

GSA Publications

FIGURE GUIDELINES

All illustrations, whether line drawings or photographs, are considered figures. GSA accepts only electronic files of figures. For manuscript submission purposes, figures may be submitted as PDF, TIFF, GIF, or JPEG files. **PDF files are preferred.**

Note: If your paper is accepted, you will be asked for the native files of your figures, meaning the file type in which the figures were originally created. But, only the 4 types above are accepted during submission. For the types of native file types allowed if a paper is accepted for publication, see the Accepted Publication-Quality Figures section below.

Not accepted: Figures in MS Word, PowerPoint, or LaTeX format.

To ensure the best possible results, please prepare art for illustration according to the following guidelines.

GENERAL INFORMATION

- Compare the look and style of your figures with those in articles from the GSA publication where you are submitting a paper.
- Label all figures with author name, figure number, and manuscript number, outside of the image area.
- Keep the sizing guidelines in the Style section in mind.
- If figures are reproduced without change from another publication, acknowledgments must be clearly made. The burden is on the author to obtain copyright permission, if this is needed. The following conventional designations should be used:
 - “After” = possible redrafting, but no information change.
 - “Modified from” = some change.
 - “Adapted from” = radical changes.

GUIDELINES

Lines and Labels in Graphs, Maps and Legends

- Use clean black lines, no finer than 1 point and no greater than 2 points.

— 1 pt. line — 2 pt. line

- On maps, please include latitude (°N, °S) and longitude (°W, °E), a north arrow, and a scale in kilometers.
- Graphs must have all axes and lines labeled.

3300 Penrose Place, P.O. Box 9140, Boulder, Colorado 80301-9140, USA

- General titles of illustrations should appear in the figure caption, not in the figure itself.

Lettering

- Use a clear, sans serif typeface (Helvetica or Arial).
- All lettering should be between 7 point and 12 point type size.
- Try to keep all text in a figure (including axis labels, contour labels, latitude and longitude, scale text, inset text, etc.) around the same size to aid reducibility and/or enlargement.
- Avoid making the lettering too large for the figure. This can result in a "cartoonish" appearance.
- Avoid the use of boldface lettering because the open spaces in the letters tend to fill in when reduced.
- Place a white background behind lettering that crosses a dark or textured area in a figure.

Sizing

Do not size smaller or larger than these dimensions.

	Inches	Picas	Centimeters
Page width	7.125	44	18.5
Column width in a 3-column layout (1 pica between columns)	2.33	14	5.9
Column width in a 2-column layout (1 pica between columns)	3.5	21.5	9.1
Page depth	9.5	56.5	22.5

Preparing Images for All to See

(Excerpted and modified from: De Paor, D., Karabinos, P., Dickens, G., and Atchison, C., 2017, Color Vision Deficiency and the Geosciences: GSA Today, v. 27, no. 6, p. 42–43, <https://doi.org/10.1130/GSATG322GW.1>. Read the full text at <https://www.geosociety.org/gsatoday/groundwork/G322GW/article.htm>.)

Color Vision Deficiency (CVD) is a common workplace disability. Summarized here are guidelines for creating illustrations that will look great to everyone, regardless of their ability to perceive certain colors. (Resources where you can test images for accessibility include vischeck.com, color-blindness.com, colorbrewer2.org, contrastchecker.com, Sim Daltonism, and Adobe Illustrator.)

- **Select graphic styles for accessibility:** Make legends clearly readable and use clearly distinguishable colors. Compare how your data are shown in various formats (pie chart vs. bar chart, for example) and choose the presentation style that is most likely to be clear to all.
- **Redundancy:** Distinguish items by more than color. Use circles and squares and solid and dashed lines. Label items directly, not in a key.
- **Color choice:** Colors differing only in hue, especially percentage red or green, cause problems. Dark red–dark green, blue–violet, red–orange, and yellow–green confusion is common. Magenta and turquoise are good choices because people with red–green–Color Vision Deficiency (RG-CVD) can see the blue component.
- **Thickness, brightness, and contrast:** People with RG-CVD cannot see thin lines or small polygons because insufficient functioning retinal cones are activated. Make lines thick and use high-contrast text,

arrows, or other shapes. Drop-shadows and boxes make text stand out. Saturation and brightness variations are critical.

