

DIGITAL IMAGING BASICS for KILGARLIN CENTER CONSERVATION STUDENTS

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As an essential component of their coursework, conservation students at the Kilgarlin Center must create online portfolios that display the book and paper treatments they've performed. The digital photographic documentation for these treatments is extensive, and the conservator student must then manage, edit, and process these images for display on the web. In addition to the more general "Digital Imaging Basics" tutorial, it seemed appropriate to provide a digital imaging introduction and overview that might help to meet the specific needs of the conservation students.

SHOOTING

A Note about Treatment Photos: Much time and hassle will be saved in post-processing and - editing if you spend extra effort during your photographic setup. White balance using the designated card whenever you change your lighting setup, and try to remembering how your lights were set for the before treatment shots. These things will help to keep your images looking consistent.

Image Quality/Resolution with the Nikon Coolpix 4500. We usually use the FINE setting for conservation treatment photos. Please see the general digital imaging basics tutorial for definitions of these and other terms.

Compression	File Format	Purpose	Approximate File Size	Approximate No. of Pictures per 128 MB Card
HI (uncompressed)	TIFF	Maximum image quality.	9.9 MB	12
FINE (compressed 1:4)	JPEG	Fine image quality. Suitable for enlargements or high-quality prints.	1.7 MB	74
NORMAL (compressed 1:8)	JPEG	Normal image quality, suited to most applications	1.3 MB	98
BASIC (compressed 1:16)	JPEG	Shoot more images that are suitable for email and web use.	796 KB	160

The Nikon Guide to Digital Photography with the Coolpix 4500 Digital Camera.

Image Size with Nikon Coolpix 4500

The camera is usually set to the 2272 x 1520 (3:2) image size setting for conservation treatment photos. This is the largest image size available that has the same height and width proportions as standard photographs taken with a 35mm camera.

STORING

File Size

Image file size depends on both the image quality and the image size. Image file size is an important thing to keep in mind when considering how many images can be stored on the digital camera's memory card, burned onto a CD, or uploaded onto your server space. Images created in the FINE and (3:2) settings average approximately 1-2.5 MB. These files are fairly large and will need to be resized for use on the web.

Short Term Storage

You can save your images to the hard drive temporarily. You can also upload your files to the UT server space using Webspaces, or to the iSchool server space using Fugu. (Please see the corresponding tutorials for more information.) Digital images can eat up your server storage quickly so these venues are often used as temporary storage options.

Long Term Storage and Backup

When you decide to backup your hard drive files, or if you just want to transfer them, you can burn them in a number of different ways to a CD or DVD. The major difference between CDs and DVDs is the amount of storage space they hold. CDs have about 700 MB storage capacity and DVDs have 4.7 GB storage capacity (almost 7 x that of a CD). You may also find that not all computers can read or write DVDs but most can read and write CDs, and so keep this in mind when planning to burn your files to a digital medium.

IMAGE EDITING

With treatment photos, or any large collection of photos, the less editing you have to do, the better. Editing takes time and if you choose to save your originals (as recommended,) you'll end up with multiple versions of the same image that you'll then have to store and manage. There are ethical implications of editing treatment photos as well.

That said, there are a number of program options for image editing. Programs such as Preview, iPhoto, or the proprietary software associated with the camera, among others, can be used for basic image editing. For additional and more complicated image editing options, such as adding text and automatic straightening, Photoshop and the free, open-source program, the Gimp, are where to turn. Many conservation students have had success using Photoshop Elements, a slightly less complex but still effective version of Adobe Photoshop. Please see the graphics tutorials for introductions to these programs.

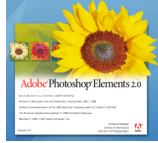
IMAGE RESIZING

As stated previously, you should keep full sized copies of your originals, but you *will* need to resize your images for display on the web. Most treatment photos associated with conservation portfolios are displayed on the web in two sizes: a small thumbnail, that typically ranges from 100-300 pixels, and a larger blowup image that generally ranges from 600-800 pixels. Unless you choose to use an automated image display feature (see Dreamweaver's Web Photo Album,) you'll have to resize your images to both of these sizes if you elect to display your images as thumbnails that link to blowups.

