



Scanning images

This advice sheet is for use by people who are scanning documents and photographs for deposit with the cultural heritage archives of Groote Eylandt (currently, the Ajamurnda project).

Device

If at all possible, and if the document/photo is movable and able to be laid flat, use a flatbed scanner, not a camera or phone. At last resort, if using a camera or phone, see the sections **Document preparation** and **Lighting** below.

Document preparation

Blow away any dust or dirt on the item before scanning or placing on scanner. Clean the scanner glass if needed.

If the item to be scanned has many pages:

1. if possible, separate the pages so each can be laid fully flat (e.g. if the pages are in a folder, or if you have a spare copy so that you can detach/cut off each page)
2. if the pages cannot be separated but the object (book/magazine etc.) can be squashed along its spine, keep the spine squashed as flat as possible (and completely still) during the scan. It may help to put a heavy object on top, or to hold down with your hand (even if this means leaving the cover up - in which case shield your eyes from the scanner's light)
3. if the pages cannot be separated and the object cannot be squashed flat (e.g. it is a valuable book, or would get damaged in the process), then you need to prop it open and photograph each page separately. This generally requires specialist equipment and/or setup, such as a camera stand, trays, props, clips and glass sheets to hold the item flat and at a suitable angle, together with suitable lighting

If the object is too big for the scanner:

4. scan in overlapping sections (which can be joined together later in software); or photograph it using suitable equipment (see 3. above)

Scanner settings

Available settings will depend on the model of scanner used. We recommend the following settings:

5. always choose "colour picture", never greyscale or black and white. Your scanner may list this option as something like "millions of colours" - always choose "millions" of colours, not less.
6. resolution - also called DPI or PPI (dots per inch or pixels per inch): ideally, for preservation and archiving, choose a resolution of 600 dpi. In most cases, there is no advantage in choosing a higher value. For effective printing, you need a resolution of at least 250-300 dpi (depending on the size of printed page), and this resolution will often be sufficient for most purposes, including preservation and archiving of ordinary documents (but for special manuscripts and artwork, stick to the higher resolutions).
7. cropping: some scanning software will provide a cropping box so that you can capture only a certain part of the whole image. If you scan something like a book, make sure to include the whole book object, including any visible margins, edge etc., not just the printed section. If in doubt, scan more rather than less, because the image can be cropped later.

Do not set the scanning software to modify the images (such as modify brightness or contrast).



File format and file name: after scanning, you need to save the image, and choose a format and filename. See sections on **File formats** and **File naming**.

File formats

It is important to choose the correct format for your image. Typically, the scanner will initially capture the image in a raw or "neutral" form; the file format is selected only when you save the file. Note that in some software, options for particular formats might need to be set separately before scanning and saving.

Choose a format appropriate to the content and purpose of the resulting image:

8. TIFF (or TIF): for archiving, and for high quality professional creative work with images. Stores the image more or less intact, typically with large file size.
9. BMP: similar to TIFF, stores intact uncompressed images and is generally more user-friendly than TIFF.
10. JPG (or JPEG): for photographs (images with many colours, and gradations of colours, and not predominantly with straight hard edges or flat areas of single colour). Note that JPG compresses images - it throws away some of the detailed information to compress (and partly degrade) the image. If offered a compression or quality level, choose a high level, e.g. 80%. You may be able to preview the image to be saved and compare it to the raw scanned image to ensure there is no visible degrading (look especially at edges, straight lines, and colour gradations).
11. PNG: for "flat" images, i.e. with large flat areas (e.g. white space) and sharp edges (especially text), and without a lot of colours or colour gradations. If unsure about any PNG options presented, choose PNG 24. In general, PNG files are compressed but not in a way that degrades the image.
12. GIF: as for PNG, but we recommend to use PNG rather than GIF.

There are also several other formats but for most cases choose either TIFF, JPG or PNG. Note that PDF is *not* an image format, but rather a "container" file for images, and the contained image might be in any of these formats. We recommend against storing images as PDF files.

File naming

All image files must have their correct extension, such as .tif or .jpg (or .jpeg). This will usually be added by the scanning software based on your choice of file format.

In most computers, upper case (e.g. BMP) or lower case (e.g. .bmp) are interchangeable in file names, but be consistent.

It is recommended that *before* saving images, you set up a suitable folder(s) on the receiving computer with folder names suitable for facilitating and managing your scanning project. For example, you might create a folder for each day of scanning, or for each item type.

Save each file to an appropriate folder, and give each file a name that makes sense within your task or context. The filename might, for example, contain one or more of the following:

13. item name (or shortened version), e.g. alc-letter.png
14. page or scan number, e.g. handbook-p09.bmp
15. date scanned, e.g. 2019-02-08-pay-claim.png
16. main content, if applicable, e.g. boobook-owl.jpg



General advice for filenames

For maximum durability and best practice, observe the following rules for file naming:

17. use only these characters: letter a-z and A-Z, digits 0-9, _ (underscore), - (hyphen) and one only full stop (.) which goes between the file name and the extension.
18. avoid using spaces, or any characters other than those listed above, in filenames.

Software and processing

You need some kind of software to manage the scanning process. There is a wide variety of software that you can use to undertake the scanning process, including software provided with your scanner. Image software such as Photoshop or GIMP can also be used to manage scanning.

Other generic and free software can also manage scanning; we recommend XnView or paint.net.

Once your item is scanned and the image is saved, we strongly recommend that you keep that "first scan", unmodified, as a reference image, and/or for archiving. In general do not use any software to modify the image except in the context of a particular task (e.g. for printing, or for web pages or inclusion in a publication). If working with a publisher, graphics professional or archive, ask them what they need rather than modify the reference image yourself.

Lighting

In all cases where a camera is used, rather than a scanner, pay particular attention to the lighting:

19. it should be relatively bright (perhaps located outside in daylight or near a window if you do not have suitable lighting equipment)
20. it should be even and diffuse (so that there is even lighting across the object surface, and there are no reflections)
21. check camera options for lighting type (daylight, fluorescent etc. and colour balancing)

Metadata

Metadata is the additional information (usually text) needed to identify and catalogue the item. In some cases, metadata is recorded in cameras and phones as information embedded in the image file, but this is not reliable; in most cases, a scanner is used which may not create metadata. Ideally, a scanning session should include the creation of a metadata document, such as a spreadsheet, containing metadata. The metadata document should be carefully preserved with the image files.

Recommended metadata for scanned images (where known):

22. file name of image of scanned item
23. name and description of object (including physical size, publishing information if relevant)
24. description of topic or content
25. names of people, places, events etc. mentioned in the item
26. owners, authors, illustrators etc. of object
27. source of object
28. date when original was created, obtained etc.
29. page number (if multiple page scans of single object)
30. who has undertaken scanning
31. scanning details incl. date and settings
32. cultural notes, sensitivities and/or access restrictions

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