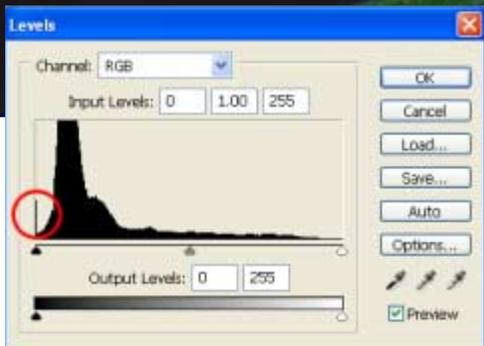
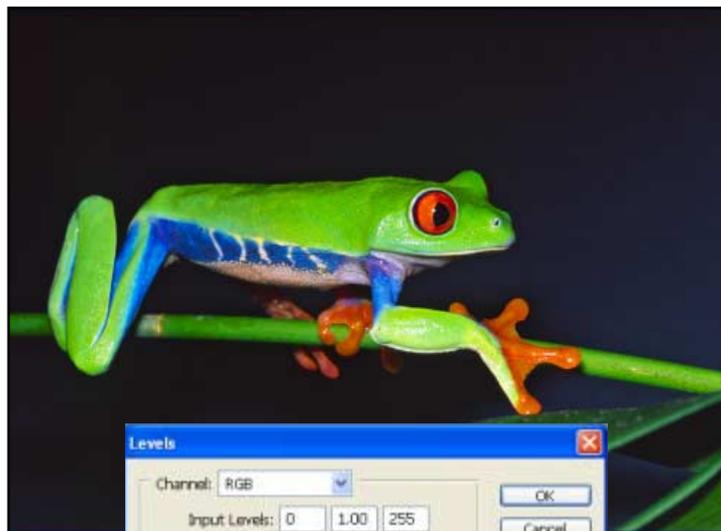


Understanding Histograms

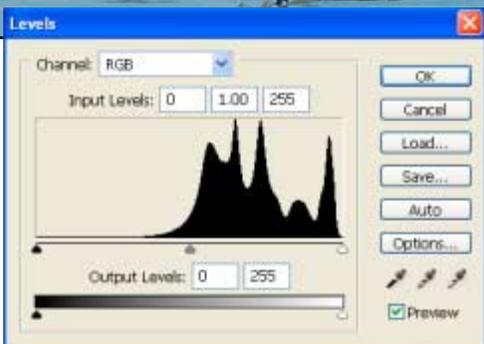
Rule number one: there's no such thing as a "Perfect Histogram". Each histogram is unique to the image it represents, thus no two images will contain the same histogram information, unless is the same image in question. The histogram is merely a representation of the distribution of tonal values over the image. The following examples will help you understand the concept.



Histograms display the pixels' tonal value distribution over the image. The left (Black) slider represents the shadows, the center (Gray) slider represents the midtones, while the right (White) slider is for the highlights. Let's see what they tell you about the image.

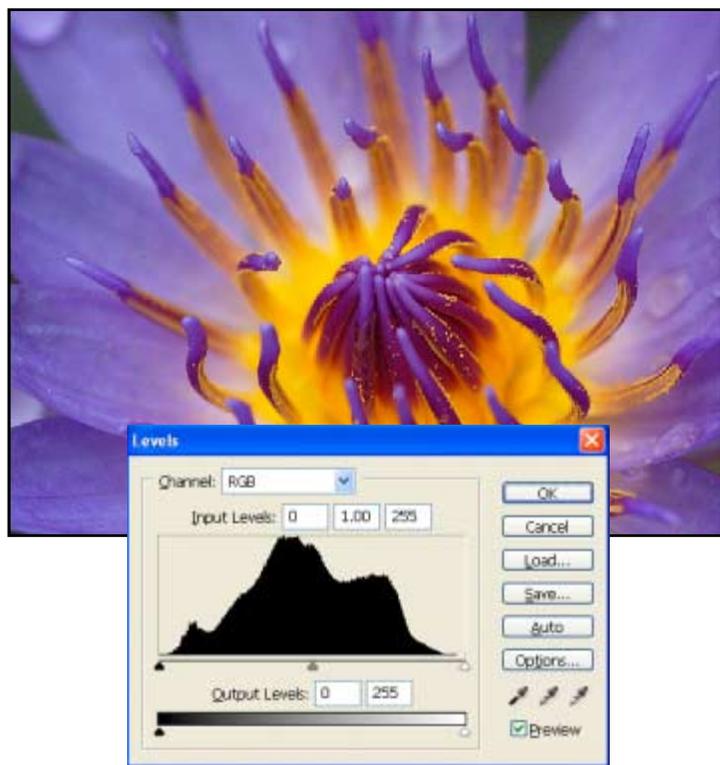
Histogram 1:

