

NOTE

JPEG capture has the advantage of offering faster capture burst rates and smaller file sizes. JPEG capture does make sense for people like busy news photographers, where speed and the compactness of the file size is essential for wireless shooting. JPEG is also perfectly fine for shooting fun photos on a digital compact or smartphone camera. But for everything else I recommend that you shoot in raw mode whenever possible. Raw files are often not that much larger than high-quality JPEGs, and the raw mode burst rates on a typical digital SLR are usually adequate for all but the fastest sports shooters. Apart from that, it just doesn't make sense these days not to shoot in raw mode. Above all, Lightroom is designed to help you make the best possible photographs from the raw data captured by your camera sensor. Only by shooting in raw mode can you ever hope to achieve the highest-quality results.

NOTE

Some Canon cameras are able to shoot using an sRAW format and some also in an mRAW format. These are files with smaller pixel dimensions than the full-size raw files, where the demosaic processing is carried out completely in the camera. This means that although such files appear to respond as if they are proper raw images, they are unable to provide the full range of Lightroom raw image-processing features. For example, you will lose some of the benefits of the improved demosaic processing that is found in Lightroom 3 or later.

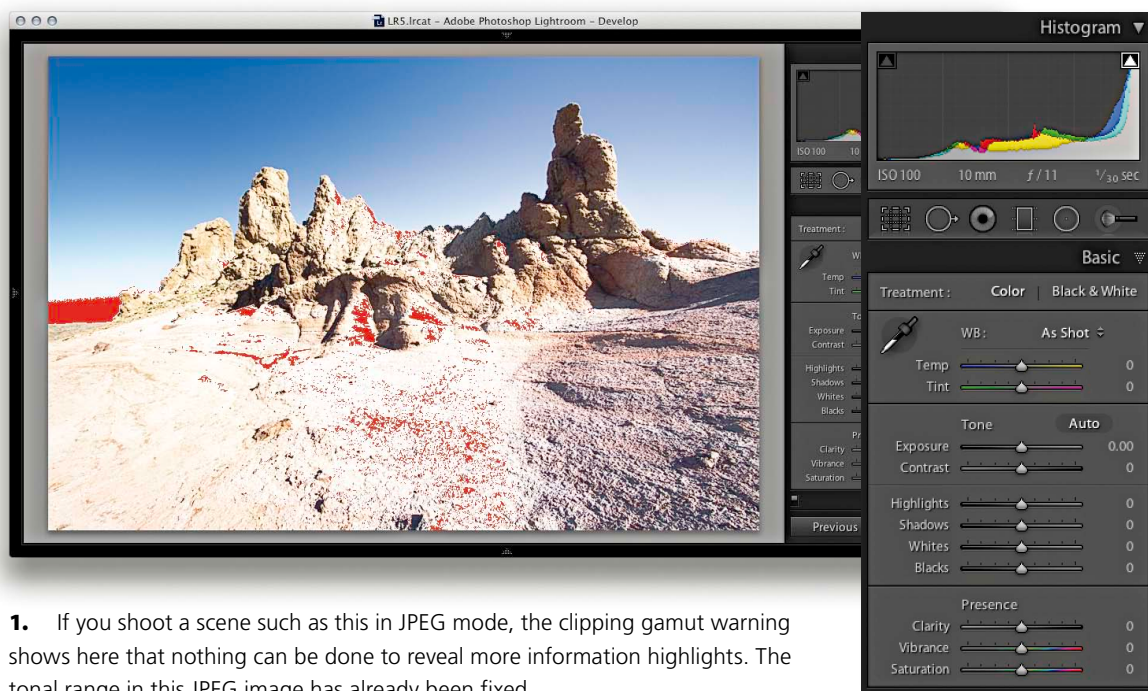
Raw or JPEG?

At first glance, Lightroom appears to handle the processing of raw images and non-raw images as if they were the same. The fact that you now have more controls at your disposal to edit the color and tone in a JPEG capture is in one way a good thing, but it would be unwise to conclude from this that a JPEG image can now be considered equal to the quality of a raw capture. Here is a brief summary of the differences between shooting in raw and JPEG mode.

A typical good-quality digital camera might be able to capture 12 bits of data per channel, which equates to 4096 levels of information per color channel. This does not mean that every image you capture will contain 4096 levels in every channel—an underexposed digital photograph will have far fewer levels than this. But even so, you want to preserve as many levels of data as you can. It is claimed that the medium format digital cameras and some of the more recent digital SLRs can capture as many as 14 bits of data or 16,384 levels per channel. Whether you can capture 14 bits or just 12 bits of data per channel, being able to record up to 4096 levels or more is still a lot of levels to play with.

A raw capture file contains the direct raw data as captured by the sensor, without any pre-image processing applied to it. This is the major advantage of raw: when you shoot using raw mode, apart from the exposure and ISO setting, nothing else about the image processing will have been decided yet. A raw file is like a digital negative that has yet to be processed, and as such it's a master file with the potential to be edited in many different ways. Some photographers have found their initial encounters with raw images to be off-putting because some raw images may appear dull and lifeless when they are first imported into Lightroom. But, in a way, this is a good thing because you want there to be room to expand the tones and add more contrast as you see fit. Lightroom's Develop module can be used to interpret your master files in a variety of ways, but they work best when they are used to edit raw images. Also, the Develop settings can be set up to automatically match JPEG output, which makes the "speed and simplicity" argument for shooting JPEG redundant.

The alternative option is to shoot using JPEG mode where the camera automatically applies the image processing in-camera. This can include things like setting the white balance, adjusting shadow and highlight clipping, applying a tone curve, removing noise, sharpening the image, and converting the raw data to an 8-bit RGB output space. The JPEG capture mode also compresses the color data (while trying to preserve the luminance) to produce a compact JPEG capture file, and all the image processing is managed by an onboard image processor inside the camera. The user has limited control over the JPEG processing beyond setting the white balance settings, sharpness, noise handling, and RGB output space before the pictures are shot. You can use the Develop module controls in Lightroom to enhance a JPEG photo's appearance, but there are limitations as to how much you can do before you start to see clipping and artifacts in your JPEG-edited photos.



1. If you shoot a scene such as this in JPEG mode, the clipping gamut warning shows here that nothing can be done to reveal more information highlights. The tonal range in this JPEG image has already been fixed.



2. If the same image is captured in raw mode, a negative Exposure combined with a negative Highlights and other adjustments quickly reveals the highlight detail that the JPEG capture version was unable to preserve. When you process a raw file, you potentially have more tone information to play with and therefore more flexibility when making tone and color adjustments in the Develop module.