Pacific New Media

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Adobe Photoshop: Channels and Masks

The power and flexibility of PS comes from a combination of tools, including the use of channels and masks, which allow for highly elastic image editing and increased control over selected areas.

Photoshop CS5 offers a range of poweful new features designed to assist you in performing common tasks such as making extremely compicated selections, removing unwanted objects, and changing the fundamental shapes of your subject. These new tools are called:

Content Aware Fill
For removing (or moving) unwanted objects and automatically recreating the background behind the removed object.

Refine Edge
For making complicated selections around difficult objects such as hair and subtle subject details that, prior to this tool, were very difficult to select.

Puppet Warp
Which allows you to change the fundamental shape or movements of objects within the frame.

1. Burning and Dodging with Layer Masks

One of the most powerful features of Photoshop in editing images is found in the layer mask feature built into the adjustment layers. Using masks is a highly flexible way to provide selective controls to your image: advanced burning and dodging, color corrections and enhancements, etc.

Black = conceals changes
White = reveals changes

When you create a mask on an adjustment layer, where the mask is black, you are protecting that portion of the image from any changes. Where the mask is white, you are affecting changes on the image according to the adjustment layer you have selected, i.e. levels, or color balance, curves, or hue/saturation.

In the image below, we see one of the limitations of photography. The buildings are correctly exposed, but the sky is too light, lacking tonal depth and dimension.
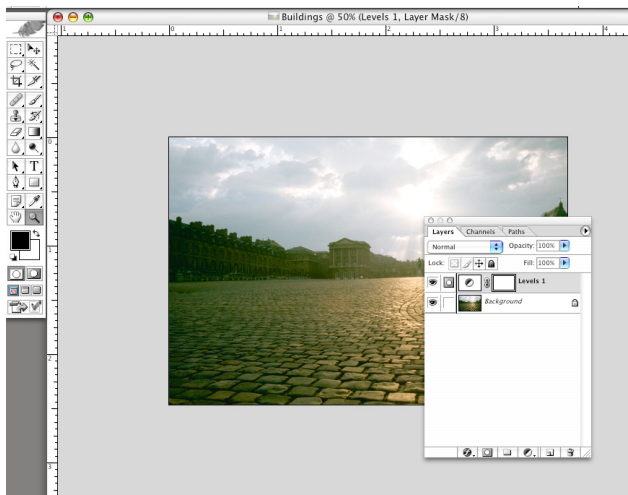
To create a layer mask, make an adjustment layer for levels and do not adjust the levels. Simply press OK and create the adjustment level with no changes to the image. Examine the adjustment layer. The icon on the left is the levels control; the blank box on the right is a layer mask.

Option-click the mask itself and you will have a window with a white box on your screen. This is your mask. Where there is white, your level control will affect the image. Right now, the entire box is white. The entire image would be affected if we run the levels control.
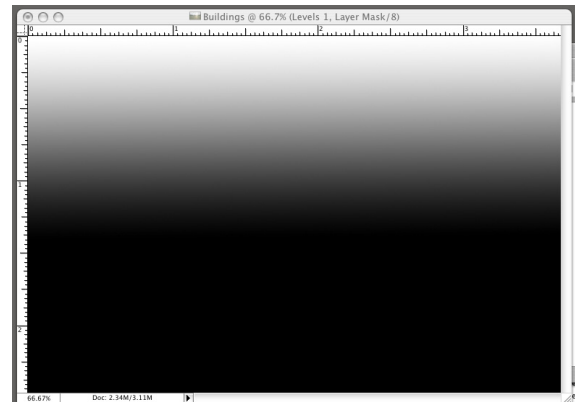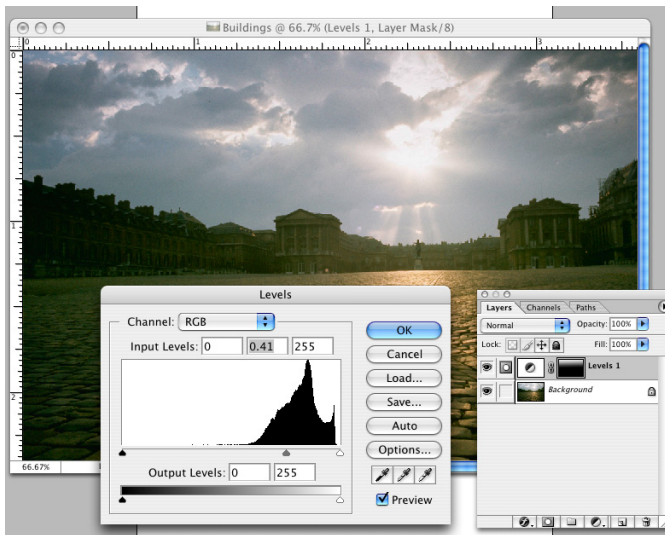
To affect the sky only, we need to create a black and white mask, where the building areas are black (protected) and the sky area is white (revealed). Use the linear gradient tool and draw a black to white gradient where the bottom 2/3 of the image is black and upper 1/3 of the image (where the sky is located) is white.

