



Curves for Black & White

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In this lesson, we're going to cover the Curves adjustment, which is what I believe to be the single most powerful adjustment in Photoshop. One of the best ways to get comfortable with using Curves is to use the adjustment on black and white photographs, and that's what we're going to focus on here.

Because most of us are shooting digitally, we will be starting with a color photograph and then converting it to black and white while still retaining the color information in the file. This information can be useful when processing the photograph.

The colors in an image have a lot to do with how the viewer experiences the image and where their eye is directed. The eye is naturally drawn to the most colorful areas in an image, and once we convert to black and white, those colors will no longer be present, so the viewer will see the image in a different way. When there is no color, the eye will be most drawn to the areas that have a lot of detail, areas that have a lot of contrast and areas that have the most brightness. These are the things we are going to control when working with Curves adjustment layers.



In the images above, you can see how an image can be viewed differently when displayed in color vs. displayed in black and white. With the version on the left, the eye is drawn to the areas of vibrant color, where the draw is different with the version on the right.



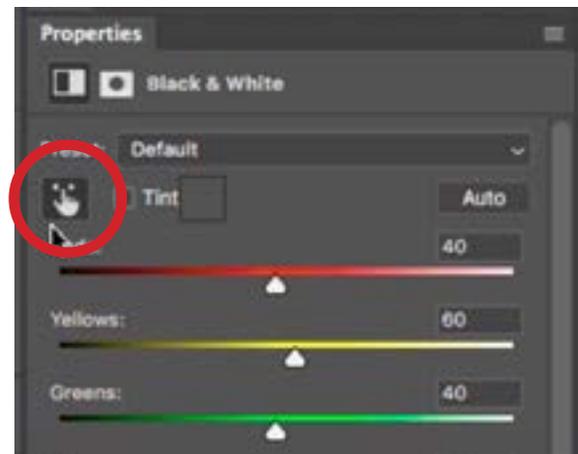
We're going to take this image, convert it to black & white and then use a series of Curves adjustments to direct the eye to the important parts of the frame.

Create a Black & White Adjustment Layer

We will start by opening our color image and then creating a black and white adjustment layer by clicking on the Adjustment Layer icon at the bottom of the Layers panel and choosing Black & White from the pop-up menu. We will NOT convert the image to grayscale (via the Image > Mode menu) because we will end up with no color information in the file. We want to keep the color information because we can use it to isolate areas based on color.

When we create the black and white adjustment layer, the Properties panel will become visible on the screen. We want to turn on the Targeted Adjustment Tool, which looks like a little hand icon in the upper left corner of the panel. We will use this tool a lot, so you might want to change a setting so that it is always turned on by default. This setting can be accessed by clicking on the little menu icon in the upper right corner of the panel and choosing "Auto-Select Targeted Adjustment Tool" from the drop-down menu. Note that this will change the setting for this tool in the Hue/Saturation adjustment layer as well as the Curves adjustment layer.

With this tool active, we can click on an area in our image and drag left or right. Dragging left will darken whatever color used to be in that area and dragging right will brighten the color that used to be in that area. For example, if we click and drag left on the sky area in an image, it will darken all areas of the image that used to be blue. We'll use this tool to fine tune the image based on where the colors used to be and then we'll move on to the Curves adjustment.

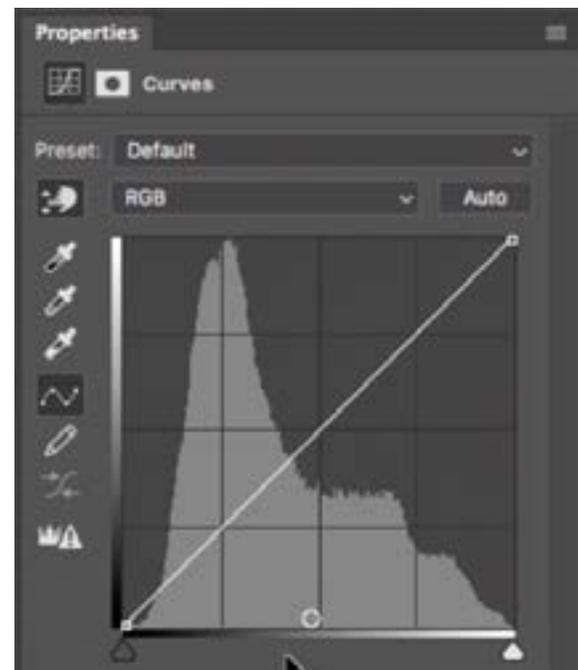


In the Properties panel for the Black & White adjustment layer, the Targeted Adjustment Tool is turned on.

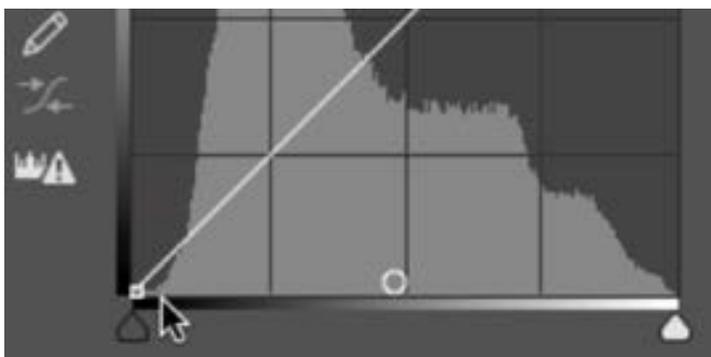
The Curves Adjustment Layer

Now that the image is black and white, we'll create a Curves adjustment layer by clicking on the Adjustment Layer icon at the bottom of the Layers panel and choosing Curves from the menu that pops up.

