

## USING LAYERS IN PHOTOSHOP

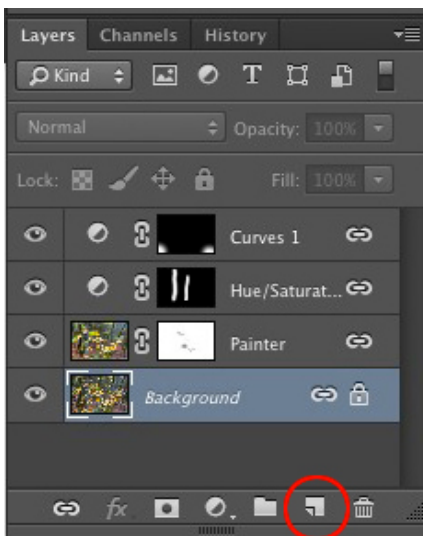
By Diane Miller

Here are the basics of Layers in Photoshop. The uses most important to digital darkroom work are not complicated. If you can make a sandwich you can work with layers. But, like all things with Photoshop, the deep end of the pool is really deep. I'll refer to some of the stuff that lies below thirty feet at the end. If you prefer to dog paddle with a life vest, read on – you can do a lot that way.

With the power of the latest RAW converters from Adobe (Adobe Camera Raw 7.x in Photoshop CS6 and later and Lightroom 4 and later), you have tremendously improved control over tonalities, with the ability to bring out shadow and highlight detail in a single exposure almost to the point of HDR. But there are still many things beyond the adjustments in RAW conversion that Photoshop can add to your digital darkroom tools, and the most flexible and powerful way to work is to use layers. I'm using Photoshop CS6 here, but other image-editing programs, such as Photoshop Elements, have some of the same capabilities.

1) The Layers panel is where you see and manage layers, which show as a stack with the Background layer on the bottom. If you don't see the Layers panel, go to the top menu bar and click Window > Layers. In recent versions of Photoshop there is a Photography workspace (panel layout), which is more suited to digital darkroom work than the default one. Go to Window > Workspace to find it.

2) There are two kinds of layers commonly used for digital darkroom work: pixel layers, which contain image elements, and adjustment layers, which affect the appearance of pixel layers, something like filters on a lens. Visualize the layers stack as flat pieces of a picture (pixel layers) or filters (adjustment layers), stacked on top of one another. The figure below shows two pixel layers and two adjustment layers.



3) Every image starts out as a Background layer, which is typically the image you opened from a RAW file, saved as a TIFF from a non-Adobe Raw converter, or captured as a JPEG. You can add other pixel layers above it. They might be “full frame” layers that completely hide the layers below, such as a copy of the Background layer on which you have done some cloning, but they can also be a “cutout” element that doesn’t fill the whole image, such as a bird added to a sky. An added element may be copied from any pixel layer in the image or from another image. Pixel layers other than the Background can be moved around, rotated, resized or distorted.

4) You can also create an empty pixel layer, by clicking the icon at the bottom of the Layers panel just left of the trashcan (circled in red in the figure above). An empty layer is sometimes created to contain elements cloned from another layer or image. To clone from the Background layer, for example, create a new empty layer just above it and set the Clone tool to Current and Below (in the tool options bar at the top of the screen), and leave the empty layer as the selected one while you clone. Pixels will be copied from the layer below onto the new empty layer.

