



Government of **Western Australia**
Department of **Mines, Industry Regulation
and Safety**

Preparing graphics for manuscripts



**Geological Survey of
Western Australia**

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Preparing graphics for manuscripts

Graphics used in Geological Survey of Western Australia (GSWA) products are broadly classified as figures, photographs or plates. Figures include line drawings and photographs that can be placed within the text, immediately following reference to them. Plates are usually illustrations larger than a two-page spread that accompany a manuscript. Red text is hyperlinked.

For graphics queries, contact [Graphics Manager](#).

Acknowledgements

It is the author's responsibility to ensure that permission to use illustrations from other sources is obtained and that the source is properly acknowledged. The acknowledgement should be given as follows:

after Smith (1990) — illustration reproduced, possibly redrawn, no change in information (permission of the original author is required)

modified from Smith (1990) — some changes from original

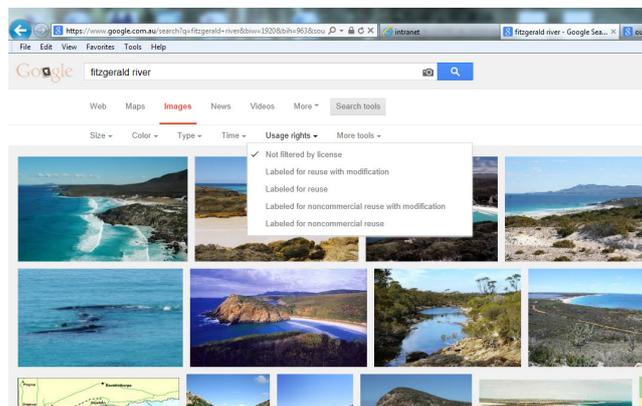
adapted from Smith (1990) — radical changes to original

Copyright and permission

Authors should be aware that any images downloaded from the internet to be used in manuscripts, documents or presentations are subject to copyright. Do not assume that if you cannot find an attribution that the image is free to use. All images must include an acknowledgement of source.

Images are often distributed unauthorized via the internet including on Facebook and YouTube so that by the time you see them, they may look as if they are legitimately available and free to use. You must do more research and drill down to discover the actual owner of the image, whether payment is required, and whether you are free to use the image but with the proper attribution. Some copyright holders allow their images to be used through a Creative Commons licence. The image below was listed on Google images as a free image. As you will see, the image is the property of Brian Voon Yee Yap. However, as the copyright holder, he has made his image freely available. This free image still requires attribution specified by the licensor.

Google offers a simple usage-type filter mechanism as part of their advanced image search function. This allows you to search for images based on their usage rights:



Diagrammatic cross-sections

Guidelines for the drawing of cross-sections are similar to those for maps. The need for simplicity, appropriateness, and consistency of symbols, legends, and annotation remains the same. Vertical and horizontal scale bars are needed (or alternatively, a statement of vertical exaggeration). Cross-sections are subject to fairly stringent cartographic conventions, which need not concern manuscript authors. The best policy is to avoid drawing strictly (or even approximately) north–south sections if at all possible, label the ends appropriately, and view from the south.

Equations

If you are using equations in your manuscript, please submit these as individual PDFs or image files (EPS). Using Equation Editor in MS Word is fine; however, this does not transpose over to InDesign and has to be recreated.

Figures

When preparing manuscripts for publication, discuss any cartographic requirements for illustrations or images with the Graphics manager or with the Editing and Publishing (E&P) manager, so they can assist you in getting your material ready for publication.

The Graphics section can save you time, and help you prepare illustrations by using existing figures, accessing corporate data layers and images, compiling fair drawn figures from sketches and images, or finalizing your artwork to conform to house rules.

If you intend to prepare your own figures, you must have Graphics finalize them. Artwork should be supplied in one of the following formats:

- Corel Draw CDR format, version 2019 is currently being used for the preparation of artwork
- ArcMap MXD format, with any shapefiles used in a GSWA network drive location, to allow viewing by other computers
- Microstation DGN format
- An EPS or PDF export from your drawing program.

Images or photographs supplied for an illustration should be:

- at least 300 dpi (dots per inch) for the size it is intended for use
- RGB or CMYK colour format (either is acceptable)
- free of annotations or photograph date stamps. Any annotations required on an image should be submitted separately, so they can then be added by a cartographer without affecting the integrity of the image to be used.