This image of a Red-eyed Tree Frog has a lot of shadow information, as most of the background is made of dark black. Notice how the midtones make less than a 30% of the tonal values, and the highlights are minimal. In other words, most of the information is distributed along the shadow area. A high peak at the shadow end of the histogram indicates an area so dark that no-visible details are found.



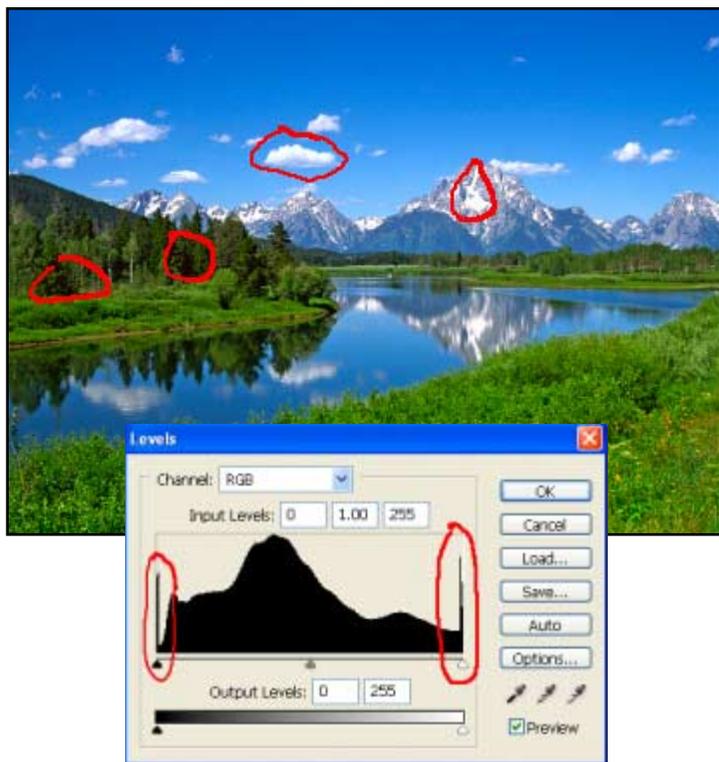
Histogram 2:

On this image of a Reddish Egret (White Morph), most of the tonal values are distributed between the midtones and highlights. Note that there's no overexposure of the whites as the histogram curve ends at the highlights end in a gradual decent. High peaks at the end of the histogram curve in the highlights would have created some over exposure of the highlights. There are no major shadows in this image, thus minimal information is stored in the shadow area.



Histogram 3:

This photo of a water lily shows a good distribution of all tonal values for the whole tonal range. An image with such histogram contains a wide dynamic range and will allow you to make some exposure adjustments without risk of losing information at either extreme of the tonal range. This image was taken under cloudy conditions, that explains the even light and the lack of strong shadows/highlights.



Histogram 4:

This image of Grand Tetons NP has some areas of overexposure as well as some underexposed areas. Take a look at the histogram and note the high peaks on both ends of the tonal range. There are more over-exposed areas than underexposed, while the midtones are good enough. This is a situation that often happens when shooting in the middle of the day, when the sun is high and strong.

Once we understand histograms, it will be easier to make corrections in Photoshop. Knowing and using the histogram display in your digital camera can help you adjust the exposure so you only lose one end of the tonal range rather than both.