

2 Using the GIMP: Correcting and Touching Up Your Images

2.1 Getting Started

2.1.1 Opening and Developing a RAW Format, or “Digital Negative” with the GIMP

This section of the book will teach you how to open RAW files, or digital negatives.

If you’ve read the first chapter, you already know that the GIMP 2 can open *most* RAW formats. If you saved your photos in JPEG, you can also open them directly with the GIMP. Opening images directly from the GIMP is probably the most efficient method to touch-up your photos.

However, if you want to develop your digital negatives with a color depth of 16 bits per channel (rather than 8 bits) in order to make fine-tuned corrections and/or print a higher quality photo, you’ll need to use a plug-in. Either RawPhoto or UFRaw will do. Once you’ve integrated one of these plug-ins into the GIMP, it will automatically activate when you open a RAW file with the GIMP. Let’s first take a look at the UFRaw plug-in since it can be installed standalone or as a plug-in, as described in Section 1.3.5.

UFRaw can be used in three different ways. If used as a GIMP plug-in, when you open a RAW file in the GIMP, the UFRaw preview window will automatically open. You can set corrective options for color and brightness values in the preview window.

You can simply click *OK* on an open image to load it into the GIMP. Then you can use the GIMP’s tools for corrections—a legitimate practice. Since UFRaw supports a color depth of 16 bits per color channel, this method allows you to make detailed adjustments while using the GIMP’s familiar tools. (Without UFRaw, you’d be limited to 8 bits.)

In addition, UFRaw can be used as a stand-alone program for developing digital negatives. With the UFRaw stand-alone, you can save images in the PPM, TIFF or JPEG file format with a 16-bit color depth per channel for PPM and TIFF. The example images in this section were produced with UFRaw stand-alone.

Moreover, UFRaw offers a batch mode (available for the Linux platform; to obtain information about this feature, enter `man ufraw` or `ufraw—help` in the Linux console).

The main UFRaw window is designed so that the various working commands are displayed in the sequence in which they will be applied to the image. You can open an image in UFRaw and experiment with the options to see how they affect your image.

Figure 2.1: An unedited digital negative was just opened in the preview window. The left panes show color histograms and setting options.

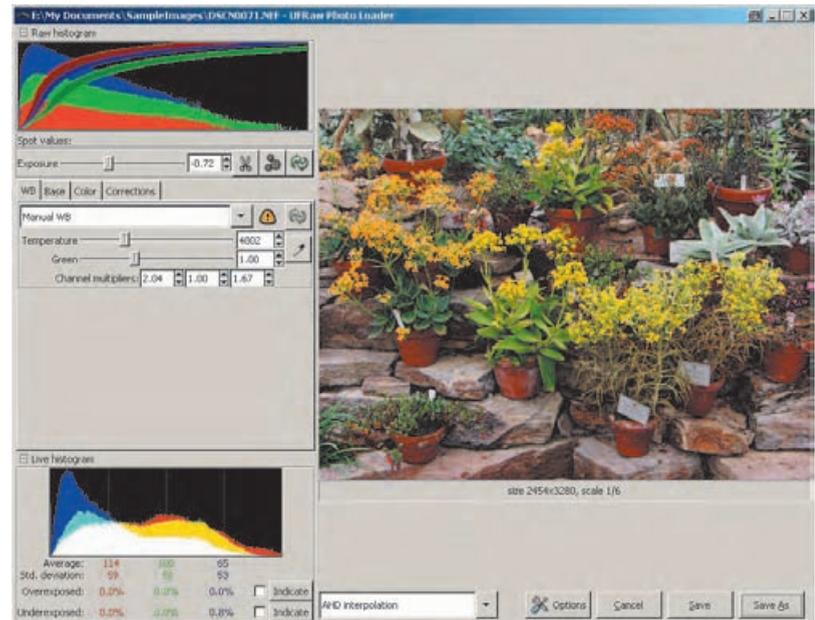
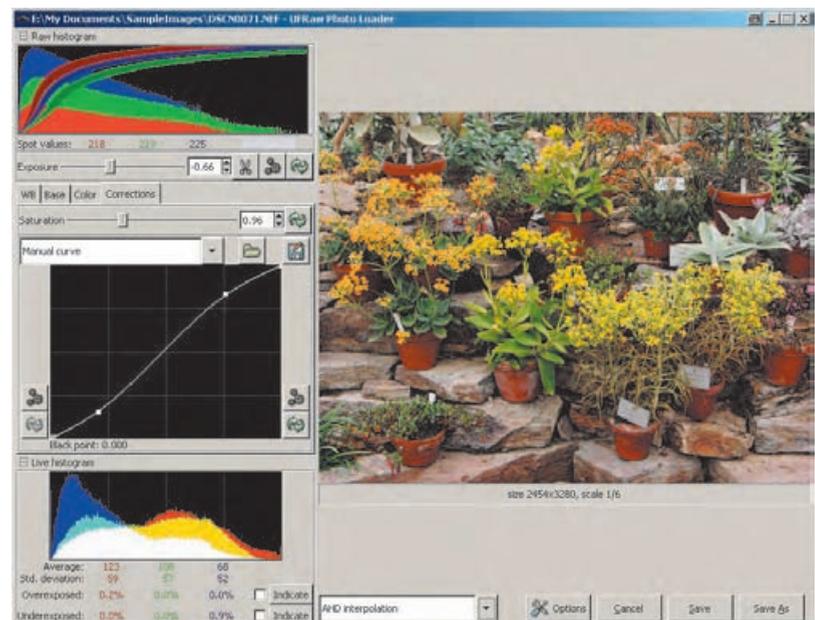


Figure 2.2: The edited image with minor color corrections. Note that the left pane reveals the slight changes that were made on the Corrections curve.



The RAW Color Histogram

The dented color curve in the top left corner of the window is the color histogram of your RAW image. It displays the luminosity, or the image brightness according to color values. The color curves beyond the histogram show how the RAW data will be converted on the finished image.