Understanding Curves At the bottom of the curves chart is a bar that contains all of the different brightness levels you can have in a picture, with black on the left and white on the right. The bar chart tells you which of those shades you actually have in the picture. If you ever see a gap in the histogram, it means that the particular shade found below the gap is not present in your picture. The shades that have higher bars in the chart represent the shades that take up the most space in the picture.



The Properties panel for the Curves adjustment layer shows the curves chart, with black represented on the left and white on the right.



In this chart, you can see that we have all brightness shades in the image because we have bars over the entire bar (even of some of them are very short).

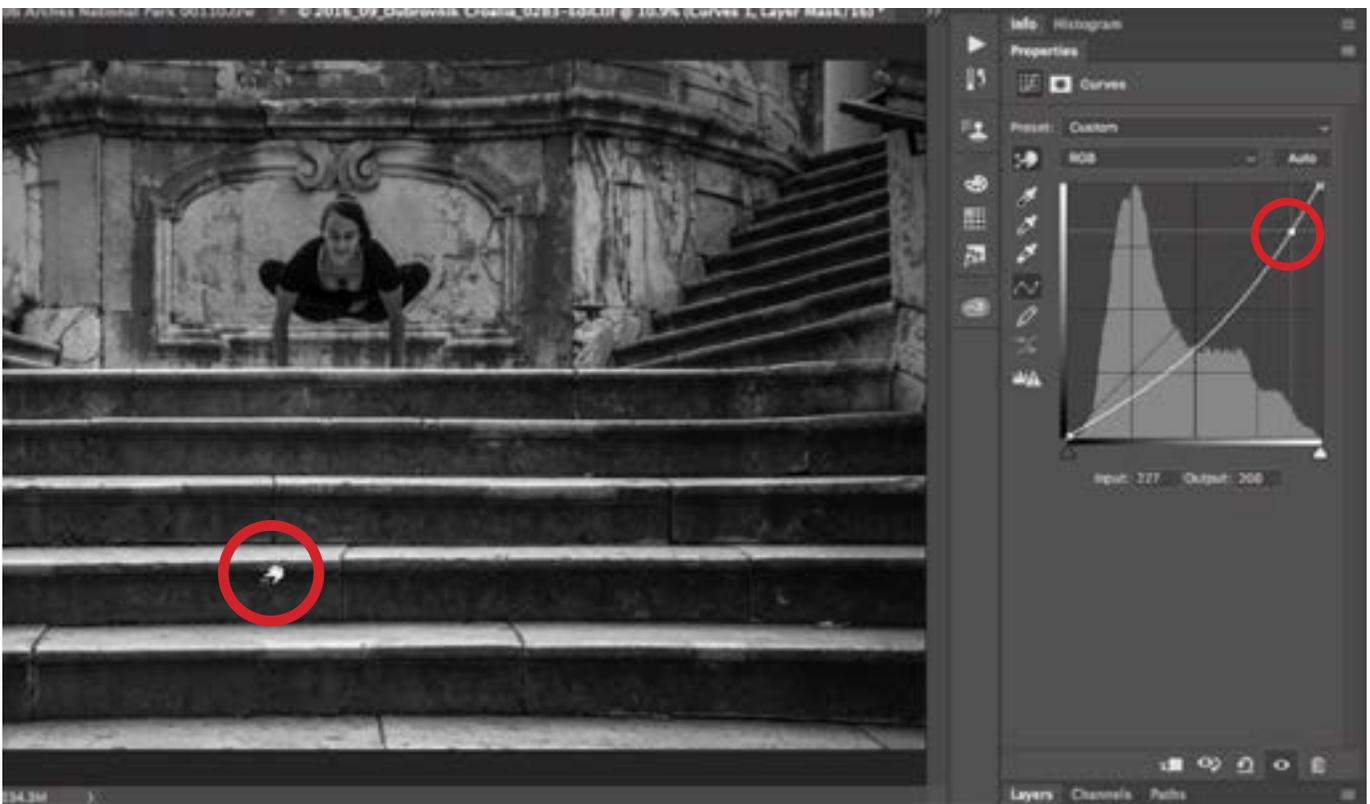
In the Curves chart, we'll always start out with a diagonal line and this indicates how much light would be used to reproduce the shades found along the bar at the bottom. For example, the line is all the way at the bottom of the chart on the left side of the histogram and that's because the left side of the tone bar represents black and it requires no light to create black. The line is at the very top on the right side because this side represents white and it requires the most amount of light to create white in the image.

Adjusting with Curves With the Curves adjustment active, we can hover our cursor over the image and we'll see a circle appear somewhere on the diagonal line in the curves chart. This circle is essentially measuring how much light is in the area where our cursor is. If we were to look straight down below the circle, we will see the shade that the mouse is targeting.



When we hover the cursor over an area in the image, a circle will appear on the curve, representing the shade that is directly under the cursor.

If we want to change something, we'd first make sure that the Targeted Adjustment Tool is active, we would click and drag on the area we want to change and then drag up (to lighten) or down (to darken). In the video example image, we want to darken the stairs a bit, so we clicked and dragged down on the bright part of the stairs. When we did this, a point was automatically placed on the curve and then that point was moved downward on the curve, therefore darkening the targeted tonal area. The only problem is that without any points placed as anchors on the curve, the entire curve will move as one unit, so when we dragged part of the curve down, the rest of the curve moved as well. This caused a darkening effect in more areas than we desired. That's ok, however, because we can correct for that. We'll just drag the curve down, only paying attention to the area we want to darken (the top of the stairs). When it's at a desirable brightness level, we'll release the mouse button.



