

intended use of your image. Is it for publication in a magazine or book? Do you plan on processing and printing your own images? Are you planning to shoot JPEGs and turn them over to a print agency for processing and printing? Your answer will dictate your choice of color space.

Adobe RGB (1998) has a larger *color gamut*, meaning more colors can be displayed within the color space. For those planning to edit and print their own digital files, many photographers believe Adobe RGB is a better color space; but this is only a personal preference and not a caveat. More recently, some photographers have adapted the ProPhoto RGB color space as it provides an even larger color gamut than Adobe RGB.

The sRGB color space was developed cooperatively by Hewlett Packard and Microsoft to provide a color standard for monitors, printers, and the Internet, so consequently most web browsers are designed to best display images with this color space. In actuality most commercial and desktop printers are sRGB driven devices and many print agencies specify the sRGB color space as the commercial printers are calibrated for it. If you plan to shoot mainly for web output, or you use an outside agency specifying sRGB to print your work, shooting in sRGB mode can save you a great deal of time later as you won't be faced with converting a large batch of images. You can always convert to another profile later but the whole idea of workflow is to avoid putting extra steps in the process.

## JPEG or RAW

All Nikon Digital SLR cameras offer the option of capturing in either JPEG or RAW format. Which file format you choose depends on what you are shooting and the intended end use.

The JPEG file uses a compression file format, which results in a much smaller file size but at the expense of image quality. Each time a JPEG file is opened, edited, and re-saved, it undergoes another round of compression, which degrades image quality. After several such operations there is a noticeable loss of image quality, usually in the form of what are called JPEG 'artifacts.' One way to work around this is to save the original JPEG as an 8-bit TIFF file and use this as your master file. In this way the only loss suffered is from the initial, in-camera compression.