Right-clicking the RAW histogram pops up a menu which allows you to scale and size the histogram.

Exposure

You can digitally change the original photo exposure. Increasing the exposure is a simple process; the downside is that the noise in the image increases as you increase the exposure. Decreasing exposure is a trickier process, as it is impossible to recover clipped highlights.

The  **Unclip Highlights** option usually produces a subtle effect. UFRaw might clip highlights that were not clipped in the RAW file. Setting this option may add undesired color to your clipped highlights, so use with caution.

Clicking on the  **Auto Adjust Exposure** icon will automatically correct the exposure settings. Since the correction is done prior to setting the actual color, the result is not very precise. Other functions in UFRaw also allow you to automatically set options.

Clicking the  **Reset Exposure to Default** button resets the exposure to the program's default values.

You will notice that there is a reset button available for every option so that you can undo any optional changes and revert back to UFRaw's default values.

Be aware that **Reset White Balance** button behaves slightly differently than the other reset buttons. Rather than resetting UFRaw's default values, this button resets the white balance to the value corresponding to the one that was loaded with the image.

Bottom Line: UFRaw will “remember” any settings that you might have defined while editing an image; it will automatically apply those settings to the next image unless you click the  **Reset** button to reset the option settings to the program default beforehand.

WB White Balance

The **WB White Balance** settings control the ratio between the three color channels. You can set the **Color Temperature** to make your picture warmer or colder. The Temperature option primarily controls the blue color channel. There is a second control for the green color channel.

In addition, you can set the white balance to **Camera WB**, **Auto WB** or **Manual WB**. You can move the controls sliders or click on the  **Spot White Balance** icon (eyedropper), then click on a white, neutral gray or

black area of the image. Holding the mouse button down while you drag the cursor will increase the selected area. Clicking the eyedropper icon again will recalculate the white, gray, and black values of the selected area.

Base Curve

Base Curve offers you two choices: **Linear Curve** or **Manual Curve**. **Linear Curve** corresponds to the pre-settings of the image. **Manual Curve** lets you correct the brightness and contrast settings separately, using various brightness ranges (see Section 2.4.9 on Gradation Curves). If you click the lower area of the linear curve and drag it downwards while holding the left mouse button down, you'll notice that the dark shades in the image become darker. Repeat the process for the upper area of the curve, dragging upwards this time, and the bright colors become brighter. By experimenting you can correct any brightness problems or just creatively play with the image. You can produce a color inversion of a true photo negative by dragging both end points of the curve vertically.

Various camera manufacturers and other sources offer similar tonality curves on their websites. You can also create curves of your own and save them to reuse with your images by clicking on the **Diskette** icon. To load a curve that you've downloaded or created on your computer, click the **Folder** icon. Also, you might want to peruse the ready-made curves found on Udi Fuchs's website at <http://ufraw.sourceforge.net/Contribute.html>.

Color Management

Color management refers to the working color space of the mode used, which is mainly RGB for our purposes. You can find detailed information at <http://ufraw.sourceforge.net/Colors.html>.

Clicking the **Use Color Matrix** control increases color intensity, but the individual colors tend to overexposure or underexposure.

Corrections

Moving the **Saturation** slider to the right increases the color saturation of your image, while preserving both hue and brightness. Moving the slider to the left desaturates the image, reducing the colors until you have a pure black-and-white image.

The curve in the **Corrections** settings affects the brightness of the image. You can edit this curve in the same way as the **Base Curve** to increase image contrast. The **Base Curve** is intended to apply readily available curves to the image. When simply touching up the contrast of an image, use the **Corrections** control.

Live Histogram

This is the histogram of the preview image, which is updated whenever you change the settings. By right-clicking on the live histogram, options pop up that allow you to set the curve's size and representation.

There are two modes in which you can control the exposure. Clicking the controls or buttons underneath the Live Histogram will show you the **Overexposed** or **Underexposed** pixels in the image. The numerical values next to the controls indicate the amount of overexposure or underexposure per channel in percentages. These values provide objective information, enabling you to correct the exposure and color settings, thus preventing a faulty exposure. Of course, the desired exposure naturally depends on the atmosphere you wish to create in your image.

Interpolation

The interpolation defines how the image dots should be recalculated when you save the final image.

The default is **AHD Interpolation**. It provides the best results, but may enhance the noise in the photo.

VNG Interpolation provides very good results.

VNG Four Color Interpolation should be used if you find Bayer pattern artifacts in your photo (see Section 2.4.7 on the Moiré Effect).



Figure 2.3: An image that was saved and reloaded shows a disturbing colored grid pattern, commonly known as Bayer pattern artifacts.

Bilinear Interpolation is a very basic interpolation, but it is fast.

Half-size Interpolation is the fastest interpolation method. It generates a single pixel out of every four original pixels. This option appears only in

the GIMP plug-in; in the stand-alone version you can achieve the same effect by setting the **Shrink Factor** in the **Save As** dialog to 2.

Options

All settings not directly related to image editing are hidden in the **Options** dialog. Please visit Udi Fuchs' website at <http://ufraw.sourceforge.net/Guide.html> for more information.

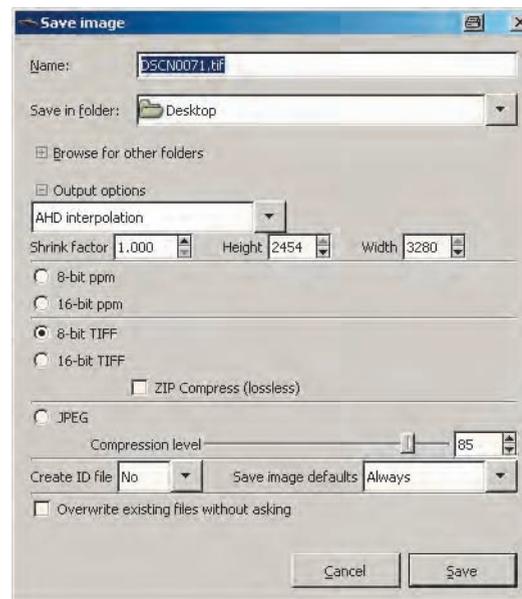
Saving Your Image

If you are using UFRaw as a plug-in, just click **OK** to send the image to the GIMP. The plug-in version will not save images, so you'll have to revert to the GIMP's interface in order to save your image.