Here, we clicked on the bright part of the stairs and are dragging downward. This placed a point on the curve that represents that bright shade and is moving the point down, therefore darkening that shade.

After moving the curve, you will notice that not only do you see the white line of the curve, but you also see a dark diagonal line, which represents where the curve used to be. This allows us to see how far the curve has deviated from its original position. In the video example image, the dot we placed was for the bright areas so it's near the top of the curve. As a result, the middle of the curve line moved significantly lower, and we'll need to fix this. When working with a curve, I usually have two points. One of them will be to control the brightest part of the area I want to affect and the other will be to control the darkest part of that area. It's similar to having a dimmer switch for both areas and this will give me the utmost control over the tone. In the example image, I clicked and dragged down on the brightest part of the steps to darken them. Now, I'll click and drag up on the darkest part of the steps in order to make them brighter, compensating for the darkening effect made by the first point.



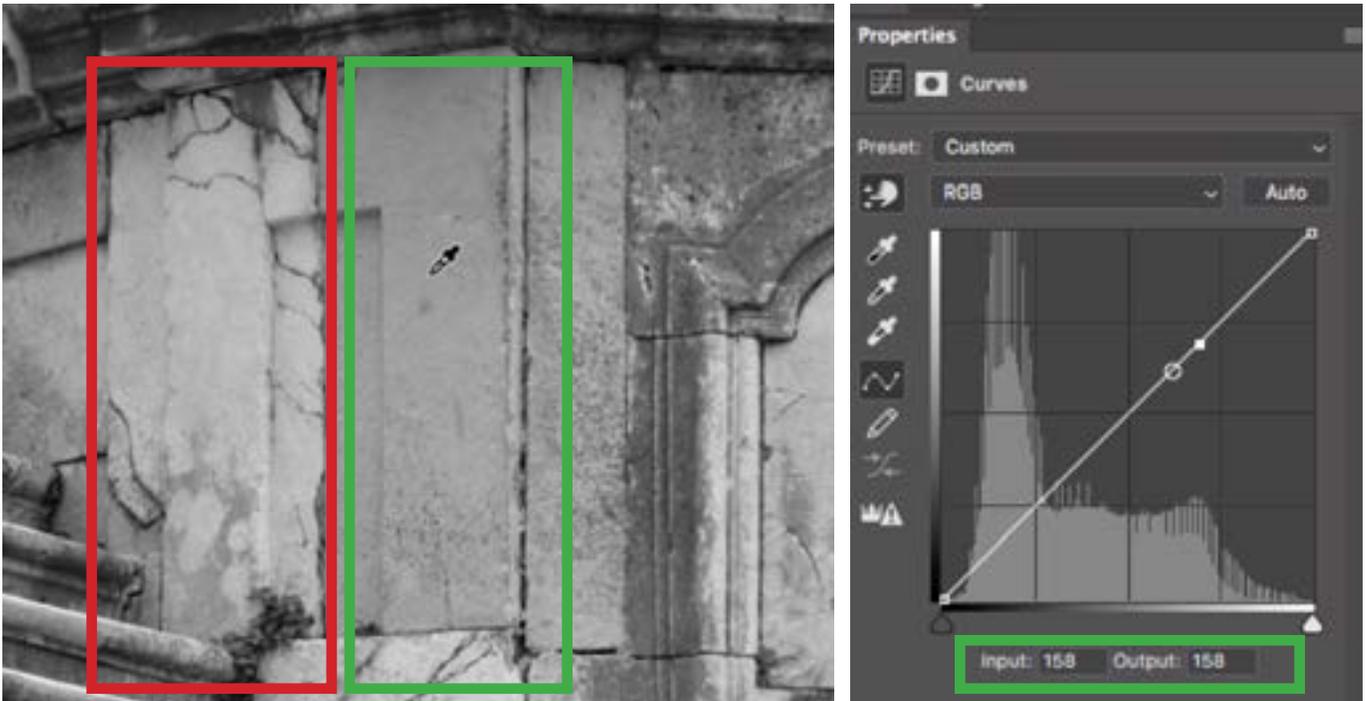
The first point we placed on the curve ended up moving the curve as a whole, therefore brightening the image as a whole. To compensate, we placed a second point and moved it up in order to lighten the dark areas again.

Curves & Masks The Curves adjustment really becomes useful when we use the adjustment with masks. This will allow us to control the area where the effect is applied, instead of having it affect the entire image. When you create an adjustment layer, it automatically has a mask attached to it and that mask is automatically active by default. This allows us to activate the Brush Tool and paint with black in the areas where we did not want the effect to be visible. In the example image, we only wanted the adjustment to affect the stairs in the lower half of the image, so we used the Brush Tool to paint with black over the top half of the image, hiding the effect in that area.



We only wanted the Curves adjustment to affect the stairs in the lower half of the image so we are using the Brush Tool to paint with black on the mask to hide the adjustment in the top half of the photograph.

