

## Saving For Digital Projection & The Web

Saving images for digital projection and/or the web can be something of a balancing act between the image file size and quality. The idea is to reduce the file size so that it can be loaded and displayed quickly but without compromising the image quality. Nobody wants their images to be displayed blurred and pixelated.

An image needs to have at least 3 (ideally 4) attributes to be web-ready.

It should be:

- In RGB colour mode
- At 72ppi (Pixel per inch) - Screen resolution (*Can be higher but is unnecessary, increases file size without any benefit in quality*)
- A JPEG. (*There are other web compatible file formats but JPEG is most suitable for photographs*)
- Embedded with a colour profile. (*For colour fidelity*)

Photoshop's 'Save For Web & Devices' is the ideal tool to ensure you save your image at the correct resolution and file size. Before we look at that tool let's have a look at the relationship between an image's resolution (pixel count) and physical size. This is an aspect that continues to confuse a lot of digital photographers.

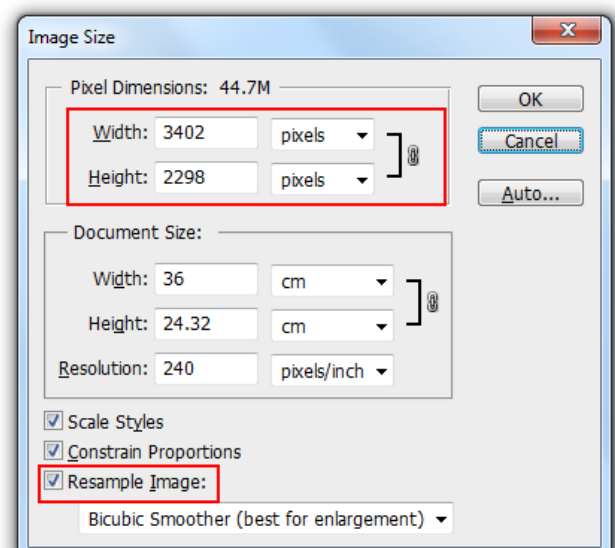
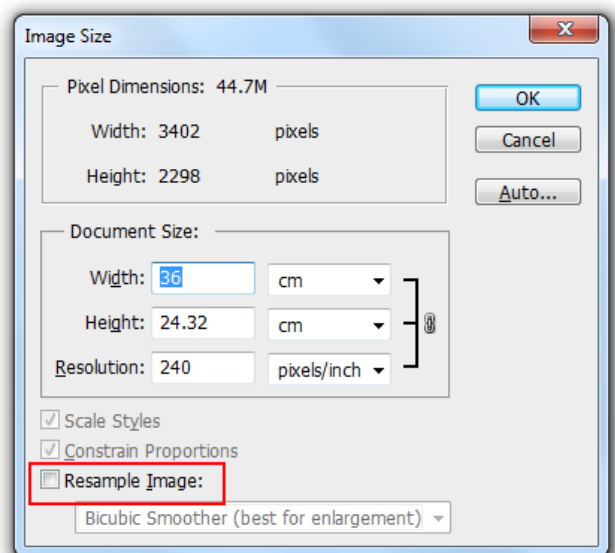
**Note that Image resolution is measured in pixel per inch (ppi). Inkjet printer resolution is measured in dots per inch (dpi)**

The Image Size dialog box shows an image of 44.7m pixels. The top area of the box shows the pixel dimensions and below that is the document size. Notice (at the bottom) the Resample Image box is unchecked. Unchecking this box renders the Pixel Dimensions area inaccessible. The pixel count cannot be changed. The document size can be changed but notice that the Width, Height and Resolution are all linked. Change one and other two will change accordingly. i.e. Increase the width and the height will increase (proportionally) but the resolution will decrease. The pixel count remains constant. Therefore an increased image size results in fewer pixels per inch. Conversely, decrease the width and the height will decrease while the resolution will increase because there will now be more pixels per inch.