In the UFRaw stand-alone version, you can save your image in either of two ways: **Save** or **Save As**. Clicking the **Save** button saves the image as a TIFF file in the same folder that you initially opened the RAW image in. You cannot select a different file name or file type with this option. If you hover your cursor over the **Save** button, a summary of where and how the image will be saved will pop up.

Clicking the **Save As** button pops up a familiar window in which you can select a file name, file type and folder. Windows users might find the file browser a bit awkward. It will be discussed in more detail in Section 2.2.8.

Figure 2.4: The **Save Image (Save As)** dialog of UFRaw. Clicking the checkbox next to **Folder Browser** opens the folder browser.



The **Save Image** dialog lets you choose one of three file formats: PPM, TIFF, and JPEG. The first two file formats will save your image in the highest qual-

ity. TIFF is probably the most widely used high-quality format used when importing images to other programs. Both the PPM and TIFF file formats let you save images with either 8-bit or 16-bit color depth per color channel. If you opt for 16 bits, make sure that the program you'll be using for further editing or when opening your image supports 16-bit color depth per channel. Remember that the GIMP is limited to 8-bit color depth.

You should be aware that UFRaw does not yet support **Embed EXIF Information**. The feature is under development, but current builds of UFRaw can only embed EXIF information for Nikon NEF, Canon CR2, and Pentax PEF files in the JPEG image format.

If you are interested in saving EXIF information, check out the **ExifTool** by Phil Harvey.

Exchangeable Image File Format (EXIF) is a standard format developed by the Japan Electronic Industry Development Association (JEIDA) that modern digital cameras can use to save data. Visit <http://en.wikipedia.org/wiki/Exif> for more information.

This first section focused specifically on the requirements of photographers working with RAW formats. The following chapters will explore requirements for working with images directly in the GIMP image editing program.

The Procedure

Below is a summary of preparatory steps you'll need to take in order to practice the procedures described above:

- ▶ After installing the GIMP on your computer, install the UFRaw plug-in.
- ▶ Insert the CD packaged with this book into your computer's CD-ROM drive.
- ▶ Start the GIMP. In the main window, select the **File > Open** menu item from the Toolbox to open an image (see Section 2.2.2).
- ▶ Locate the CD in the File Browser and browse through the *SampleImages* folder. You will find an image labeled *DSCN0071.NEF* (Nikon RAW Format).
- ▶ Double-clicking on the sample image will simultaneously launch the UFRaw plug-in and open the image. Have fun experimenting with the settings introduced above.

2.2 Editing Images in the GIMP

2.2.1 Opening, Setting and Storing an Image—the Steps

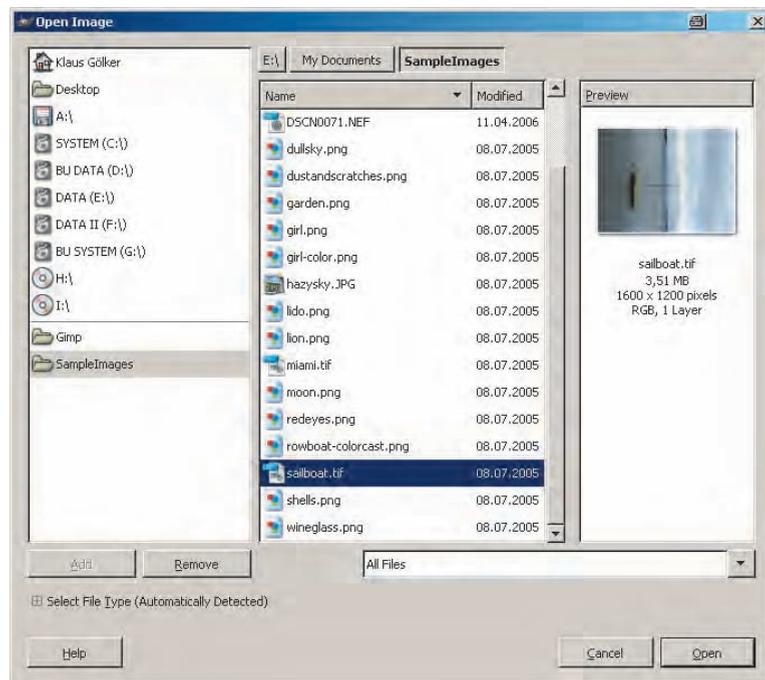
Once you have saved an image from an external source, such as a digital camera, onto your computer, you can:

- ▶ Open it in the GIMP
- ▶ Set the size and resolution
- ▶ Rotate the image
- ▶ Change the image's size on the screen (zoom in or out)
- ▶ Save the image in a high quality format
- ▶ Prepare it for printing

2.2.2 Opening an Image

From the **File** menu in the Toolbox select the menu item **Open**. The **File Browser** will pop up.

Figure 2.5: The Open Image window.



Double-click on the drive or directory where you want to search for an image in the left pane.

The middle pane will now display subdirectories, which you can double-click on to open until you've found the folder containing the image you want.

The buttons above the search boxes show where you are within the specified directory path. If you're in the wrong sub-folder, use these buttons to move back to the main folders and start again until you've found the appropriate file.

The middle pane will now display the files contained in the selected folder, sorted alphabetically by name.

You'll notice a scrollbar on the bottom right-hand side of the **Name** box. Pull the bar up or down to quickly search through the folder.

Now click the name of the desired image in the **Name** box. A preview of the selected image will appear in the right-hand pane.

If no preview appears, or if a message pops up telling you that no preview could be created, double-click on the **Preview** box to get a preview of the image.

Once you've found the desired image, click on it to select it; then click the **Open** button to load it. Or just double-click the image name in the **Name** box.