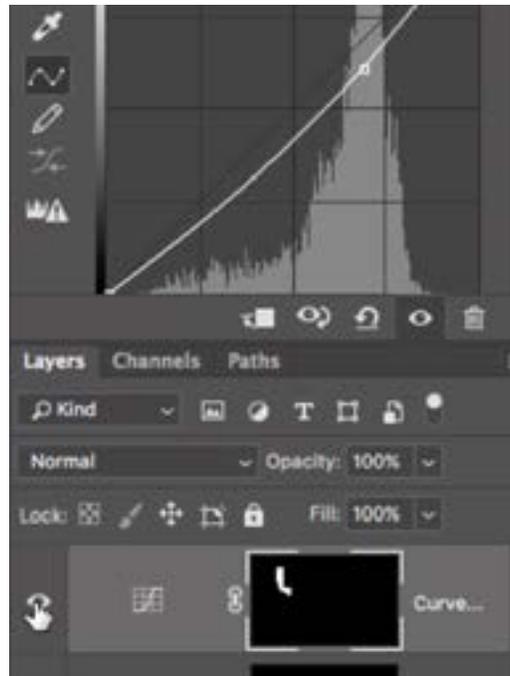
Now, we'll look at the image and decide what we need to work on next. In this case, there is a bright area on the left side that I feel calls unnecessary attention, so I want to darken it, making the brightness match the brightness of the surrounding areas. We'll create another Curves adjustment layer to do this. With this new Curves adjustment, we'll click on the area we want to change in order to place a point on the curve. Now, since we want the brightness to perfectly match the surroundings, there's a special technique that we'll use. We'll hover the cursor over the area that we want to match, but we WONT click. We'll look at the curve and we'll see a circle appearing that represents the amount of light that is in the desirable area. This is the amount of light that we want to match in the area where



In this image, the area highlighted in red is the area that we want to change and the area in green is the area that we want to match. We're hovering the cursor over the desirable shade (the area we want to match) and are noting the numbers below the Curves chart.

we placed the point. If we look below the chart, we'll see two numbers: Input and Output. These numbers will only appear when one of the points on the curve is active. You can tell that a point is active because it is solid white instead of hollow. As we hover the cursor over the area we want to match, we'll take note of the number below the chart. In our case, it's 157. Now, because the active point is still the one we placed in the area we want to change, we can type 157 into the output field and this will match the brightness of the target area to that of the desired area (the area we want to match).

The problem is that the rest of the image changed as well, so we will need to use the layer mask in order to isolate the effect to that one area. Because it's a small area that we want to affect, we'll make a selection around the area and then invert the selection by going to the Select menu and choosing Inverse. This will give us

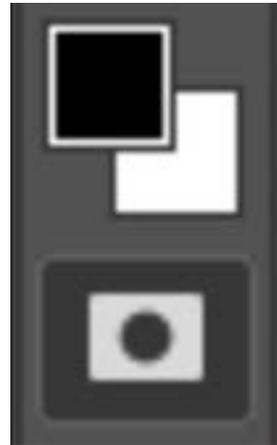


Left: A selection was made around the area we want to change. Right: With the layer mask active, that selection was then inverted and then filled with black. This made it so only the targeted area will get the effect created by the Curves adjustment.

the opposite of the selection, so the rest of the image is selected instead of the small area. Now, we'll fill that selection with black, therefore hiding the effect in all areas except for that small area we wanted to darken. (To fill the selection with black, we made sure that black was set to the foreground color and then we used the keyboard shortcut to fill a selection with the foreground color: Option+Delete on Mac or Alt+Backspace on Win)

Selections & Quick Mask Mode Looking back at the image as a whole, there are a few other areas where I want to apply a similar technique. These are areas that I think are too bright and call attention away from the subject. Sometimes, I like to isolate the area first and then apply the Curves adjustment, and I will do this using Quick Mask Mode. With Quick Mask Mode, if we have an active selection and then type the letter Q, to enter Quick Mask Mode, the selected area will look normal and the area that is NOT selected will have a red overlay. This allows us to better visualize the selection. While in Quick Mask Mode, we can use the Brush Tool to change the selection. Painting with black will make areas unselected (and therefore red) and painting with white will make areas selected (removing the red overlay).

We don't need to start with an active selection in order to use Quick Mask Mode. If we tap the Q key with no active selection, the image will not change visually, but you can tell that Quick Mask Mode is active because the Quick Mask icon changes within the Tool Bar (It's right below the foreground/background color swatches). The Quick Mask is empty so we will paint with black to add the red overlay. We'll paint just over the area we want to eventually change with the Curves adjustment. In the example image, it's another area I feel is too bright and I'd like to darken. If we make a mistake on the mask, we can always paint with white in order to clean up the overspill. (Tapping the X key will exchange the foreground and background colors, making it easy to quickly switch between black and white.) Now, because I was painting with black, the painted area will not be selected while the rest of the image IS selected. This is the opposite of what we want so we'll use the keyboard shortcut Command+I (Ctrl+I on Win), which is the same as going to the Select menu and choosing Invert. We'll tap the Q key to exit Quick Mask Mode and now we can make the adjustment. We'll go to the Layers panel and add yet another Curves adjustment layer. Because there is an active selection, that selection is automatically applied to the layer mask attached to the Curves adjustment layer. To darken the targeted area, I'm simply going to click and drag down on it until I feel that the brightness level is no longer distracting.