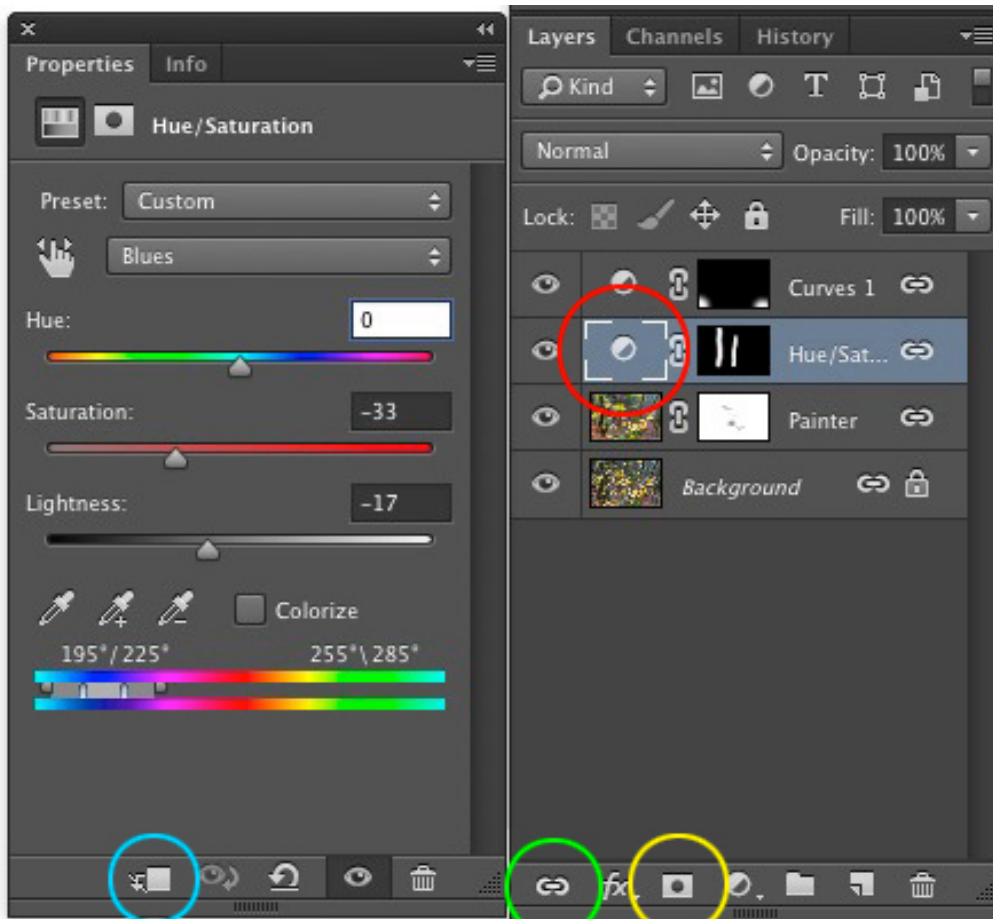
5) One layer is always selected (active). It is shown in color (according to the color scheme you have chosen for Photoshop) and it is the one that will be affected by whatever you do. (If it is gray, you have inadvertently gotten into Quick Mask mode, which is discussed below. Hitting the Q key should get things back to normal.)

6) An adjustment layer goes above a pixel layer to affect its tonal or color appearance. (Before you make it, select the pixel or other adjustment layer above which you want it to go.) The adjustment is permanently editable, which means you can change it as much and as many times as you want, now or next year, without any degradation to the quality of the underlying pixel layer(s). That is not the case if you make changes directly to a pixel layer instead of using an adjustment layer. The changes you make with adjustment layers are applied cumulatively at the time you flatten an image, which is generally only necessary when you export a derivative JPEG or TIFF for some external use.

6a) There are a few adjustments that can’t be done with an adjustment layer, that can only be done directly, with Image > Adjustments, but they are not commonly used ones for photography. The most useful for digital darkroom use is the Shadows/Highlights adjustment, but with proper use of the Shadows and Highlights sliders in Adobe Camera Raw or Lightroom, coupled with Nik’s Detail Extractor (in Color Efex Pro 4) it is rarely needed.

7) To make an adjustment layer, go to the top menu bar and click Layer > New Adjustment Layer, or click the middle icon at the bottom of the Layers panel, the black and white circle. Here’s one of the best things about working in layers: After you have made the initial adjustment, turn the visibility of the layer on and off with the eyeball icon to really see what you have done. That will let you see if you need further tweaks to the mask shape or the adjustment itself. To bring the adjustment dialog back up to

tweak an adjustment after you have created it, click the icon on the left end of the layer thumbnail, circled in red in the figure below.



8) If there are several layers below an adjustment layer, it will affect the image as though they were flattened.

9) If you want the adjustment layer to affect only the pixel layer immediately below it, you can *clip* it to that layer by clicking the leftmost icon at the bottom of the adjustment panel, circled in blue above. (Toggle to unclip.) You can also hold the Alt key and move your cursor between the two layers until it changes to that icon, and then click. There is no need to clip an adjustment layer to the Background layer, as it is the only layer beneath the adjustment layer.

10) You can mask a pixel layer, to hide parts of it, or an adjustment layer, to block areas to which it applies. You mask by painting with a black brush to hide, or with a white brush to re-reveal part of an area if you went too far with the black brush. Use the regular brush in the Toolbar with the Foreground color set to black using the black and white squares at the bottom of the Toolbar. Vary the size and hardness as needed. A brush set to partial opacity will give partial blocking (translucency). You paint in the image window and the brush strokes will be reflected in the layer's mask thumbnail.

You can also use the Eraser tool in place of the black brush, but it's easier just to switch back and forth between black and white brushes with the "x" key. A mask on a layer is completely editable next week or next year. The paint never dries.

