustainable Heritage Network

**Category:** Photographs and Images, Workshop Session

### 2017 U. Manitoba Digitization Basics SHN Workshop: Audio Digitization



**Community:** Sustainable Heritage Network

**Category:** Workshop Session, Audio Recordings

### 2017 U. Manitoba Digitization Basics SHN Workshop: Digital Preservation



**Community:** Sustainable Heritage Network

**Category:** Preservation, Workshop Session

**COMMUNITY:**  
Sustainable Heritage Network

**PROTOCOL:**  
Public Access

**CATEGORY:**  
Photographs and Images, Workshop, Databases and GIS, Digitization Planning, Audio Recordings

**COLLECTION:**  
SHN Workshops

**ORIGINAL DATE:**  
2017-02-02

**CREATOR:**  
Sustainable Heritage Network

**LANGUAGE:**  
English

**LICENSING OPTIONS:**



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(CC BY-NC 4.0)

**AUTHOR:**  
Admin

# Educational Resource

sustainableheritagenetwork.org



## Materials for Storage and Soft Packing

Community: Sustainable Heritage Network  
Category: Preservation, Artifacts and 3D Objects



## Best Practices and Practical Solutions for Storing and Exhibiting Photographs

Community: Sustainable Heritage Network  
Category: Preservation, Photographs and Images



## Caring for Personal Collections: How Tribal Cultural Institutions Can Help

Community: Sustainable Heritage Network  
Category: Artifacts and 3D Objects



## Introduction to Making Custom Mannequins

Community: Sustainable Heritage Network  
Category: Artifacts and 3D Objects



## Beyond the Box: Using Coroplast for Creative and Cost Effective Storage Solutions and Exhibit Mounts

Community: Sustainable Heritage Network  
Category: Preservation, Artifacts and 3D Objects



## Exhibit Fabrication: Safely and Effectively Displaying Books

Community: Sustainable Heritage Network  
Category: Text, Preservation



# SHN Communities

Institutions or groups of people who share and manage content based on their cultural protocols.



Convening Great Lakes Culture Keepers



# SHN Communities (ctd.)

## Communities

Mukurtu CMS



Multnomah County Archives



Nazlini Chapter



Northeast Document Conservation Center



Northern BC Archives



Northwest Archivists Native American Collections Roundtable



Oregon State University Libraries



Pacific and Regional Archive for Digital Sources in Endangered Cultures



Providence Archives, Seattle



Rebecca Elder Cultural Heritage Preservation



SAA Native American Archives Roundtable

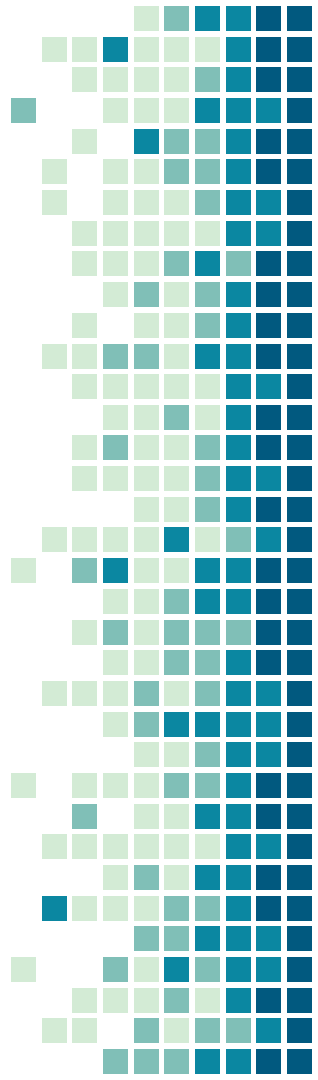


Sequoyah National Research Center



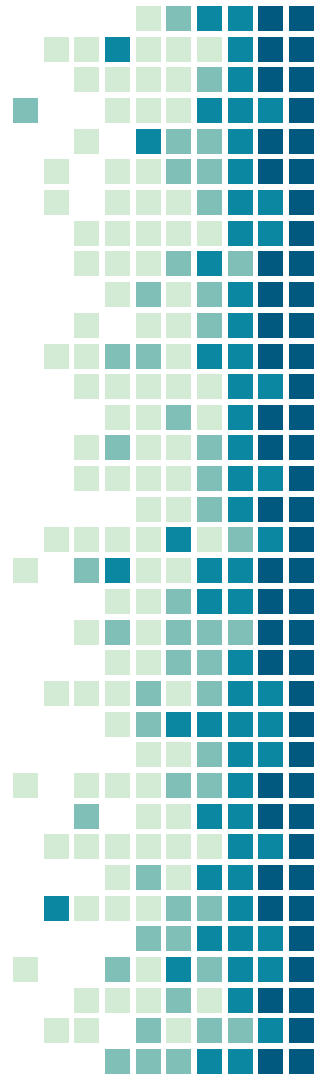
# AGENDA Morning (Gina)

- **9:30-10:30** Introduction to Photograph Identification
- **10:30-11:45** Introduction to Preservation
- **11:45-12:00** Questions and Discussion
- **12:00-1:00** Lunch



# AGENDA ~~Afternoon~~ (Lotus)

- 1:00-1:30 Why Digitize? Discussion
- 1:30-2:15 Project Planning and Policies
- 2:15-2:30 Break
- 2:30-3:00 Digitization Workflows and Technical Specifications
- 3:00-3:30 Digital Preservation Storage
- 3:30-4:00 Questions, Surveys, and Discussion



# Identification and Preservation of Photographs



Gina Rappaport, Photo Archivist, National Anthropological Archives  
ATALM, 2019

# 4 Goals of Processing

- Documentation/security
- Physical care
- Intellectual arrangement
- Intellectual access



# 3 core activities of processing

- **Arrangement** aims to clarify the collection's existing order or to establish an order which best represents the collection.
- **Preservation** addresses the physical needs of the collection materials, and employs techniques for the stabilization and long-term storage of the many types of objects that collections may contain.
- **Description** aims to provide intellectual access to the information in and about collection, by describing both its context and content.

Description also serves a preservation role!



- Identification of types and versions
- Factors and types of deterioration
- Housing and storage
- Reformatting for preservation and access
- Resources

# IDENTIFICATION



35mm  
Gelatin Nitrate  
Salted POP Dry-plate opaltype  
Cyanotype Cabinet Polaroid Daguerreotype  
Transparency Ambrotype Acetate Safety-film  
Card DOP Paper Silver  
Collodion Platinotype  
Photomechanical  
Direct-positive  
Cellulose

WordCloud

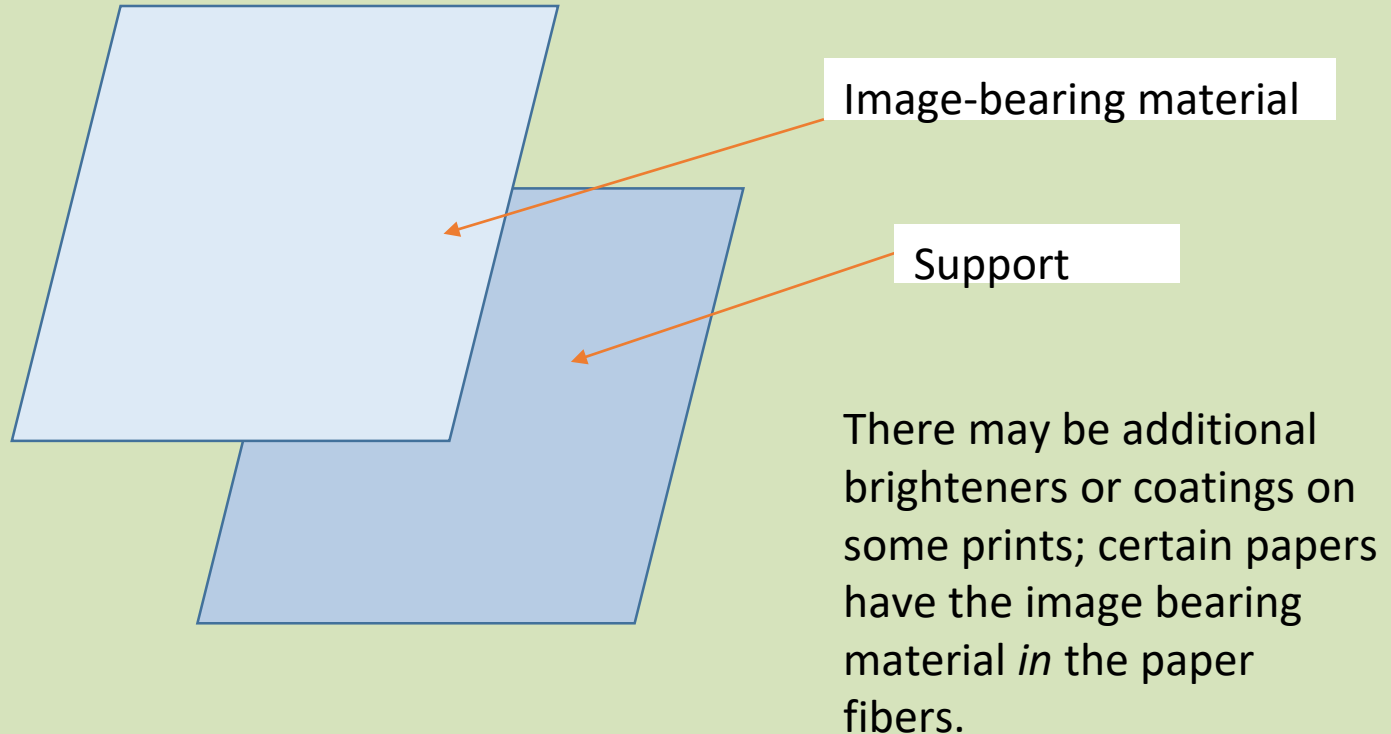




## Key Questions for Identification:

- What is the nature of the support material and emulsion?
- What is its format/process?
- What is its polarity—positive or negative?
- What are its characteristics of deterioration?
- What is its version/genealogy?

# Support and Format/Process



# Positive or Negative?



# Direct Positives



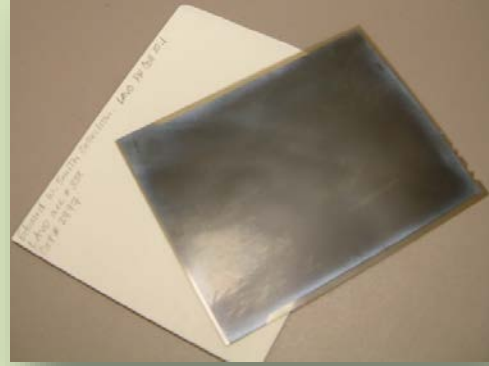
- Daguerreotype (1840-1860)
- Ambrotype (1854-1865)
- Tintype (1856-1920)



# Negatives

- Salted paper (1841-1860s)
- Wet plate (1850s-1880s)
- Dry Plate (1880s-1920s)
- Cellulose nitrate (1880s-1950)
- Cellulose Acetate (1925-present)
- Polyester (1955-present)





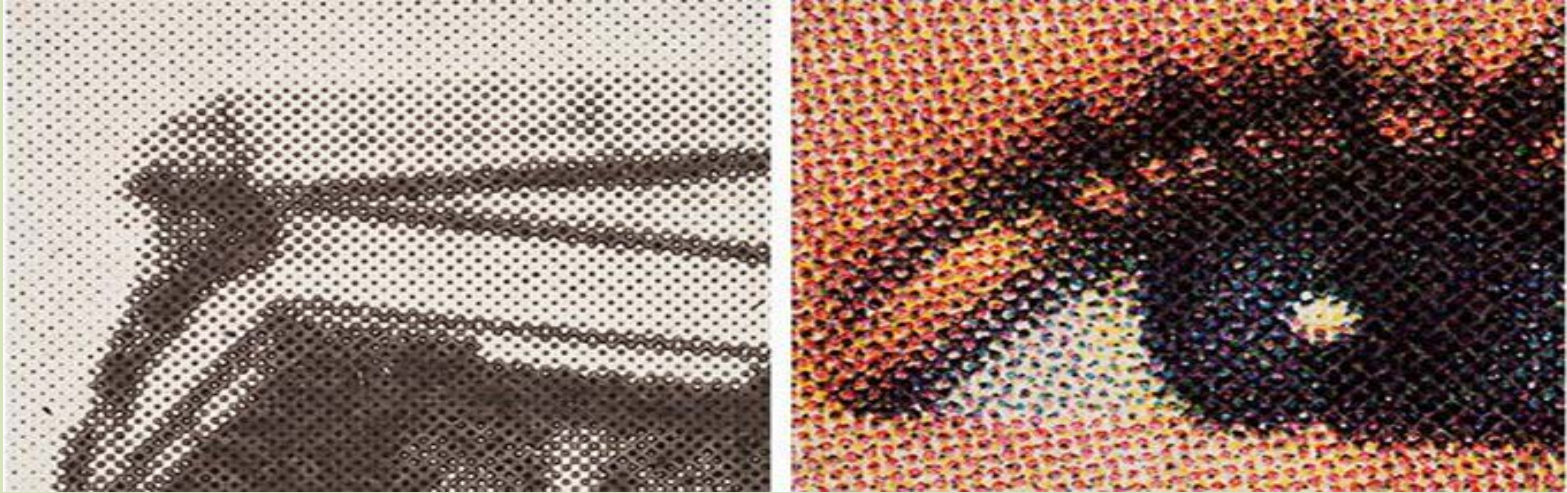
# Prints



- Salted paper (1845-1855)
- Albumen (1855-1895)
- Collodion and gelatin POP (1895-1905)
- Gelatin DOP (1905-present)
- Color (1965-present)



# Photomechanical





# Transparencies



# Photo Albums



# RESOURCES

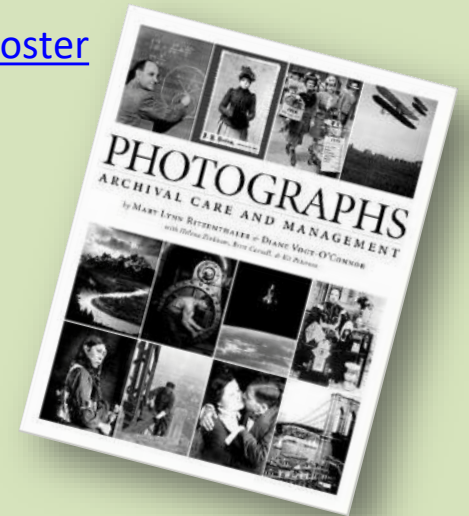
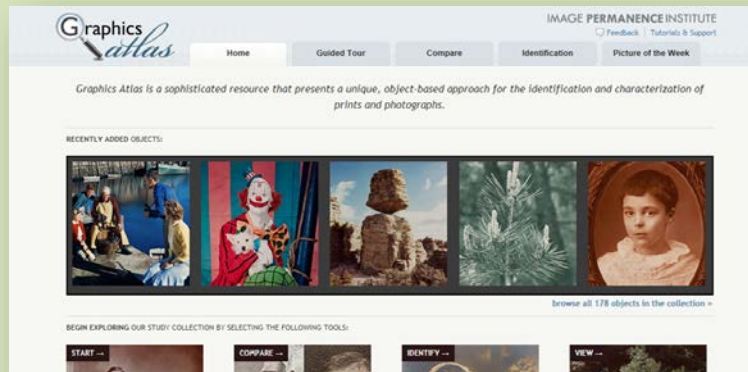
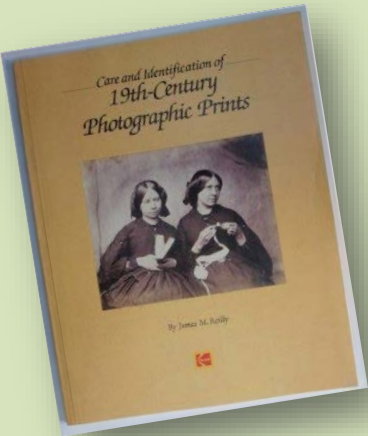
<http://graphicsatlas.org/>

