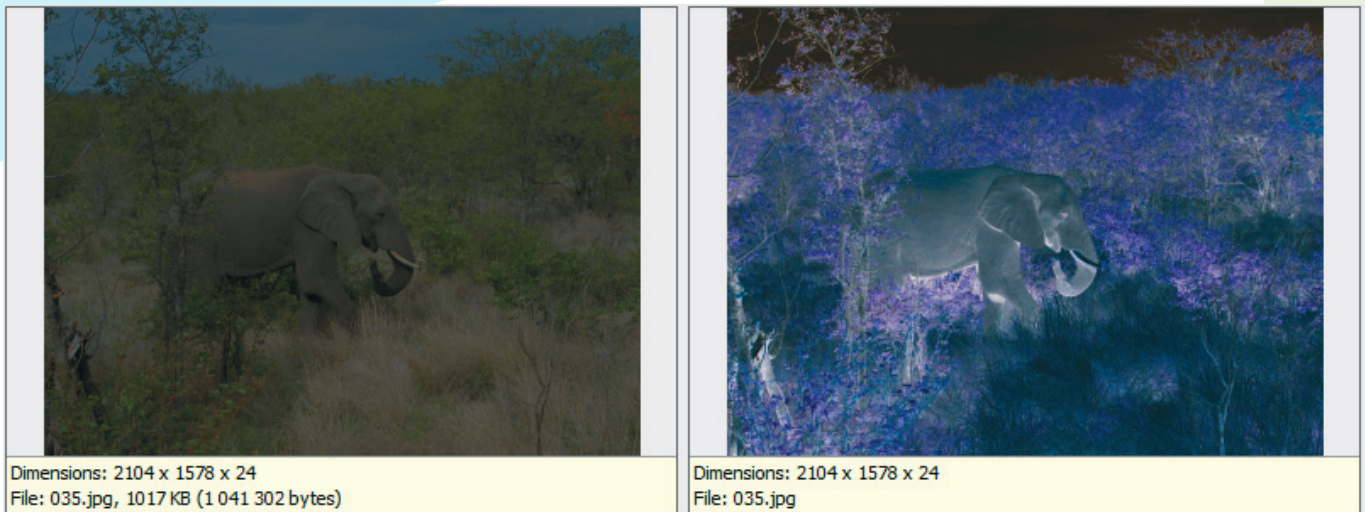


Improving Exposure with Histogram Curves

January 26th, 2011

Intended for: [pros](#)

The most basic edit for any photograph should be exposure correction. There are many ways to do this job. One of the most advanced of ways is via the Curves window, which we'll take a look at here.

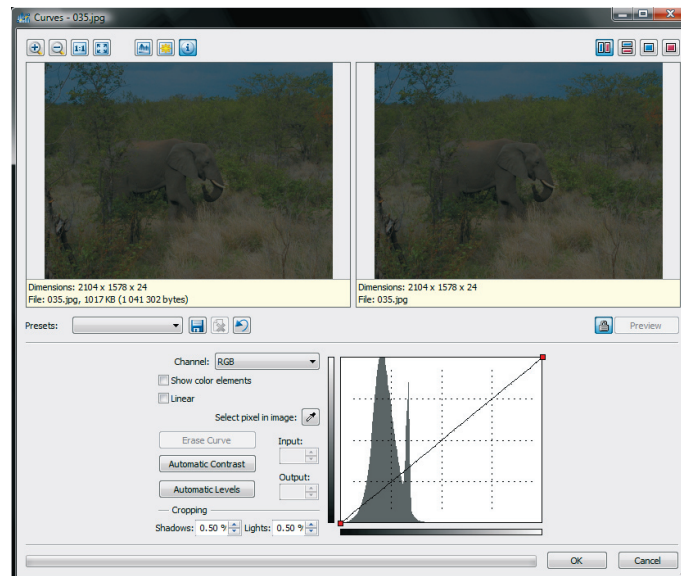


Let's start with a little theory. You may wonder, why bother with editing brightness and contrast? The reason is simple. Most cameras produce pictures with a fairly limited dynamic range. This especially applies for digital compacts. The fault lies with their lenses, which transfer contrast poorly... and which have even worse contrast as focal length grows. You can easily verify this for yourself. Take a picture of a high-contrast scene at a wide angle and then, with the same aperture, on the longest focal length that your camera supports. You will see that the picture taken at the long focal length looks "washed out."

Curves or Levels?