Now, click back on the background layer and bring your image back into the window. Notice that the layer mask now shows the black to white gradient. Double-click on the levels icon on the adjustment layer and move the center slider. You will see that the sky alone is affected due to the levels control being filtered through the layer mask.

Any method of applying black and white to the layer mask will work: the linear or radial gradient tool, the paintbrush, or using individual channels. This represents a highly flexible method of burning and dodging your image

Another use of layer masks is to "blend" multiple images.

To use a layer mask:

Take the background layer of one image and drag it on top of a second image. The layer stack will now reveal two content layers, one on top of another.

Now, on the upper layer, go to Layer>Layer Mask>Reveal all. A white layer mask will appear to the right of your top layer. Black conceals and white reveals. The layer mask is white allowing the entire upper image to show. By placing black and white in the layer mask, you will control how the two images blend.

Click on the layer mask and highlight it, making it active. Now, draw a black to white gradient on the layer mask. And voila, the two images are blended in accordance with the mask.
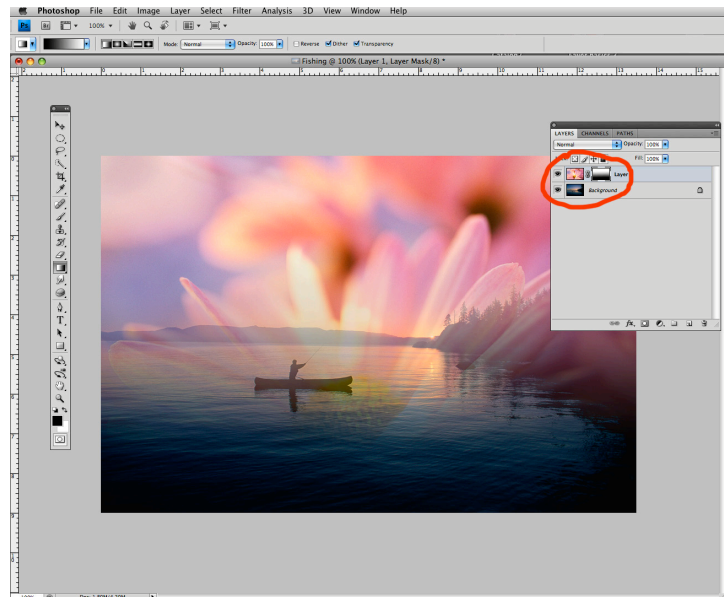

Painting on a Layer Mask

To activate a layer mask. Click on the mask, the white box. You'll see a highlight border surrounding it; that means it is active. Create an adjustment layer for levels or curves and make the ENTIRE image as light as you want the girl's face. Do not be concerned if the background become too light.

Using the brush tool, paint black where you want to fully hide the effects of the adjustment layer. Paint grey where you want to partially hide the effects of the adjustment layer. In other words, by painting with black you are returning those parts of the image to the original BEFORE you used Curves or Levels. By painting with grey, you are allowing SOME of the adjustment layer effect to show through. Any method of applying black and white to the adjustment layer can be used -- paintbrush, linear gradient tool, fill tool, etc.