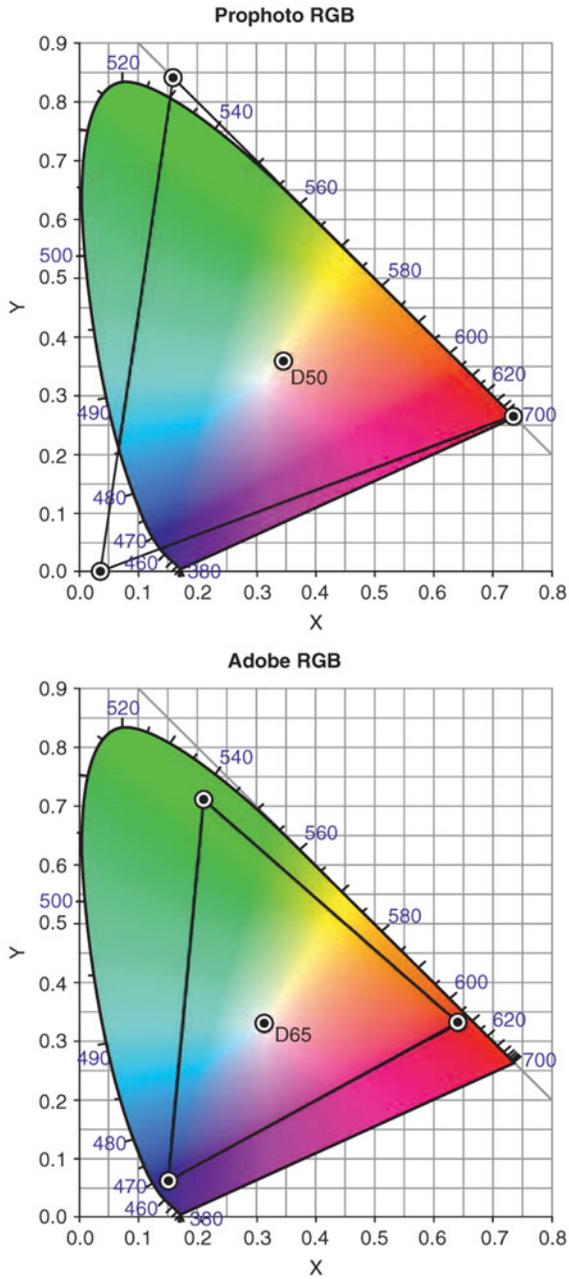


Figure 2.2

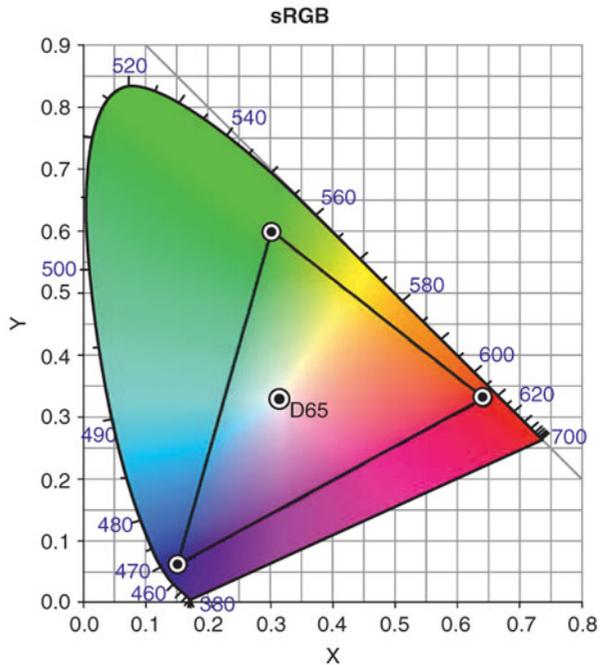


Figure 2.2 (Continued)

JPEGs are 8-bit files, which contain 256 shades of color in each of the three color channels. By contrast, a 16-bit TIFF file created from a RAW file contains over 65,000 shades of color in each color channel. The practical implication for us as photographers is that with a RAW file, and the resulting 16-bit TIFF file, we have more information to work and edit with, which translates into better overall image quality. Figures 2.3 and 2.4 illustrate the number of colors in an 8-bit and a 16-bit file, respectively.

In its favor, the RAW format provides huge latitude for adjustment after the fact. You can adjust up to two stops of exposure, plus or minus, after the fact, and white balance can be adjusted afterwards as well. Sharpness, contrast, and noise levels can also be adjusted when RAW processing. From these digital negatives you can produce large 16-bit TIFF files, containing much more resolution and color information than that found in the JPEG format.

