RGB to B+W & Back

Using B+W tone control to creatively affect color images

original

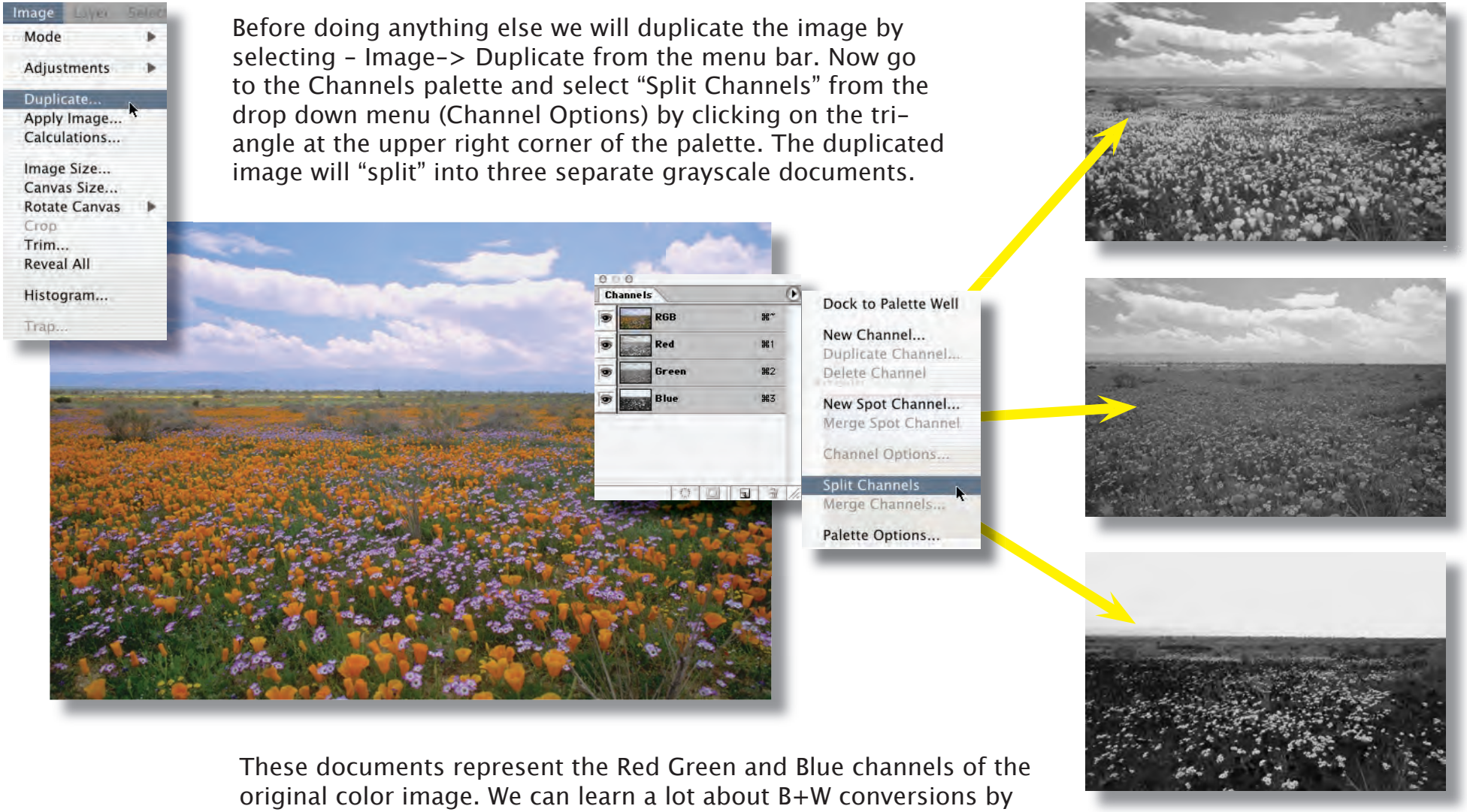
final

Normally we think of B+W as an end in itself but in this tutorial we are going to take a little excursion into B+W in order to create an idealized color representation. The basic technique is especially valuable when dealing with RGB images because we can affect contrast changes that would be difficult to do with any precision using curves.

The image on the left is a royalty free stock shot from a budget CD and it suffers from generally lackluster color. Its not horrible and we can easily transform it into the much more acceptable version on the right. You might want to try your hand at correcting this image using the normal approach with curves, hue/saturation or color balance before proceeding further just so that you have a point of reference. After you've seen the power of B+W luminance editing you won't settle for just "good enough" images and I'm sure you will find all sorts of applications for this approach.

After you're satisfied with your correction open the original version and follow along...

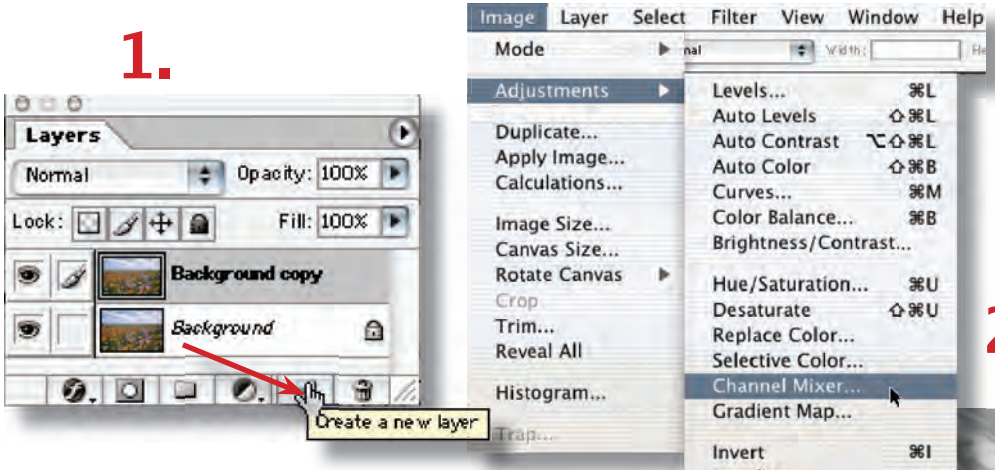
Before doing anything else we will duplicate the image by selecting – Image–> Duplicate from the menu bar. Now go to the Channels palette and select “Split Channels” from the drop down menu (Channel Options) by clicking on the tri–angle at the upper right corner of the palette. The duplicated image will “split” into three separate grayscale documents.