<https://www.youtube.com/watch?v=f7InzLN6zoY&feature=youtu.be>

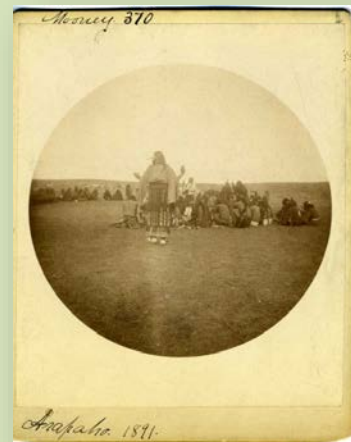
<https://gawainweaver.com/processID>

<https://www.nedcc.org/free-resources/preservation-leaflets/overview>

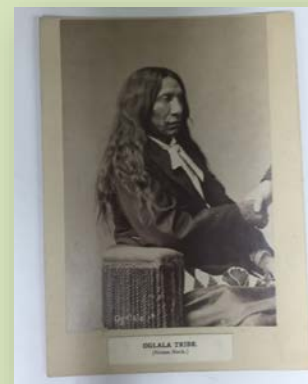
<https://www.imagepermanenceinstitute.org/imaging/negatives-poster>



# Versions: Image and Object, Original and Copy



# Red Cloud







Ogallalala Soup  
 7  
 Sitting Bull  
 Little Horn  
 9  
 Amos Horse  
 10  
 Tom Horse  
 11  
 Bear Bound  
 12  
 Black Bear  
 13  
 Sad Thunder  
 14  
 Name Miller  
 15

1  
 Spotted Tail  
 2  
 Swift Bear  
 3  
 Crow Song  
 4  
 He Kelpag  
 5  
 Ring Thunder  
 6  
 Spotted Tail  
 7  
 Louis Richeance  
 8

[COPY 1891, DEC. 25, 1902]

23  
 Spotted Elk  
 24  
 Name Miller  
 25  
 Major Bingham  
 26  
 Name Garnett  
 27  
 Louis Richeance  
 28  
 Major Woodward  
 29  
 S. Face

15  
 Shoulder  
 16  
 Red Hand of the  
 Cheyenne  
 White  
 18  
 Prather's  
 19  
 Red Star  
 20  
 Change  
 21  
 + Mand  
 22  
 Lone



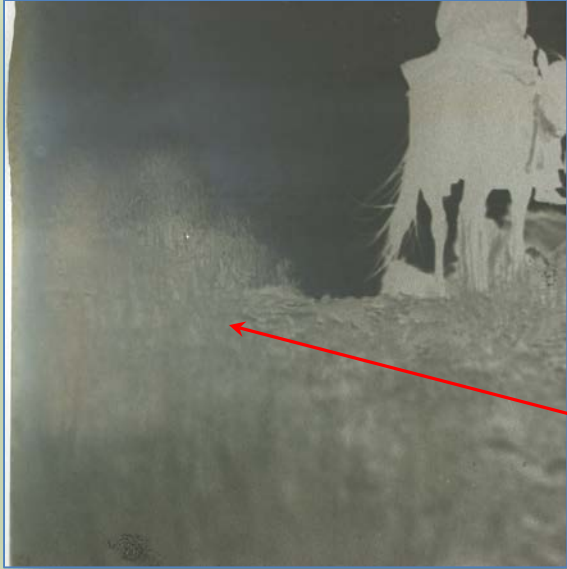






STUMPY IN HAWAII-LAND







RUNKERT IN HAWAII-LAND





Volcano Park. © T. P. Loonis, Viola



Volcano Park. © T. P. Loonis, Viola, Cal.





Q



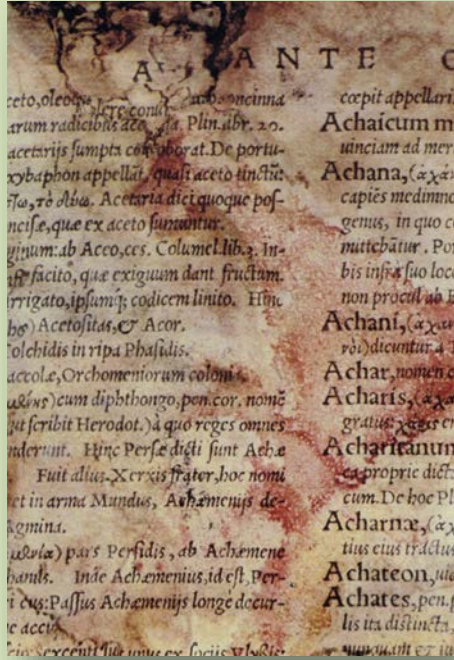




# Cycling and extremes of temperature and relative humidity



# Airborne Pollutants



# Light



## Handling and Mechanical Stresses

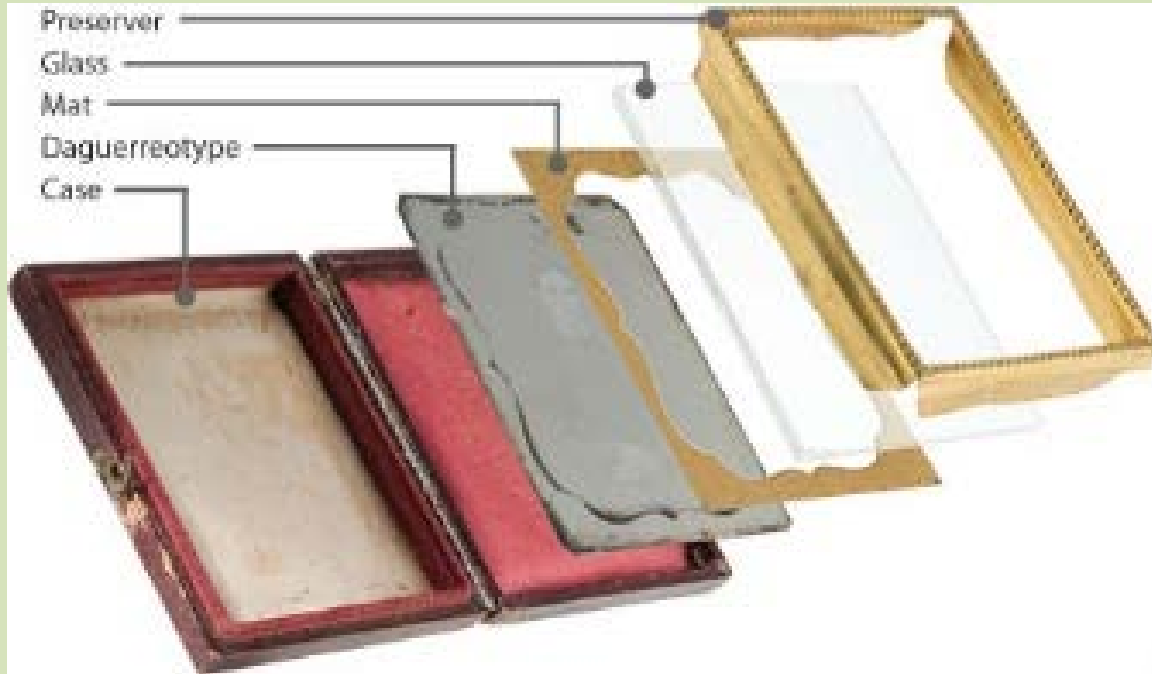


How do these threats affect different photographic types?



What does deterioration look like?

# Direct positive cased photographs





## Direct positives



# Glass negatives

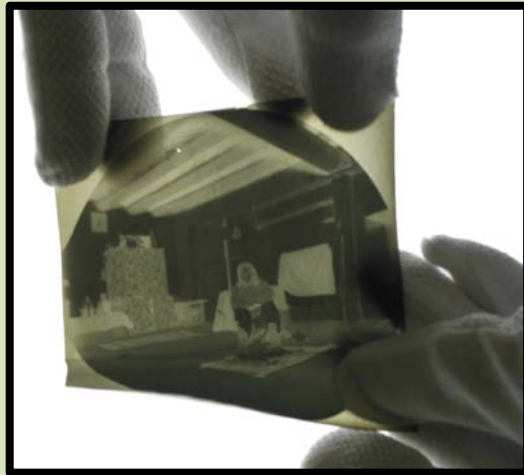


# Glass Transparencies



# NITRATE

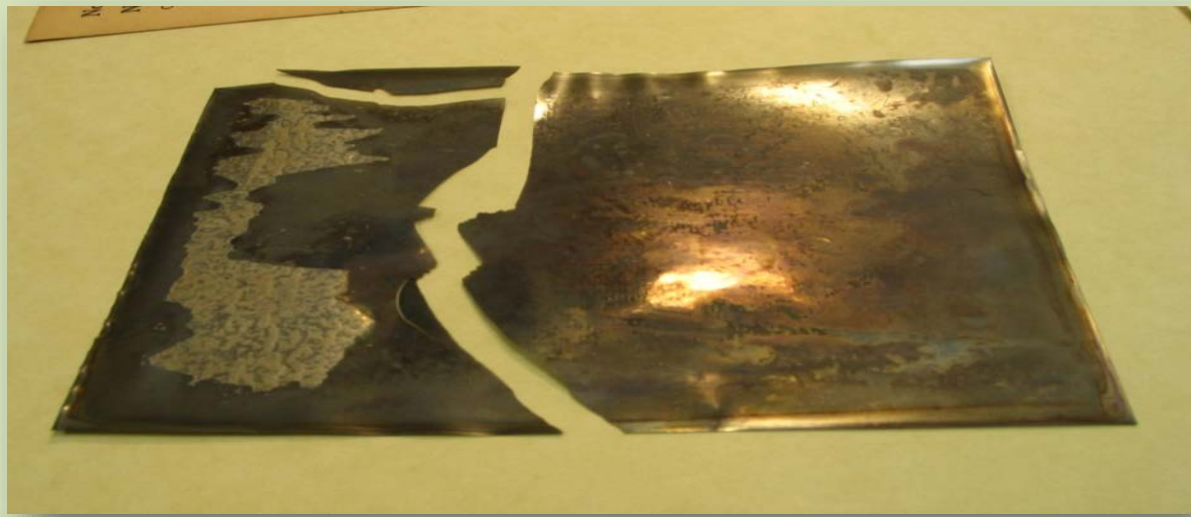
*Friend or Foe?*



# Stages of nitrate deterioration







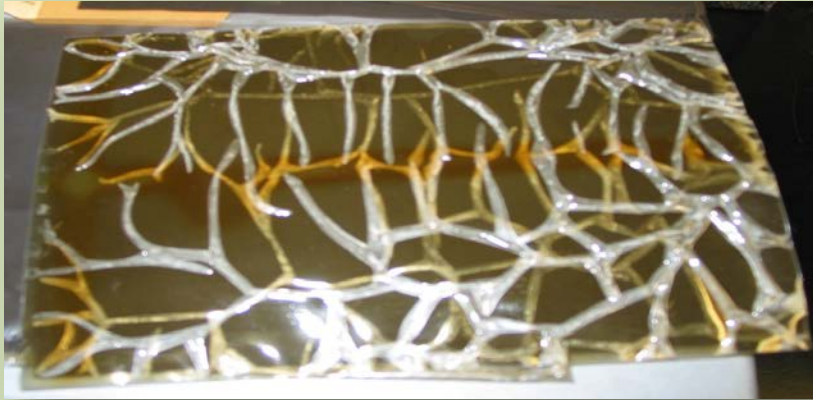




# Transformation into Alien Lifeforms



# Film negatives – cellulose acetate



# Color Film Negatives and Transparencies



# Black and white prints

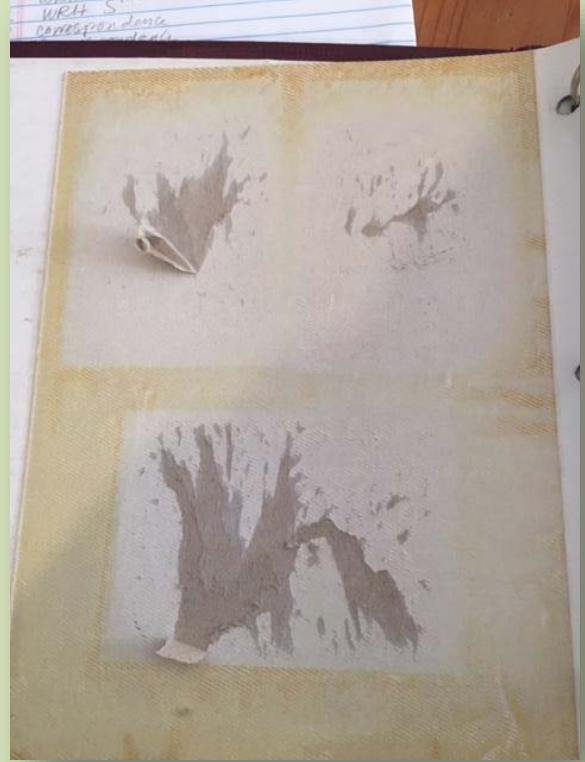


# Color prints



# Albums





VRH S  
Correspondence  
date

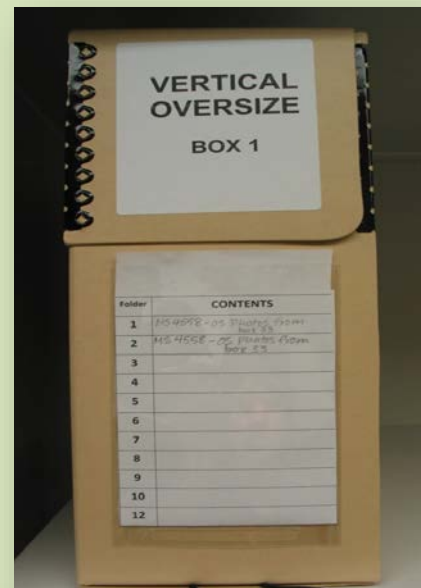
# Principles of Handling





# Principles of storage

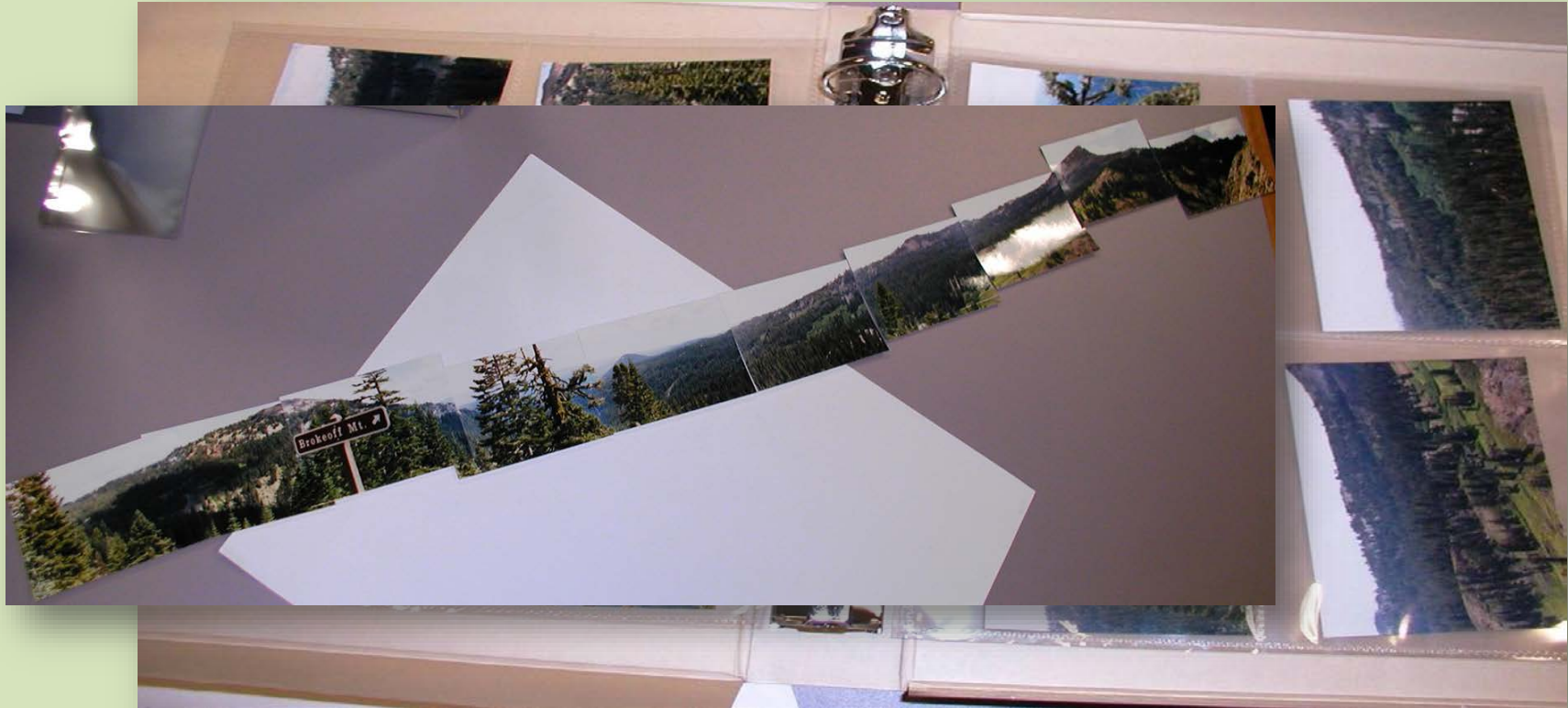
- Proper housing slows deterioration
- Material should be supported by its housing
- Material should not extend beyond its housing
- Material should not be compressed by the weight of surrounding items
- House materials by size and format