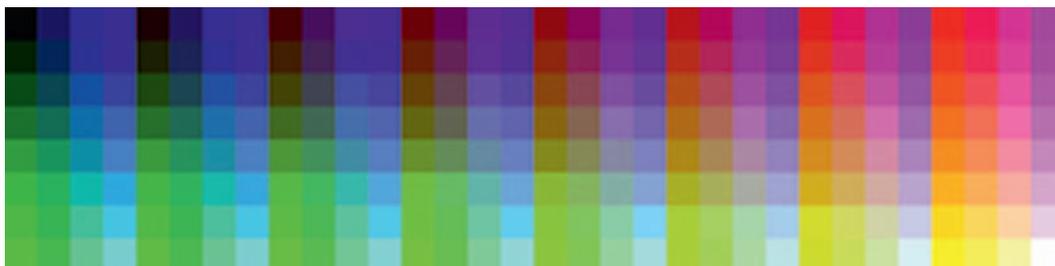


Figure 2.3

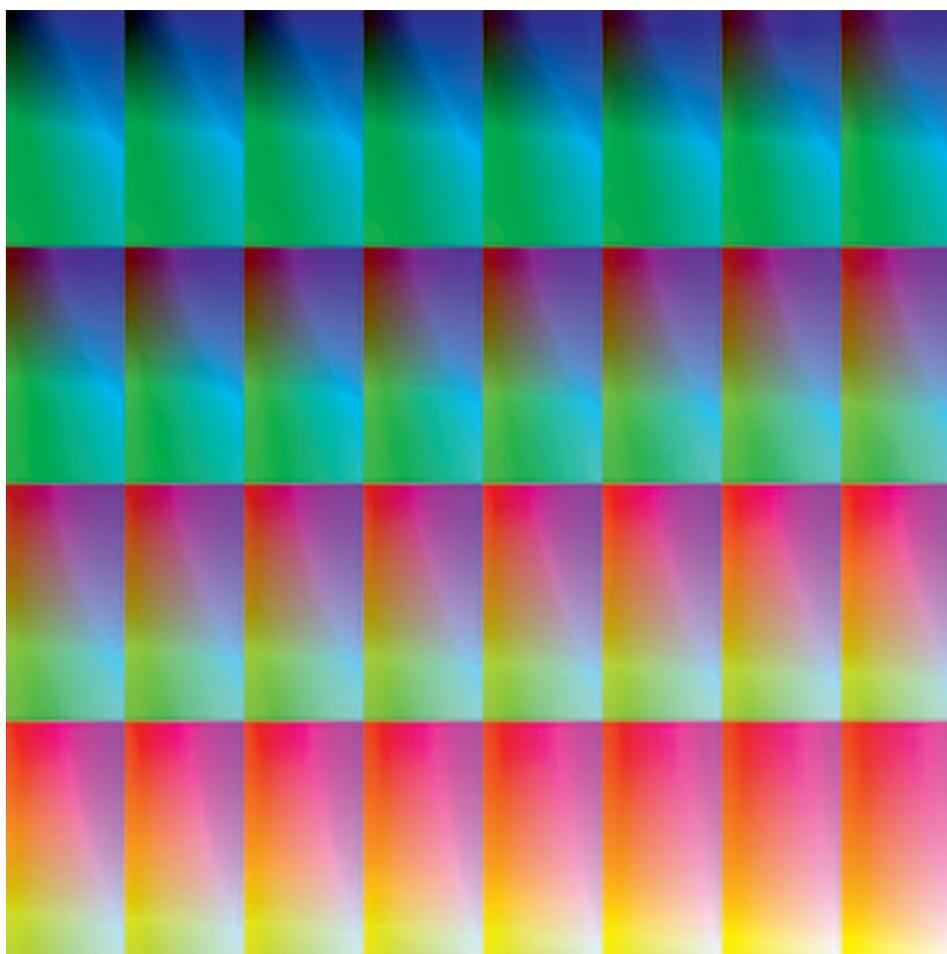


Figure 2.4

JPEG has its own legion of fans for several reasons, but size and ease of use are primary. Properly exposed JPEGs in the right hands can produce beautiful output for print and screen. The smaller file size makes batch processing a large number of JPEGs much less time-consuming as well.

A large RAW file is somewhat overkill when you are shooting a small piece of jewelry for eBay, but on the other hand if you have your camera set to capture a small or medium JPEG and you grab a priceless shot of your child scoring the winning goal in a soccer match you will be sorely limited by the small resolution of the JPEG format. Another consideration is the quantity of images you plan to shoot in a given session. Most landscape and fine art photographers will choose RAW for the potential file size and editing latitude it allows for later. In today's digital world, for many wedding photographers to shoot anywhere from 800 to 1500 images isn't unusual. Consequently most wedding



Figure 2.5 Images with large dynamic range and complicated color gradation benefit from editing in 16-bit mode.

photographers shoot in JPEG mode to minimize post processing and avoid hours of tweaking in front of the computer screen.

Nikon Digital SLRs currently allow the user to select RAW *plus* JPEG as an option. This gives you the best of both formats, but plan on carrying more memory cards that are now so inexpensive that it is no longer a real issue.

The bottom line is to consider all relevant factors involved in your workflow when deciding on an image format. What is the intended use for these images? What is the largest resolution (image size) I will need? How much time will be involved in post processing?

## Transferring Images to Your Computer

Having worked many years in a camera shop I can safely say that most folks just plug their camera into the computer and use whatever program automatically launches to download images.



**Figure 2.6** Images with large dynamic range and complicated color gradation benefit from editing in 16-bit mode.