A few tips:

- ▶ If you've opened a folder that you'll be using frequently, you can "bookmark" it by clicking on the **Add** button in the left box of the window.
- ▶ Clicking the **All Files** button will display a list of file formats the GIMP can read. If you select a specific format from the list, the file browser will only display files in that particular format.
- ▶ You'll also see an option called **Determine File Type**, which is set to *Automatic* by default. Clicking this button will provide a pop-up window listing file formats. If the GIMP doesn't automatically recognize the format of the image you selected, you can use this option to specify the file format of that image.

2.2.3 The Image Window—Your Workspace

The **image window** is the main window that appears when you open an image. This is your actual workspace. Although initially the window will show your image in full size, you can decrease the size of your image so you can use the remaining space in the window to lay your palette and tools.

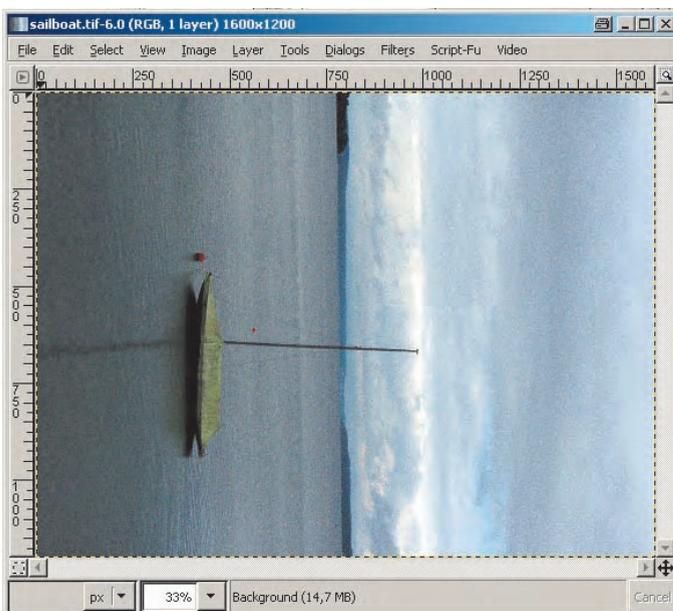


Figure 2.6: The image window.

The **blue title bar** displays the image's file name, color mode, the number of layers, and the original size in pixels.

In GIMP Version 2 and higher, the image window features a **menu bar** where you will find the familiar menus, such as **File**, **Edit**, **View**, and so on. We will discuss the menu items one by one later on. You will also find these menu items in the image window's **context menu** (right-click the image window to open it). Some users find that it's quicker to work within the context menu.

In addition, the image window is bordered at the top and left by **rulers**. By default, the rulers measure pixels (px). You can change the measuring unit of the rulers to inches or millimeters by clicking the pulldown menu in the status bar at the bottom of the window.

However, if you hover the cursor over a ruler, then left-click while holding the mouse button down and pulling, you can drag **guides** into the image. Guides are very helpful when checking an angle or selecting an area you want to crop from the image.

If you click the **Magnify** tool button , you will notice that the image inside the window will automatically adapt to whatever size you change the window to.

The two smaller buttons,  and , at the bottom left serve to toggle the view between selection and mask modes (more about using these later).

Clicking the  button will reveal a small preview image of the open file. This is particularly helpful when you have zoomed into the image and want to see how a change affected the entire image without having to zoom out. If you hold your mouse button down, you can move around the image and click on the areas you want to view. You'll notice that the larger image in the window will move in correlation with your movements on the preview image. The section chosen with the preview image will remain in the main window after closing the preview window.

The **status bar** at the bottom of the main window also supplies useful information:

- ▶ The upper left corner of the image will reveal the current cursor position in pixel coordinates.
- ▶ The next field from the left displays the measuring unit for the rulers. The default is "px" (or pixels), but you can opt to display the rulers in inches or millimeters.
- ▶ Next, there is a hot-key for the zoom button so you can quickly enlarge your image.
- ▶ The next field displays the name of the current layer, as well as the uncompressed file size of the image. When calculating a change effected to the image, a progress bar appears in the status line. In addition, a **Cancel** button may appear so that you can stop the process.
- ▶ In general, the status bar is also used to output various values, such as the **Measure** tool.

The image window (and all other windows in the GIMP) behaves like a typical Windows window. If you move the cursor outside the border of a page or to a corner point of a window, it will morph into a dual arrow, enabling you to manipulate the window size by dragging it while holding the left mouse button down.

To move windows on the desktop, click the blue title bar and, while holding the left mouse button down, pull the window to the desired position.

All program windows feature the three familiar buttons on the upper right corner that minimize, maximize, and close the window.

2.2.4 Rotating an Image by Fixed Values

Suppose the image you just opened is rotated 90 degrees clockwise. To set the image straight, click on the image with the right mouse button. The working menu will pop up. Select **Image > Transform > Rotate 90 degrees CCW**.

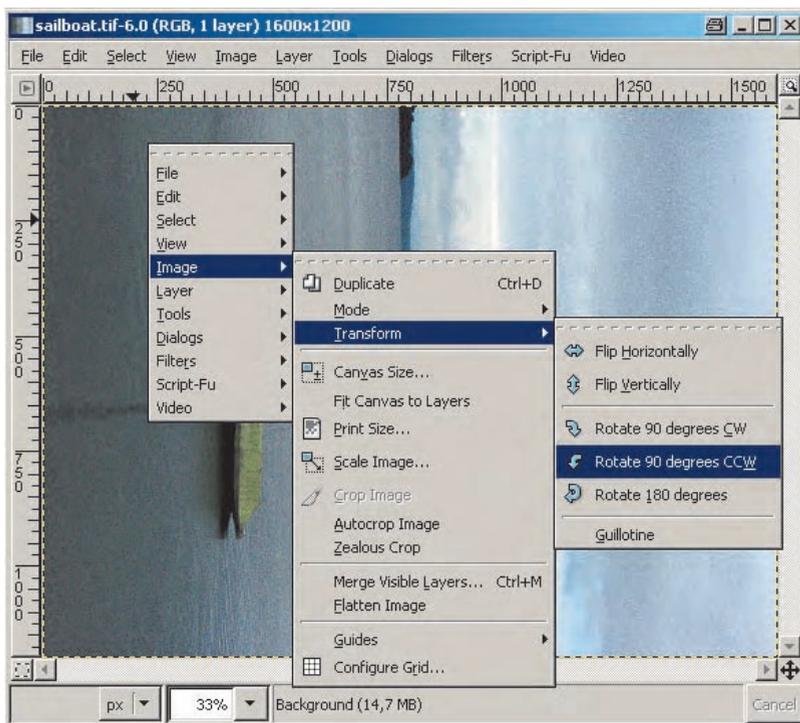


Figure 2.7: The working menu of the GIMP will pop up when you right-click on an open image.