- **Avoid rainbow color maps:** Despite copious research showing that it is the worst possible choice, the rainbow color map continues to be popular. Although violet and red are the extremes of visible light, they do not convey different magnitudes to the brain. A diverging color map does (www.kennethmoreland.com/color-maps/).

Image Reproductions

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ACCEPTED PUBLICATION-QUALITY FIGURES

When your manuscript has been accepted, you will be asked to provide publication-quality graphics. We require two electronic files for each figure: one in the program in which it was created (native format), and one in EPS, TIF, or PDF format. Generally, photos should not be scanned at higher than 600 dpi (dots per inch); line art is usually good at 1200 dpi.

The following native graphics formats work best, as long as the version of the application is noted and the file is labeled with the correct extension:

- **Adobe Illustrator (.ai).** This is the most preferable file format, but this refers to figures actually created in Illustrator, not figures that were created in another program and then imported to Illustrator.
- **Canvas (.cvs).** Only Canvas version 9 or newer is accepted. Transparencies and drop-shadows tend to cause conversion issues in Canvas; please avoid these when possible.
- **Freehand (.fh).** Only Freehand version 9 or newer is accepted.
- **CorelDRAW (.cdr).** Only CorelDRAW version 13 or newer is accepted.
- **Photoshop (.psd).** Most Photoshop files can be used with few problems. Just make sure that the resolution is between 300 and 600 dpi for photos, or 1200 dpi for line art.

Files created in any application other than those listed above should be saved as a TIF or EPS and must be between 300 and 600 dpi resolution at the desired print size. Label figure files with author name, figure number, and manuscript number. We do NOT accept low-resolution 72 dpi images (no web images).

Best Resolution

For all figure files, line art should be saved at 1200 dpi at 100% size. Standalone photos should be saved at 300 dpi (or higher). Color images should be saved at 350 dpi (or higher) at 100% size.

Placed/Imported Images

All images that have been placed or imported into your figure file must accompany this file (i.e., if you import a photograph into illustrator called photo.tif, you must supply this photo.tif electronic file along with your Illustrator file).

Digital Camera Images

Files created by digital cameras are preferred as TIFF or RAW format (though JPEG is acceptable) and must be at least 300–600 ppi when scaled to the desired print size (be sure that your camera is set for highest resolution for best results). We do not accept 72 dpi photo images.

Invisible Elements

Many graphics files contain unnecessary "invisible" elements. These are sometimes imported graphics that the creator of the file has traced over and then set not to print. To save time and to cut down on file size, delete the unnecessary element.

Color

Submit your figures in black and white unless you are willing to be responsible for the cost of publishing in color. Upon acceptance of your manuscript, you will be supplied with an exact cost for color.

For color figure costs, see [Author Information at a Glance](#).

Fill Patterns

- If possible, use hatched patterns instead of dot fill patterns.
- Dot fills must be between 20% and 70% black.
- Any fills that represent different values in the same illustration must differ by at least 20%. For example, fills that are 20% black and 30% black must not be used on the same figure, but fills that are 30% black and 50% black are acceptable for use on the same figure.

Loose Inserts/Supplements

Loose inserts/supplements (maps, seismic reflections, cross sections, etc.) may be included. Sheets may be printed on one or both sides, in color or in black and white. Two sizes of inserts are available: 11 × 17 and 25 × 38.

When submitting a new or revised manuscript, authors must submit electronic file(s) of the insert as a "supplemental file." If a paper is accepted for publication, authors must provide both electronic files and hardcopies, sized to the exact publication size.

GSA Books can also publish a CD-ROM or DVD (that includes, for example, maps, seismic reflections, cross sections, etc.) to accompany a book. Authors must provide both a final electronic file in PDF format and a hard copy. Any changes that must be made may incur charges. Authors must pay all costs for CD-ROM/DVD duplication.

Authors must pay all costs for inserts. These costs include press preparation, printing, folding, handling, and inserting. For questions about inserts or pricing, contact:

Geology: geology@geosociety.org

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