

# **Recommended Digitization Standards for the New Hampshire History Network**

Prepared by New Hampshire Historical Society, September 2015

## **Overview**

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Digitization allows for increased access and preservation of collections. The New Hampshire History Network provides access to digital collections throughout New Hampshire. The following are recommended digitization standards for Participating Organizations in the New Hampshire History Network. These standards are based on the New Hampshire Historical Society's digitization standards, as well as the Federal Agencies Digitization Guidelines Initiative (FADGI). Please note that these are recommended guidelines, and when scanning has already been completed, it is not necessary to redigitize the items to conform to the recommended standards.

When digitizing items within a collection, the New Hampshire Historical Society saves the digital image in both TIFF and JPEG formats. TIFFs are traditionally used for high resolution reproductions and preservation purposes. JPEGs are smaller files that provide access to the digital image. The New Hampshire History Network only requires the contribution of JPEG images. However, it is strongly recommended that the home institutions save the TIFF files for their own purposes.

Items can be digitized using either a flatbed scanner, overhead scanner, or a digital camera. If an entire image can not fit on a flatbed scanner, then a digital camera should be used. A digital camera should also be used for the interior of bound volumes in order not to break the binding as well as with three-dimensional objects. The digital camera should be of high enough quality to ensure appropriate image resolution.

## **Image Resolution**

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Image Resolution – the number of pixels per inch (ppi) in a the image

Pixel- a minute area of a illumination on a display screen, an image is composed of many pixels

PPI (Pixels per inch) – the number of pixels per line per inch in a digital photo

Higher image resolution indicates that more pixels are stored in the amount of space of a given image. When an image has a higher resolution, the zoom capabilities on the image increase. All digital images should have a minimum of 3,000 pixels along their longest dimension, and a minimum resolution of 400 ppi. Items should never be scanned at less than 400 ppi, even if the longest dimension is greater than 10 inches. Calculations should reflect the dimensions of the actual item to be scanned, not its matting or support. The following is a list of examples of scanning resolutions based on the size of the item. This is to show that oftentimes, the size of the item reflects the minimum scanning resolution. However, this may change based on the type of material. Keep in mind, file size will change based on the physical size of the document as well as the resolution of the scan.

Item Size	Minimum Scanning Resolution
2" x 3"	1000 ppi
4" x 5"	600 ppi
8" x 10"	600 ppi
10" x 14"	400 ppi

The following list contains recommendations based on the medium of the item. Sometimes it may be necessary to go to a higher resolution based on the content and detail of the item being digitized. See the above table for examples. When an item is smaller, it is often necessary to scan at a higher ppi to ensure that the scan is at an appropriate resolution. All items (including black-and-white photographic prints) should be scanned and saved as 24-bit RGB color images. The only exceptions might be black-and-white photographic negatives or books/typed pages, where the visual quality of the image will not be diminished. These items can be scanned and saved at 8-bit grayscale. The following is a list of media and how they should be captured. All these settings can be controlled through your imaging software, whether it be the software that came with your scanner and digital camera or the software you use to edit images (such as Adobe Photoshop).

The following chart provides the basic guidelines for each type of material that might be digitized for the New Hampshire History Network. The size of the item will impact these recommendations. More information on each type follows the chart.

Media Type	Minimum Scanning Resolution
Objects	12 to 18 megapixels
Textual Records	400 to 600 ppi
Maps/Broadsides/Oversize	400 ppi
Photographs	400-800 ppi
Film Negatives	800-1200 ppi

### **Objects**

The digitization hardware, i.e., the digital camera, will impact the resolution of the image that will be created. The New Hampshire Historical Society currently digitizes at 18 megapixels = 5184 pixels x 3456 pixels. This is the resolution based on the current technology used at the New Hampshire Historical Society. Individual institutions are advised to capture the highest size/quality possible using their current technology.

### **Textual Records Image Resolution**

Textual records include manuscripts and books. It is typically sufficient to scan textual records at 400 to 600 ppi, but if the writing or type is small, it might be necessary to scan at a higher resolution, up to 600 ppi.

## **Photographs**

Photographs contain visual material using color, texture, lighting, and variations in subject. For this reason, it is often necessary to scan photographs at a higher resolution. 400 ppi is typically the minimum and will provide a good quality digital image. However, increasing the ppi will enable the viewer to get a richer experience from the photograph especially if the image is small and/or has a good amount of detail. For example, the New Hampshire Historical Society scanned all of its stereograph collection at 800 ppi.

## **Maps/Broadsides/Oversize**

Maps, broadsides, and other oversize materials usually do not require a scan over 400 ppi unless the item contains large amount of small details. The file size of this type of material is important to remember while scanning. The image should be of good quality, but should not be so large that it is difficult to load.

## **File Format**

Files should be saved in 24-bit RGB color JPEG (Joint Photographic Expert Group) format. This is the image that will be used on the New Hampshire History Network. It is also good to save the image in TIFF (Tagged Image File Format) format, with an IBM Byte Order (rather than a Macintosh Byte Order) for reproduction and preservation purposes. The New Hampshire Historical Society uses IBM Byte Order based on its hardware. This choice of Byte Order is up to the institution.

## **Additional Resources for Digitization Standards**

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Federal Agencies Digitization Guidelines Initiatives -

<http://www.digitizationguidelines.gov/guidelines/digitize-technical.html>

American Library Association-

<http://www.ala.org/alcts/resources/preserv/minimum-digitization-capture-recommendations#manuscripts>

Smithsonian Institution-

<http://siarchives.si.edu/services/digitization>