# Considerations for choosing enclosures and housings

- Process type
- Dimensions
- Condition
- Value
  
- Quantity
- Storage space
- Access needs
- Costs

**Housing should not impede access!**



# Glass storage

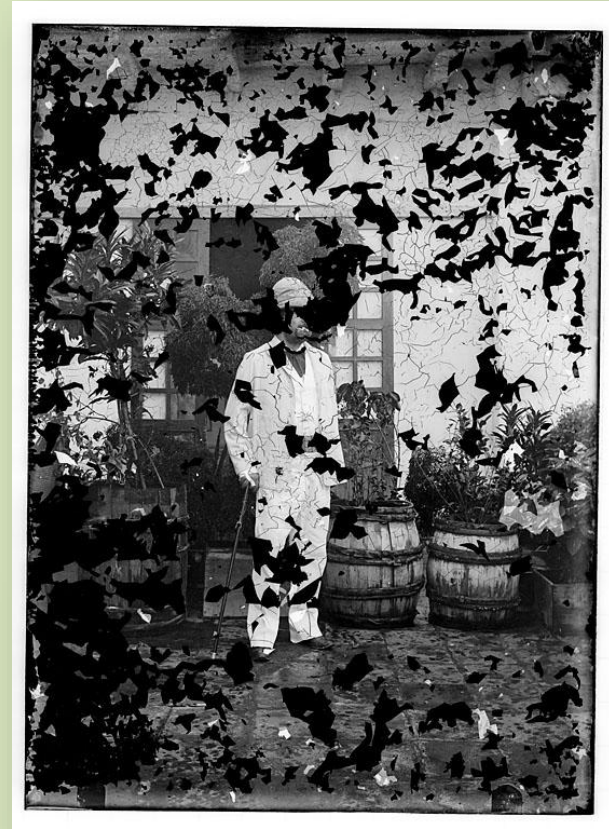
- Store on edge (long edge is best)
- Store in paper or tyvek enclosure
- 4-flaps are optimal – this makes viewing and handling easier
- Glass is heavy so be careful of using boxes that are too big, but also be careful of boxes that are too narrow and can tip over
- Store glass on stable shelves or cabinets, on lower shelves if possible



# Enclosures and containers



# Stabilization of deteriorated glass

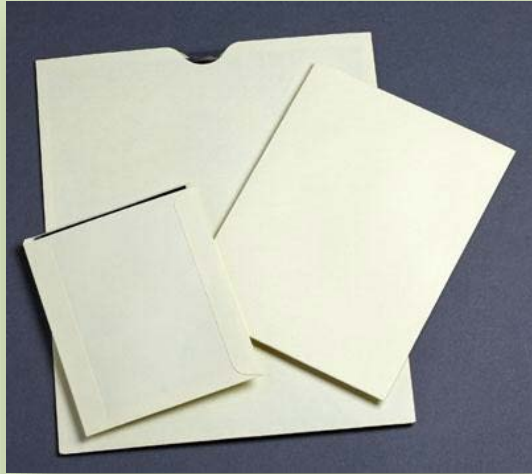


# Still Film Storage

- Store individually in paper enclosures
- DO NOT store in plastic enclosures
- Store vertically in boxes
- Store in cool or cold storage if possible
- Follow NFPA 40 guidelines if possible



# Enclosures and containers





Print File  
ARCHIVAL PRESERVERS

P.O. BOX 407638 ORLANDO, FL 32840 • (407) 256-7100

INSERT EMULSION SIDE DOWN

STYLE NO. 35-78

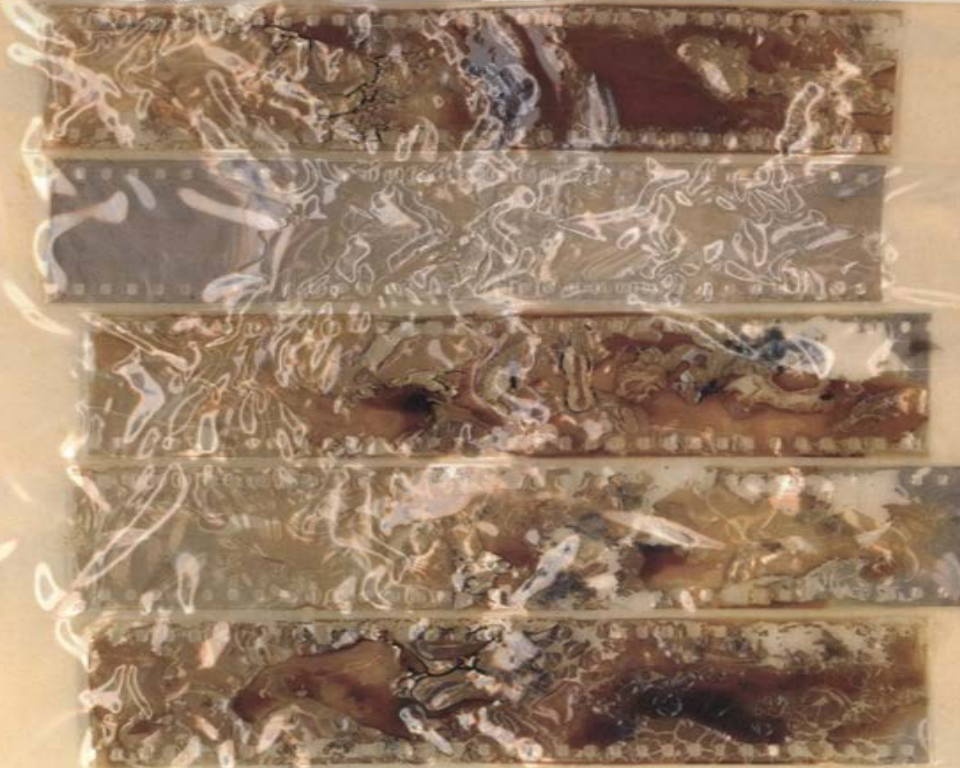
Thomas B. Card

M-22

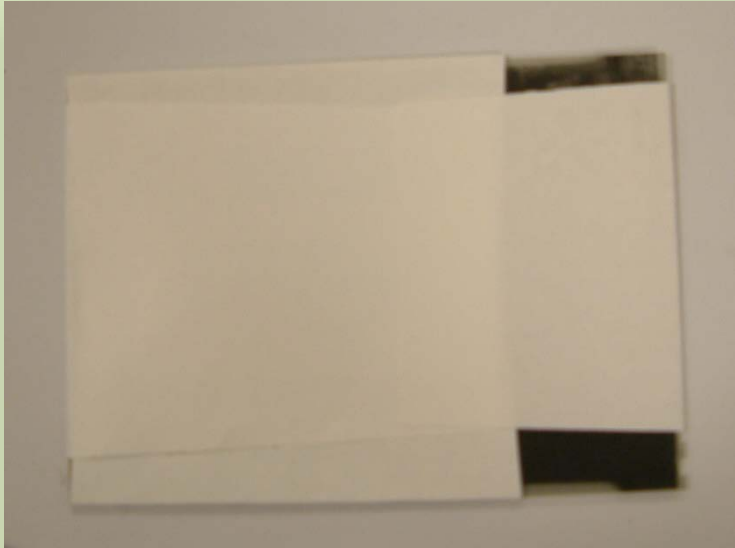
DATE:

ASSIGNMENT

FILE NO.



# Poor use of enclosures



# Stabilization of deteriorated or problematic plastic still film





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## Standard for the Storage and Handling of Cellulose Nitrate Film





# Slide storage



# THE OLD ENCLOSURES MAY HAVE VALUE!



# Print storage

- Buffer prints from other material if possible
  - Encapsulate in archival polyester or
  - Interleave acid-free paper or
  - Use archival polyester pocket pages
- Folders and boxes should provide support so that prints do not bend or fold
- If viewed regularly, housing should not interfere with viewing

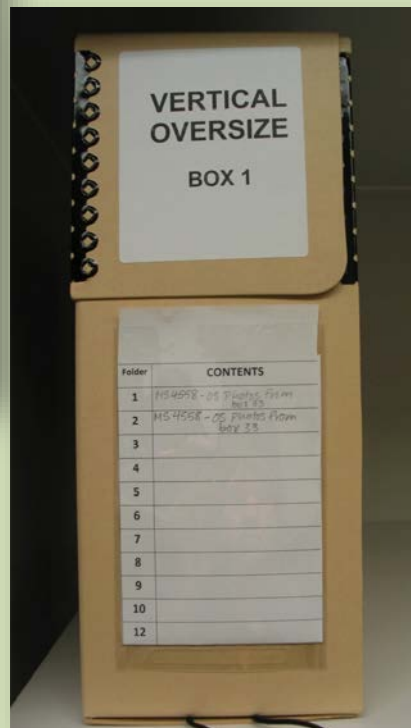
# Enclosures and containers

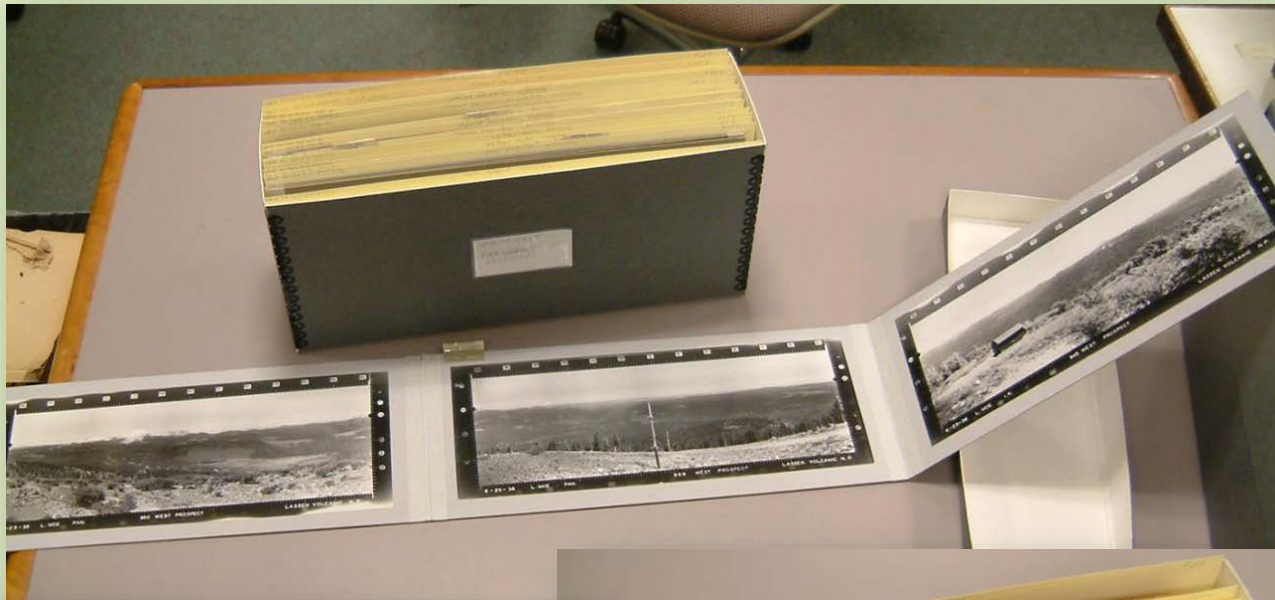




# Large and unusual sizes









# Album storage

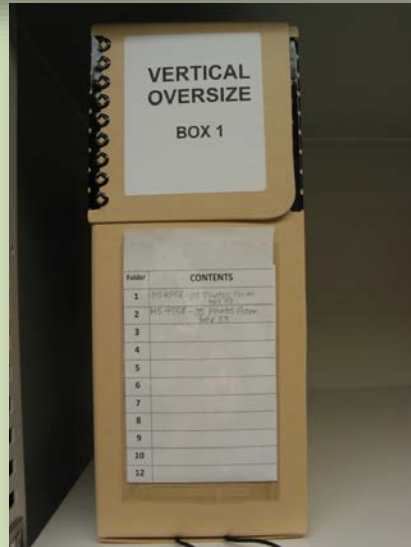
- Box/enclosure should support album on all sides
- Contents should be protected from adjacent items if necessary
- Intrinsic value of album format may dictate housing





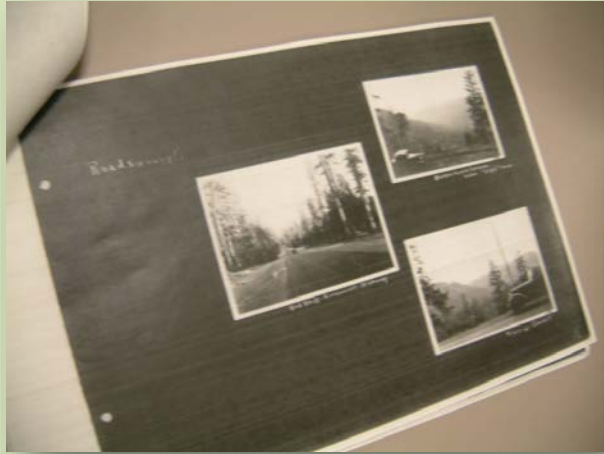
# Interleaving?