**Note that a pixel does not have a physical size in an image.**

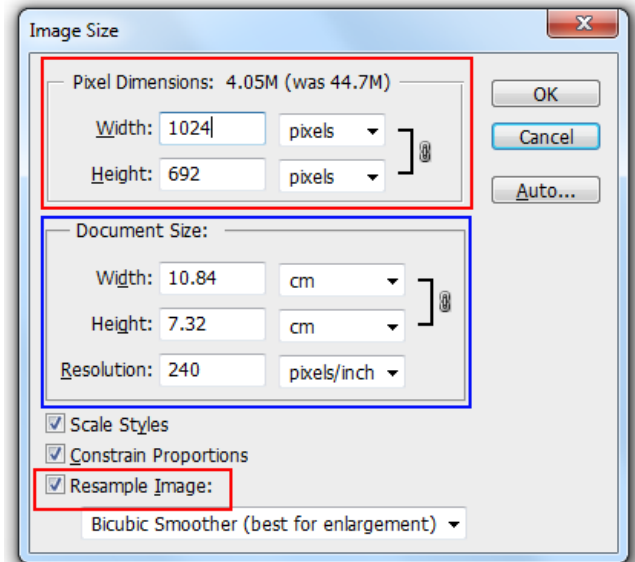
This Image Size dialog box shows (at the bottom) that the Resample Image box is checked. This now allows access to the Pixel Dimensions area (outlined in red at the top). The image can now be resampled by either upsizing or downsizing. By downsizing the image, pixels will be discarded. By upsizing the image, Photoshop will add pixels making a 'guess' as to what colour they should be. This is called interpolation.

Access to the Document Size area is still available but note now that the Height and Width dimensions (still linked) have been divorced from the Resolution. The image size can now be changed by either reducing or increasing the pixel count whilst maintaining a constant resolution. *If you wish to change the resolution as well as the width and height the resolution should be changed first.*