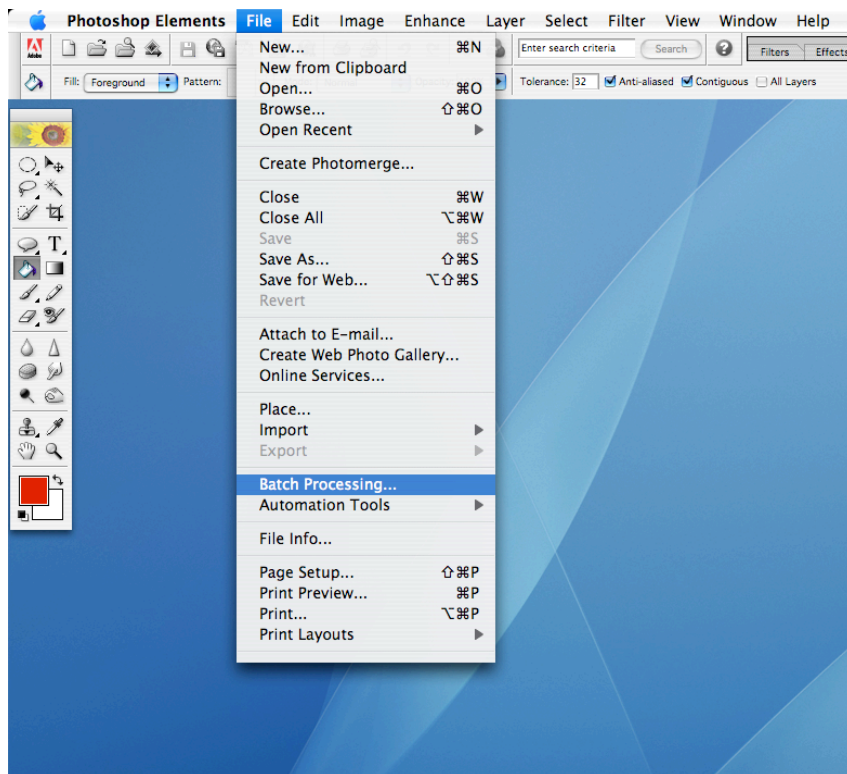
Batch Processing

The Batch Processing feature in Photoshop Elements provides a quick and easy way to apply standardized changes to size, quality, and file format to a number of images. For example if you wish to convert all of your before treatment images to a medium quality JPEG that is 100 pixels high, you can use this feature.

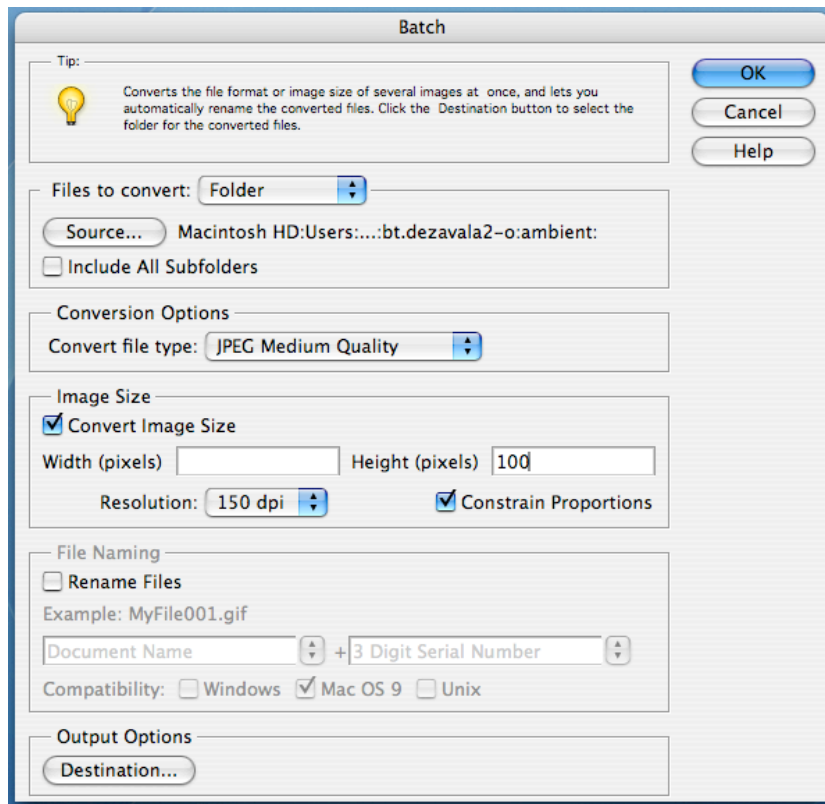
1. First, place all of the images you wish to alter in a single folder.