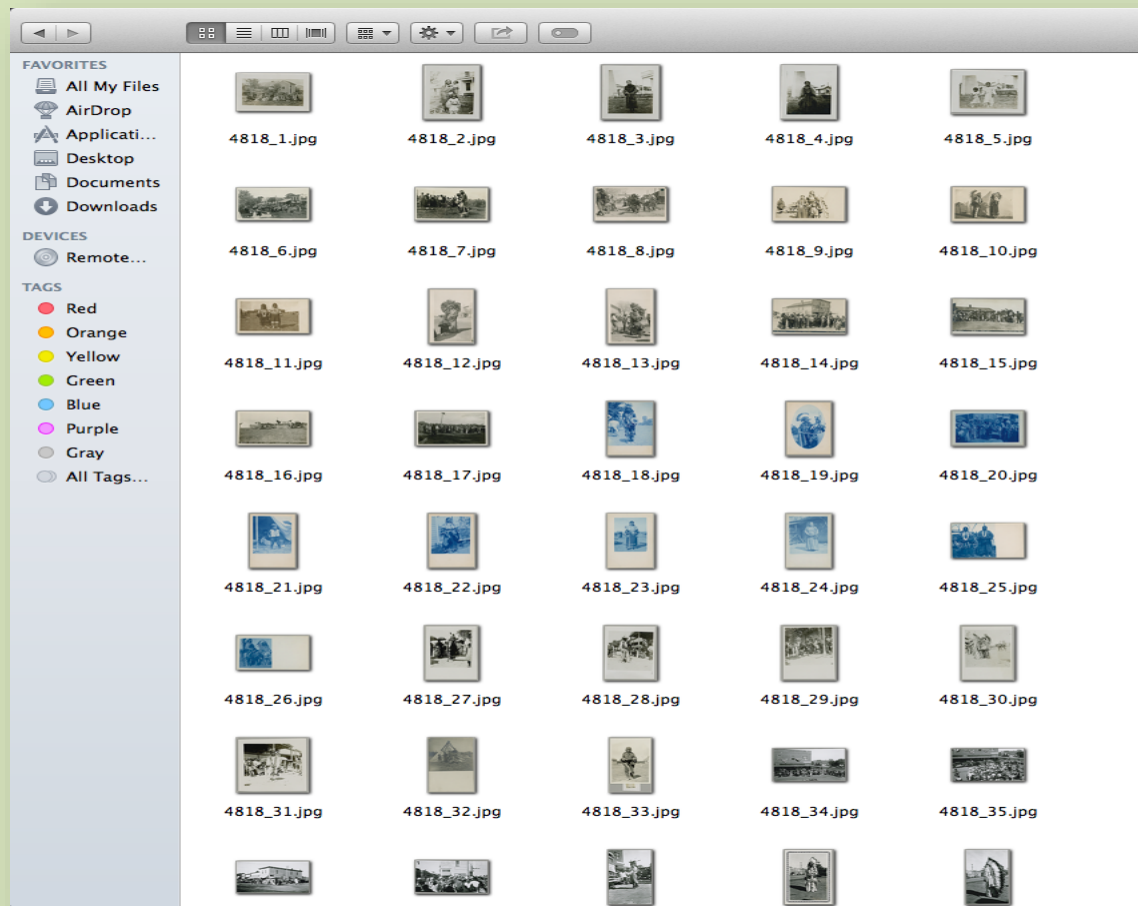






# Reformatting





# RESOURCES

<https://www.imagepermanenceninstitute.org/>

<http://www.nedcc.org/free-resources/preservation-leaflets/overview>

<http://www.dp3project.org/>

## Online Resources

NEDCC technical leaflets <http://www.nedcc.org/free-resources/preservation-leaflets/overview>  
NPS Catalogue O'Grams [http://www.nps.gov/museum/publications/conservation/cons\\_isc.html](http://www.nps.gov/museum/publications/conservation/cons_isc.html)  
NPS Museum Handbook Chapter on Photographs <http://www.nps.gov/history/shanum/publications/MSU/Appendix%20A.pdf>

## Identification

<http://www.photography-museum.com/primer.html>  
<http://www.citygalaxy.com/faq/node/1>  
[http://oldphoto.org.uk/?q=other\\_web\\_sites\\_-\\_early\\_photography.htm](http://oldphoto.org.uk/?q=other_web_sites_-_early_photography.htm)  
<http://www.the2study.com/?q=htm>  
<http://www.cycleback.com/photoguide/index.html>

## Preservation

<https://www.imagepermanenceninstitute.org/>  
<http://www.photographyroom.com/faq.html>  
<http://www.dp3project.org/>  
[http://www.loc.gov/ndep/tyberk/feature\\_wedec.php?rec=5954](http://www.loc.gov/ndep/tyberk/feature_wedec.php?rec=5954)

## Archival supplies

Hollinger Metal Edge <http://www.hollingermetaledge.com/>  
Gawler <http://www.gawler.com/Archival/Archival>  
University Products <http://www.universityproducts.com/>

How to for sink mats <http://www.iamarchivists.org/pdf/213/preservation.com.html#u1.pdf>

## Publications

Edgc-3. BEdccy. *Collectors Guide to Early Photographs*. Iola, WI: Krause Publications, 1999.  
Reilly, James M. *Care and Identification of 19<sup>th</sup> Century Photographic Prints*. Rochester, NY: Silver Print Press, 2001.  
Rizezathaler, Mary Lynn, and Vegt-O'Connor, Diane. *Photographs: Archival Care and Management*. Chicago: Society of American Archivists, 2006.  
Taylor, Maureen A. *Uncovering Your Ancestry Through Family Photographs*. Cincinnati: FamilyTreeBooks, 2005.  
Wilhelm, Henry Gilmer. *The permanence and care of color photographs: traditional and digital color prints, color negatives, slides, and motion pictures*. Grinnell, Iowa: Preservation Publishing Co., 1993.

## Society of American Archivists workshops

Visual Literacy/Advanced issues in Photo Management: [http://www2.archivists.org/prof\\_education/course-catalog/list-visual-literacy-for-photograph-collections](http://www2.archivists.org/prof_education/course-catalog/list-visual-literacy-for-photograph-collections)  
General photo management: [http://www2.archivists.org/prof\\_education/course-catalog/list-photographs-archival-principles-and-practices](http://www2.archivists.org/prof_education/course-catalog/list-photographs-archival-principles-and-practices)  
Identification and Preservation: [http://www2.archivists.org/prof\\_education/course-catalog/?preservation-and-identification-of-20th-century-visual-material](http://www2.archivists.org/prof_education/course-catalog/?preservation-and-identification-of-20th-century-visual-material)  
Other trainings and workshops

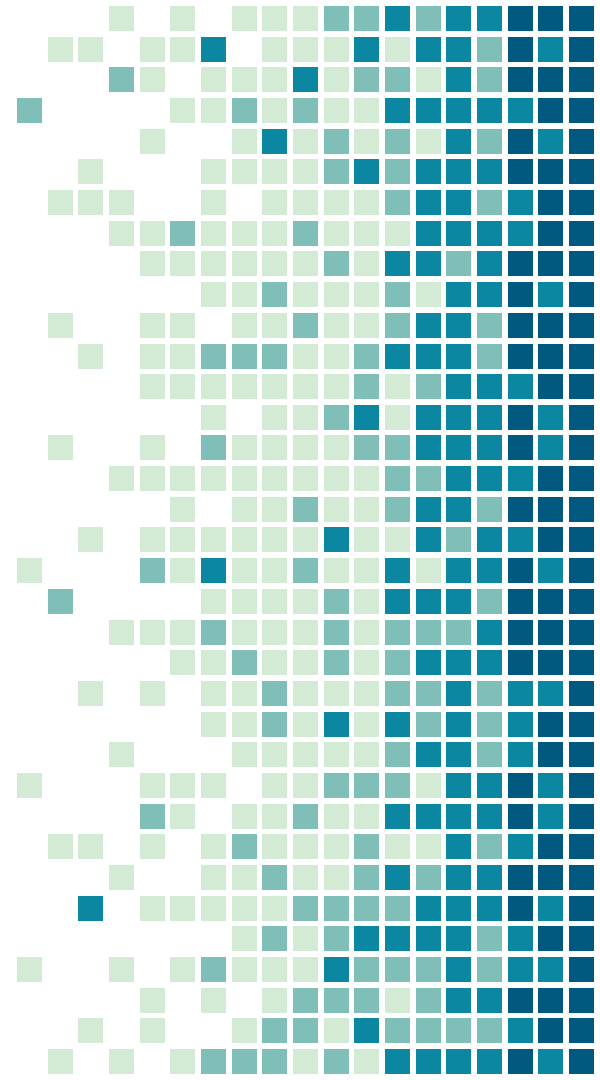
Gawain Weaver: <http://gawainweaver.com/workshops/>

Questions?



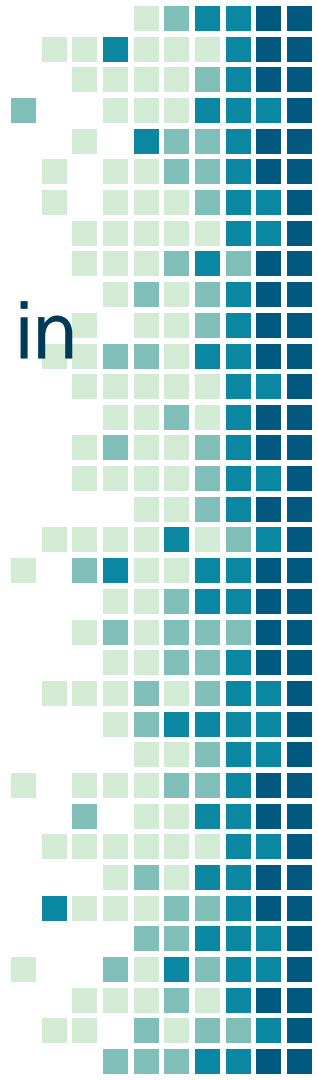
# Why Digitize?

discussion



# Discussion Activity: Groups of 4

- **WHY** do you want to digitize materials in your department and community?
- **(15 mins) Make a short list of your group's WHYs and include:**
  - Reasons
  - Opportunities
  - Challenges



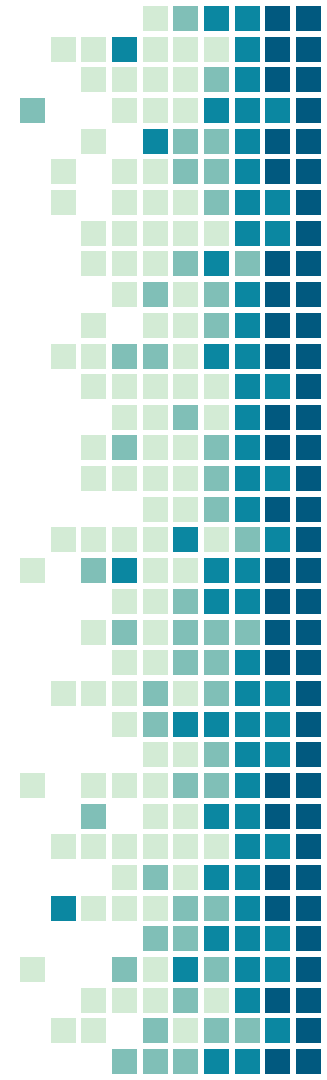
# Project Planning and Policies

Starting your own  
digitization projects



# HOW TO START DIGITIZING?

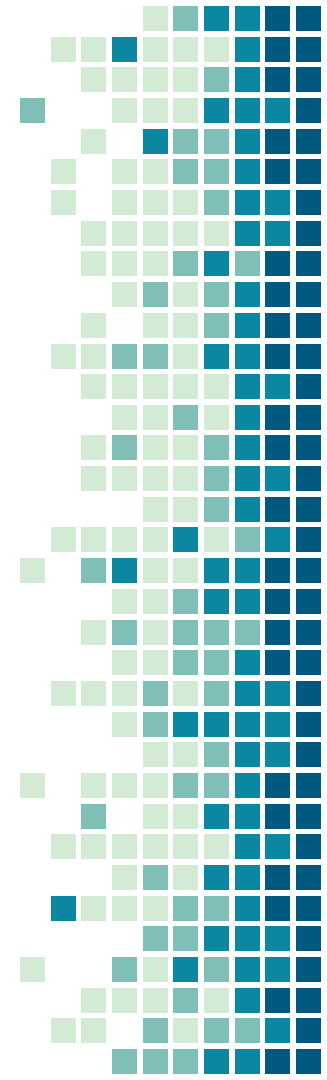
- In house
- Collaboration
- Outsourcing





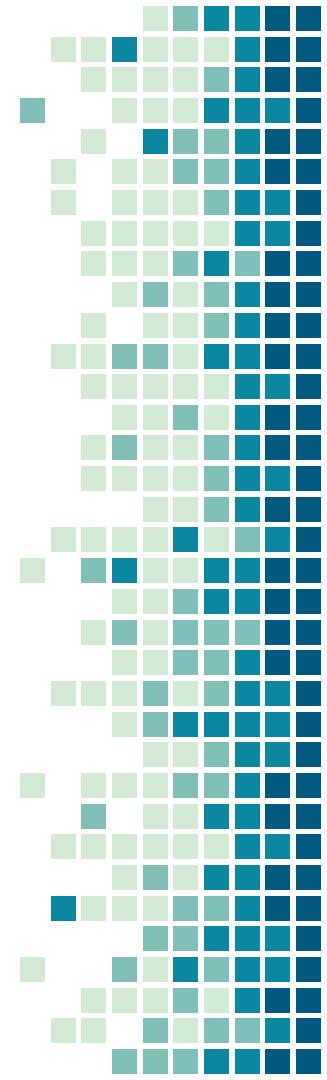
# SHOULD WE DIGITIZE?

- Scope and timeline
- Outcomes and benefits
- Permissions and copyright
- Legal, cultural concerns



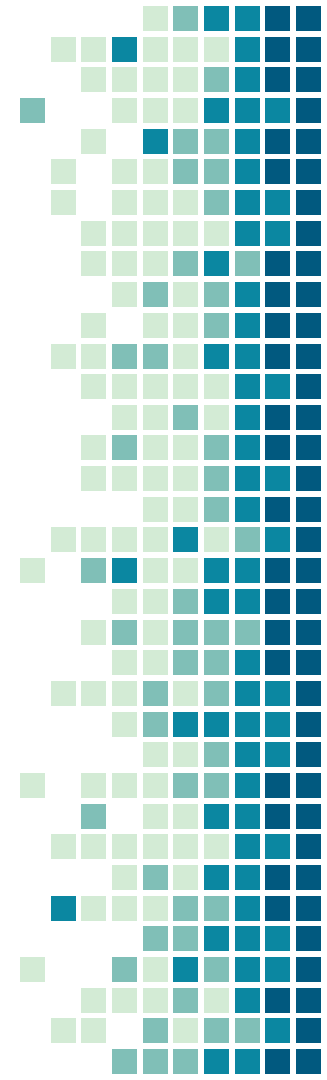
# CAN WE DIGITIZE?

- Equipment and software
- Physical Space
- Staff
- Digital storage needs
- Metadata
- Providing access



# ASSESSMENT FACTORS

- Size of collection
- Format
- Condition
- Time and Resources
- Budget

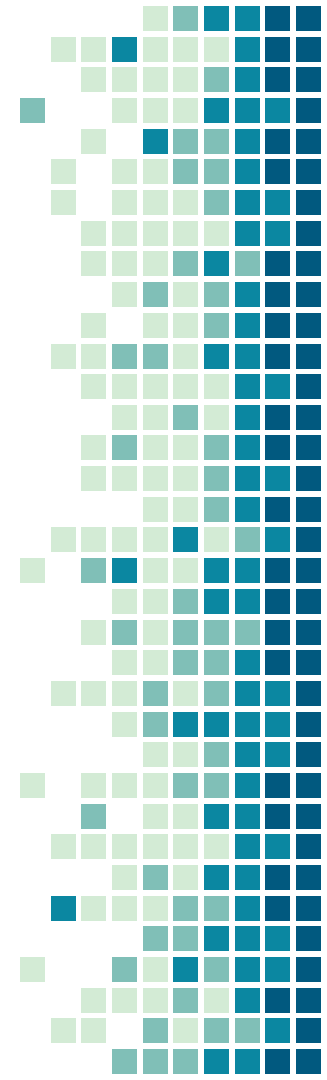


# POLICIES AND DOCUMENTATION

- Digitization Purpose Statement
- Digitization Selection Criteria
- Digitization Policy
- Digitization Manual
- Digitization Project Workflows

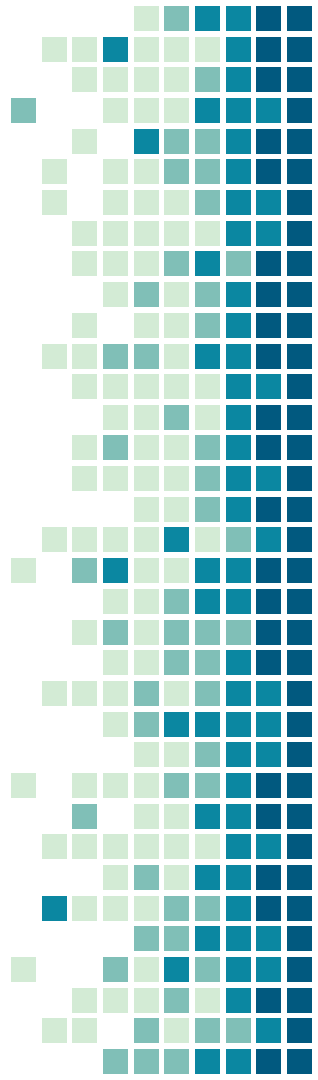
# Digitization Selection Criteria

- Fit to Purpose Statement
- Demand
- Uniqueness
- Physical condition
- Cultural concerns
- Legal concerns
- Funding
- Staff time



# PROJECT MANAGEMENT TIPS

- Clear timeline
- Digitization Logs or Tracking Sheets
- Clear folder structure and file naming system
- Staff training



# PROJECT PLANNING AND WORKFLOW

- What are the goals of the project?
- What does a basic workflow look like?



# PROJECT TRACKING

Database2 - Database - C:\Users\naultj\Documents\Database2.accdb (Access 2007 - 2016 file format) - Access

File Home Create External Data Database Tools Tell me what you want to do...

Task List

Search Save Filter

New Task E-mail List Contact List Show/Hide Fields Reports ?

Open	Task Title	Priority	Status	% Complete	Assigned To	Start Date	Due Date	Completed Date
(New)		(2) Normal	Not Started	0%		10/3/2018		

Smithsonian Spaces People Calendars Create page tree Blogs Create ...