These documents represent the Red Green and Blue channels of the original color image. We can learn a lot about B+W conversions by examining the differences between the three channels. It helps to arrange the document windows so that you can see each file next to the others. For the moment we will simply use these as reference – later we will use these documents to construct a better B+W version of our color image.

Now, return to the original image file...

1.

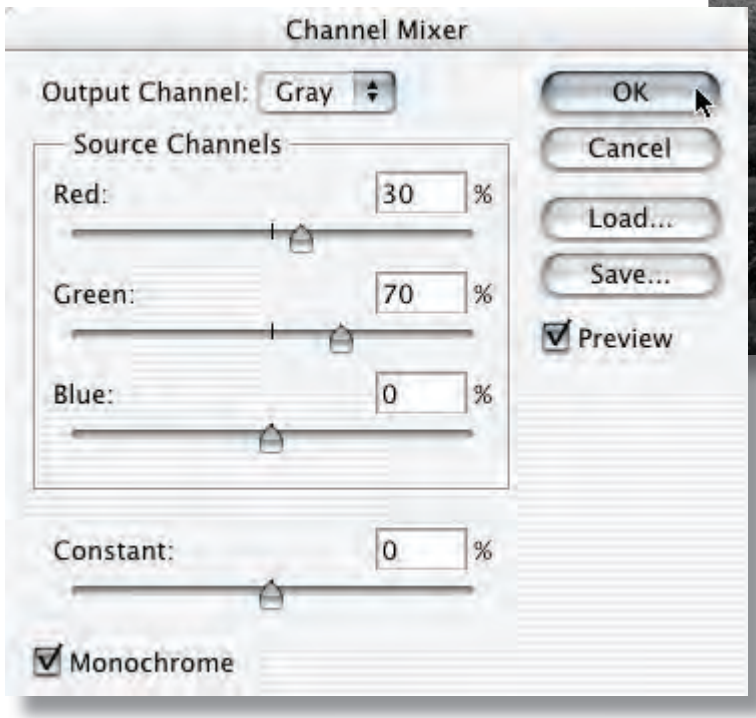


Duplicate the background by dragging it to the new layer icon at the bottom of the Layers palette.

2.

Duplicate the background to a new layer. With this new layer highlighted select – Image–> Adjustments–> Channel Mixer. Check the Monochrome checkbox at the lower left of the dialog and set up the sliders as shown to produce a conservative B+W rendition of the scene. You can experiment a bit with different settings but at this point we just want something functional.

3.



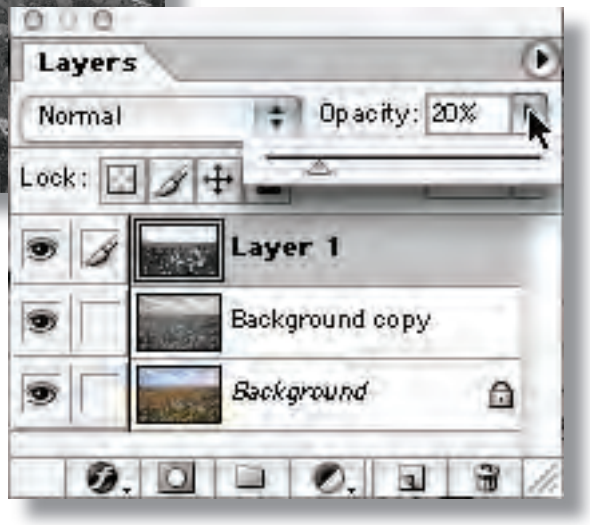
Most of the image luminance is carried in the green channel so, to assure that we have a good range of tones to deal with we normally boost the percentage of green in our “mix”. Examine the three grayscale documents to get a feel for the different tonal renditions. The blue channel in this image is too dark to be of much use but the red channel has some good contrast in the clouds so we can add a bit of red into the mix.

Normally we might simply adjust the contrast of the image using curves but this time we are going to play around with other “blends” using layers and layer apply modes.

Start by dragging the Blue document onto our layered file while holding the shift key– this will automatically register the layer onto the other layers

When you drag the grayscale document onto the RGB layered file it is automatically converted into an RGB layer.

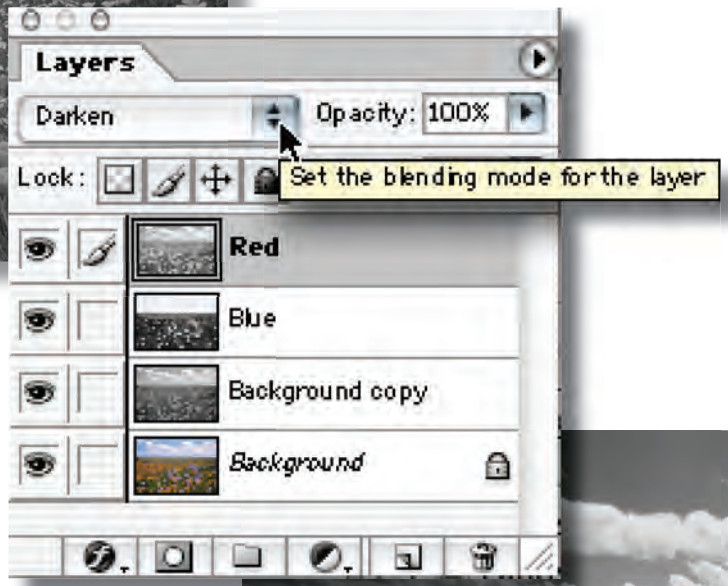
Now change the layer opacity with the slider at the top of the Layers palette. We will reduce the brightness of the orange flowers and increase the brightness of the purple flowers by blending in just a little of the blue document. This is just like using the Blue slider in the Channel Mixer but we have the added benefit of having access to layer apply modes.