2.2.5 Setting the Image Size and Resolution

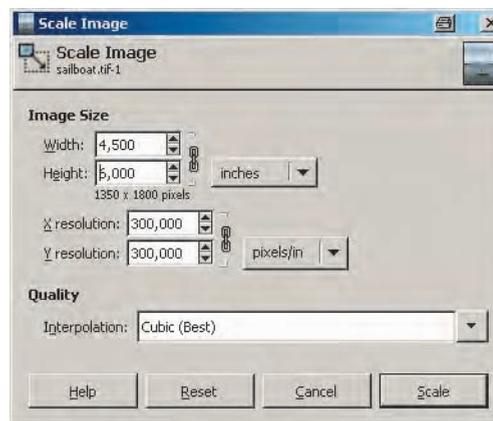
The image should now be upright. Next, you'll want to set the size and resolution. Let's imagine that you want your image to be about the size of a photo print, 4.5 × 6.0 in, so it can easily fit on one print page. The target resolution of the image is 300 dpi.

Note: As mentioned earlier, you can find all necessary commands in the working menu located on the menu bar above the image, as well as in the context menu, which opens when you right-click on the image. If you prefer working with your mouse, the context menu should be easier and faster to use. However, if you prefer to work with keyboard, you'll probably want to use the keyboard shortcuts. Keyboard shortcuts are displayed next to the corresponding menu items.

Options for setting the size and resolution are located in the image window; just go to **Image > Scale Image**.

When the **Scale Image** window pops up, you can set the measurement for **Resolution X** to 300 pixels/in (= dpi). In the text field, just overwrite the default value and press **Enter** to accept your changes. Both resolution values should now be 300 pixels/in.

Figure 2.8: The Scaling Image window.



Make sure that the chain icon near the resolution is closed, and that the X and Y resolutions are equal (see Figure 2.8).

The next step is to set the image size (measured in pixels, inches or millimeters). In the upper part of the window, you will see two values: **Width** and **Height**. If you want to use inches as your size unit, set inches as the measurement unit by clicking the arrow next to the **Pixel** field (to the right of the **Height** field) and select **inches**. Then type the number 6 for the value in the **Height** field. Press **Enter** to accept your changes. The value for the width should now be 4.5. (**Be Aware:** GIMP 2.2 can be a little fussy when changing these values, so you may have to repeat this process more than once.)

Next you'll want to select the quality of the pixel recalculation, i.e. to the interpolation **Cubic (Best)**. Click to open the dropdown menu, which

was probably set on **Linear** by default. Click the **Scale** button to accept your changes. The program will now calculate the new image size, which will change as the calculation progresses. If you want to see the full image in the working window again, you can choose one of the various tools at your disposal to change the view.

2.2.6 Changing the Resolution and Size

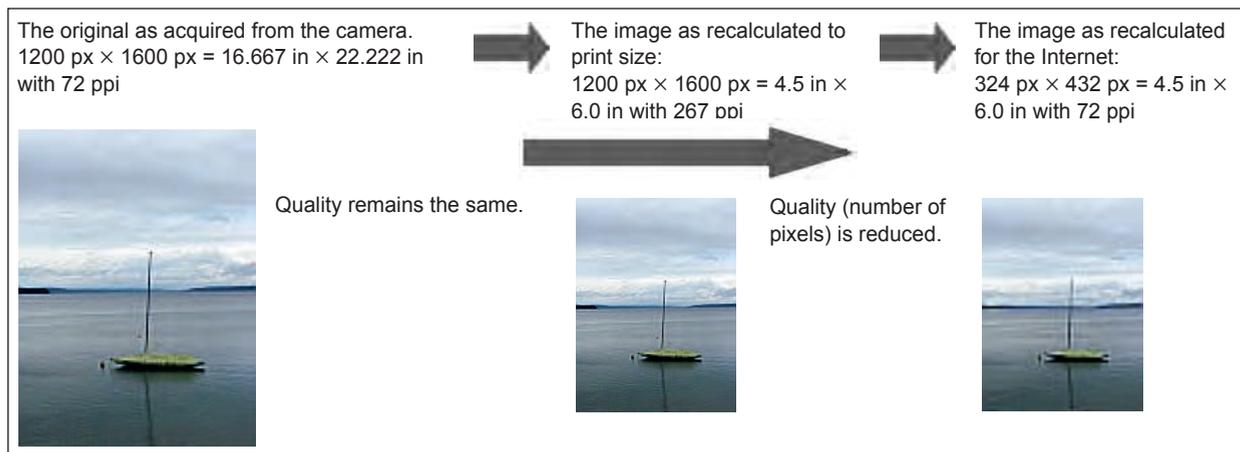
When you open an image imported from your digital camera, the GIMP tells you what the image dimensions are in the **Image > Scale Image** window. For example, it might read: 1200 px × 1600 px = 16.66 x 22.22 in = 423.33 mm × 564.44 mm with 72 ppi (ppi = pixels per inch).