Paragraph Responsive

People / Nault, Jeanine / Dashboard / Nault, Jeanine's Home DRAFT

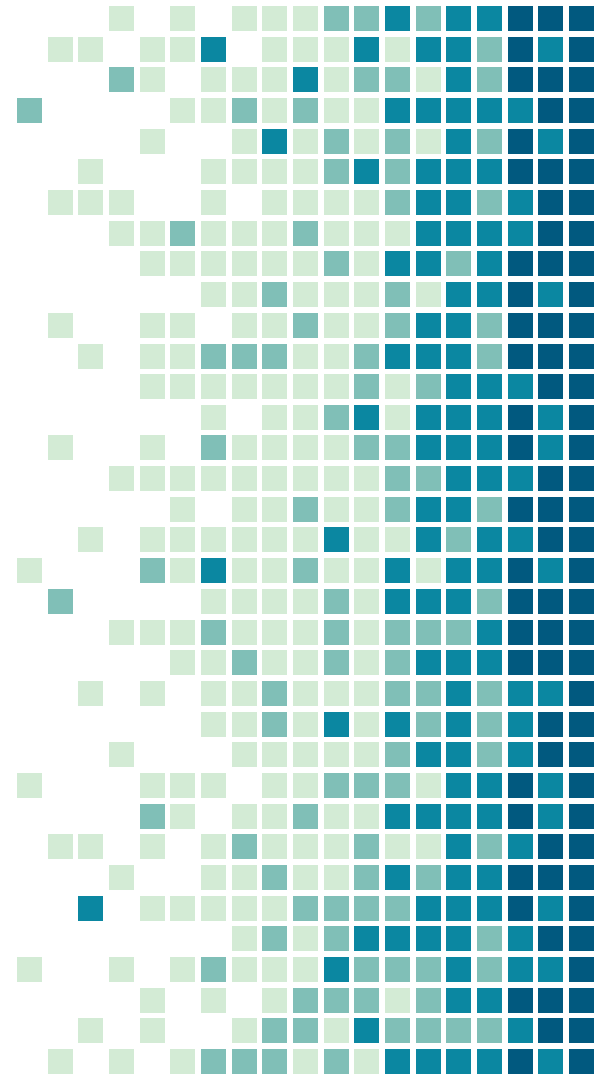
## Project Tracking

Task Name	Duration	Start	Finish	Status
Write SOW	5 days	01 Oct 2018	05 Oct 2018	COMPLETE
Hire vendor	15 days	15 Oct 2018	02 Nov 2018	IN PROGRESS
Collections Assessment	45 days	01 Oct 2018	15 Nov 2018	IN PROGRESS
Metadata Enhancement	30 days	16 Nov 2018	21 Dec 2018	IN QUEUE
Digitization	30 days	01 Jan 2019	08 Feb 2019	IN QUEUE

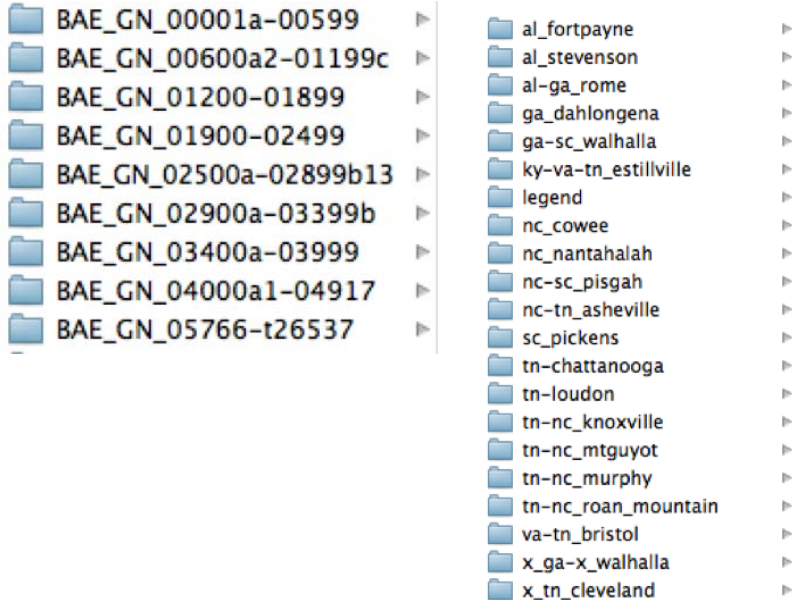


# File Management

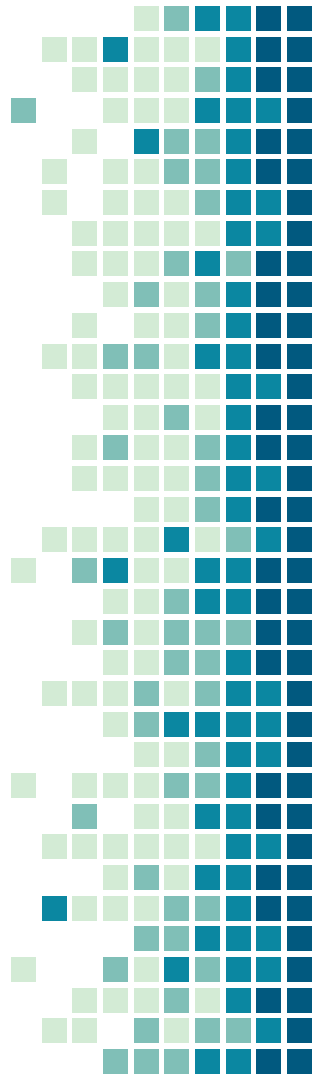
Keeping Organized



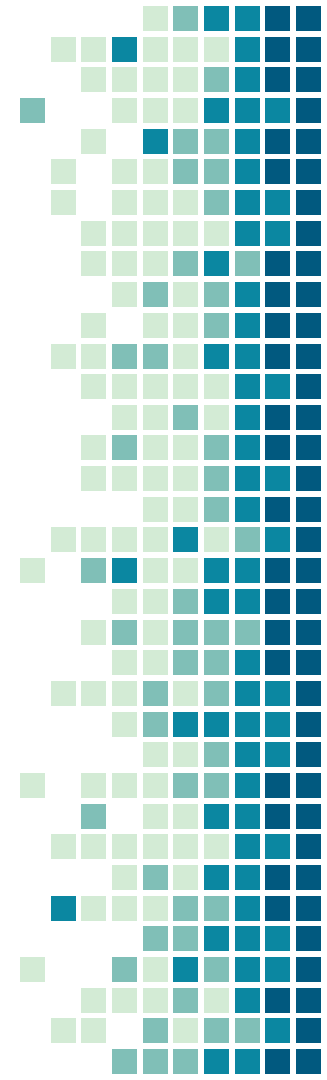
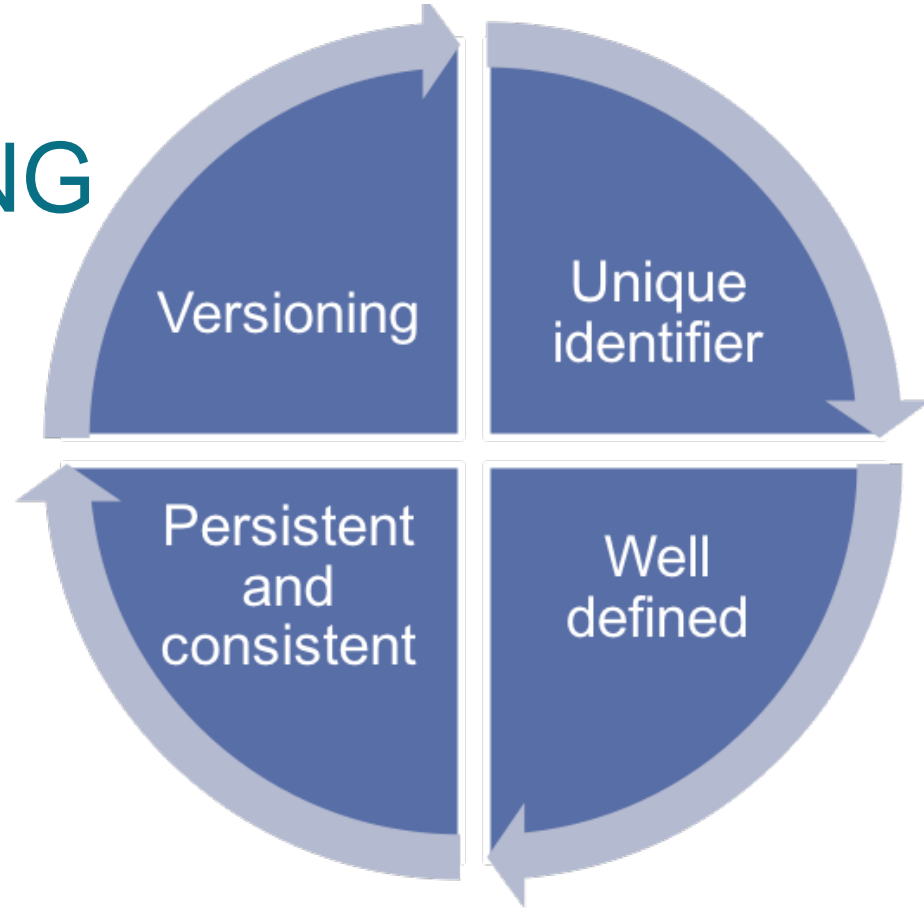
# FOLDER STRUCTURE



- Master files
- Access copies
- Publication copies
- Etc.



# FILE NAMING



# FILE NAMING EXAMPLES

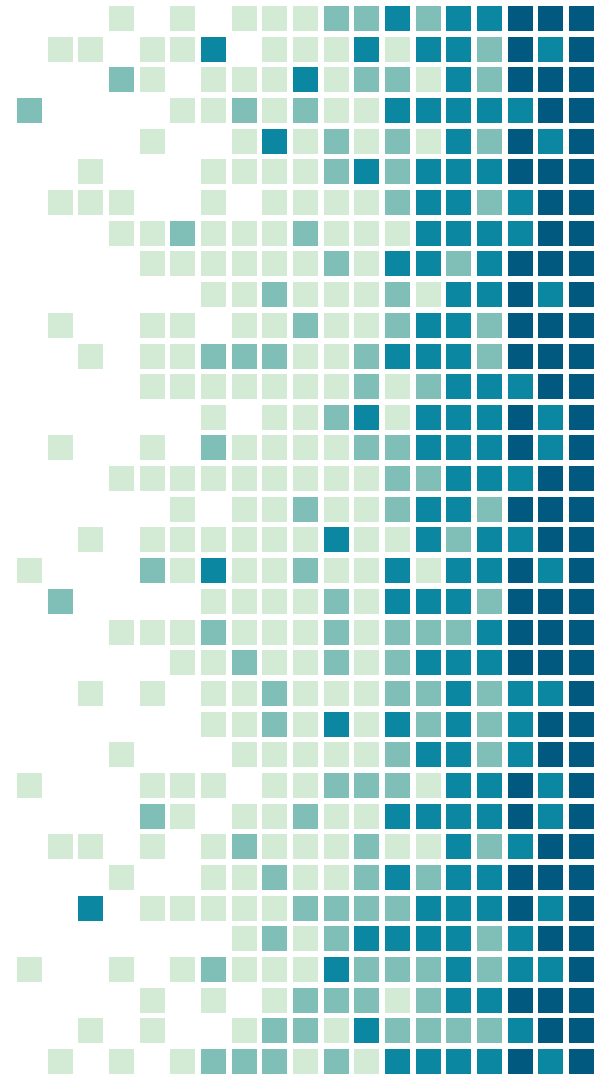
- Prefix and suffix additions
- Examples of filename variations:
  - “V” = verso, backside of image
  - “x01” = numbering assigned during digitization
  - “ntbk” = manuscript is or contains bound notebook
  - “front\_cover,” “back\_cover,” “title\_page”



Analog Collection Name	Digital Surrogate <u>File</u> nam <u>ing</u> Convention	Example
NAA MS 385	<u>msnumber_number.tif</u> <sup>1</sup>	385_002.tif
Notecard within NAA MS 385	<u>msnumber_notecard.tif</u>	385_notecard_1.tif (use number if sequence)
Notebook within NAA MS 385	<u>msnumber_ntbk_number.tif</u>	385_ntbk_001.tif If multiple notebooks: 385_ntbk_1_001.tif; 385_ntbk_2_001.tif
Kinship chart or other identifiable material within NAA MS 385	<u>msnumber_kinship_chart.tif</u>	351_kinshipchart_no_1_ver_2.tif <sup>2</sup> ;
Note within NAA MS 385	<u>msnumber_front_note.tif</u> <u>msnumber_end_note.tif</u> <u>msnumber_pgnumber_note.tif</u>	385_front_note_01.tif, 385_end_note_01.tif, 385_01_note.tif

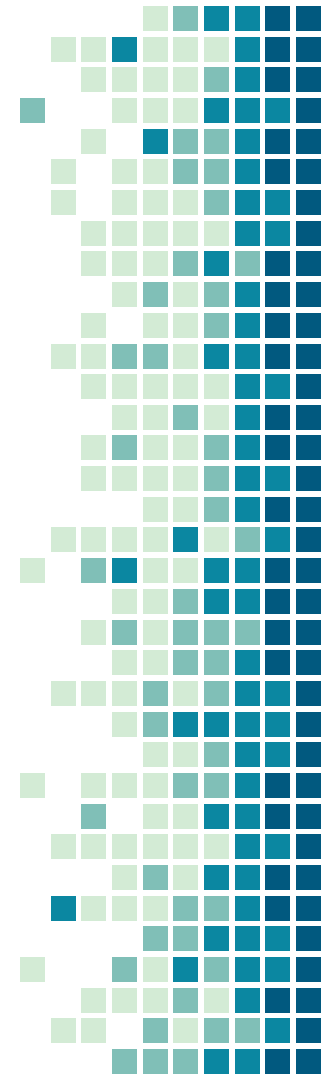
# Image Digitization: Workflows and Technical Specifications

Creating quality digital files



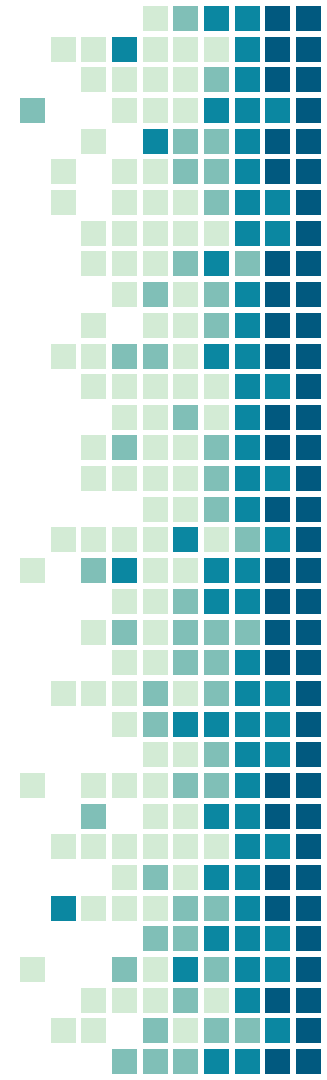
# EQUIPMENT

- Lots of options! Consider:
  - Results
  - Resources available
  - Format of materials



# NEEDS FOR SCANNING

- **Equipment:**
  - Scanner
  - Computer
- **Software:**
  - Scanning software
  - Editing software
- **Storage**







**\$100-200**

Lightweight, fewer options, may not provide software.