11) A pixel layer doesn't come with a mask but you can add one by clicking the third icon from the left at the bottom of the Layers panel, circled in yellow above. To paint the mask, make sure you click on the mask thumbnail of the layer, which will outline it with a sort of frame. If you have the frame around the thumbnail for the picture instead of the mask, you will be painting on the image.

12) An adjustment layer comes with an empty mask. Masking an adjustment can give targeted lighting effects that mimic fill flash or graduated neutral density filters, only with much more control. You can make an adjustment and then paint on a mask as you would with a pixel layer, to block the adjustment in some areas. But it is more common to want to adjust a small specific area of the image, so it is easier to make the mask first. This is done using Quick Mask mode. There is no such thing as a Quick Mask; it is just shorthand for a quick and easy way to brush in an area you want to be adjusted. It is simple and straightforward, and is something I use on almost every image, but there are a few steps to spell out and I'm going to refer you to my tutorial on Virtual Fill Flash: <http://www.adorama.com/alc/0008106/article/Virtual-fill-flash>

13) When you have pixel layers other than the Background, or adjustment layers that have a mask, it is possible to move their content (slide them around) with the Move tool, thus changing how they are registered to the Background image. It is easy to do this inadvertently if you have the Move tool selected and drag the cursor over the image with one of these layers active. (If an adjustment layer doesn't have anything on its mask, there is nothing to move.) You may not notice this until you make a print or output the image for some purpose. You can prevent this by *linking* these layers to the Background, which can't be moved. Select a group of layers you wish to link, including the Background or a layer already linked to it, and click the link icon, which looks like a chain link, at the lower left of the Layers panel, circled in green above.

Those are the basics; here is some further useful information.

Don't flatten your master file unless you like to burn bridges behind you.

You can turn the visibility of layers on and off with the eyeball icon at the left of the layer thumbnail.

You can delete layers by dragging them to the Trashcan icon at the bottom right of the Layers panel.

You can change their order in the stack by dragging and dropping, but with adjustment layers that can change their result.

You can rename layers by clicking the name in the layer thumbnail.

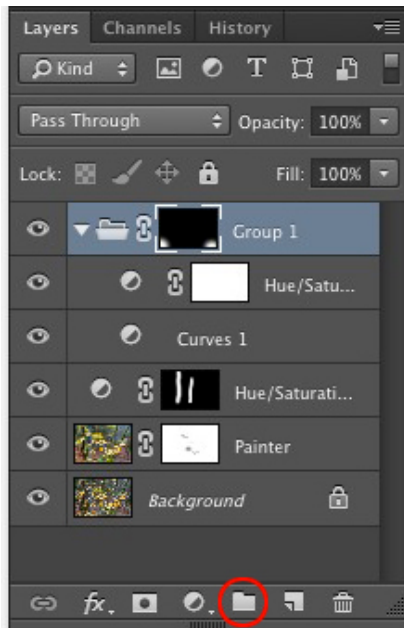
You can merge a set of layers by making them the only ones visible with the eyeball icon and going to the menu selection: Layer > Merge Visible. I like to preserve all the layers when possible, but this can be useful when two pixel layers don't match well and are most easily cleaned up with cloning.

You can reduce the transparency of a layer with the Opacity slider near the top right of the Layers panel.

Sometimes it's useful to link a set of layers to one another, instead of to the Background, so they will stay in registration if you move one. An example would be an element that has been composited into an image with masked adjustment layers that apply only to it. You can make a Group of a set of linked layers and then link or unlink that, as needed, to the Background.

You can group several layers together by clicking the icon that looks like a file folder, circled in red in the figure below, and then dragging the desired layers into the resulting Group layer (or creating them inside it). It works best to grab the layer by the empty space to the right of the name or of a link icon, and drag to the empty space on the right of the Group layer. Grouping is a convenience to be able to toggle the visibility of a set of layers together, for example if you have two alternative sets of adjustment layers you'd like to keep in the same document for comparison. It is also a convenience for having one mask apply to several layers. You can simply drag the mask from an adjustment layer onto the Group layer.

Here, from the previous figure, I have created a Group and dragged the Curves layer into it, and then dragged its mask onto the Group. Then I created a Hue/Saturation layer in the same group, which will have the same mask. That way I can edit the shape of the mask and have the results apply to both adjustment layers it contains.

