

# Raw Image Processing

As we know, JPG images are processed in the camera, which throws away most data available in the captured image. JPG processing follows software steps determined by the programmers who wrote the camera embedded editing process. It is NOT analogous to old fashioned film development and it is not 'old fashioned' photography. It is analogous to having a drug store develop your film images: One size fits all. To follow the 'old-fashioned' process of developing an image, a photographer must shoot in Raw format. Raw format captures and retains all electronic data that hits the camera's sensor. It is left to you, the photographer, to develop that raw image, just as Ansel Adams and photographers of old did in their darkrooms. You, however, have more tools available to do so, which would have delighted the old timers!

When you develop an image in Camera Raw, no changes at all are made to the original raw file. Instead, editing data is stored in a separate file and your image viewer software applies the directions in that file to the raw image before it displays it on your screen. The file with directions has an extension .XMP. If you don't like the result of your edits in Camera Raw file, you can delete the .XMP file for that image. Nothing you do affects the original raw file.

You can do a large share of your editing in the Camera Raw software, before importing the semi-developed image into either Photoshop or Elements and before saving in Lightroom. Here is a very basic and quick typical work flow.

Open your original raw capture in Lightroom, Photoshop, or Elements. If it is in raw format, it will automatically open in the Camera Raw software. In Photoshop and Elements, Camera Raw is on a separate software screen. In Lightroom, it is in the **Develop > Basic** panel within Lightroom. The name of each slider adjustment is the same in each of these three programs.

At the top of the **Basic** panel (leftmost icon in Photoshop/Elements Camera Raw), choose a **White Balance** from the drop-down or move the **Temperature** and/or **Tint** sliders to achieve your desired white balance. I usually leave mine on **As Shot** or **Auto**.

Moving downward on the menu, I usually hit the **Auto** button first, to automatically adjust the next six sliders. Camera Raw makes its first development guess. However, **Auto** often makes adjustments I do not like. I find myself frequently moving the **Black** slider to the left and the **White** slider to the right. To bring out mid-tones, I move the **Shadow** slider to the right and compensate by increasing **Contrast** to the right or **Black** slider to the left. One should play with these sliders to bring out contrast and light without losing balance. Remember, the camera does not see what you see when taking the image. That is because your vision is mediated by a historically based brain function, called perception. You want to communicate a sense of what you perceived to the viewer, which means making changes to the raw image.

In most cases, I move the **Clarity** slider to the right, to enhance the structure. If the image is still too washed out, I move the **Vibrance** slider right, to brighten the more muted colors. Rarely, it is necessary to move the **Saturation** slider to the right, to increase saturation of all colors, or to the left, to desaturate when all the native colors are just all too intense.

Finally, the **Detail** section of Camera Raw provides a means of decreasing noise. This is done with the **Luminance**, **(Luminance) Detail**, and **(Luminance) Contrast** slider(s). Move them to the right, but don't overdo it. There are better noise reduction tools in Photoshop, including **NIK Define 2**. For Lightroom users, the NIK Collection (Google) plug-in, **Define 2** is also available. For sharpening, I use **NIK Sharpener Pro 3: Output Sharpener**, which works better than the Camera Raw sharpener, in my opinion.

Bonus: For spot adjustments, play with the **Adjustment Brush**. In Lightroom, it is to the far right above the **Basic** panel. In Photoshop Camera Raw, it is the plain brush on the top left menu. Once the **Adjustment Brush** panel is opened, click **New**, and then select the size of your brush. Size 3 is good for a start. Click on the part of the image you wish to adjust, and draw inside the lines of its edge to create a mask. Then move the editing slider tools. Play with these. You can **Reset** previous adjustments. You can also **Erase** bits of your current mask.

For more extensive editing and creative composition, use Photoshop. To enhance your image with presets, use the NIK and Topaz plug-ins, available for all three tools covered in this overview.