2. Open Photoshop Elements from the Applications menu in your finder.
3. Select File--> Batch processing.

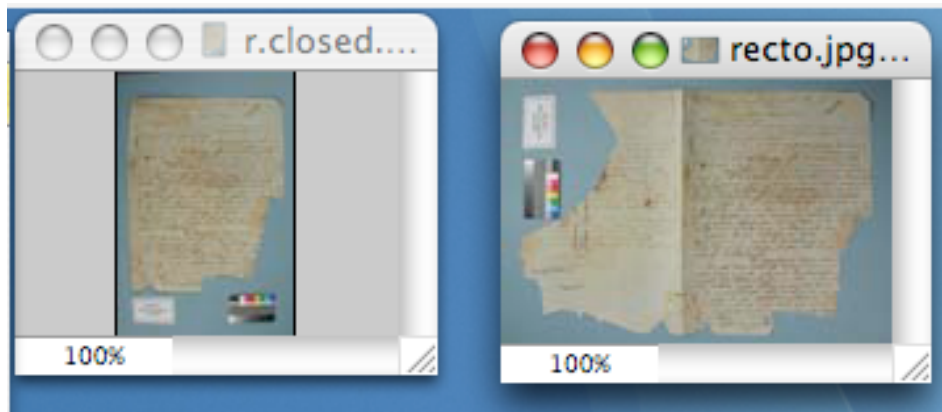


4. Select the destination folder where you've placed your images.
5. Select the file format you wish to convert to. (You may want to select "Medium quality JPEG" for digital images that will be displayed on the web.)
6. Set the desired height or width dimensions of your images.
7. Rename the files, if you wish.
8. Choose a new folder or destination for your revised images.

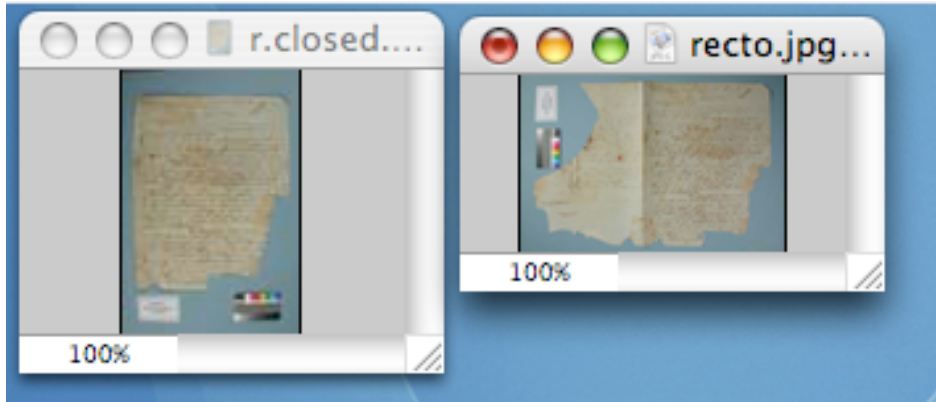


9. Click on Okay at the upper right. Photoshop Elements will apply the desired changes to your images.

If you batch horizontal and vertical images together, the two types of images will be different sizes but the same height or width after processing. You may find that having both horizontal and vertical images of the same height facilitates display on the web, particularly if you will be inserting the images into the same table row. (Please see the Dreamweaver tutorial for more about inserting images into tables.) For example, these two images had original (height x width) dimensions of 747 x 500 pixels and 500 x 747 pixels, respectively. When batch processed together they look like this:



They are the same height: 100 pixels, but their width dimensions vary. Alternately, you may choose to batch process horizontal and vertical images separately or to wait till after resizing to rotate your images. If this is done, your images will look like this:



FILE MANAGMENT

Managing digital image files can be a challenging task, particularly if you have many files and multiple versions of the same image. Having an organization scheme in mind before you start accumulating vast quantities of digital images is a good idea. Changing your organization scheme after creating web pages can cause problems (your links may not work if you move the images around after inserting them in to your web page.) You may also choose to use an image file management program, such as iPhoto. iPhoto can help you manage large quantities of images, and it also has a number of storage, display, and search options. Please see the iPhoto tutorial for more about program.

METADATA

You may find the metadata associated with digital images useful. The amount and type of metadata depends on the software and hardware associated with the digital capture (camera or scanner) and conversion. To see information such as the image file size and the date of creation: Right click on an image, or hold down the Control key on a Mac and click with the mouse, and then select “Get Info” from the menu that appears.