If you want to modify the image to print size of, say, 4.0 × 6.0 in, you have to multiply the resolution using a factor of 22.22 : 6 = 3.70. The calculated value is approximately 267 ppi. For example, you would set the resolution to 267 ppi in the **Image > Scale Image** window and subsequently click the **Scale** button to accept your changes. The image will be recalculated to a size of approximately 4.5 × 6.0 in, but the number of pixels and the quality will remain roughly the same. Only the dimensions are changed.

Your image is now ready for high-quality print. All you have to do before you print is to modify (or crop) the canvas to the desired size by using the **Image > Canvas Size** menu item; see Section 2.2.8).

To size your image for use on the Internet (or to send via e-mail transmission or use on a webpage), simply leave the resolution at 72 ppi (or 96 ppi) and change the dimensions in inches. This recalculation will reduce the number of pixels: 324 px × 432 px = 4.5 × 6.0 in with 72 ppi. In this case, the image must be recalculated. So select the **Image > Scale Image > Interpolation: Cubic (Best)** to create the highest quality image.

The following representation shows how resolution, image size, and quality interrelate:



In other words if you choose to enlarge an image, you must reduce the resolution by the factor by which you want to enlarge the image so that the number of pixels and, thus, the quality of the image, will remain the same. When printing the enlarged image, you should consider the fact that resolutions of less than 150 ppi will often produce poor results, even on a modern inkjet printer.

There is an option to artificially enlarge an image, using interpolation to increase both the size and resolution of the image. This process calculates new image dots and adds them to the image. But if you enlarge an image beyond a certain size, it will usually become spongy and blurred.

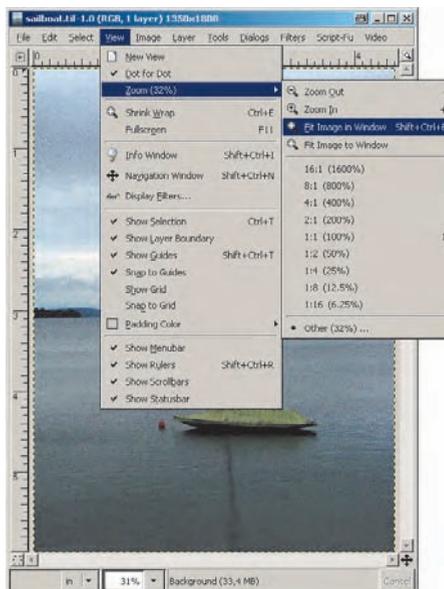
2.2.7 Changing the Image View Size (Zooming)

Note: Changing the view size of your image will not affect the actual image or file size. The view options customize how you see the image on your computer screen, allowing for easier editing and detail work.

You can zoom in and out on an image selection by using the **Magnify** tool, which can be found in the Toolbox. Click the **Magnify** icon. The cursor will change into a magnifier icon. Clicking the magnifier on your image will enlarge that particular section, and the spot where you clicked will become the center of the image. If you press the **Ctrl** button, hold it down and click on the image again, the image section will be reduced in size. You can repeat these steps until your image has been reduced or enlarged to your specifications.

Alternatively, you can use the zoom tool in conjunction with the left mouse button to pull a rectangle over the section of the image you wish to select. When you release the mouse button, the image you “lassoed” with the rectangle will be displayed in the image window.

Figure 2.9: The View > Zoom menu.



The **View > Zoom** menu offers options to select the displayed size of an image.

- ▶ **Zoom Out** (makes the image progressively smaller)
- ▶ **Zoom In** (makes the image progressively larger)
- ▶ **Fit Image in Window** (fits the image *inside* the existing window)
- ▶ **Fit Image to Window** (fits the image so that it will be the exact size specified by the window's width or height, rather than inside it)
- ▶ **Nine specific zoom levels**
- ▶ **Other** (lets you customize a scale)

The **View** menu also allows you to select and hide elements and attributes so you can work on specific areas without distractions. You can also make the grids and guides magnetic, which will cause tools and image objects to automatically orient themselves to the guides and grids (similar to “snap to” functions). Two particularly interesting viewing options are:

- ▶ **Shrink Wrap** (which resizes the window to the image height or width)
- ▶ **Full Screen** (which displays the image in full screen, without a window. Press the **Esc** key to toggle to window mode)

2.2.8 Cropping (Clipping) an Image

In the previous step you reduced the image proportionally (i.e., in the same page ratio); therefore, you obtained a width of 4.5 in, rather than 4.0 in, the width you wanted.

To get a width of 4.0 in, you need to crop the image by 0.5 in.

In the Toolbox you'll find a **Crop** tool (which toggles between **Crop** and **Resize** modes) that you can use to crop or clip your images. In the example, you cut 0.25 in from both the right and left margins. Now click on the upper left corner of the image window, and while holding down the left mouse button, pull it to the bottom right corner point. Then click the **Crop** button in the **Crop/Resize** window to crop the image. If you click the **Resize** button, the margins will be covered or hidden rather than removed. Doing this affects only the image size, not the working area (or canvas) which is what you want to do. Modifying the canvas is comparable to working with a photographic mount in analog photography.

In this example, however, you want to crop the image to a numerical measure. Go to **Image > Canvas Size** to access the pop-up menu for this. (see Figure 2.11).

The term “Canvas” is commonly used in image editing programs to designate the working area where images are placed. The canvas can be larger than the visible image content, but by default, the canvas size will coincide with the image size.



Figure 2.10: The Image menu.

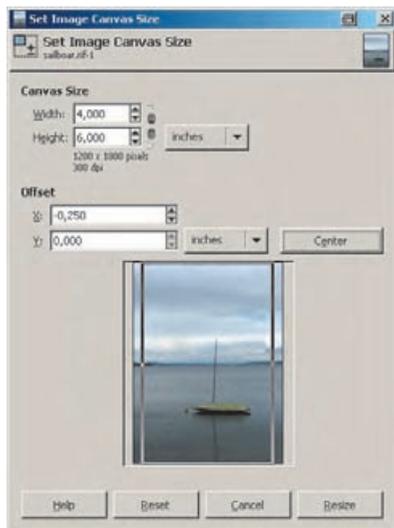


Figure 2.11: The Canvas Size window.