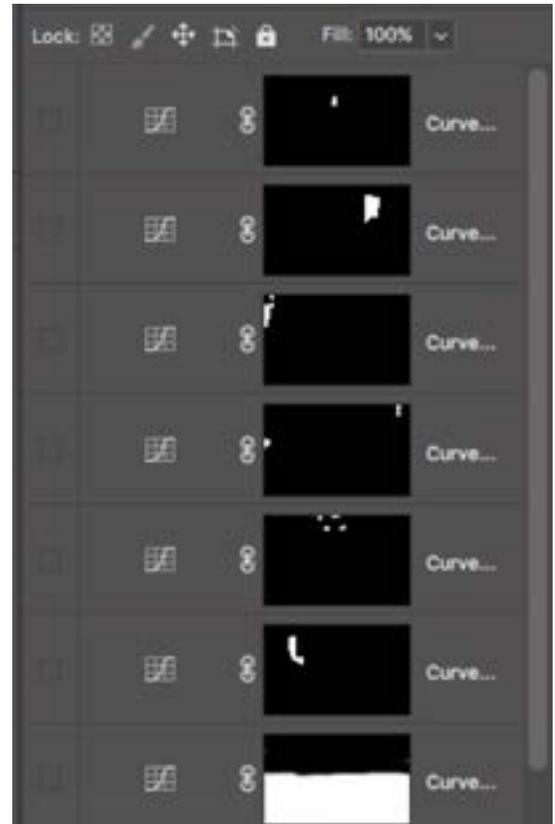
The Quick Mask icon is located at the bottom of the Tool Bar. In this screen shot, Quick Mask Mode is turned on.



Left: We used Quick Mask Mode to create a selection around the area we'd like to change and that selection is applied to the Curves layer mask. Center: We're clicking and dragging down on the area. Right: As we drag down, a point is placed on the curve and then moved down, darkening the targeted shade.

There are a few other additional areas in this image that I feel are too bright and distracting, and we will tackle those as well. Sometimes, we can use the same adjustment layer to correct different areas. In this case, we'd simply paint on the mask accordingly. We are able to do that in a few areas in this image. In other areas, we created a new adjustment to correct for something distracting using the same methods described above.

Adjusting a layer mask If we need to make changes to a layer mask, we can do so by painting on the mask with black or white. In order to better visualize the mask, we can tap the backslash key (\) to get a view that is the same as Quick Mask Mode, with the red overlay. We can then paint as needed and then tap the backslash key again to go back to the normal view.

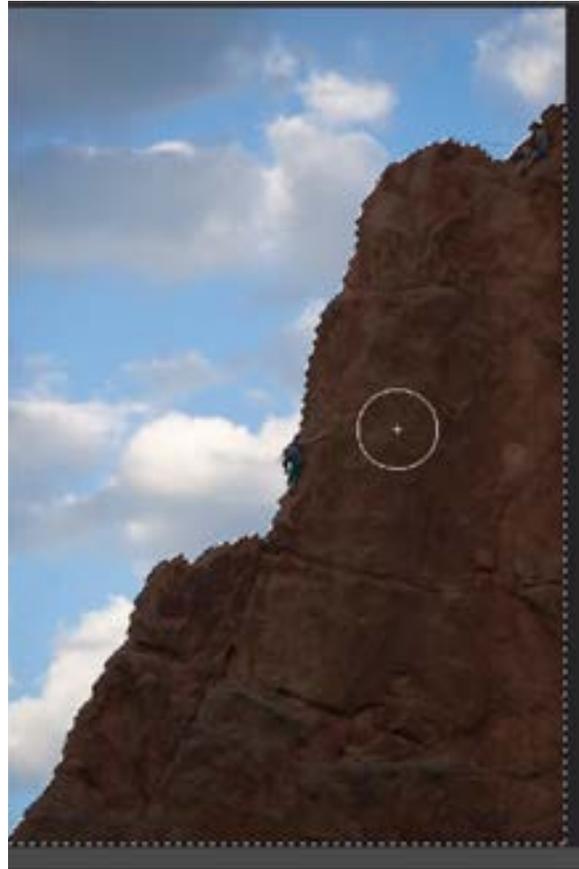


You can see that a series of separate Curves adjustments was used to correct specific areas in the image.

Sky & Cliffs image Let's look at another example image. In this image, the eye is really attracted to the bright blue sky and we want to draw more attention to the cliffs and the climbers. To convert to black and white, we'll create a black and white adjustment layer and then drag the blue slider up a bit. This actually makes the sky area brighter, creating more contrast between it and the cliffs.