Illustrations submitted to Graphics should be accompanied by a list of captions. This can help cartographers appreciate the intent of a diagram and allow them to emphasize the more important features. The page dimensions for the illustration should also be indicated by the author, taking into account the space required for a caption, and page margins.

Figures must not exceed the following specifications:

- Single-column figures 81 mm wide x 237 mm high
- Full-page portrait figures 168 mm wide x 237 mm high
- Full-page landscape figures 247 mm wide x 158 mm high

Fair drawing of diagrams will not be started by Graphics until Assistant Director approval to edit has been received, and the manuscript has been handed to E&P for editing, except by explicit prior arrangement with the Assistant Director. This is to avoid preparing illustrations for manuscripts that may not be published for some time. It also ensures time is not wasted with excessive or inappropriate graphics. The **Graphics Manual** may be helpful in the preparation of figures.

All figures should be numbered, using Arabic numerals, in the same order as they appear in the text. Figures should only be numbered 5a, b, c if they are parts of one figure and will appear on one page.

To ensure that text and illustrations are compatible, illustrations should be planned at the same time as the text. Please ensure that the main features discussed in the text appear on the appropriate diagrams — place names on maps, main stratigraphic units on sections and so on — and that spelling is consistent. Names of current lithostratigraphic units, tectonic units, and events need to be consistent with entries in the Explanatory Notes database.

Captions

- For GSWA publications, figures are drawn without captions. Captions are considered to be part of the text and are typeset at the same time as the text.
- A figure and its caption should be self-explanatory.
- Avoid long and detailed figure captions. Ideally captions should not exceed 100 words.
- Place descriptions of symbols used in a figure on the face of the figure, in the form of a legend, not in the caption.
- Number part figures in lower case (e.g. Figure 3a). Part figures should also be labelled as a), b), and so on, on the figure.

Caption punctuation

Do not use a full stop after captions that are not complete sentences unless followed by a complete sentence that is also part of the caption, when a full stop is used in both cases.

Citing figures in text

The following shows how to cite figures in text:

The structural setting (Fig. 2) shows that... (preferred usage)

Or:

Figure 2 shows the structural setting

The Bunbury Basalt (Fig. 3c–f)... (preferred usage)

Or:

Figure 3c–f shows the textures of the Bunbury Basalt

The Bunbury Basalt (Figs 2 and 3c–f) is ... (preferred usage)

Or:

Figures 2 and 3c–f show that...

Coordinates in figures

In general, latitude and longitude should be used for regional figures, and where these figures cross MGA zones. Note that there are no spaces or commas in the coordinates using this format, e.g. 21°35'55"S, 118°24'45"E. For more-detailed figures within a particular zone, easting and northing coordinates are used, e.g. 496070E 6822730N. Convert all local or old grids into GDA94 (MGA) coordinates. All photographs should include coordinates for their location in the figure caption and WAROX site IDs where relevant.

In appendices

- Unlike figures in the main text, figures in appendices are not listed in the Contents page.
- Where there is only one appendix, call it Appendix (not Appendix 1); figures should be numbered as Figure A1.
- Where there are multiple appendices, the numbering of figures should reflect the appendix they are in, for example: 'Figure 2.1' (first figure in Appendix 2; not Figure A2.1).
- References to appendices should be made to an appendix as a whole — not to individual figures. If a figure is so important to the context of the manuscript, it should be included in the main text.

Google images in GSWA material

Google images can be used in GSWA publications under the following conditions:

- Google Maps and Google Earth images only
- GSWA (academic) publications only
- All uses of Google Maps and Google Earth and its content must provide attribution to Google and the suppliers, such as, attribute Google (e.g. © 2021 Google) and third-party suppliers (e.g. © 2021 Tele Atlas)
- For printed material ensure the display attribution is within or immediately adjacent to the visual
- For screenshots, the Google or Google Maps logo is not required but attribution must always be present. However, the reverse is not allowed — only including Google logo is not proper attribution, particularly when third-party suppliers were used for the Content
- When using Maps/Earth Content in print, any images used must reflect how they would look online

- Stitching printed images together from either Google Maps or Google Earth to create a larger image is not permitted
- Content from Google Maps or Earth content may not be used as a core part of printed navigational content, such as tour books, maps. Limited use, such as a single page in a promotional booklet for a geological location, is acceptable if it fits within the general guidelines described below
- Content from Google Maps and Google Earth may not be used in items for resale (i.e., t-shirts, beach towels, shower curtains, mugs, etc.).
This restriction does not apply to media such as books.