You can enlarge or reduce the canvas size without modifying the image it contains. By enlarging it, you create a border around the image that can be used to insert other image elements or text. For example, you may need to enlarge a canvas if you want to create a collage or paste more than one image on it, as shown in Section 3.12.2.

Reducing the canvas size may result in cropping the image. But in this case, the image size changes to the new dimensions. You can use the steps described below to crop the canvas by the pixel.

The Procedure

- ▶ Set the measurement unit to inches.
- ▶ For this example, you will crop only the width of the image. To do this, you must click the chain icon next to **Canvas Size** in the upper window to remove the link between width and height.
- ▶ Set the value for Width to 4.0.
- ▶ Next, you have to set the offset; if you do not, the image will be cropped on the right side only. Since you want to crop the image equally by 0.5 in, you must set the Offset to X: -0.25 in, as 0.25 is half of 0.5 in. Alternatively, you can click the **Center** button to center and crop the image equally on both sides. Or you can select the image section by clicking the preview image and move it within the cropping frame, while holding down the left mouse button.
- ▶ Finally, click the **Resize** button to crop the image. Again, only the visible image section will be reduced. If you want to remove image information which has simply been hidden thus far, an extra step is needed. Go to the **Image > Fit Canvas to Layers** menu to remove previously hidden image data.

2.2.9 Saving your Image

Now that you finished editing the image, it's time to save it. In fact, it would be wise to make a habit of saving any image you are planning to modify immediately after opening it. Just save it as a new file with its own file name. This preparatory step will ensure that:

- ▶ Your original remains unchanged
- ▶ You do not overwrite your original by mistake
- ▶ You can save any desired change to the new image immediately

It is recommended to use a file format such as XCF, TIFF, or PNG for your working image. These formats guarantee best image quality. Of course, if the image contains layers, the GIMP will limit your format choice to XCF or PSD.

Compressed files in JPEG or GIF format should be created only as copies of the original or working image.

The submenus to save images are found in the menu bar of the image window. The **File** menu offers two options:

Save simply saves your modified image onto itself. The existing version will be overwritten. After you close the image, you cannot undo this process. It is highly recommended to save your image whenever you modify it to your liking. This will ensure that you won't lose your work in case of a power outage or program crash.

Save as: Select this option if your image is new, or if you want to save your image under a different file name and/or in a different file format.

You can enter a name and a file extension for the image that you intend to save in the text field beside **Name**. The **Save in folder** dropdown list displays the location where the last image you saved was stored. Click the arrow to display the options and select the folder you wish to store the image in. Click the + sign next to **Browse for other folders** to open a new dialog, similar to the **Open Image** dialog. This dialog will let you find and select the folder you want to save your image in. Or you can create a new folder by clicking the **Create Folder** button. Clicking the + sign next to the **Determine File Type: By Extension** option pops up a dialog that lets you select a (different) file type for the image you intend to save.

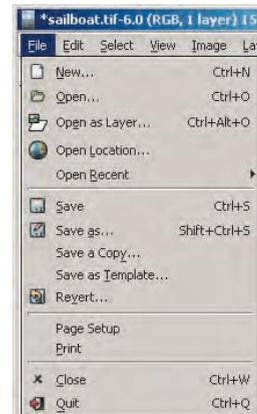


Figure 2.12: The File menu in the image window.



Figure 2.13: The simplest version of the Save dialog. The "Save in folder" dropdown list lets you select a storage location from your main folders or Favorites.

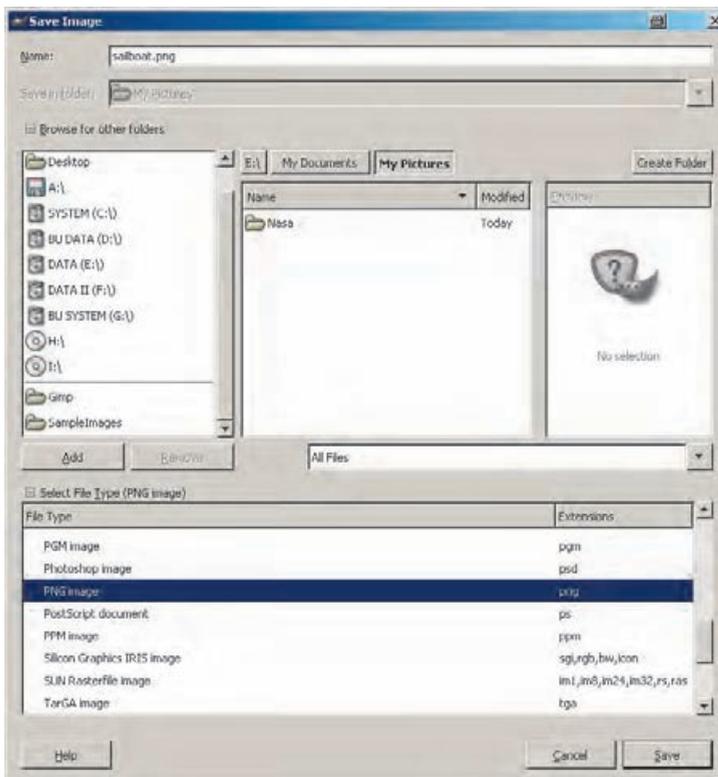


Figure 2.14: The Save Image dialog with all panes open.

Always choose a high quality file format for saving and archiving your images. You can type in the desired file extension or select the desired file type from the **Determine File Type: By Extension** dropdown list in the **Save Image** dialog. The list includes the XCF, TIFF, and PNG formats, all with compression. It is a good idea to create a separate folder for your working images. (Just click on the **Create Folder** button in the top left part of the **Save Image** dialog.)

When you save your image, a new dialog box will pop up and give you the option to export the image in the desired file format, depending on the format you selected. Click **OK** to proceed.

Another dialog will now prompt for desired image file attributes. For the TIFF format, select **LZW Compression**. This compression method is lossless and reduces the file size. Click **OK** to accept. Your image is now “in the can”.

