



SISP requires you submit figures in electronic format. This guide will help with the basics of electronic art file preparation for printed publications.

SISP currently accepts two file formats for image submission:

TIFF (Tagged Image File Format)

EPS (Encapsulated PostScript)

Resolutions (in “dots per inch”) for TIFF files should be:

300 dpi for halftones (color or grayscale)

600–900 dpi for combination halftones (halftone with text)

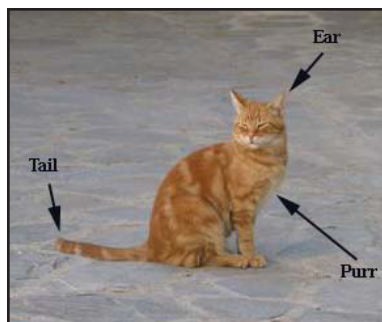
1200 dpi for line art (black and white, no shading)



This is an example of B&W line art. The best format for it is EPS with vector graphics (see glossary). If using TIFF, it should have a resolution of 1200 dpi.



This is an example of a halftone. The best format for it is TIFF. It should have a resolution of 300 dpi.



This is an example of a combination halftone. TIFF and EPS formats work equally well with combo halftones. If using TIFF, it should have a resolution of 600–900 dpi.

Dos and Don'ts

Do have your hard copy images scanned by Smithsonian Photographic Services (SPS) if you don't already have them in a digital format. SPS provides photographic support for Smithsonian administration, museums, and research centers. You can contact them at photos@si.edu.

Do name your files with the first author's surname, and the figure number. For example: Smith.Fig.1.tif. or Doe.Fig.2c.eps.

Do combine multi-component figures into one file. Components should be labeled a, b, c, etc. in the file, as well as in the file name.

Do make sure you set the correct TIFF mode for your image type.

B&W line art = *Bitmap* mode

B&W halftones and combo halftones = *Grayscale* mode

Color halftones and combo halftones = *CMYK* mode

Do size your art at 100% of publication size. SISP's full-page text area (where text and figures appear) measures 7.25" × 9.625".

Do make sure your image is cropped closely with no excess white space.

Do use the same font type for all text in figures.

Do carefully consider eventual reduction when choosing font and font characteristics (e.g., bold) in figures.

Do submit PDF copies of art files in addition to TIFF and EPS files, if possible. PDFs are more easily distributed to peer reviewers. PDFs are acceptable only for review.

Line art example: Detail from Map 4, Appendix A of *Glorious Mud!* by Gus and Ora Van Beek, SISP, 2007. Halftone and combination halftone examples are courtesy of Deborah Stultz.

Don't use RGB color mode for art files.

Don't use or copy images from the web. Internet graphics are typically 72 dpi (acceptable for computer monitor display), so they are not appropriate for print reproduction.

Don't “res up” art files. If you have a scan that was saved at a resolution lower than required by SISP, the only way to make it high resolution is to re-scan. Adjusting the resolution field in the existing file does not create more dots per inch, so the file remains low resolution.

Don't submit JPEGs. They do not include enough data to ensure quality printing. JPEGs are appropriate for computer monitor viewing, but not print reproduction.

Don't create graphics in MS Powerpoint, MS Word, WordPerfect, or other non-graphic applications.

Don't scan originals of poor quality. Image quality will not be improved just because it is made digital; a low-quality original will yield a low-quality reproduction.

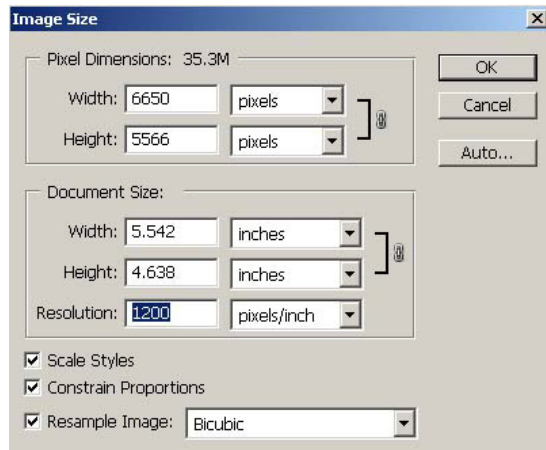
Don't email art files. You may provide files on a CD or DVD, or you may upload them to SISP's FTP site. Don't know how to FTP? Contact Debbie Stultz at schol_press@si.edu.

Don't provide color versions of images that will be printed in black and white. Converting CMYK files to grayscale may cause loss of contrast and reduced crispness in the final product. Scan as a B&W image instead.

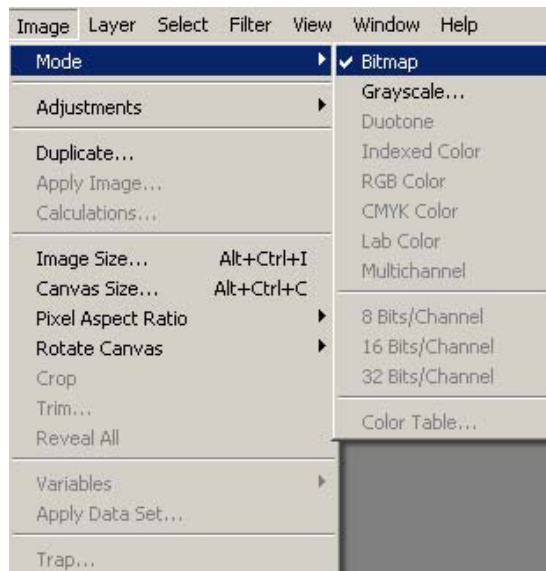
Navigating Adobe Photoshop

Line Art

- Open your graphic in Adobe Photoshop.
- Verify the resolution is correct. Go to Image > Image Size. For line art, the resolution should be 1200 “ppi” (same as “dpi”).