Judgement is based on Google Maps and Google Earth content rules and guidelines.

Graphs

The use of graphs to display numerical data can often be a more informative alternative than tabulation. In this case, graphs should replace, not duplicate, data presented in tables. Graphs may be submitted for drafting in MS Excel format.

The amount of detail required in a graph can vary considerably. Too many data points are difficult to reproduce and can often be simplified, without loss of impact, by the use of envelopes of data points. Rose diagrams and other polar graphs should be expressed in percentage and the number (n) of samples used in the analysis should be shown on the face of the diagram.

Line drawings

Most line drawings are maps, sections or graphs. All symbols and ornaments used in a drawing must be explained in a legend; conversely, all elements of a legend should appear on the drawing to which it refers. Line drawings should always be simple and uncluttered. Fine detail should be reserved for illustrations reproduced as plates.

Textual matter on the face of diagrams should, in general, be in uppercase and lowercase. It is helpful if authors identify the relative importance of annotations so that graphics staff can choose appropriate and consistent type sizes. Colour coding is a convenient way of achieving this.

Logos

Acknowledging third parties and use of logos

Reports and Records produced under the Exploration Incentive Scheme (EIS) are commonly written in collaboration with external authors from other organizations. From time to time, non-EIS Reports and Records may also be partly, or wholly, written by non-GSWA authors. Geological fieldwork may also have been carried out with the permission of, or under agreement with, traditional owners. External authors must be acknowledged by footnoting their institutions and addresses. Academic institutions, other government organizations, analytical laboratories, or traditional owners may be acknowledged either by adding logos, or with a line or two of text. In some cases, both logos and text are required.

Required logos should be detailed on the manuscript flow sheet. If no such information is included, and the manuscript includes non-GSWA authors or the title of the publication refers to isotope analysis or geochronology, the editor should check with the project manager or branch head to find out if logos are needed, and which.

Exploration Incentive Scheme

Publications that fall under the banner of EIS must include a logo for the Scheme. The logos will be placed on the front cover and similarly positioned on the inside cover. No text accompanies this logo.

Isotope and geochronology publications

Reports and Records that are primarily about isotope analysis, including U–Pb geochronology undertaken at the John de Laeter Centre at Curtin University, will include a logo for the organization or analytical laboratory. The following text and logo(s) should be placed on the imprint page, below the standard statement about grid references (Reports) or publication disclaimer (Records).

Depending on specific content, most GSWA and external publications that include geochronology or isotope data should incorporate one or more acknowledgements and logos:

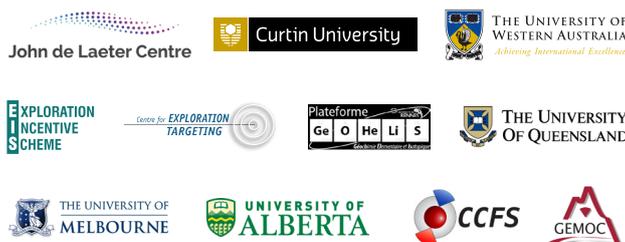
Isotope and element / U–Pb analyses were conducted using the GeoHistory laser-ablation ICP-MS and SHRIMP ion microprobe facilities at the John de Laeter Centre (JdLC), Curtin University, which are operated with the financial support of the Australian Research Council and AuScope National Collaborative Research Infrastructure Strategy (NCRIS). [edit red text as required]

The TESCAN Integrated Mineral Analyser (TIMA) instrument was funded by a grant from the Australian Research Council (LE140100150) and is operated by the John de Laeter Centre, Curtin University, with the support of the Geological Survey of Western Australia, The University of Western Australia and Murdoch University.