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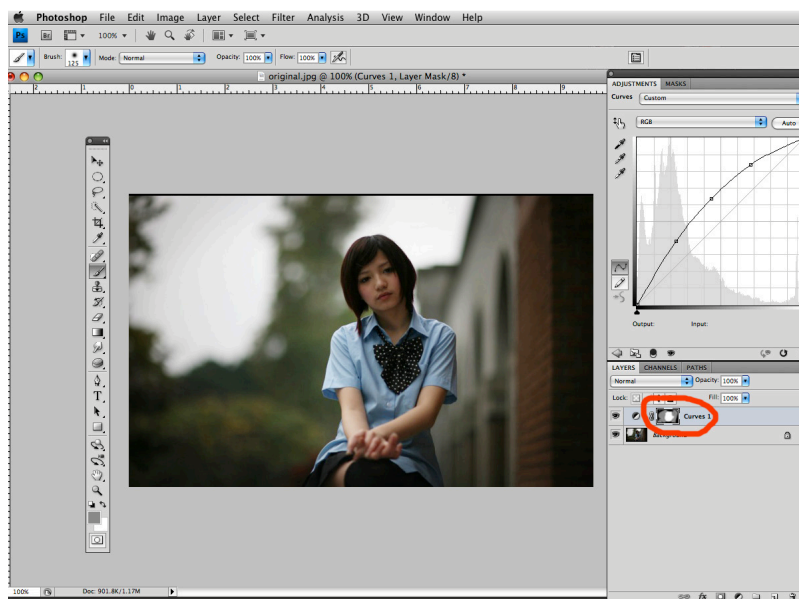
2. New Refine Edge Tool (for working with masks and making complicated selections)

New_Mexico_Sky.jpg
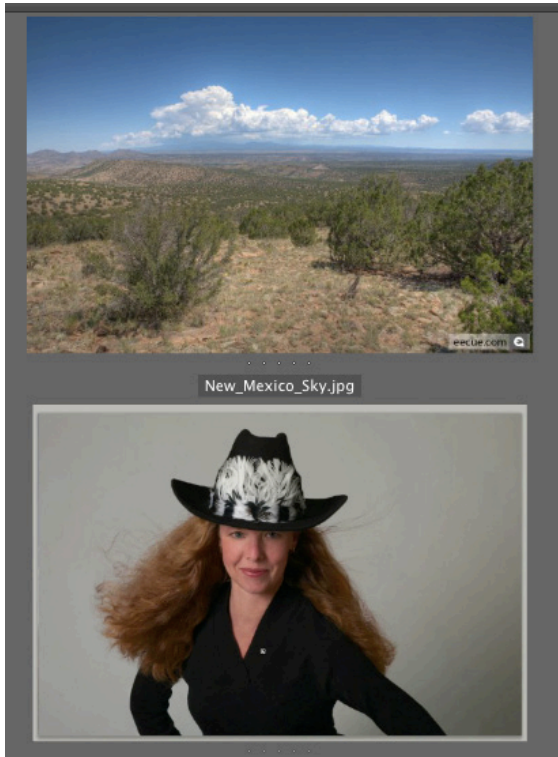
In this exercise, we will select the cowgirl, including her wisps of hair, and place her on the New Mexico background image.

1. Drag the cowgirl image over the landscape image, creating one file with two layers, with the cowgirl on top.

2.) Use the Quick Selection tool to make a rough selection of the cowgirl. You will notice that the wisps of hair and subtle details still remain outside the selection.

3.) Choose Select>Refine Edge. Click ON the Edge Detection>Smart Radius Tool. This is the new algorithm that makes powerful and subtle selections. Set radius to an average value of 3 pixels. This can be adjusted later to refine your selection.

4.) Position your cursor on the image and the cursor becomes a brush. Set a soft brush and a brush size that can paint over the selection edges where you need to add to the selection, such as the wisps of her hair. Paint the brush over the areas of hair, leaving a several pixel boundary including the selection and unselected areas. The algorithm calaculates the edges of subtle detail, such as her hair and adds them to the selection. Use the radius slider as needed to add details to the selection. Use the option key to subtract or remove unwanted details from the selection.

