



# Photoshop Mastery

Taking Photoshop to the next level

■ BY BEN WILLMORE

## Digital Photographers Must Choose: JPEG or RAW?

Asking someone if you should shoot in RAW or JPEG format is like asking if you should use Mac or Windows—everyone has an opinion, and some want to shove it down your throat without considering your needs. Let's look at the facts and decide which might be best for your situation.

Most high-quality digital cameras give you the option of saving images in either RAW or JPEG format. My Canon EOS 10D produces images that are 3027x2048 pixels no matter which of those formats I choose. That's enough information for a 5x7" or 6x9" print, depending on the resolution used. If I use high-quality JPEGs, I end up with 1.30-MB files that can be written quickly to a CF card. In fact, if I hold down the shutter and take photos as quickly as possible, I'll be able to get 65 photos in 1 minute and fit 406 images on a 1-GB card. With RAW files, I end up with 5.07-MB files, which take a bit longer to write to the memory card, allowing me to take 25 shots in 1 minute and fit only 161 images on a 1-GB CF card.

Just about any program that's capable of displaying a photo can open a JPEG file, which makes it a popular choice when sending images to others. On the other hand, you need special software to open RAW files. You can open a RAW file in Photoshop CS; but if you're using a prior version, you'll have to spring for the \$99 Camera Raw plug-in or get stuck using the software that comes with your camera (which you can use to save the file as a TIFF so you can open it in Photoshop). Because most people don't have the capacity to open a RAW file, you'll have to go through multiple steps and end up saving your images as JPEGs or TIFFs if you'd like to send them to someone else.

From what I've said so far, it sounds like JPEG would be the clear choice but before we decide, let's look at the main disadvantage of shooting in JPEG format. To create a small file (1.30 MB vs. 5.07 MB), the JPEG format must degrade the quality of your photos. This shows up as blocky-looking artifacts in your image. You might not notice them when you first open an image,

but just about anything you do to the image (enlarge, adjust, sharpen, etc.) is likely to exaggerate those artifacts enough to make them noticeable, as shown below.



On top is the original version of a portion of the bald eagle image; bottom is after adjustment. The JPEG file is on the left, RAW on the right.

RAW files take up more space on your hard drive but they give you many advantages over JPEG files. When opening a RAW file in Photoshop, you'll be presented with the Camera Raw dialog. This is where you'll have extensive control over exposure, color, and contrast as well as advanced features used to compensate for noise and lens problems (vignetting, chromatic aberration, etc.) that simply aren't available when working with JPEG files. Also, when you shoot in RAW format, your camera records 16 times as many colors as JPEG is capable of recording. Those additional colors aren't used when printing the image but are a big help when making radical adjustments that would otherwise produce posterization.

Which format should you choose? If you aren't making large prints and you get your exposure correct in-camera (meaning you don't rely on Photoshop to radically change the appearance of your images) and you shoot fast action, then think about using JPEG format. If, on the other hand, you're a perfectionist who wants as much

control and quality as possible (and might make large prints), then consider using RAW format.

If you're used to shooting film, think of RAW files as being like negatives; they need to be interpreted (in the Camera Raw dialog) before printing. That means that you can be a little more flexible with the exposure setting when shooting and don't have to worry about settings such as white balance because you can make changes when you open the image in Photoshop. Working with JPEG files is more like shooting slides where the resulting image needs no interpretation, which makes the in-camera exposure and white balance settings more critical.



The Camera Raw dialog offers advanced features that aren't available with JPEG files.

No matter which format you choose, you still have Photoshop's arsenal of retouching and adjustment tools available. Make your choice based on the facts. Don't feel pressure from others who choose to shoot RAW files: Make your own decision. Personally, I've chosen RAW for the vast majority of photos I've taken. ■

Ben Willmore is founder of Digital Mastery, a Colorado-based training and consulting company that presents the national seminar tour of "Photoshop Mastery." He's also author of Photoshop CS Studio Techniques. Check out the free Photoshop tips and tutorials at Ben's website, [www.digitalmastery.com](http://www.digitalmastery.com).