Raw vs. Jpeg

What is RAW? RAW is a file format that captures all image data recorded by the sensor when you take a photo. When shooting in a format like JPEG image information is compressed and lost. Because no information is compressed with RAW you're able to produce higher quality images, as well as correct problem images that would be unrecoverable if shot in the JPEG format.

1. Get the Highest Level of Quality

This is one of the biggest benefits. When you shoot in RAW you record all of the data from the sensor. This gives the highest quality files. And when it comes to your awesome images, you want high quality.

The difference when you shoot in JPEG format is that the camera does its own processing to convert the RAW information into a JPEG.

However, your camera is nowhere near as smart as your brain, nor is it as powerful as your computer. When you shoot RAW, you're able to do that processing yourself. You can make the decisions on how the image should look, and produce way better results.

2. Record Greater Levels of Brightness

Levels of brightness are the number of steps from black to white in an image. The more you have, the smoother the transitions of tones. Smooth is good.

JPEG records 256 levels of brightness, and RAW records between 4,096 to 16,384 levels! This is described with the term "bit". JPEG captures in 8bit, and RAW is either 12bit or 14bit. That's what that bit business means!

The effect this has on your images is huge. Those additional steps of brightness let you make more adjustments (exposure, blacks, fill light, recovery, contrast, brightness) to your image without a significant reduction of quality, because there's more levels to work with!

3. Easily Correct Dramatically Over/Under Exposed Images

Obviously you want to get the best exposure in camera, but sometimes things move fast (especially with weddings!) and you wind up with a dramatically over or under exposed image.

With RAW you have additional information in the file, so it's much easier to correct the image without a drastic reduction in quality. You can also recover more blown highlights and clipped shadows.

4. Easily Adjust White Balance

When you shoot JPEG the white balance is applied to the image. You can't just easily choose another option. With RAW the white balance is still recorded, but because you have way more data, it's easy to adjust.

5. Get Better Detail

When you shoot RAW you have access to sharpening and noise algorithms in a program like Lightroom that are way more powerful than those found in your camera.

Plus, these sharpening and noise algorithms are always improving, so in the future you'll be able to re-visit your RAW files and take advantage of these improvements.

6. Enjoy Non-Destructive Editing

When you make adjustments to a RAW file, you're not actually doing anything to the original data. What you're doing is creating a set of instructions for how the JPEG or TIFF (another file format) version should be saved.

The awesomeness of this is that you never ever have to worry about ruining an image, accidentally saving over, or being unable to go back and make changes. You can always reset your adjustments, and start over again.

JPEG files lose quality every time you open them, make adjustments, and save again. True story. It's what is known as a "lossy" file format. So if you're making edits to JPEGs you always have to be duplicating the image and saving out a new version if you don't want to lose file quality. Hassle.

7. Get Better Prints

Because of the finer gradation of tones and colors you'll get better prints from RAW files. Even though more and more people are shooting digital, great prints are as important as ever.

8. Select Color Space on Output

Color space is a bit of a complex topic, but here's a quick tip. With RAW you can choose from any color space when you are exporting it out, so you can adjust depending on the situation!

Is the image going on to the web? Then output in the sRGB color space to ensure maximum compatibility among web browsers.

Are the files heading to a client? Save it in the common Adobe RGB (1998) color space.

Do you want the widest color space possible? Use ProPhoto RGB.

Basically there are different color spaces that work best for different situations, and when you shoot RAW you can export a single image in multiple spaces!

9. Have an Efficient Workflow

It's easier to work through large batches of images when you're using a workflow centric program like Lightroom. They're designed to easily process groups of RAW images. Photoshop is not meant for that kind of thing, it's built to handle one image at a time.

In order to take full advantage of all the benefits of Lightroom you should be shooting RAW!

10. It's the Pro Option

Professionals should be providing their clients with the highest quality possible. Issues like banding and blown highlights are big deals when you're offering your clients printed products. Achieving proper color balance, and choosing the right color space for the situation are critical as well.

By shooting RAW you take control, and are able to manage these problems to create the best results possible.

Downsides and Solutions: Need To Be Processed

A common argument against shooting RAW is that because the files need to be processed, it takes more time to shoot RAW than JPEG. If you don't do any processing to your JPEGs that might be true.

However, most photographers do some level of processing to their JPEGs so already the argument is getting flimsy.

Then, when you add in the fact that adjustments like white balancing, and recovering highlights and shadows are way faster with RAW files, and it actually begins to looks like processing RAW can be faster than JPEG!!

Then, with RAW, you can easily export to JPEG, as well as convert to various sizes (like web res) at the same time. If you really wanted you could even shoot RAW + JPEG simultaneously!

RAW gives you way more options, and can be processed just as fast, if not faster, than JPEG.

Takes Up More Space

Since RAW files have more uncompressed information they can be 2-3 times larger than JPEG files. This is definitely a concern for many shooters, especially those who create a lot of images.

But over the past few years, the cost of hard drives has really dropped, and they're incredibly affordable!

Let's consider a 3TB hard drive.

A 3TB drive costs about $129

If a large JPEG file is about 8MB, you'll fit 375,000 images on the drive, at $0.000344/image

If a RAW file is about 30MB, you'll fit 100,000 images on the drive, at $0.00129/image

Obviously you can store fewer RAW files, but the number of images that you can cheaply store is so large for both formats that it's not really an issue! It's also probably a good idea to not place so many images on a single hard drive. Don't put all your photographic eggs in one basket!

Memory cards are the same deal. They're constantly dropping in price. Remember when a 2GB card was over $200?? Nowadays you can hardly even buy one that small, and 4GB is as cheap as $15. Yes, RAW files are bigger and take up more space. But that's because they're of higher quality. Go with high quality for the extra $0.00121/image.

Slows The Camera Down

RAW files are larger than JPEGs, so they'll fill up the buffer of your camera faster. The camera will still shoot the same frames per second, regardless of whether it is RAW or JPEG, but you may have to wait for the camera to write to the memory card if the buffer fills up.

If shooting fast sequences if critical for you, and you want to shoot RAW, you can purchase faster memory cards, or a more expensive camera with a larger buffer.