Blending different B+W versions of the image together using layer opacity is a very basic technique for achieving a better overall B+W luminosity. Our basic strategy is to maximize tonal separation using these blending techniques before we begin corrections using curves.

Although we can increase the tonal separation between the two different colors of flowers by blending the Blue document, we have weakened the tones of the sky with the blank white sky of the Blue document. This is something that can not be remedied in the Channel Mixer but with layers we have a number of options...

We can fix the sky with the Red document- drag the red document onto the Layered file (while holding the shift key). Now change the layer apply mode to “Darken” by selecting it from the drop down menu under the Layers tab. The sky now magically darkens leaving the rest of the image the same.

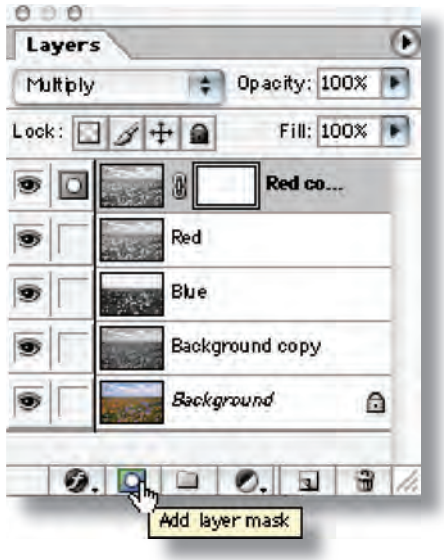


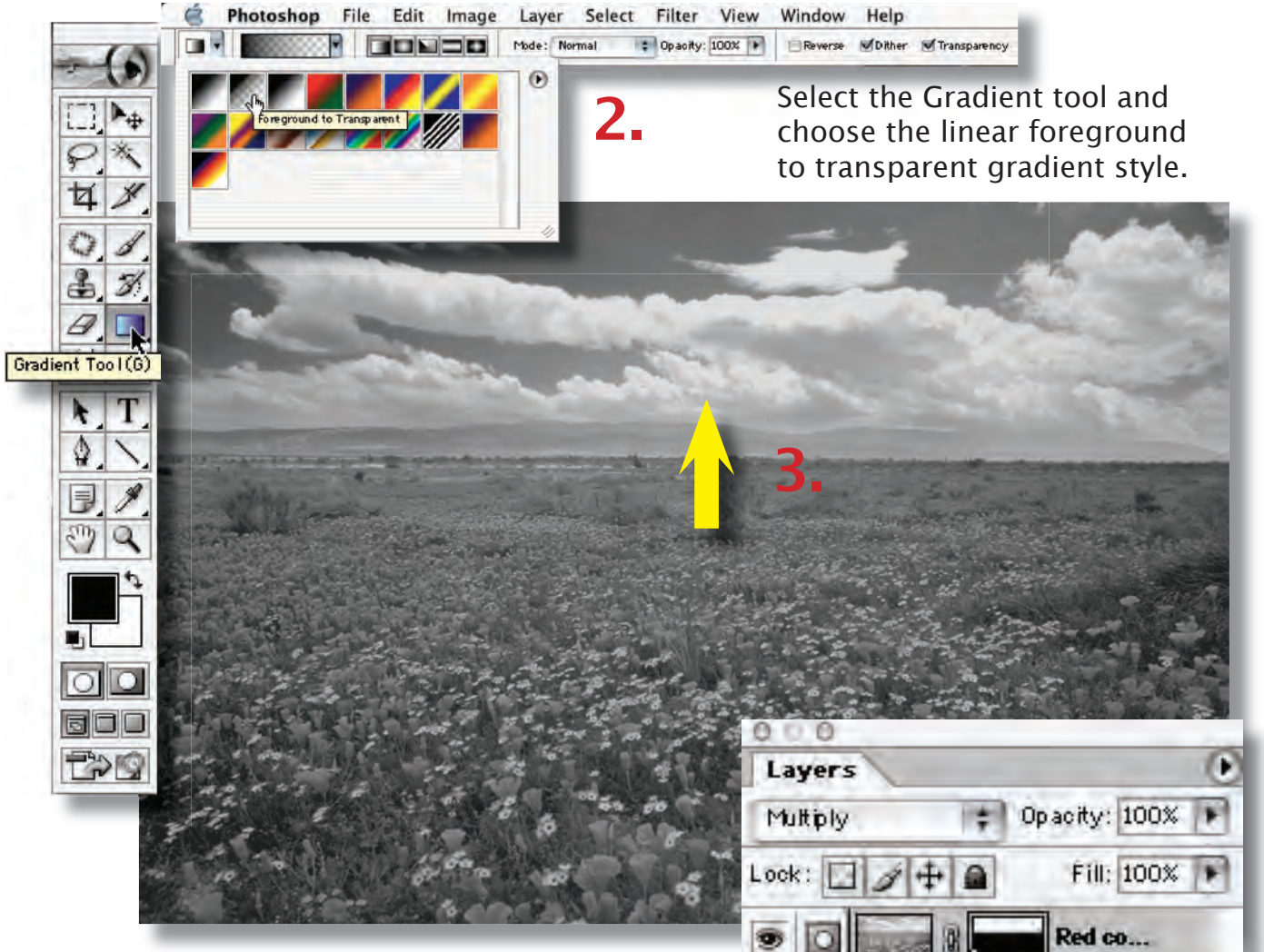
This works because everything accept the sky is lighter in the Red document and the layer is only applied where it can make the underlying image darker.

The sky is still too weak so we need to get a little more drastic. Duplicate the red layer by dragging it to the new layer icon. Now change the layer apply mode to multiply. Everything gets dramatically darker be-cause the values of the red layer are used to darken all the values of the underlying image.