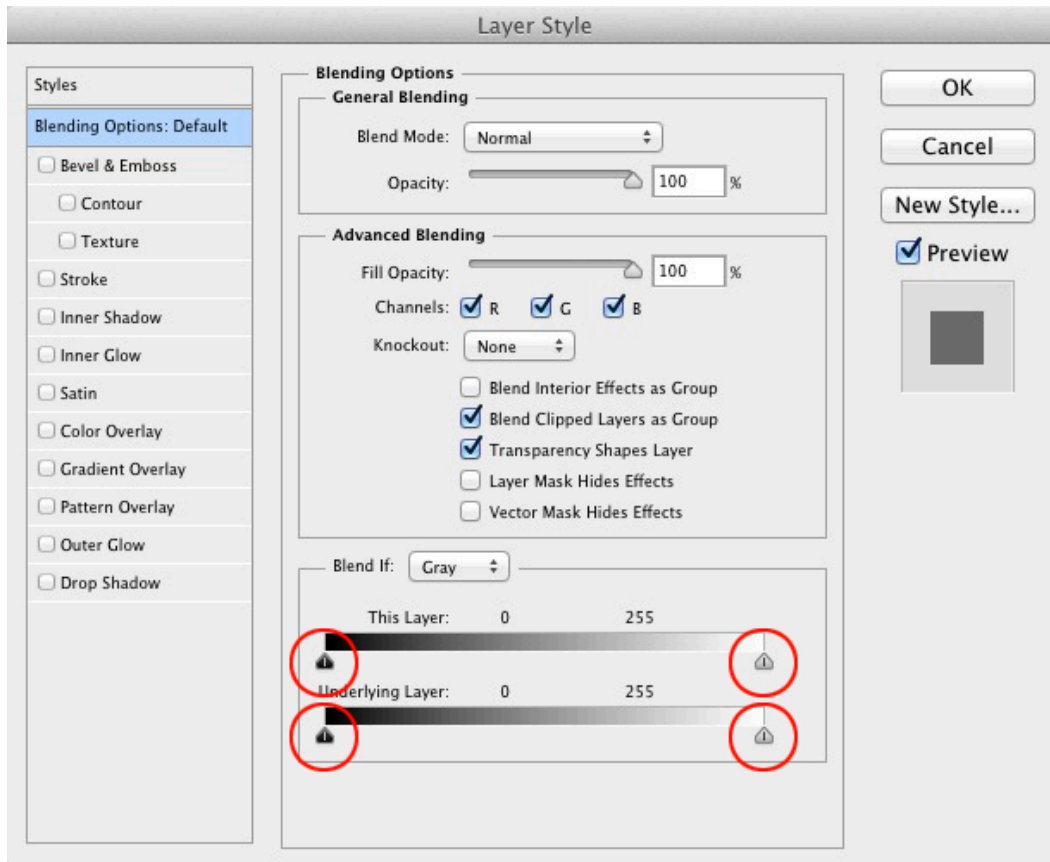


You can make a composite (flattened) layer of all the layers below and including a selected layer by clicking Ctrl-Alt-Shift-E (PC) or Cmd-Alt-Shift-E (Mac). It can be useful to continue with some types of work such as applying a creative filter that needs to be applied to a pixel layer, as an alternative to saving the image and opening a derivative flat copy to continue with the filter.

Sometimes (and often inadvertently) you can do things that change the Background to Layer 0, which no longer has the special properties of a Background layer. That means you can inadvertently drag it out of registration with the image. To glue it in place and restore its usefulness for linking other layers, as discussed in point 13 above, select it and go to the top menu bar and click Layer > New > BG from layer. Then re-link as needed.

You can change the blend mode of a layer with the dropdown just to the left of the Opacity slider. That affects the way it interacts with the sum of all the layers below it.

You can change the way the tonalities of a pixel layer interact with a layer below it with the Layer Style options. They are most easily accessed by double-clicking on the layer to the right of its name or the Link icon. For digital darkroom users, the most useful is the Blend If sliders in the Blending Options choice. For example, you can blend in darker or lighter areas from two exposures, similar to other HDR methods. To get a smooth transition you need to Alt-click on the appropriate one of the four sliders and split it and move the two independently. I'm going to leave further details to a web search, but it's easy to just try the sliders and see if one works.



You can open a file as a Smart Object from Lightroom (Photo > Edit in > Open as Smart Object in Photoshop) or from Adobe Camera RAW (Shift-click on the Open Image button). This allows you to click on the Background layer during the editing process and go back to alter its RAW settings. There is a limitation in that as you re-adjust the RAW parameters of the Background layer, you can't see the effect of any other layers in the stack.

Caution: a Smart Object layer does not have the properties of a regular Background layer; it can be moved out of registration with the image window.

You can't clone directly on a Smart Object layer, and if you had cloned to a separate layer above it, of course it will no longer match a re-adjusted Background layer. If you have mastered the RAW adjustments this is not something you often do, but if you find yourself doing it often, it is a case for saving cloning for near the end of your workflow. And it may be an indication you're not getting the most out of the RAW slider options.