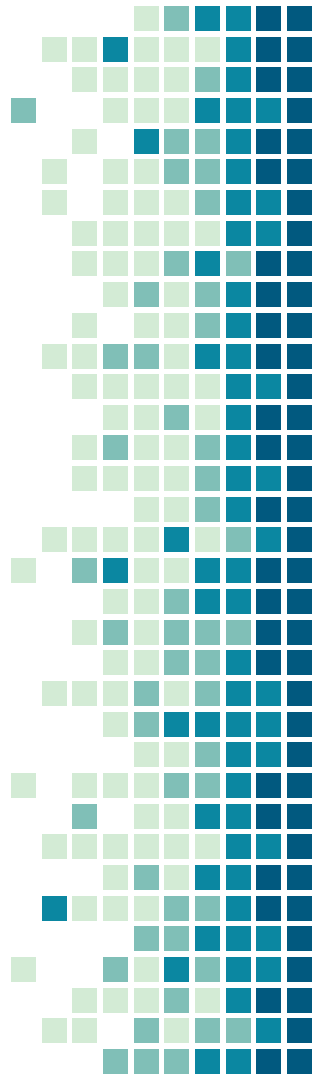
**\$1500-1700**

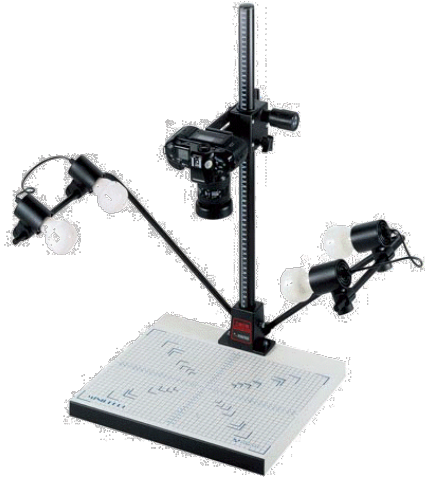
Additional features, higher quality.



**\$2000-3000**

All needed features, attachments, very high quality.





### Copy stand

Flexible, learning curve.



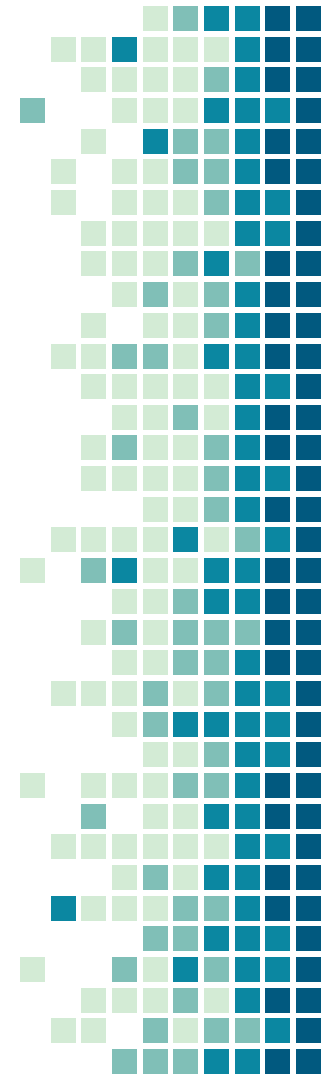
### Large format

Oversize materials,  
expensive.



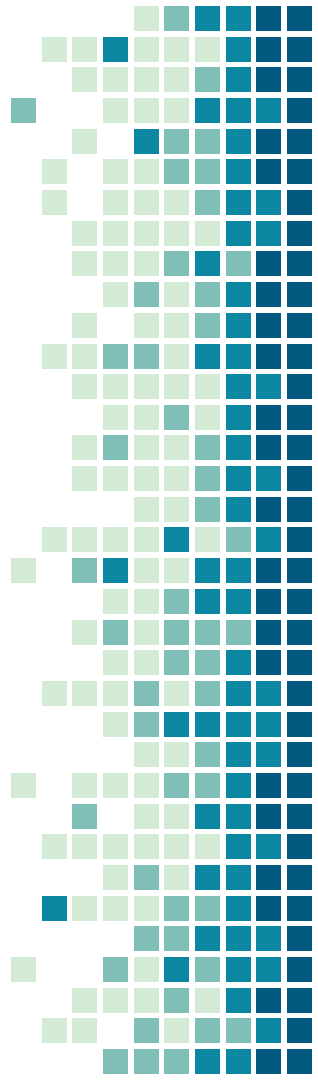
### Slide scanner (example)

Special formats, not  
flexible.



# QUESTIONS TO CONSIDER

- What is being digitized?
- Where will the files be stored?
- Who will create the files?
- How will the files be accessed by users?
- What information do you include?
- What are the recommended technical specifications for this format?



# Standards and Specifications

*Guidelines for how you capture and save files.*

- Develop your guidelines
- Use other standards and examples
- Document your guidelines
- In policy or procedures
- Follow your guidelines
- Update your guidelines and procedures

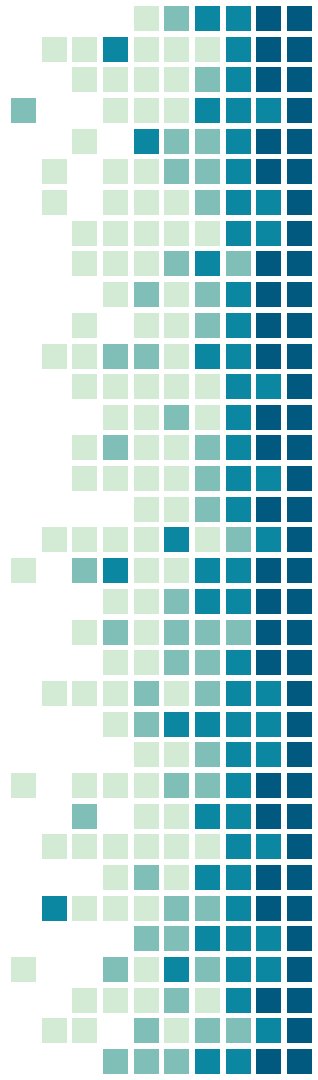


# Why use standards and specifications?

- Consistency
- Usability
- Preservation
- Collaboration

## Match goals to your standards and specifications

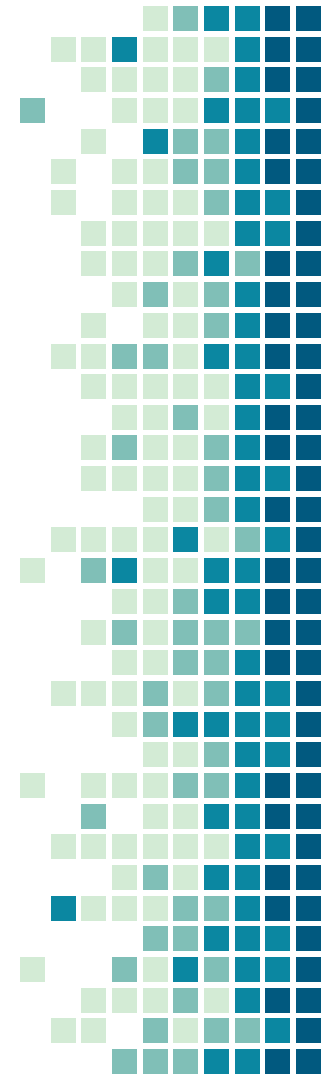
- Program goals, project goals, community needs



# Important Concept #1

## Versions of Files

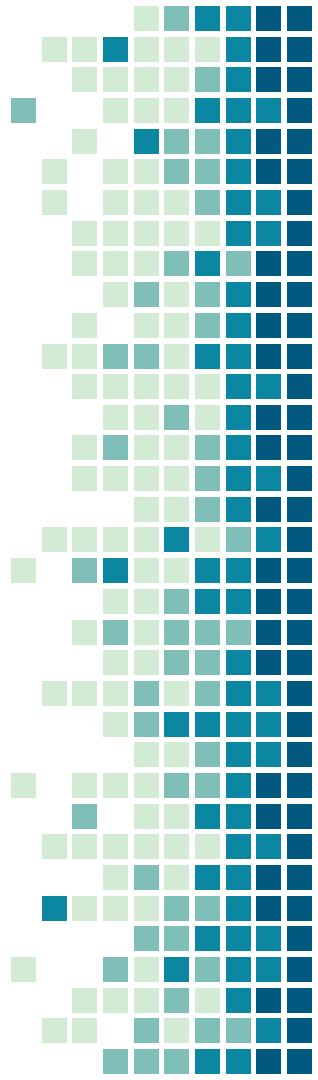
- Preservation master files
- Access/derivative copies
  - Web upload copies
  - Exhibit printing copies
  - Newspaper sharing copies



# Important Concept #2

## Compression

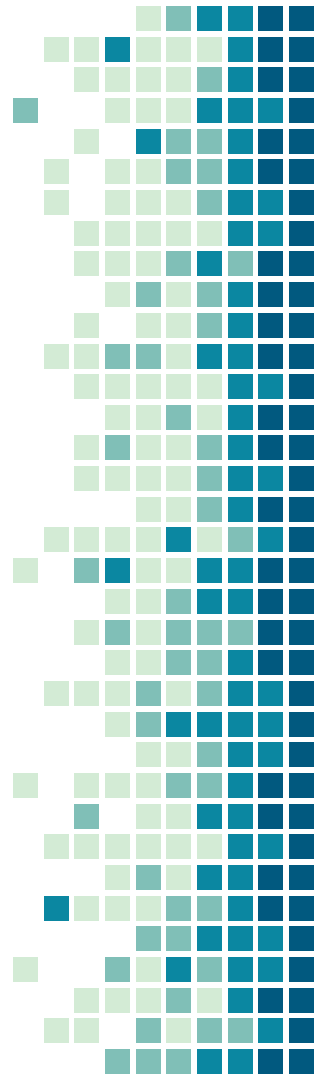
- **Compressed file:**remove data for a smaller file size
- **Uncompressed file:**save everything- big file



# Important Concept #3

## File type

- Widely supported
- Usable now and in the future
- Open vs. Proprietary

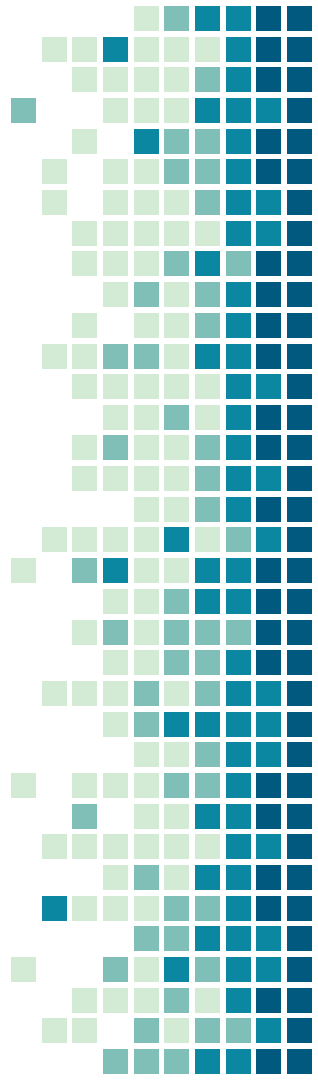




# Important Concept #4

## Higher quality = larger file size

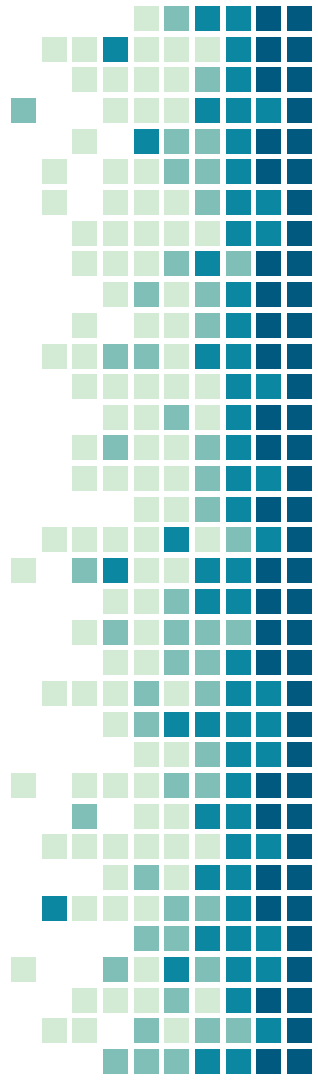
- Balance needs with capabilities
- Have a general policy
- Estimate storage required before beginning a project



# Important Concept #5

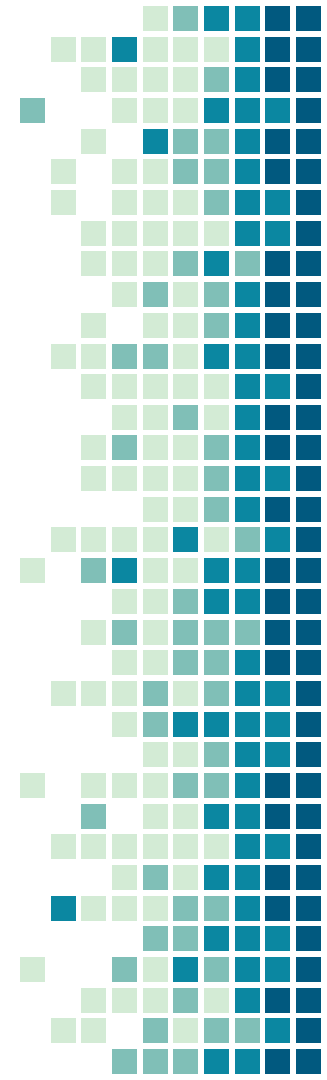
## Threshold

- Can only capture as much information as exists in the original
- Match the original as best you can



# Example: Image Specifications

- **Format:** TIFF master, JPEG or PDF access
- **Bit Depth/color:** 48 bit color
- **Resolution:** 600 ppi for photographs, 300 ppi for documents
- **Color profile:** Adobe RGB or Adobe sRGB
- **Tone:** blacks with values no lower than 9, whites with a value no higher than 247



# RESOLUTION

- **Resolution:** The number of pixels in each dimension that can be displayed the density of pixels in the image.
- **PPI:** pixels per inch (DPI = dots per inch)  
(300 ppi, 400 ppi, 600 ppi)

**Typical preservation master: 400- 600 ppi  
depending on format of the original**



# FINDING AN ITEM'S BEST RESOLUTION

## Resolution Recommendations for Reflective Materials:

### 400 ppi

- Bound material (general, rare, special collections)
- Documents and Manuscripts
- Newspapers
- Oversize materials (maps, posters)

### 600 ppi

- Prints and Photographs

## Resolution Recommendations for Transmissive Materials:

### 2000 ppi

- Transparencies or negatives larger than 4"x5"

### 4000 ppi

- Transparencies: 35mm to 4"x5"  
Negatives: 35mm to 4"x5"

Save

Delete

### Original

Document Type:

Film

Film Type:

Color Negative Film

### Destination



Image Type:

24-bit Color

Resolution:

300

dpi

Document Size:

W

2.70

H

9.33

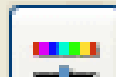
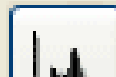
in.



Target Size:

Original

### Adjustments



Reset

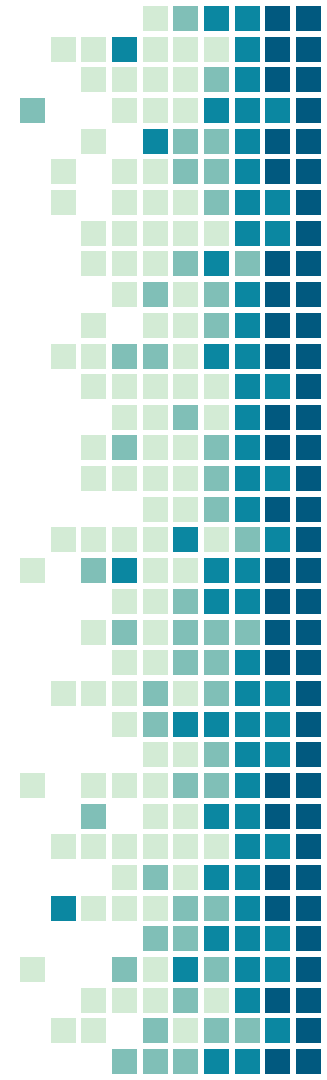
INSE

# MAXIMIZING RESOLUTION



# BIT DEPTH

- **Bit depth:** the color information stored in an image. (The higher the bit depth, the more colors an image can store.)
  - 2 bit:  $2^1 = 4$  values
  - 8 bit:  $2^8 = 256$  colors
  - 24 bit:  $2^{24} = 16,000,000+$  colors
  - 48 bit:  $2^{48} = 3,000,000,000$  colors





Save

Delete

### Original

Document Type:

Film

Film Type:

Color Negative Film

### Destination



Image Type:

24-bit Color

Resolution:

300

dpi

Document Size:

W

2.70

H

9.33

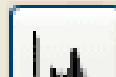
in.