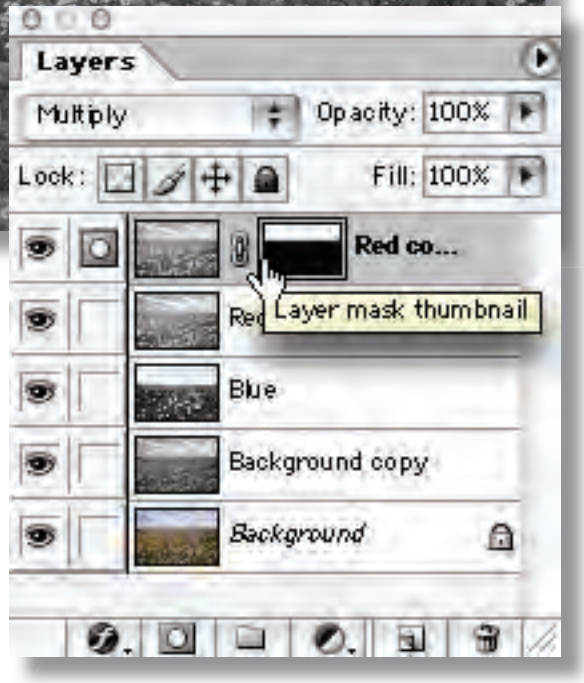
We will use a layer mask to protect the bottom part of the image from the effects of this darkening....

First create a new layer mask for the Red Multiply layer by clicking on the new layer mask icon at the bottom of the Layers palette.





Select the Gradient tool and choose the linear foreground to transparent gradient style.



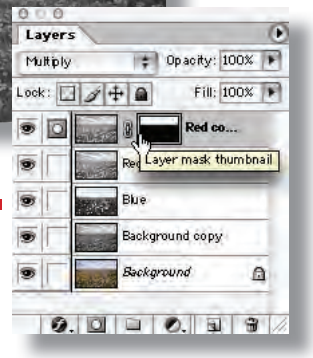
Pick a point on the horizon to begin your blend. Click and drag up to just above the mountains – this will put black into the layer mask in the foreground region and gradually blend in the sky where the mask is white. We now have an effect similar to a graduated filter placed over the camera lens and the sky is dark and dramatic. You can see the black and white areas in the layer mask thumbnail in the Layers palette.

Layer masks provide a degree of control that goes way beyond traditional B+W printing techniques. We are just getting warmed up there's still more we can do to improve the B+W rendition...

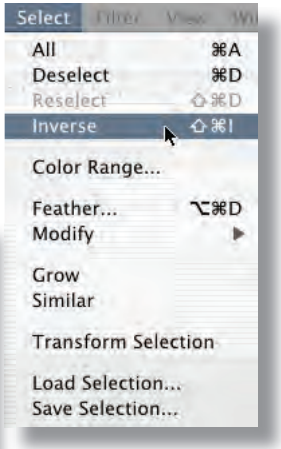
Now we will add more contrast to the foreground. Drag the Green Document onto the Layered file and change the layer apply mode to Overlay. The tones in the Green document that are darker than medium gray will darken the image. The lighter tones will lighten the image. This will create more local contrast and a sense of texture. Unfortunately it also lightens the sky so we will have to fix that with a layer mask.

1.

2.

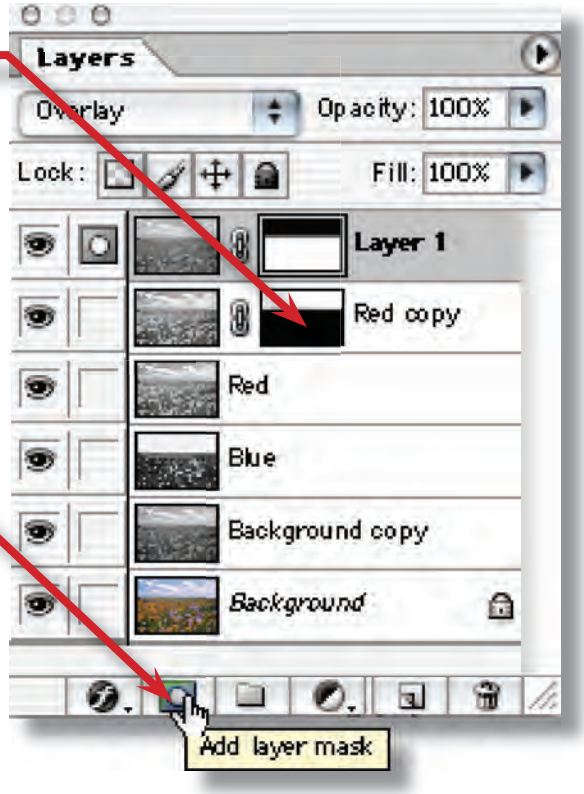


3.



We will use the mask in the Red Multiply layer to create our Green Overlay layer mask. Load the Red layer mask as a selection by Cmd/Option- clicking on the layer mask thumbnail. Then invert the selection by choosing - Select-> Inverse from the menu bar. Now the foreground area is selected.