Work with levels is discussed in a different tutorial. As mentioned there, a histogram shows the prevalence of various shades in a picture. The Levels window maps input brightnesses to new output brightnesses, and if you use it right, you can give a picture a much “shinier” and cleaner look. The Curves function gives very similar results, but allows—and demands—more control over the process. In Curves, you are also working with the histogram, but you can work more flexibly—stretching it, shifting it, and otherwise reshaping it to obtain the look you want. As with Levels, the curve you create on the histogram sets how the input brightness values (for RGB or for individual channels) are mapped onto output values. Editing curves for just the R, G, or B channel affects the saturation of the given color element in the final picture.

To reach Curves from the Manager, use **Edit | Adjust | Curves... (Shift+C)**. To reach it from the Editor, use **Adjust | Curves... (Shift+C)**. We will be discussing the Editor version here. It’s usually best to keep the normal contents of the preview area—that is, both a before preview and an after preview—since they make it easy to see how the edit will affect the picture. Take note of the option to show a stripped-down version of the window (via the **Change Window Mode** button), where you preview your changes in the main Editor window. This does have the disadvantage of not letting you compare the edited picture with the original, however.



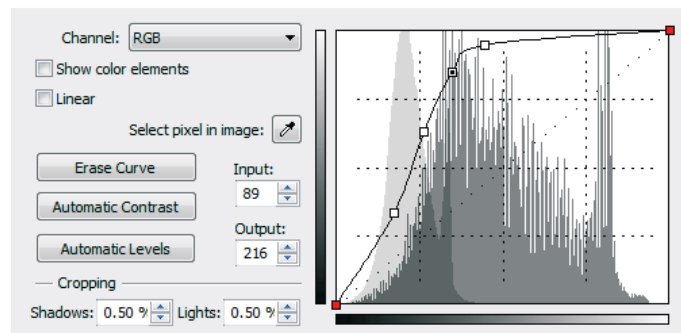
The Curves window’s normal look

Shaping the Curve

The Curves window is divided into three main areas—the preview area, the histogram/curve area, and the area for settings and options like automatic contrast and the choice of which channel to affect. Note the **Erase Curve** button—use this to return to the default curve if you don't think you can get good results from your current one.

Work in Curves is relatively easy. Just adjust the end points, add inbetween points, and use all of them to help shape the curve that is used to translate input (“before”) brightnesses to output (“after”) brightnesses. The hard part tends to be in the art of it, not the science. To add a new node to the curve, move the mouse cursor over it so the cursor changes to a crosshairs, and then click on the curve. To remove an unwanted node, click the node and press Delete.

The ability to work with nodes is the advantage that the Curves window has over the Levels window. To add a node based on a particular shade within the edited picture, use the eyedropper. Click the Eyedropper button for this. The cursor changes to an eyedropper icon. Use it to “suck in” the desired shade. A node representing that shade is immediately added to the curve. To move a node, click it and drag it to the desired position.

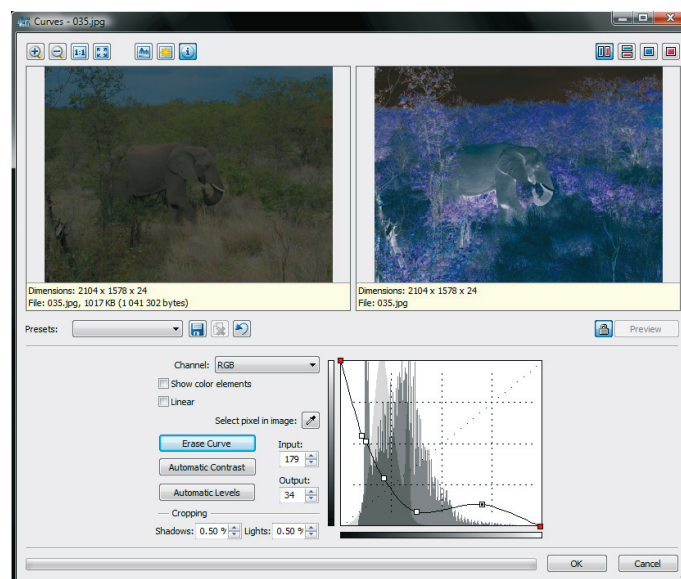


Fine-tuning the curve's midpoints can add some depth to the picture.

Do Be So Negative

Keep one simple rule in mind while editing: dragging the node for a shade down and to the right darkens the shade, while dragging the node up and to the left lightens it. When making large changes to nodes, watch out for underexposure and for overexposure (“blowout”). To check for these, turn on the underexposure and blowout displays for the preview panes.

Don’t hesitate to add lots of nodes if needed. This makes the curve a bit cluttered, it’s true, but it also lets you fine-tune the picture extremely well. If you really want to, you can change a picture’s whole look using Curves. For example, flipping the endpoints of the curve around turns the picture into a negative!



Flipping the curve’s endpoints gives a negative of the image.