Lu–Hf measurements were conducted using LA-ICP-MS at the ARC National Key Centre for Geochemical Evolution and Metallogeny of Continents (GEMOC), via the ARC Centre of Excellence in Core to Crust Fluid Systems (CCFS), based in the Department of Earth and Planetary Sciences at Macquarie University, Australia.

Isotope analyses were funded in part by the Western Australian government Exploration Incentive Scheme (EIS).

Staff at the Geochronology Laboratory of the Geological Survey of Western Australia are thanked for their diligent efforts in separating minerals for geochronology. (for external journal articles only)



The acknowledgement statements for external analytical facilities tend to change periodically, based on changes in funding sources, for example. Please ask a geochronologist for up-to-date advice on which acknowledgements and logos need to be included.

Maps

For maps that are to be interspersed with text, the essentials are:

- some indication of north (normally to the top of the map) — latitude and longitude (or MGA) annotations are preferred to a north arrow
- a scale bar
- sufficient topographic detail to locate geological features shown
- a legend with all units and symbols listed
- symbols usually conform to GSWA Geological Series map standards (see [GSWA geologic map symbology](#)). New symbols need to be approved by the Chief Geoscientist
- screens consistent and appropriate for the rock type shown — use consistent screens or symbols for the same rock unit or feature in a series of drawings
- simplicity — map figures should convey geological concepts; they are not navigational aids. Such detail should be reserved for plates
- names on maps should be consistent with names in manuscripts (e.g. '3 Corners Well' on the map should not appear as 'Three Corners Well' in the manuscript, or vice versa). In rare cases, a long name (e.g. 'Government Well') may be abbreviated (to 'Govt Well') on the map due to space constraints
- names on maps should be current and consistent with those in the Explanatory Notes database
- use small caps when citing map names (other than in references): KALGOORLIE
- use SF 51-5, not SF 51-05 or SF51-5
- labels should start with a lower case letter unless it is a formal name, e.g. breakup unconformity, top Eneabba Fm., Eneabba Fm.

Photographs

Photographs for publication should be of the highest quality. Poorly exposed, out-of-focus photographs will not be accepted. Digital images (either JPG or TIFF format) should have a resolution of at least 300 dpi, and image dimensions equal to, or greater than, the intended final publication size (note: most photos are published at 81 × 60 mm — 300 dpi).

Authors should provide printouts and digital versions of each photograph. Prints should not be trimmed. Many photographs need to be cropped to enhance their subject, in which case crop marks should be clearly marked on the printouts. Similarly, if artwork is required on the face of the photograph (such as arrows, scale bar) it should be annotated. Printouts should be marked with a figure number and an indication of 'way up' on the page.

Scale bars should be added to photographs that include an ambiguous size reference within the frame (they can be marked on photocopies supplied). In particular, photomicrographs require a scale bar — not a magnification factor.

All photographs should include coordinates for their location in the figure caption. Photographs of fossils used to illustrate systematic paleontological works are a special case and a different format applies. Authors of such works should consult with E&P at an early stage.

Plates

The finished size of most plates (maps or cross-sections) is predetermined by the scale required and the area of coverage, or in the case of series maps, by convention. The majority of plates that accompany GSWA publications are geological maps. Those that are members of a series (e.g. 1:100 000 or 1:250 000 series) have well-defined specifications for layout. For other 'special' maps, the boundaries of which do not necessarily conform to the MGA, as well as plates other than maps (cross-sections, correlation charts), it is essential to discuss layout (size, style) with both cartographic editors and map editors before compilation begins.

The guidelines given above for preparation of line drawings apply equally to plates. However, plates carry the following additional features:

- a title panel with a brief but descriptive caption
- authorship and date of compilation with a recommended reference
- division and department logos (plus others as required)
- a border around the perimeter of the drawing
- identification of the publication with which the plate is associated.

Content and layout of the plate must be approved by the Project manager and Director before digitizing proceeds. Most plates are produced by Mapping and Events.

Whether they are series maps (1:250 000, 1:100 000) or project maps (of a scale determined by the scope of the project), coloured maps follow a different and more complicated route from author's desk to publication than do other types of illustration.

Line drawings that are too large to be included within text are published as plates. They may be drawn by Graphics or, depending on their style and complexity, by Mapping and Events.

For more information see [Graphics Manual](#) or contact [Graphics Manager](#).