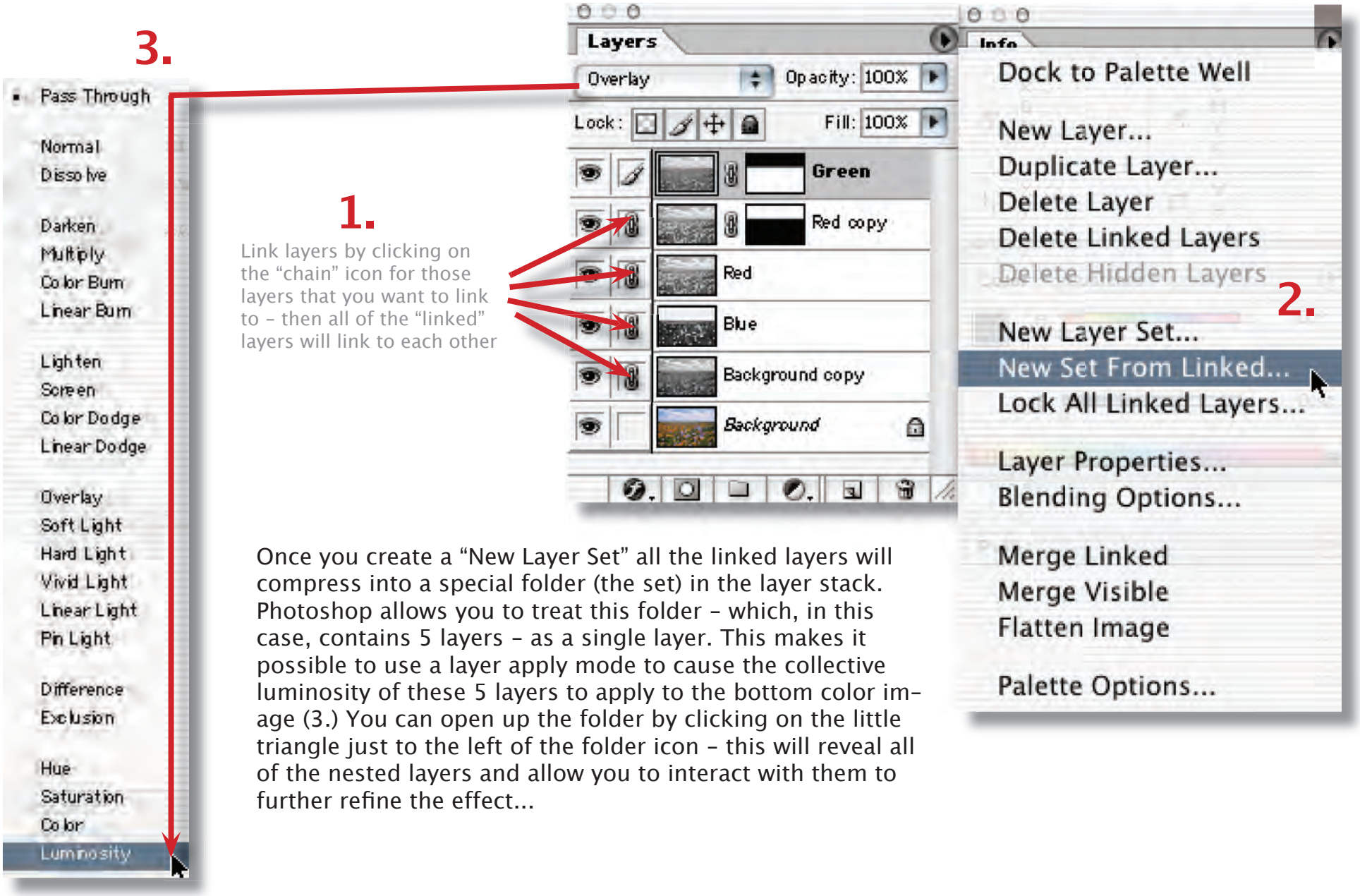
4.



With the Green Overlay layer highlighted, click on the new layer mask icon at the bottom of the Layers palette. The selection is put into the layer mask and the sky is now protected from the Green overlay effect. We have our dark sky back and the benefit of the increased local contrast in the foreground.

This technique of copying a selection from one mask layer into another is very useful - it allows us to register masks precisely and cuts down on the work of building multiple masks.

OK... so far we've been building a better B+W image and we have several layers of B+W image data interacting to create more tonal separation in our image. Wouldn't it be great if we could get that same kind of value separation into the color image? Well... guess what – all you need is to get this B+W info into a layer and apply that layer in Luminosity mode. (1.) Link all the B+W layers... (2.) Choose "New Set From Linked..." from the layer options menu. (3.) Select Luminosity from the apply modes drop down.



Once you create a "New Layer Set" all the linked layers will compress into a special folder (the set) in the layer stack. Photoshop allows you to treat this folder – which, in this case, contains 5 layers – as a single layer. This makes it possible to use a layer apply mode to cause the collective luminosity of these 5 layers to apply to the bottom color image (3.) You can open up the folder by clicking on the little triangle just to the left of the folder icon – this will reveal all of the nested layers and allow you to interact with them to further refine the effect...

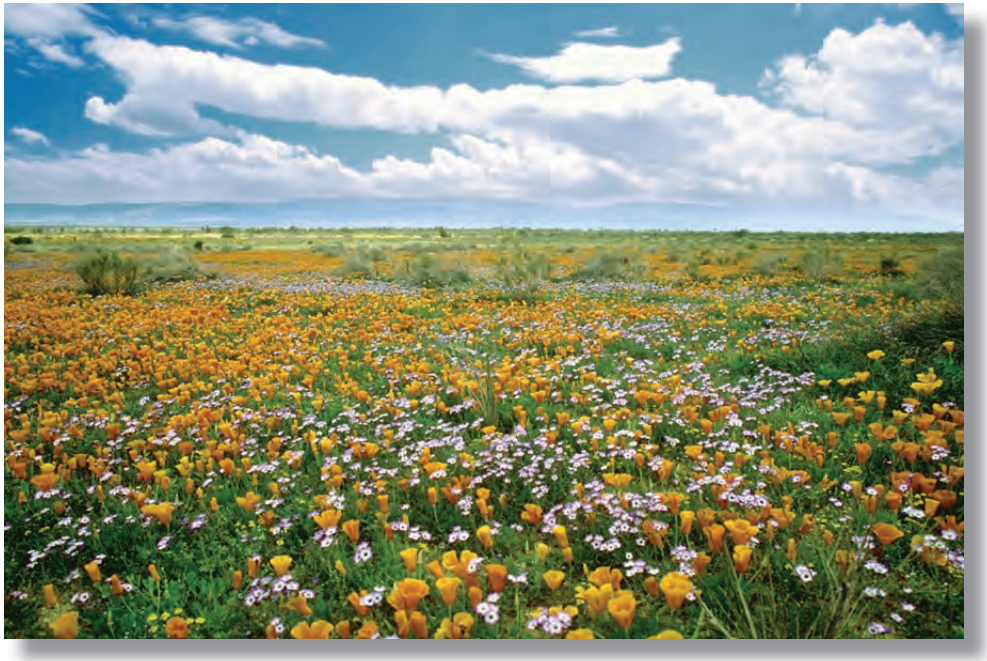
This is what the layer stack looks like when you have compressed all the B+W “layers” into a “Layer Set”

