

Photoshop Mastery

Taking Photoshop to the next level

■ BY BEN WILLMORE

Nondestructive...16 Bit...ProPhoto RGB?

These are the buzzwords coming out of the mouths of many top photographers as they talk about the latest and greatest in workflow. But you seldom hear about the nitty-gritty details or one potential “gotcha,” so let’s decode these terms and see what the big deal is.

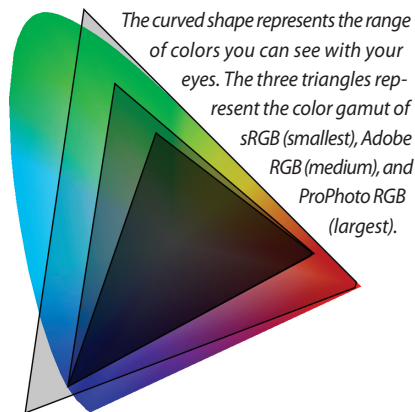
Choosing a color space

The RGB color space you use when processing a RAW file or scanning an image determines the range of colors your image can contain. There are three main choices in use today:

1) The *sRGB* color space offers the narrowest range of colors (a.k.a. color gamut) and is only recommended when an image will be reproduced in newsprint, displayed on the Internet, or sent to certain photo labs that require it. The reason *sRGB* isn’t recommended for professional users is because most output devices are capable of reproducing much more vivid colors than what’s contained in an *sRGB* image.

2) The *Adobe RGB* color space is more popular among professional users because it more closely matches the range of colors that most output devices can reproduce. This color space is a good compromise for people who don’t want to become overly educated about the details of color management, and is a popular choice worldwide. As some users have become more educated about color and the science behind it, they’ve noticed that many digital cameras are capable of capturing a wider range of colors than *Adobe RGB* images can contain (especially in the darker regions of an image) and many output devices can reproduce colors that aren’t available in the *Adobe RGB* color space.

3) In an attempt to get the most from their hardware, some users have adopted *ProPhoto RGB*, which has a wide enough gamut to contain all the colors your digital camera and printer are capable of reproducing (and a lot more), but most images will only take advantage of a small amount of the extra range provided by this color space.



The curved shape represents the range of colors you can see with your eyes. The three triangles represent the color gamut of *sRGB* (smallest), *Adobe RGB* (medium), and *ProPhoto RGB* (largest).

[See “Under the Hood” on page 106 of this issue for more on color management.—Ed.]

16-Bits mode

When processing a RAW file or scanning an image, you’ll usually be offered the choice between opening the image in 8- or 16-bit modes. Documents with 8 bits contain up to 256 brightness levels, while most 16-bit documents contain 4,096 brightness levels (the 16-bit mode is capable of handling up to 32,769 but most digital cameras don’t capture that much data). By using 16-bit mode, you’ll be taking advantage of all the brightness levels your camera is capable of capturing. You only need 8 bits of information to produce a good-looking image onscreen or when printed, but those extra shades are useful when performing adjustments because they help to ensure that transitions from bright to dark will remain smooth.

Nondestructive imaging

You have two choices in how to adjust an image: apply adjustments directly via

the Image>Adjustments menu, or apply them via the Create New Adjustment Layer pop-up menu at the bottom of the Layers panel. The latter is much more versatile because it always leaves the original image untouched so that any adjustment can be removed or modified, even after the document has been saved and closed.

A few cautions

Implementing a nondestructive, 16-bit, *ProPhoto* workflow shouldn’t be treated as a casual affair for the following reasons:

1) Files that are 16 bit take up twice as much space on your hard drive when compared to 8-bit files. The difference is even greater when layers are added, and those giant file sizes can slow Photoshop down to a crawl.

2) Images in 16-bit mode are mainly useful when applying adjustments. Adjustments that are applied as adjustment layers aren’t permanent until you merge them into the original image (or flatten the image). So be sure to merge or flatten before converting your image to 8-bit mode; otherwise, the adjustment layers will no longer be applied to the full data that your camera captured and will be recalculated and applied to only 8 bits worth of data.

Don’t expect others to know how to deal with your specialized files (most people don’t use 16-bit *ProPhoto* images), so when handing your file over to someone else, be prepared to flatten your image, convert to a different color space (like *Adobe RGB* or *sRGB*), change the mode to 8 bits, and save out a copy of the file. That way they won’t have problems dealing with the results of your specialized workflow. ■

Ben Willmore is the best-selling author of Adobe Photoshop CS3 Studio Techniques and Up to Speed: Photoshop CS3, as well as co-author of How to Wow: Photoshop for Photography. Ben spends many of his days on the open highway, a digital nomad in his 40’ motorcoach. Learn about his latest adventure at www.WherelsBen.com.