When exporting an image, the layers it contains can be merged into one background layer; that is, if you chose a file type (**tif**, **jpg**, **png**, etc.) which is unable to save layers. After the image is exported, the modified image will still be open in the image window.

Don't worry: if you saved your original image prior to changing the file attributes, it will not be overwritten. You can quickly reopen the original from within the Toolbox by selecting **File > Open Recent**. Remember: Always save images with layers in a layer-enabled format (**xcf** or **psd**).

The **Save a Copy** item differs from the **Save as**. The image will be saved as a copy in the desired file format within the selected storage location, but the original will remain open in the image window.

Finally, you should be aware that you can create templates for eventual reuse with new images. For example, if you want to use the same dimensions, resolutions, background attributes, and file format for multiple graphics, creating a template will save you time. Save the setting for the first image by accessing the **File > Save as Template** menu item. To reuse the template with a new image, select the **File > New** menu item and refer to the **Template** option in the pop-up dialog.

2.2.10 Printing Images

To print images from within the GIMP, you'll obviously need to connect a printer to your computer, and make sure that a recent driver is installed in Windows. Whether your printer is connected to a parallel port or a USB port can be a factor. The GIMP recognizes some printers at the parallel port only, even though the printer works flawlessly over the USB port when accessed from within other programs. Ideally, you should connect your printer to the parallel port (normally LPT1 for Windows). If you still have trouble printing images from within the GIMP, you might find a solution from the GIMP User Group (<http://gug.sunsite.dk/>). For questions relating to GIMP under Windows, visit the WinGIMP Forum.

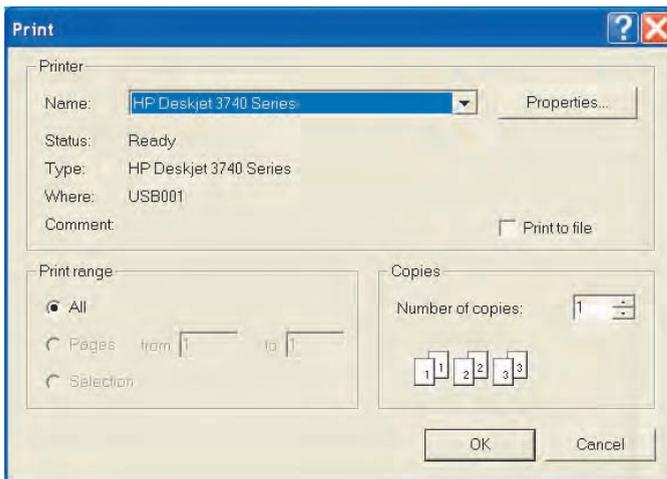


Figure 2.15: The GIMP's Print dialog. Click the Attributes (Properties) button to set printer options.

Nevertheless, driver problems can arise, preventing you from printing directly from the GIMP program. Epson printers seem to have the most problems. But you can work around most of these problems by printing your images from within another program, such as IrfanViewer.

The **Print** dialog is found in the image window under the **File > Print** menu. If you installed a print program specific to your printer or other device (such as a scanner), a device-dependent program window will pop-up, which you can use to configure your settings. Otherwise, the GIMP's standard print window will appear.

The following settings are available in the **Print** dialog:

- ▶ **Printer** (dropdown list for selecting the appropriate printer, such as the printer at the parallel port (LPT1), if you have more than one printer installed)
- ▶ **Print Range** (to print specific pages of a multi-page document, such as EPS or PS [PostScript] files)
- ▶ **Number of Copies** (to print more than one copy)

Clicking the **Properties** button pops up a dialog where you can set the following options, depending on your printer:

- ▶ Page orientation (**Portrait** or **Landscape**)
- ▶ **Media Choice** (type of paper)
- ▶ Print type (color, gray levels, or black and white)
- ▶ Resolution (sometimes this is set automatically, depending on the paper selected)
- ▶ Depending on your printer, there may be more settings available, such as paper size and other variables

Keep in mind that you can always burn your images on a CD and take them to a photo shop for exposing and printing.

Note: Most large photo shops expose with a resolution of 300 dpi and accept only the JPEG file format. If you plan to take your images to a photo

shop, collect and save your images in 300 dpi resolution and JPEG format before burning them on the CD.

2.3 Working with Scanned Images

Of course, you can use scanned images and edit them in the GIMP, in addition to images from your digital camera. The following sections give you important information and detailed instructions.

2.3.1 Prerequisites for Scanning

Before you can read an image from a scanner in an image editing program, you must properly connect the scanner to your computer and install the scan program that came with the device. If you work under Linux, you can use the XSANE interface.

What image editing programs generally do is provide a scanning connection (usually referred to as the Twain source for Windows platform and SANE if you're using the Linux or Mac OS). An independent scanning program or XSANE is necessary for scanning, and can be accessed from within the image editing program. Scanning under Windows is described in Section 2.3.2; the same process works on all operating systems.

As mentioned above, scanning under Linux is supported by the SANE ("Scanner Access Now Easy") library. You can find SANE in many Linux distributions, including SUSE Linux. The graphical interface for scanning is called XSCANIMAGE or XSANE. If you've already installed SANE and XSANE, it can be accessed by going to **File > Acquire > XSANE: Device Selection** (i.e., your scanner) in the **File** menu of the Toolbox.

XSANE provides a graphical interface that allows you to choose settings for the current scan process, similar to the steps described in Section 2.4.2.

Additional information about SANE and XSANE can be found on the Internet at:

- ▶ <http://www.sane-project.org>
- ▶ <http://www.xsane.org>

The SANE library is also helpful for those running Mac OS X. From within the GIMP, it is accessed over a TWAIN-SANE interface. Mattias Ellert offers the required installation files (Mac OS X binary packages) for download from <http://www.ellert.se/twain-sane>.

Depending on your scanner, you may need to customize a few settings after installation for it to work optimally. Information regarding optimal scanner settings can be found at the Internet address above and on the SANE Project's website at <http://www.sane-project.org>.