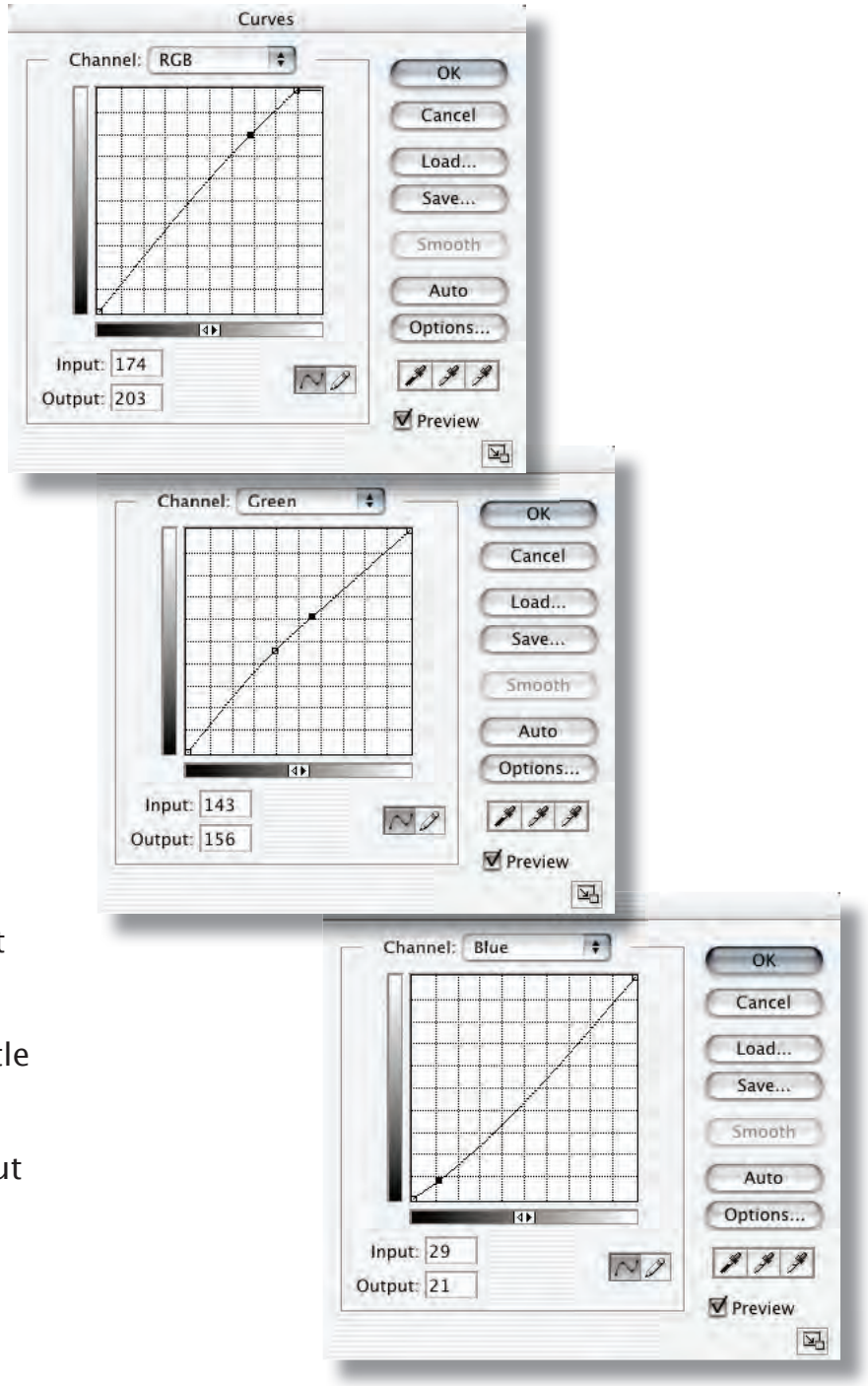
original

result after luminosity applied from B+W

We can see a huge difference in detail, contrast and color separation after applying the B+W luminosity. The purple flowers have gotten lighter while the clouds and sky have gotten darker and there is much more detail in the green leaves. All this without using any curves editing!

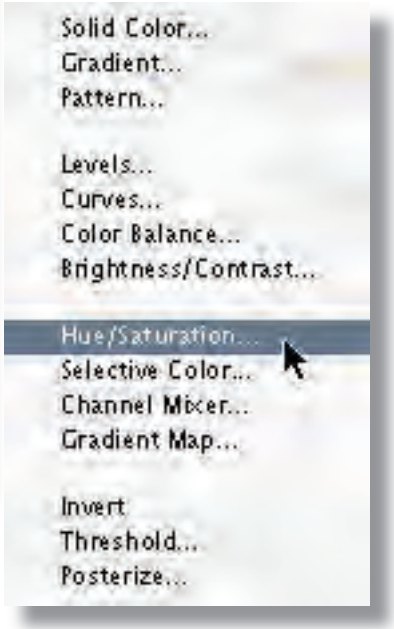
The contrast is much improved but the image now seems just a little dark overall. A simple set of curves is really all we need to get this image into shape. Let’s make a new “Curves” adjustment layer on top of everything to refine the image further...





The white balance seems pretty good so we can get away with a simple brightening of the RGB curve – I generally set my white point to 245 rather than 255 as a way of holding more detail when I eventually convert to CMYK. The green can use a little brightening and the blue can now gain a little contrast by lowering a point in the shadows.

The key to RGB curves is to keep it simple and try not to put major bumps and dips into the curves.