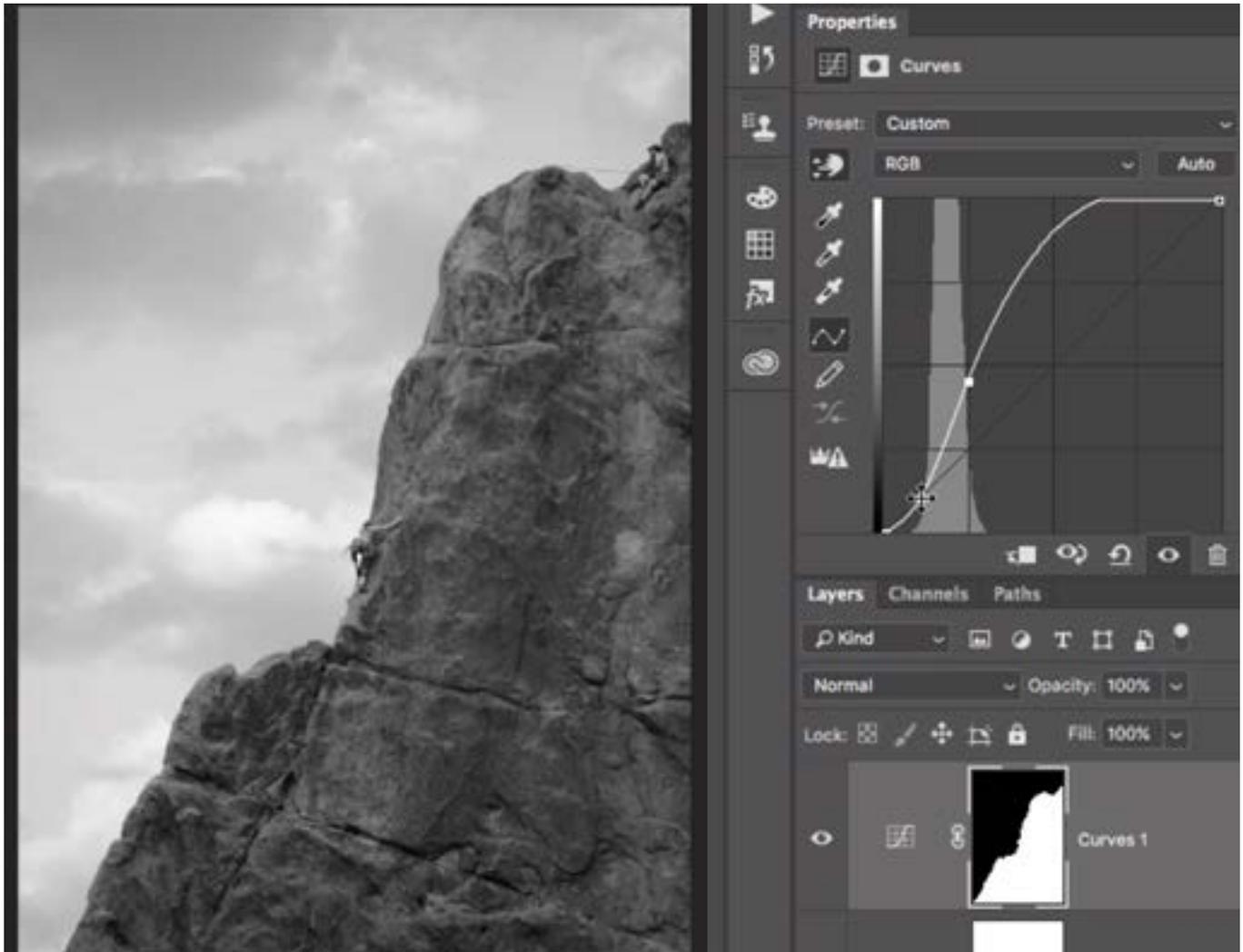
Now, to create more contrast in the cliffs, we'll use a Curves adjustment layer. Before creating the adjustment layer, however, we will isolate the cliffs with a selection. In this example, we'll use the Quick Selection Tool. Because the Quick Selection Tool works better when it has color information, we'll temporarily turn off the visibility of the Black & White adjustment layer. Then, we'll paint over the cliffs with

the Quick Selection Tool and then turn on Quick Mask Mode (Q key) in order to get a better view of the mask and make any necessary adjustments to it. After we're happy with the mask, we'll exit Quick Mask Mode and then create the Curves Adjustment Layer. Because there is an active selection, that selection will automatically be applied to the layer mask attached to the Curves adjustment layer. This layer mask isolates the cliff so it's the only area that will be affected by the adjustment.



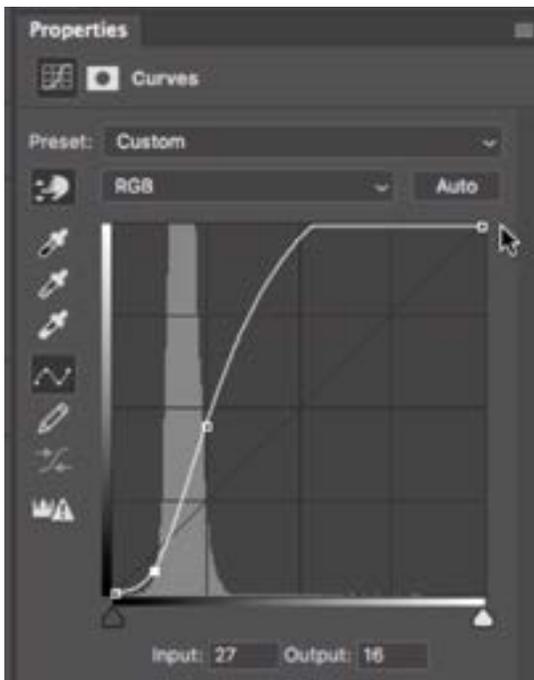
The Cliffs are being selected using the Quick Selection Tool. The visibility of the Black and White adjustment layer was temporarily turned off in order to do this.

We want to increase contrast in the cliffs and we can do that by adding and moving two dots on the curve. We'll hover the cursor over the darkest area of the cliff and we'll click to add the first dot. This will lock in the brightness of that area so that if we brighten the image as a whole, that area will not become brighter. Then, we'll click within one of the brighter areas in the cliff and drag up. This will brighten the cliff and make the curve steeper. Any time you make a curve closer to vertical, you're going to add more contrast to the image and bring out any detail that's in the targeted area. Now we can go back and fine tune the darker area by either clicking on the dot (representing the dark area) and moving it up or down or clicking within the dark area of the image and dragging up or down.