Target Size:

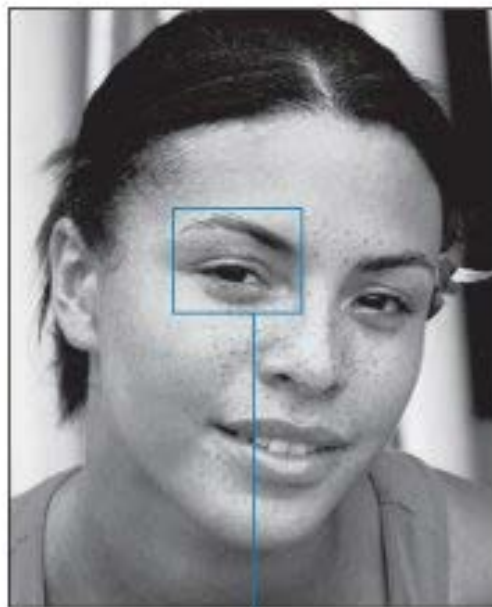
Original

### Adjustments



Reset

INSERT E



1 bit  
2 possible values



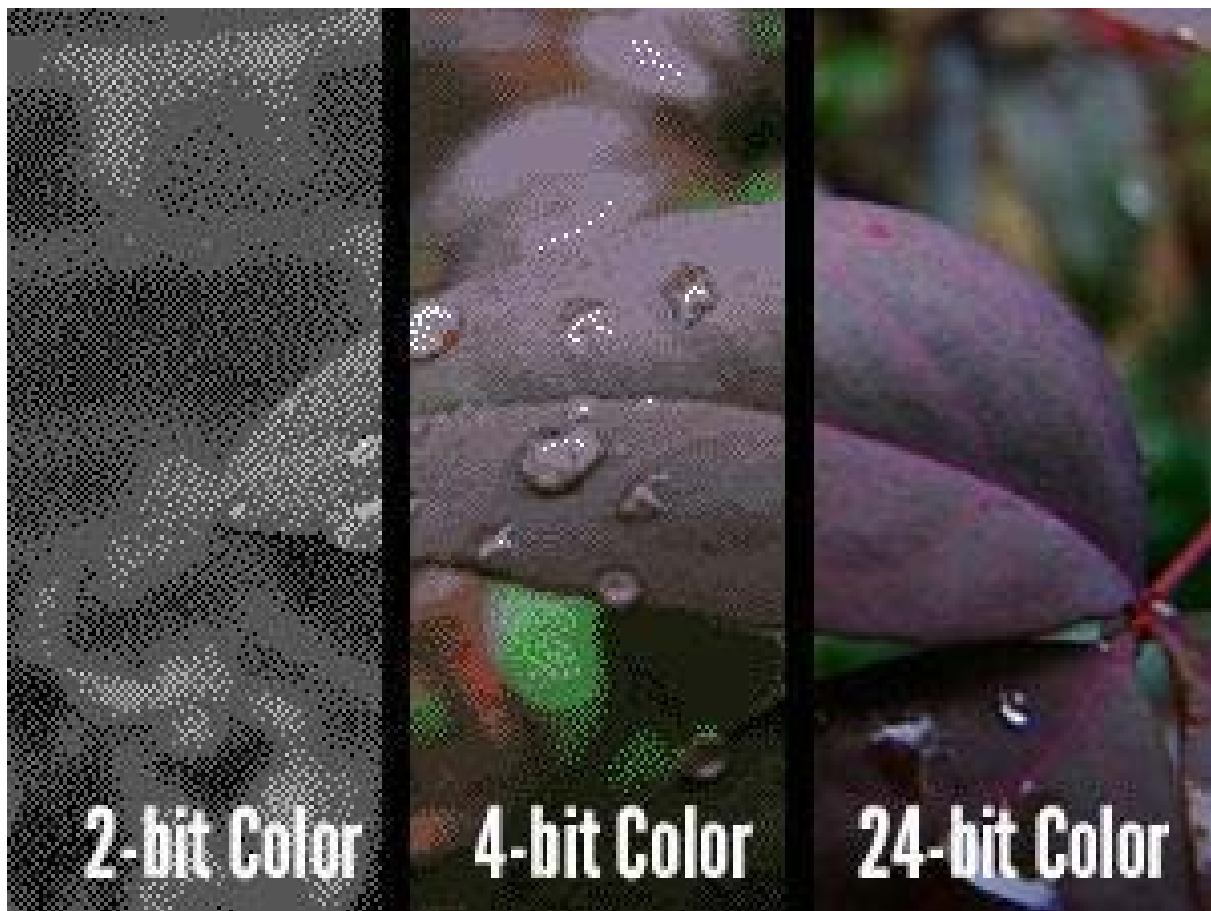
2 bits  
4 possible values



4 bits  
16 possible values



8 bits  
256 possible values



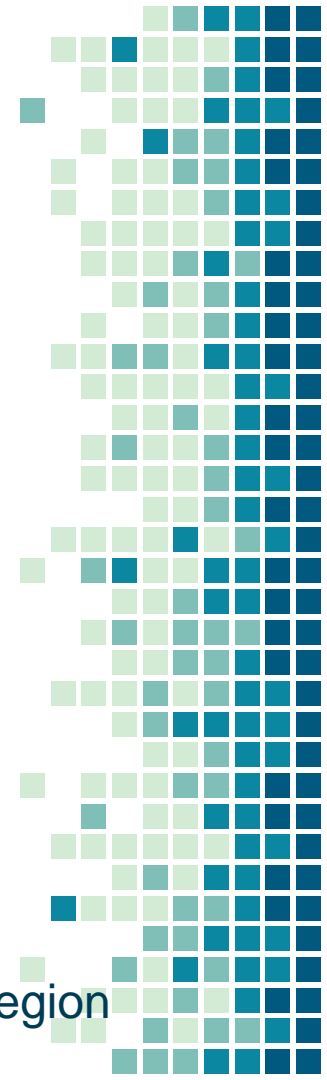
**2-bit Color**

**4-bit Color**

**24-bit Color**

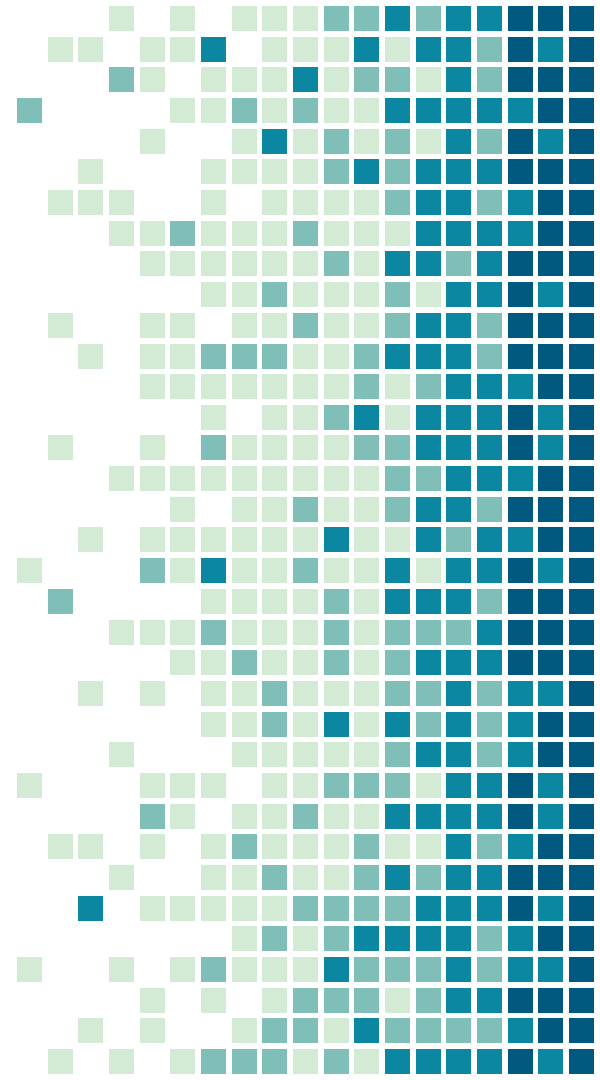
# STANDARDS RESOURCES

- FADGI- Federal Agencies Digitization Guidelines Initiative  
<http://www.digitizationguidelines.gov/>
- ALA- American Library Association  
<http://www.ala.org/alcts/resources/preserv/minimum-digitization-capture-recommendations>
- LC- Library of Congress  
<https://www.loc.gov/preservation/digital/formats/index.html>
- Reference other Tribes, Universities, and repositories in your region



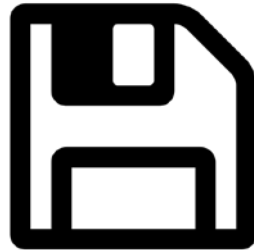
# Digital Preservation: Storage

Saving your Work



# DIGITAL PRESERVATION

- Long term storage and preservation of your digital files
- Runs through all of your digital projects



# DOCUMENT DIGITAL PRESERVATION

- Create a Digital Preservation Plan
- Can't just “set it and forget it”
- Update, research, monitor

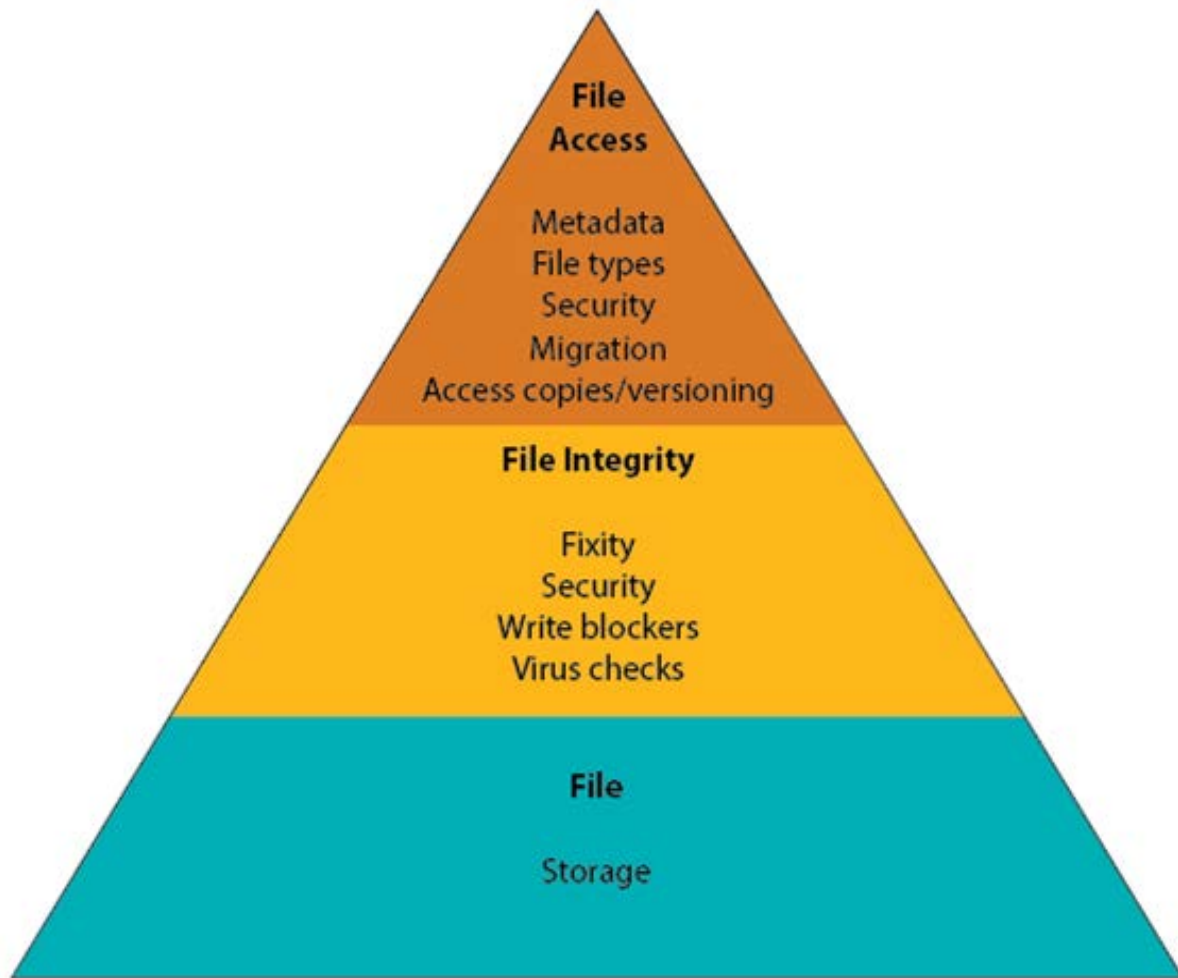


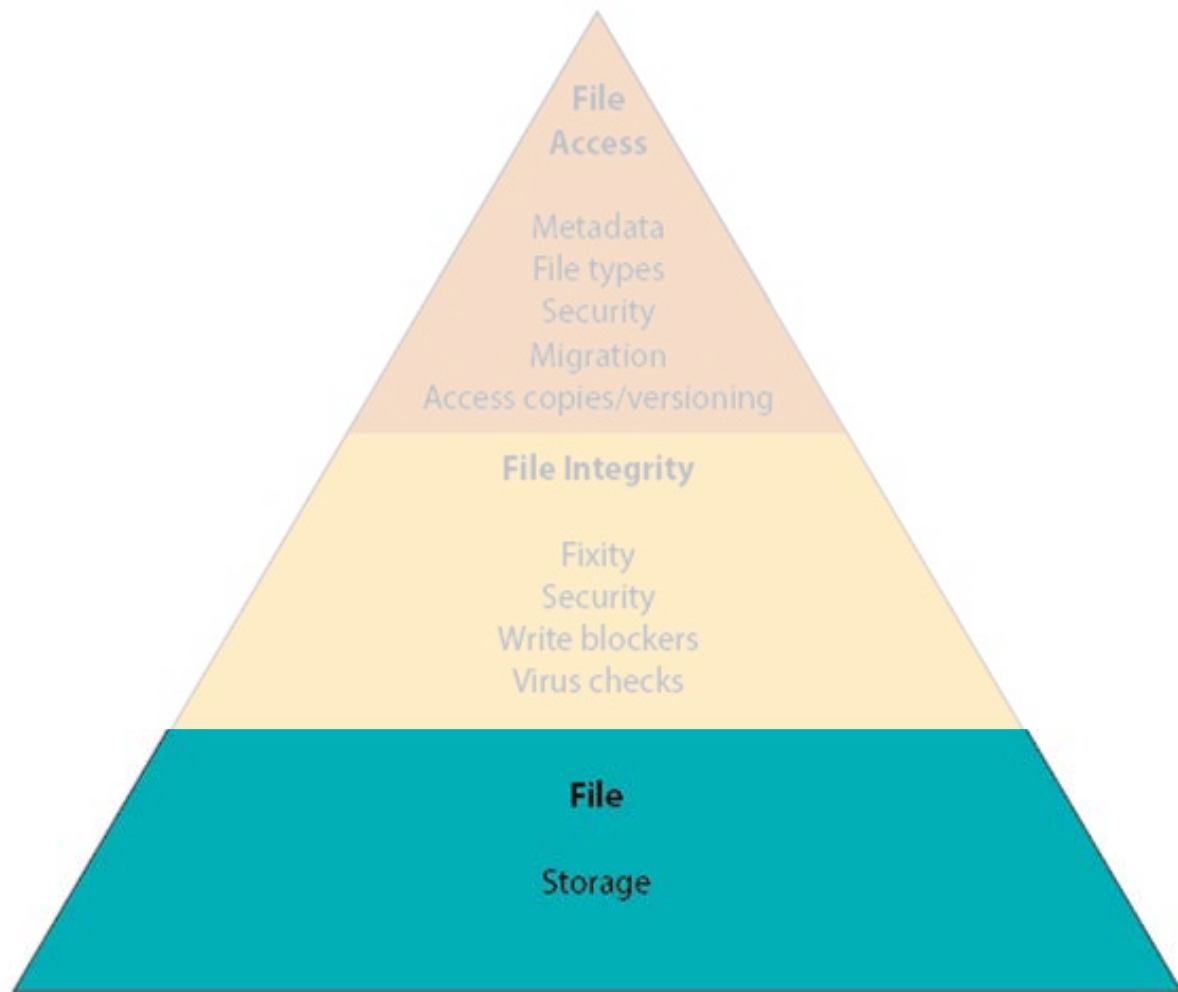
# TEAM EFFORT

- Find others to bring into the conversation
- Fit your needs into what already exists
- Maintain communication
- Balance responsibilities