- Verify that the mode is Bitmap. Go to Image > Mode.



- Make sure your image is cropped closely (no excess white space).
- Save the file as a TIFF file. Go to File > Save As.

Grayscale Images (Halftones)

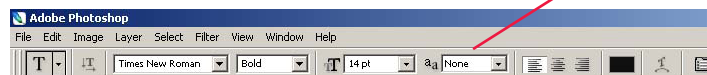
- Open your graphic in Adobe Photoshop.
- Verify the resolution is correct. Go to Image > Image Size. For grayscale images, the resolution should be at least 300 dpi. If it is a combination halftone, it should be 600–900 dpi.
- Verify that the mode is Grayscale. Go to Image > Mode.
- Make sure your image is cropped closely (no excess white space).
- Save the file as a TIFF file. Go to File > Save As.

Color Images (Halftones)

- Open your graphic in Adobe Photoshop.
- Verify the resolution is correct. Go to Image > Image Size. For color images, the resolution should be at least 300 dpi. If it is a combination halftone, it should be 600–900 dpi.
- Verify that the mode is CMYK. Go to Image > Mode.
- Make sure your image is cropped closely (no excess white space).
- Save the file as a TIFF file. Go to File > Save As.

Adding Text to Line Art

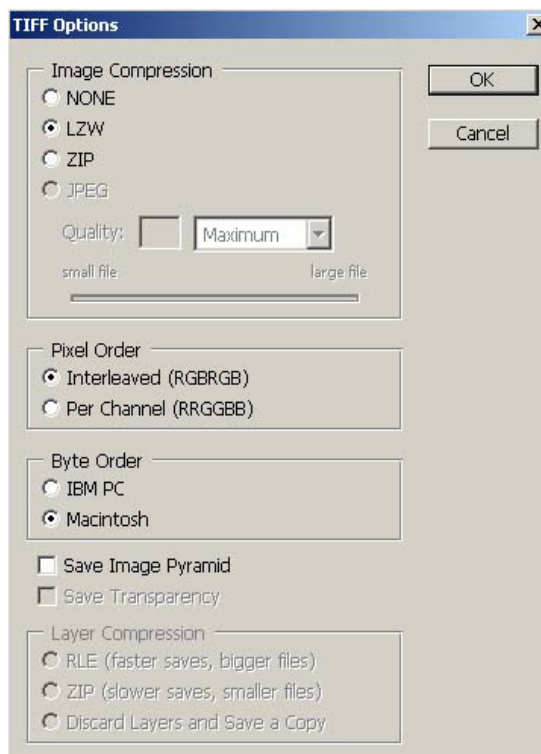
- Open your graphic in Adobe Photoshop.
- Select the text tool from the tools palette window (usually on the left of the screen).
- Select the font and font characteristics you want. Anti-aliasing should be set to “None.”



- Click in your image and begin typing.
- When done adding text, flatten (or compress) your image. Go to Layer > Flatten Image.
- Verify resolution and mode (see above).
- Save file as a TIFF (below).
- If you wish to add text to a halftone, create an entirely new image (a combination halftone) at 600-900 dpi.

Saving Your File as a TIFF

- Go to File > Save As.
- Select TIFF and set the TIFF options as shown below. (These options will be the same for Mac and PC users.)



Digital Art Glossary

Bitmap: an image format that defines an image in terms of black and white; used for line art.

CMYK: Cyan, Magenta, Yellow, Black—the four colors of four-color process printing.

Combination halftone: an image comprised of both halftone and line art elements (e.g., images with labeling); line art elements must be crisp so print reproduction does not appear jagged

DPI: dots per inch; the number of dots defined in a square inch; DPI is equal to the resolution of an image.

EPS: Encapsulated PostScript; usually used for vector graphics, line art, charts, graphs, and bitmap images.

GIF: Graphic Interchange Format; an image file format for computer use; usually low resolution.

Grayscale: an image mode that defines the image in terms of shades of gray.

JPEG (or JPG): Joint Photographic Experts Group; JPEG is a standards committee that designed this image file format known as lossy compression, which deletes information from an image that it considers superfluous; good for images on the web, but not for printing.

Line Art: illustrations or figures comprised of text, lines, dots, and dashes in solid blacks and whites, with no gray values.

Raster Graphics: the use of a rectangular grid (aka pixels) to represent images.

RGB: Red, Green, Blue. This is the color process used by computer monitors. Not an appropriate mode for print reproduction.

TIFF: Tagged Image File Format; an image file format that accommodates a large amount of data (or image information).

Vector Graphics: the use of points, lines, curves, and polygons, which are all based upon mathematical equations (instead of pixels), to represent images in computer graphics. Best for black and white line art.

Preparing Images in Adobe Illustrator

When creating graphics in Adobe Illustrator for printing, it is crucial that the person creating the illustration has a thorough understanding of the details of graphics design. There are complex problems that can occur if output paths are set up improperly, colors are indicated incorrectly, or other elements are constructed inadequately. The more complicated the illustration, the greater the possibility of problems at the printing stage. Therefore, we recommend that authors consult with SPS for creation of images in Adobe Illustrator.