Two points were added to the curve. The point representing the dark areas was added to lock that shade into place so that it won't change. Then a point was added for the bright areas. That point was moved up, brightening the light areas and therefore bringing out more detail in the image.

Any time I create a really steep curve, I'll look to see if there are any areas of the curve line that top out or bottom out abruptly. If this is the case, I will add another dot very close to the dot that caused the abrupt transition and fine-tune it in order to create a smoother transition. This will ensure that there are no abrupt changes in brightness.



Left: You can see that there is an abrupt transition where the curve line hits the top of the chart. Right: We added a second dot and moved it in order to smooth out that abrupt transition and therefore smooth out any abrupt changes in brightness.

At this point, I would like to make the climbers stand out a bit more. To do this, we'll first start by creating a selection around them. Before creating the selection, we'll turn off the visibility of the adjustment layers so that we're viewing the image in



A selection was made so that the Curves adjustment will only affect the climber.

color. The Quick Selection Tool will do a better job when it has access to that color information. We'll use the Quick Selection Tool to make a selection around the climbers. When using the Quick Selection Tool, there will be an "Auto-Enhance" checkbox and I like to turn this on. It may cause the tool to work more slowly but the quality of the selection edge will be much better. After making the selection, we'll tap the Q key to enter Quick Mask mode so that we can better evaluate the selection and make tweaks (using the Brush Tool) to any areas where the selection doesn't look right. Then we'll tap the Q key again to exit Quick Mask Mode.

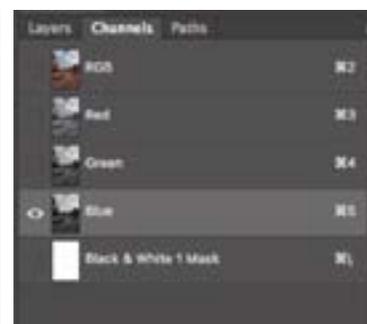
Now that we have a selection around the climber, we can turn the visibility of the adjustment layers back on. We'll click on the top-most layer so that when we create a new adjustment layer, it is placed at the top of the layer stack. We'll create a new Curves adjustment layer and the active selection will automatically be applied to the adjustment layer's mask. We'll click and drag down on the climber's pants in order to add a point on the curve that will darken the area, creating more contrast between the pants and the cliff. Then we'll click and drag up on the climber's arm, lightening it up, again to create contrast. Next, we'll apply the same technique with the second climber.

Selections and channels Let's look at another method for creating selections because this will help us to isolate areas where we might want to apply Curves adjustments. If there is an obvious difference in color between the area we want to select and the rest of the image, we can use channels to help us make the selection. In the example image, we have a red/orange foreground against a blue sky as the background. We'd like to select the foreground so that we can use a Curves adjustment to bring out more detail in this area.



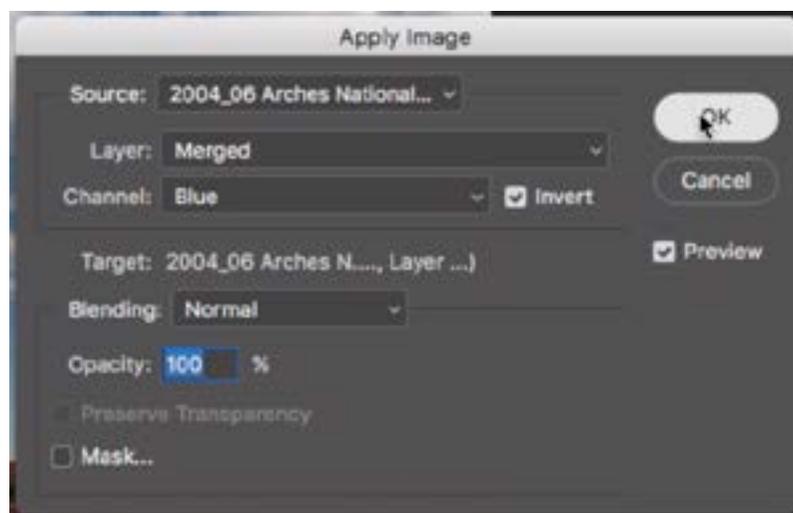
In this image, we created a Black and White adjustment layer to convert to black and white. We will eventually want to bring out more detail in the rocky foreground.

We'll start by opening the Channels panel and clicking on the RGB "channel" at the top. Then, we'll click through the different color channels, looking for the one that shows the greatest contrast between the sky and the foreground. In our case, it's the Blue channel, and we'll want to create a mask based on this. Before leaving the Channels panel, we'll click on the RGB "channel" again, and



We're clicking through the color channels to see which provides the most separation between the foreground and the background. In this case, it's the Blue channel.

then activate whichever channel was active when we first opened the panel. Because we had a black and white adjustment layer active, that is the channel that was selected, so we'll click on it and then move back to the Layers panel.