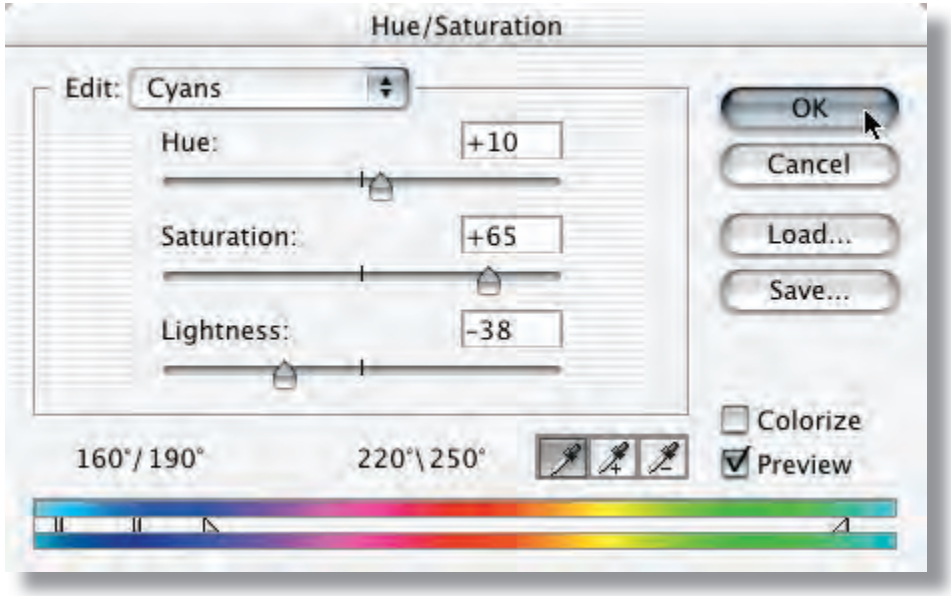


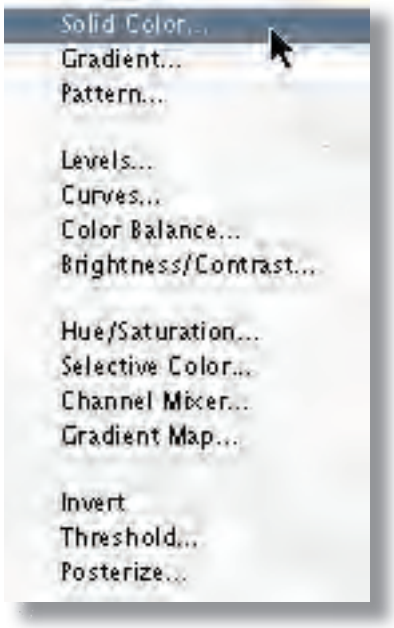
After applying the curves the sky seems a little cyan and washed out. It is harder to correct for this in the curves without affecting the saturation and richness of the yellow flowers so instead of getting into more layer masking we will use Hue/Saturation to alter just the Cyan hues in the image.

Make a new Hue/Saturation adjustment layer on top and set the dialog as seen at the right. After selecting "Cyans" from the Edit menu you can click in the sky to center the affected color range on the specific hue of the sky. Move the Hue slider to the left to shift the hue towards blue, move the Saturation up and the Lightness down.

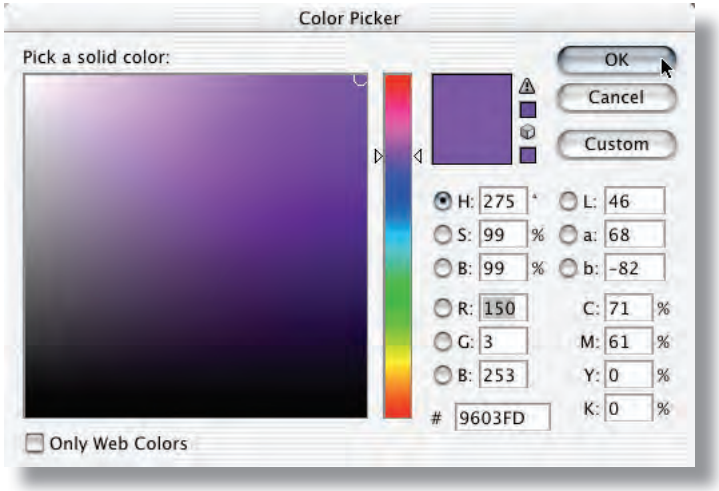
The image is looking pretty good now but it seems like we've lost some of the color in the purple flowers – a pretty fair trade-off for the overall effect – but why settle for less than perfect?

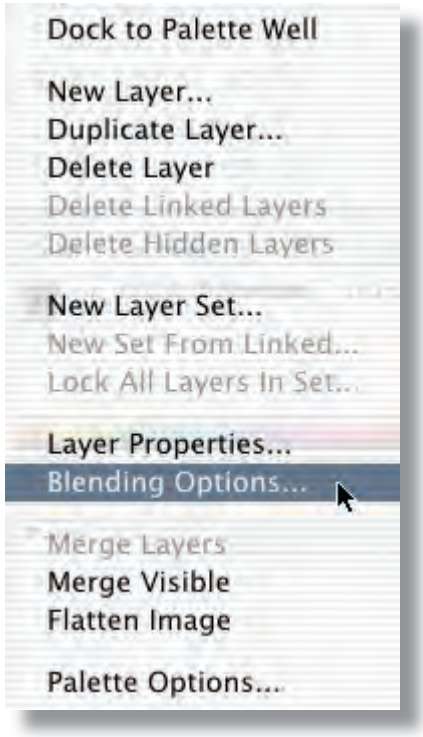
Let's see what else we can do. You never know if you've gone far enough until you try to go too far...