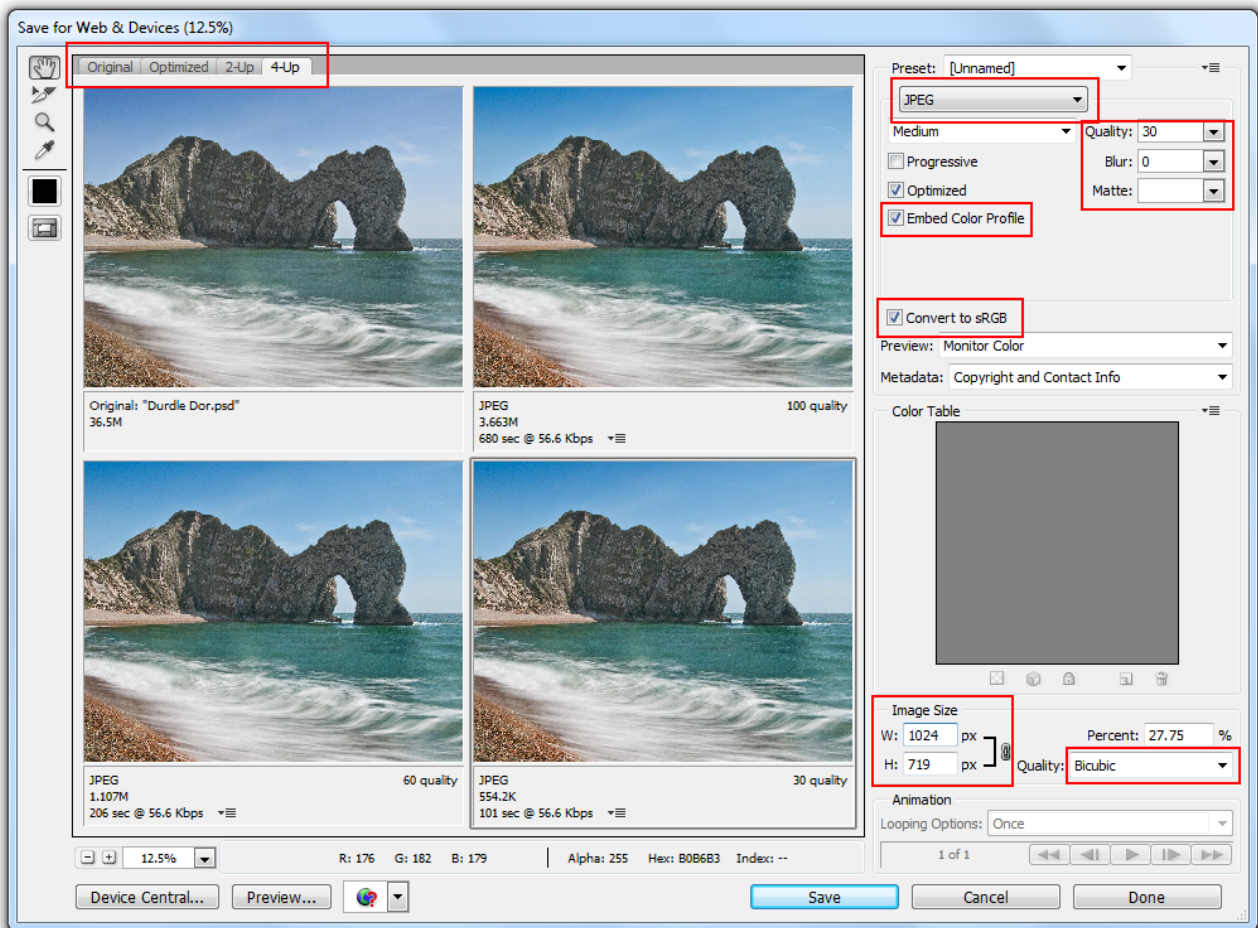


This dialog box shows that the pixel dimension width has been reduced to 1024ppi. The pixel height has reduced in proportion but, because the images resolution has remained constant the document size has reduced to reflect the reduced pixel count. Note also the reduced file size.

**Note: 1024x768 pixels is a common measurement for web and digital projection display. More recently, due to increases in screen resolution images are occasionally required at 1400x1050pixels. For projection at Bath PS your images should be no more than 1024x768. That is, if the image is in landscape format then the long side should not exceed 1024px and if the image is in portrait format then the longest side should exceed 768px.**



Using the Save for Web & Devices tool, found in the File menu, ensures that an image can be resized appropriately, ensuring that a good compromise between resolution and quality can be maintained.



At the top left of the dialog box there are tabs allowing options to show the Original, Optimised, 2-Up or 4-Up views. The original displays the unchanged image. Optimised will show the image in accordance with the settings that are made at the right hand side of the dialog box. 2-Up will show the original and the optimised image. 4-Up gives the opportunity to show the original image against 3 differing optimisations. This is the most flexible viewing option. This dialog box above shows the original image (top left), a JPEG image at 100% quality (top right), a JPEG image at 60% quality (bottom left) and a JPEG image at 30% quality (bottom right). This gives the opportunity to determine the best resolution and, if appropriate, transmission time. The image views can be magnified, if required, to see the compression effects more closely.

Looking at the right hand side of the dialog box the following options are available:

**Presets**. A number of presets are listed in this dropdown box. i.e. There are JPEG options for high, medium and low settings. Each could be set in the 4-up view and compared.

**File Formats**. JPEG is showing in the dialog box above but there are a number of other options listed which are appropriate for different types of graphics. JPEG is the best option for photographs.

**Quality**. Different qualities can be shown in the 2-Up or 4-Up views and the correct one determined. Usually, a quality of about 50-60 will be sufficient.

**Embed Color Profile**. If the image being processed has a colour profile embedded in it then this box should be ticked in order to maintain image fidelity.

**Convert to sRGB**. Viewing devices use the sRGB colour space. Ticking this option ensures the image is in the correct colour space.

**Image Size**. The specific pixel size can be specified here to ensure the image is at the correct resolution. Quality. This is the resampling method. There are a number of options listed in the drop-down box. Bicubic is probably the best one to choose for downsizing an image.

**Finally**. Using the Save For Web & Devices will ensure that you can choose the correct image size and resolution and will also ensure that only web-safe colours are used in your images. However, computer monitors and digital projectors are capable of displaying a wider gamut than just web-safe colours so, if your image is for digital projection only and you want to ensure that you maintain the full colour gamut it might be worth considering just using the Image Size dialog box to make your image the correct size and resolution, converting it to JPEG and saving it as it is.