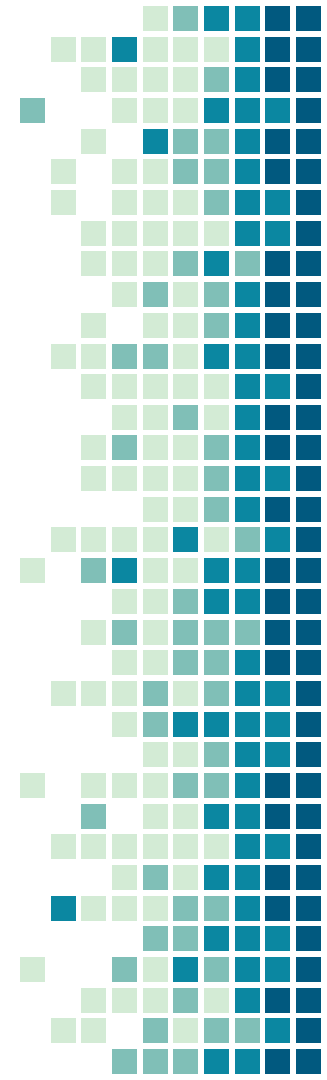


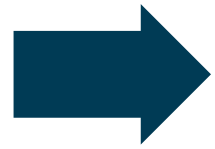




# DIGITAL STORAGE

- Storage space for content
- Integrate with IT
- What does your IT department already have set up?
- Consider types of storage
- Multiple layers





3 Copies



2 Types of Storage



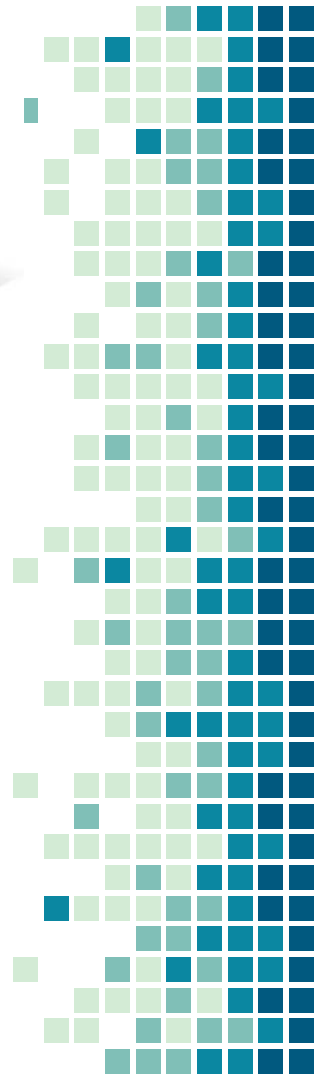
1 Different Geographic  
Location



 **3 Copies**

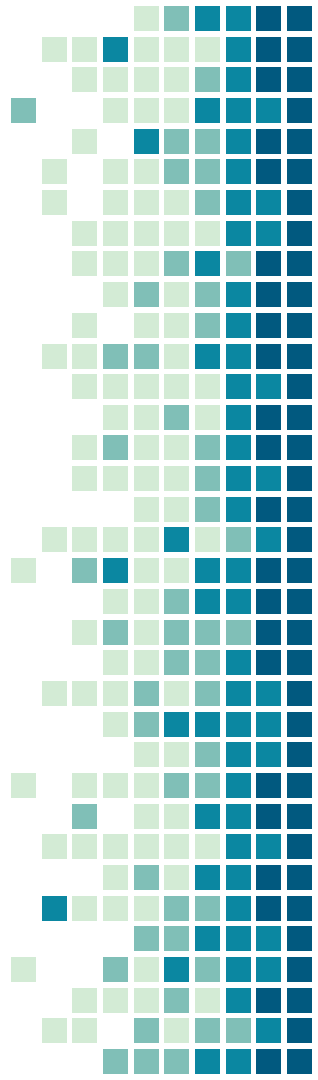


- Preservation quality files
- Choose files for long term preservation
- Not in active use
- Access/derivative copies usually not a priority



# VERSIONS OF FILES

- Preservation master copies
- Access copies
  - Created from preservation masters
  - Smaller
  - Lower quality
- Other derivatives





# 2 Types of Storage

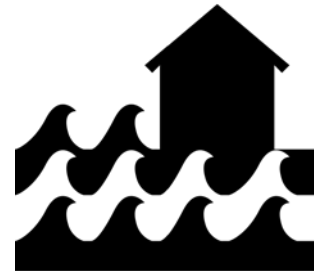
- At least two different types of storage media
- Manageable
- Fault tolerant





# 1 Different Geographic Location

- Different “disaster zone”
- Protect against natural disasters
- Option: cloud storage





# TYPES OF STORAGE MEDIA

- hard disk drives
- ~~flash drives~~
- RAID hard drive
- cloud/hosted storage
- ~~CDs or DVDs~~
- SSD (solid state drives)
- LTO Tape
- Network Attached Storage





**There is no cloud**  
it's just someone else's computer

# DIGITAL PRESERVATION: First Steps

- Have at least one backup copy of important files
- Create and update an inventory of digital files
- Start talking with IT, or others
  - Storage for digital files

# DIGITAL PRESERVATION: Second Steps

- Transfer data off of outdated media
- Decide which file types you will use for various formats
- Define security of files
- Estimate future storage needs

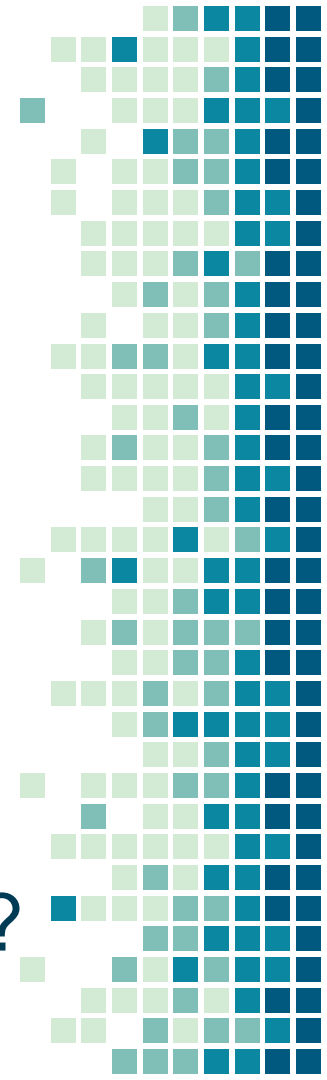
# THREE STEPS TO TAKE HOME

1. Discuss long term storage with people in your organization (or make time to plan by yourself)
2. Take stock of what you already know
3. List things that you want to find out about Digital Storage and Preservation



# STORAGE QUESTIONS

- What does IT already have in place?
- How often content is backed up?
- What types of storage devices are used, and how often storage devices are migrated?
- What risks are present in your region?



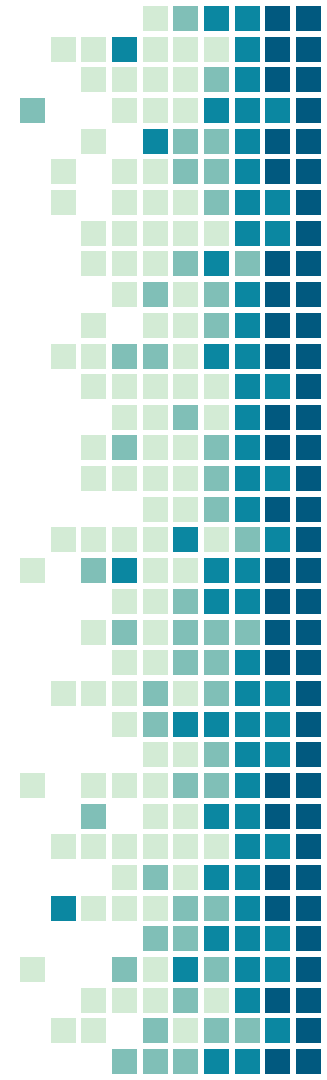
# Additional Resources

Continue to Research



# Other Resources

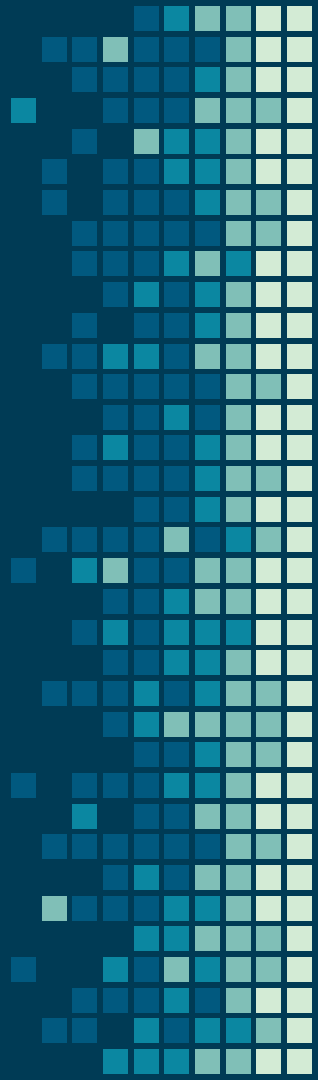
- Sustainable Heritage Network
- Preservation Self Assessment Program
- FADGI
- Library of Congress
- Indigitization





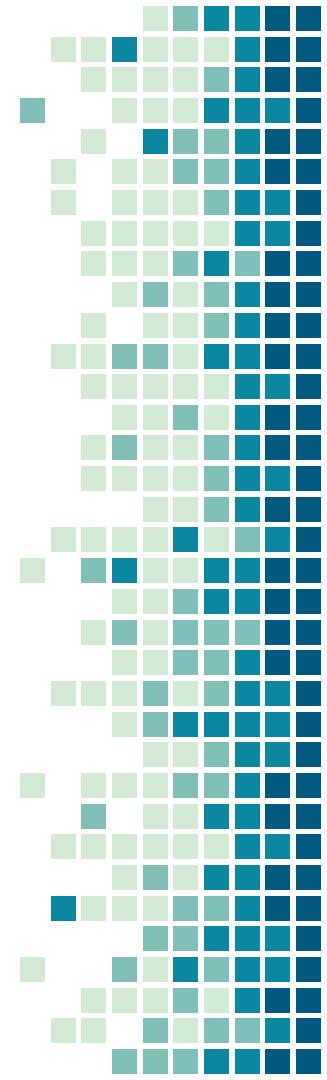
# THANKS!

Questions?



# Contact us:

- Gina Rappaport
  - [rappaportg@si.edu](mailto:rappaportg@si.edu)
- Lotus Norton-Wisla
  - [lotus.norton-wisla@wsu.edu](mailto:lotus.norton-wisla@wsu.edu)
- Sustainable Heritage Network
  - [www.sustainableheritagenetwork.org](http://www.sustainableheritagenetwork.org)
  - [support@sustainableheritagenetwork.org](mailto:support@sustainableheritagenetwork.org)



# LEVELS OF DESCRIPTION/METADATA

- collection level
- folder level
- item level
- good, better, best: depends on project

METADATA  
IS A LOVE NOTE  
TO THE FUTURE



ross, it's rolled, not a firm roll ( like logs—which is dog baine)  
 along the river mostly, that is why it is different from logs.  
 ngs, we used bear grass too to put in the middle and used the different fibers to roll in to string.  
 l up along the mountains to gather the cedar,  
 to make a better product out of it the root is long and straight—in lower levels it is more knotty  
 chers to go to the higher areas to get the straighter bark.

is is more shiny  
 en painted, it was made early so it could

i twine or a decoration always in the same place to show people who made the basket  
 that is why one stripe is faded more than the others—they didn't just make it all at once, so it is  
 faded. The colors wouldn't match -- the squares show balance that is the way it was taught to me. the modern we

and the woman both on this one  
 deer, the man would walk along way to get the deer that is why he was so skinny,  
 looks like natural dye, it is not faded at all.

in in the middle, some kind of bird, then the people, then on top the frog (called...?), then also the  
 r, that such fine weaves, in Wasco the thunderbird is called ....(trying to remember), also the turtle,  
 i on the side there is a small design looks like a frog, there are deer in there, sturgeon, it is a com  
 e man went north, some went south because they disagreed over the sound the frog made.

i dresses, they used to do that, brown ones too, my mom did that.

re old, the blue ones anyway, some of beads are milks, some look like they are not all done, the are un  
 ire. -- like that color  
 int sizes

thunderbird. We keep things, the small things, get kept.

i fancy dress, i wonder if this is the same person that has the one with the deer, the sally bags we ha

h the Wasco man and women, sturgeon was a lot in the art work. We traded our sally bags full of stu  
 ve our food stuffs in them, the dried roots. Maybe not one this small.  
 e they only had the natural stuff to make the baskets.

adorable, it's all string  
 wens

ng happened with the design, could have been a beginner or someone finished it off. That could be the  
 ide lots of mistakes like that when I first started. You run out of room. They braided the top just

D	E	F	G	H	I	J	K	L
ID	Format	Content	Identifiers	Type	Field	Date	Subject	Language
psah	psah Bx10	photograph Bx10	Note: Berk & Pat MAC_30757	Photograph	Colle Unknown		Plateau, Spokane English	EWS/MS
0 AP/	Rec: height: 10"	wid: event: Fr. Tealme	MAC_30789	Photograph	Colle	6/27/1945	Plateau, Spokane English	EWS/MS
holograp	height: 10"	wid: indians	Plateau S, MAC_30824	Photograph	Colle	6/24/1909	Plateau, Spokane English	EWS/MS
photogra	S.S&S's photogra	Indians Plateau S, MAC_30825		Photograph	Colle	6/24/1909	Plateau, Spokane English	EWS/MS
versize	ph OS	At "Donation Fee	MAC_31285	Photograph	Colle	5/17/16	Plateau, Spokane English	EWS/MS
ron 102	The Statement of	Coli Chief Siskiny	L MAC_31317	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
Photograp	height: 3"	wid: Back Row (L-R):	7 MAC_31318	Photograph	Colle Unknown		Plateau, Kallispel, English	EWS/MS
sal print 2.	Statement of	Coli (r) Margaret See	MAC_35070	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Bull bean in a p	MAC_35086	Photograph	Colle	1936 - 1939	Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli (r) Angeline Ab	MAC_35092	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Front row: two	MAC_35099	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Group of boys	MAC_35096	Photograph	Colle Unknown		Education (Child) English	EWS/MS
sal print 2.	Statement of	Coli Group of seven	MAC_35097	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Two girls. (r-l)	Ag MAC_35105	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli (r) Hank Arpa,	MAC_35156	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Two boys. (l	MAC_35157	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli (r) Leo Abraham	MAC_35180	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Lucy Cherapik	MAC_35201	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Four women,	MAC_35245	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Indian Congress	MAC_35628	Photograph	Colle	1925 - 1926	Plateau, Indian O English	EWS/MS
1976	Statement of	Coli Three Undentif	MAC_35635	Photograph	Colle	1925 - 1926	Plateau, Couer d' English	EWS/MS
1 CB	Statement of	Coli Indian Congress,	MAC_35683	Photograph	Colle	1925 - 1926	Plateau, Couer d' English	EWS/MS
psah Bx10	Statement of	Coli Indians, Plateau,	MAC_35796	Photograph	Colle	1908	Plateau, Spokan, English	EWS/MS
psah Bx10	Statement of	Coli Indians, Plateau,	MAC_35803	Photograph	Colle	1905 - 1910	Plateau, Spokan, English	EWS/MS
psah Bx10	Statement of	Coli "Indian Belle"	MAC_36187	Photograph	Colle	1905 - 1910	Plateau, Couer d' English	EWS/MS
F: Bx10 A/I	Statement of	Coli Indian Congress,	MAC_36180	Photograph	Colle	1925 - 1926	Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Rosie Wildshoe	MAC_36184	Photograph	Colle	1800 - 1910	Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Three men, west	MAC_36337	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Edna LaSante	at MAC_36358	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Scarfina and Geo	MAC_36374	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Adriana Salinas	MAC_36390	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Jim Nussendorf,	MAC_36393	Photograph	Colle	1935 - 1939	Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Lawrence Nicoda	MAC_36396	Photograph	Colle	1936 - 1939	Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Two boys sitting,	MAC_36410	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Sam Louis	MAC_36411	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS
sal print 2.	Statement of	Coli Three boys with	MAC_36449	Photograph	Colle Unknown		Plateau, Couer d' English	EWS/MS

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