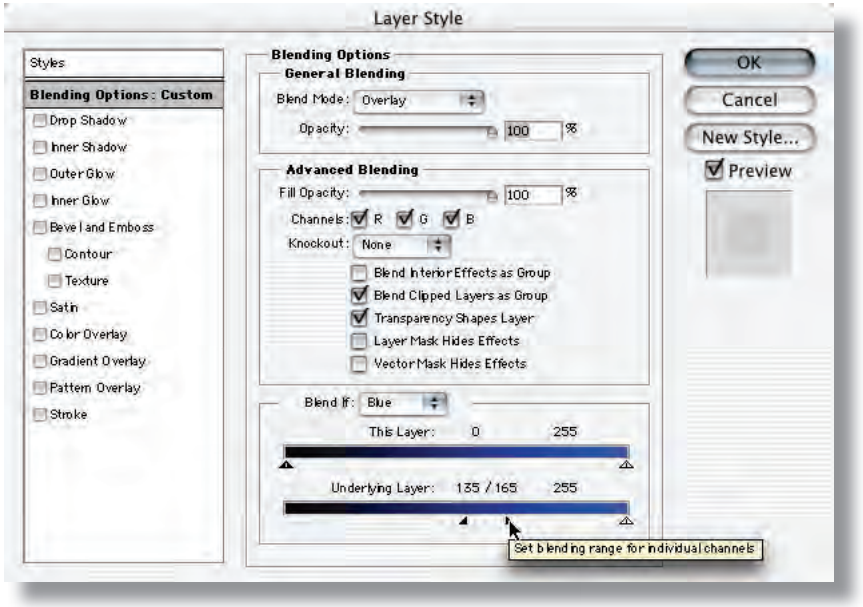
Make a new “Solid Color” Adjustment Layer. Pick an appropriate saturated purple color in the resulting color picker dialog. Finally, change the layer apply mode to Overlay. The result looks like you’ve placed a radical purple filter over the lens. Don’t get excited! We’re just getting started. We will use advanced blending options to isolate the effect to just the highlight areas of the flowers – then we’ll use a layer mask to protect the sky.





Select “Blending Options” from the layer options drop down menu at the triangle at the upper right of the Layers palette...

Set the resulting Layer Style dialog as shown at the right: select “Blue” in the “Blend If” drop down menu – there is more contrast between the violet flowers and the rest of the foreground in the blue channel of the composite image – we are trying to isolate the effect to the lightest areas in the blue channel. That is where the violet flowers live – move the black slider to the right until the purple cast is removed from the green grass and yellow flowers. Hold down the option/Alt key and “split” the black slider triangle – this will blend the transition between the affected and protected areas.



We have essentially colorized the purple flowers with the solid color “Overlay” layer and brought back the intensity of the original color. Unfortunately the sky is now a lurid purple and we will need to fix that.

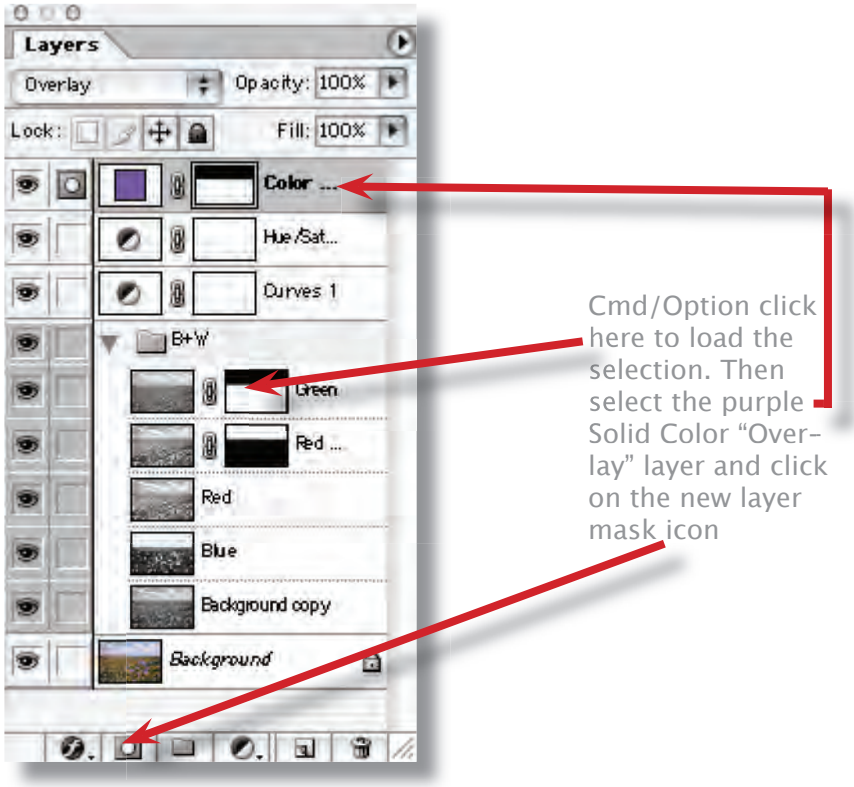
Remember how we used the B+W “Green” layer to increase the contrast of the foreground? (see page 7) We used a layer mask to protect the sky from the Overlay effect. All we need to do is copy the layer mask from that layer into a new layer mask for this layer.

Find the green “Overlay” layer and Cmd/Option click on the layer mask thumbnail to make a selection from that mask...

Click on the new layer mask icon once you have the marching ants selection from the Green layer mask. The sky area will be protected from the purple “Overlay” effect but the foreground flowers will still benefit from the added purple color.

I think we’re finally finished!

Go to the last page to see how far we’ve come



Congratulations! If you’ve managed to follow this so far you have experienced the benefits of manipulating B+W tonality, using various channel blending techniques, and applying the resulting luminosity to the color image. You’ve also used: Image Duplicate, Split Channels, duplicate layer, Channel Mixer, dragging documents into layers, layer opacity, Darken, Multiply and Overlay layer apply modes, layer masks, the Gradient Tool in layer masks, loading selections from layer masks, linking layers, layer sets, Curves and Hue/Saturation adjustment layers, Solid Color adjustment layer *and*.. advanced blending options. Did you miss not having to use selection or painting tools?

original

toggle to
final

final

toggle to
original