GIMP for Artwork in Scientific Publications

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GNU Image Manipulation Program (GIMP)

- Raster graphics editor
 - Adobe Photoshop
 - VS vector graphics
 - Inkscape
- Open-source
 - Free (free speech) and Free (free beer)
- GNU/Linux
 - Available for macOS and Microsoft Windows
 - Many 3rd party plugins and filters
- Learning Resources
 - Tutorials, guides, YouTube videos, etc...



GIMP: Canvas and Layers

- Image and Layers
 - Image = canvas
 - Set dimensions, resolution, and color mode
 - Work on the ACTIVE layer
 - Alpha-channel
 - Fancy word for 'transparent'
 - Stacked visually from Bottom to Top
 - Add text, images, individual graphs
- Save project
 - XCF file
 - Includes all layers... not just a link to files in hard drive
 - EXPORT to other formats
 - Lossless
 - TIFF and PNG
 - Lossy
 - JPG



Asset Folders Extending GIMP with new plug-ins, scripts, brushes, and more.

Photo Editing

Digital B&W Conversion Detailed conversion tutorial for generating a B&W result from a color image.

GIMP: Image Quality





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http://shutha.org/node/829





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Elsevier

- Dimensions
- Resolution
 - Line art (purely black and white lines)
 - Minimum 1000 dpi (max 1200)
 - TIFF format
 - Grayscale and RGB images (halftone)
 - Minimum 300 dpi
 - TIFF (or JPEG with maximum quality)
 - Combination art (line and halftone)
 - 500 dpi
 - TIFF (or JPEG with maximum quality)
- Format (PowerPoint and CorelDraw are NOT acceptable)
 - Tagged image file format (.tiff)
 - JPEG (.jpg)
 - Portable document format (.pdf)
 - Adobe Photoshop document (.psd)
- All text and symbols must be easily legible at the dimensions to be published
 - Embed fonts
 - Arial (or Helvetica), Courier, Symbol, Times (or Times New Roman)
 - 7 pt for normal text (no smaller than 6 for subscript)
 - Can go as high as 10 pt



Journal of Wildlife Diseases (Allen Press)

- Dimensions
 - Single-column (7 cm) wide
 - Full-page (14 cm) width
- Resolution
 - Minimum 300 dpi
- Format (PowerPoint and CorelDraw are NOT acceptable)
 - Tagged image file format (.tiff)
 - JPEG (.jpg)
 - Portable document format (.pdf)
 - Adobe Photoshop document (.psd)
- All text and symbols must be easily legible at the dimensions to be published
 - Embed or Outline fonts
 - Helvetica or Arial
 - Mount a scale bar directly on all photomicrographs
 - Include north directional arrow if North is not toward the top of the figure

GIMP - operations

File Edit Select View Image Layer Colors Tools Filters Windows Help

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| | Open | Ctrl+O |
| 5 | Open as Layers | Ctrl+Alt+O |
| 0 | Open Location | |
| | Open Recent | > |
| 4 | Save | Ctrl+S |
| ¥ | Save As | Shift+Ctrl+S |
| | Save a Copy | |
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| Export | Ctrl+E |
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| Export As | Shift+Ctrl+E |
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| Page Setup Print | Ctrl+P |
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| Copy Image Location Show in File Manager | Ctrl+Alt+F |
| ✗ Close View ™ Close All | Ctrl+W Shift+Ctrl+W |
| ຢ Ouit | Ctrl+O |

- Dimensions and Resolution
 - Scale Image
 - All controlled together
 - Careful with Interpolation

File Edit Select

- See next slide
- Format
 - Export as TIFF of PNG

| View | Ima | ge Lay | er | Colors | Tools | Filters | Windows | Hel | p | | | | | |
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You can always shrink/compress later!!!

- Once a raw pixel is gone... it's gone!
- Stay lossless for as long as possible
 - Keep original images
 - Save as XCF project files
 - Export 'forward' as NEW versions
- Re-scale DOWN only
 - This will remove pixels
 - DO NOT re-scale up
 - Pixels just get filled-in
 - Info will look correct (artificially)
 - Image stays 'pixelated'



























GIMP Exercises

- Copy/Paste from Excel (graph)
 - Native resolution = 96 dpi
 - Make it HUGE in Excel
 - Font size ~150pt
 - Line width ~20pt
- Export from Stata
 - graph export "*.png", width(4488)
- Make a panel of 2 graphs (stacked)
 - Import 1st graph
 - Scale Image
 - Align layers
 - Add text