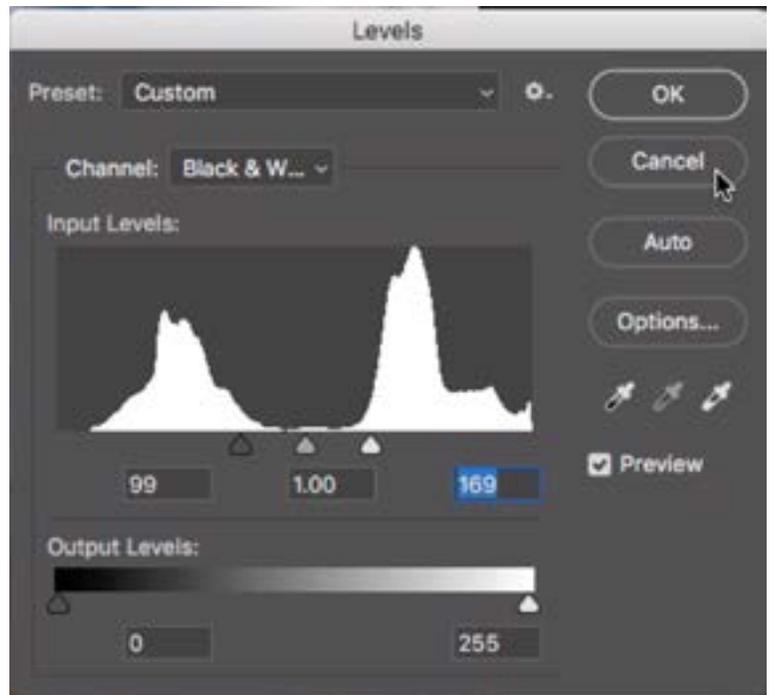
In the Apply Image dialog, we selected the Blue channel and turned on the Invert check box.

We'll turn the visibility of the Black and White adjustment layer back on and then we'll create a Curves adjustment layer on top of it. Now, we want to take the contents of the Blue channel and place it inside the mask that's attached to the Curves adjustment layer. To do this, we'll click on the Image menu at the top of the screen and choose Apply Image. Inside the Apply Image dialog, we will set the Channel menu to Blue be-

cause that is the channel that created the most separation of the area we want to isolate. This will take the Blue channel and place it inside the layer mask. Looking at the mask, the sky part is light and the foreground is dark. This is the opposite of what we want, since we want the adjustment to affect the foreground. To switch this around, we'll turn on the Invert check box to the right of the Channel menu. Then we'll click OK.

Next, we want to adjust this mask so that the orange foreground is close to white and the sky area is close to black and we can do this by creating a Levels adjustment (Image > Adjustments > Levels). The upper right slider will force areas to white and the upper left slider will force areas to black, so we'll drag both of these sliders in.

Whenever you have a mask where there is a great amount of separation between the area you want to change and the surrounding area, there will always be two humps in the levels chart. We want to move the sliders in until they are near the ends of the humps (see screen shot) and then click OK.



A Levels adjustment is being used to adjust the mask, forcing more areas to black and more areas to white.

Now, we'll view the mask directly (in the main image window) by holding down the Option key (Alt on Win) and clicking on the mask thumbnail in the Layers panel. When viewing the mask like this, we can use the Brush Tool to adjust the mask, and that's what we'll do in order to fine-tune it. We'll paint with white in any foreground areas that aren't already perfectly white. Then we'll paint with black



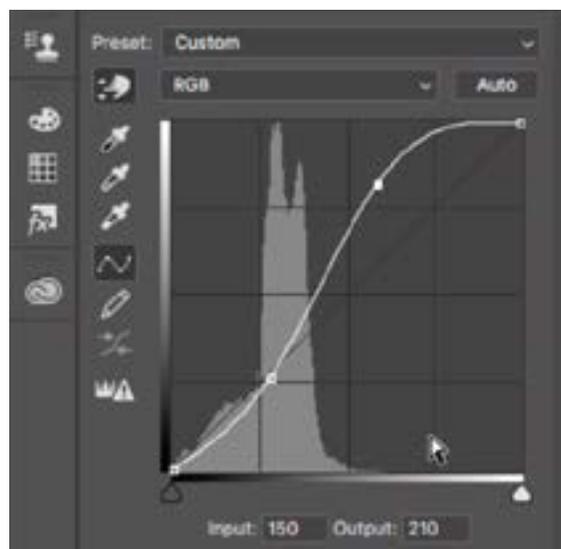
We're viewing the mask in the main image window and painting on it to make the sky area perfectly black and the foreground area perfectly white.

in areas of the sky that aren't already perfectly black. In general, we want the foreground to be solid white and the sky to be solid black. This will make it so the adjustment layer only affects the foreground (the area of the mask that's white).

We will now go to the Properties panel for the Curves adjustment and make some changes. Looking at the rocky foreground area, we'll click and drag up on a bright area to brighten it further. Then, we'll click on a dark area and drag down in order to further darken it. This will add contrast to the area.

Sometimes, you might want to adjust the mid-tones as well and the bright and dark areas. You can click and drag on a middle shade as long as the dot falls somewhere in the middle of the two current dots on the curve (and is not too close to one or the other). We will evaluate the adjustment and paint on the mask in any areas where the adjustment did more harm than good.

In this image, I also created a second Curves adjustment layer and used the same techniques to increase contrast in the tree.



With this image, we are also adjusting the mid-tone areas by clicking on a middle shade and dragging up and down to find the sweet spot. This placed a third dot on the curve between the dots representing the bright and dark areas.

Vignettes Vignettes can be a way to direct the eye into the center of the image and I often times use these with black and white photographs. To create a vignette, we'll add another Curves adjustment layer at the top of the layer stack and then we will drag the right side of the curve down a bit (see screen shot). This will darken the bright areas, making things a bit dull. Then, we'll take a huge soft-edged brush and paint with black in the areas where we want the eye to go. This will hide the curves effect, making it so the darkening is only appearing on the outer edges of the frame.



A Curves adjustment layer is being used to create a vignette. The right side of the Curves line was dragged down a bit and then we are painting to remove the darkening effect over the center areas.