5.) Use Adjust Edge tools to further refine selection as needed. Click ON Decomtaminate Color to reduce the spreading and reflecting of the blue sky color into the hair which has been selected. Finally, OUTPUT to New Layer with Layer Mask. Voila! The selection is made INCLUDING all of thed wisps and subtle details of the hair.
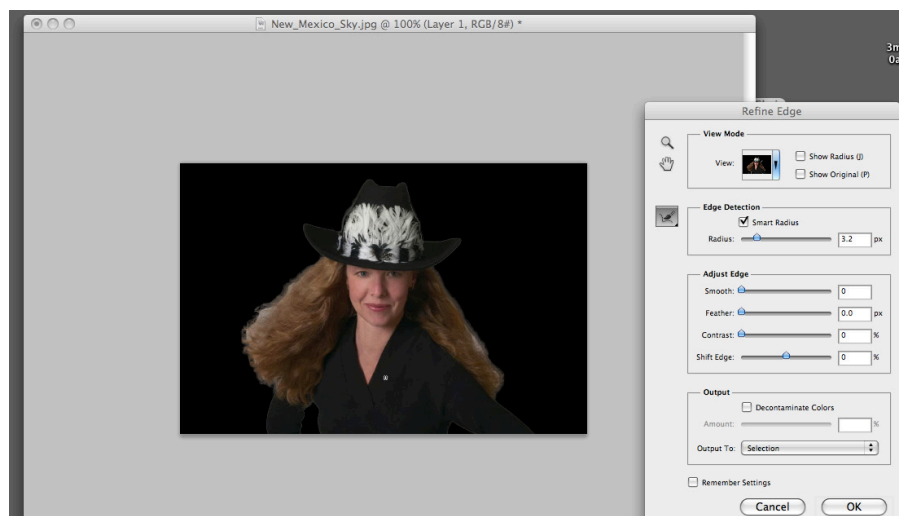
3. New Puppet Warp Tool

The puppet warp tool is an evolution of the Liquefy tool, which allows you to change the shape of objects, sculpting them and adjusting both the shape and gestures of the original. To re-edit your changes after the initial session, you will use the pupper warp tool on a "smart" object layer, which means that it is no longer rasterized and any pixel-based editing such as color correction or retouching should be done in advance of the use of puppet warp tool on the the "smart layer."

In this exercise, we will change the shape of the boxer's arm and head, creating a more dynamic gesture.

1.) Select the boxer using the quick selection or magic wand tool, and SAVE the selection. Then, as in the last exercise, open the Refine Edge dialogue box and use Smart Radius and Decomtanate color to refine your selection. When done, output to a New Layer (Not a Layer Mask).

2. Now we need to remove the boxer from the background layer, leaving the new layer as the only content layer that contains the boxer. Select>Load your initial selection and go to Select>Modify and expand your selection by 12-15 pixels, leaving a loose boundary around the boxer. Hit Delete>Content Aware and remove the boxer from the background layer.

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3. Highlight your new layer and go to Filters>Convert to Smart Filters, thus making the layer a Smart object.

4.) On the new "Smart" layer, go to Edit>Puppet Warp. Place a series of anchor points by clicking in the image, one on the glove, one or two on either side of the arm above the elbow and below the elbow. Place additional points on the body and the head.

You can clear points on the tool submenu, using the Clear command on the right side.

When you select points (shift-select to select multiple points) those points are moveable. The unselected points are "anchor" points and those parts of the image do not move. You need to think about and observe where a body moves naturally and where it does not. Select the points you want to move, grab a point and move it to the desired location. The selected points will move with the cursor, the anchored points will not move. When you have the shape you want, hit the Enter or Return Key.

Because it is a smart layer, you can return to the puppet warp tool at any time to refine or make additional changes. To return to your editing, click on Puppet Warp under the layer OR go back to Edit>Puppet Warp and your points will re-appear. You can add or delete points or change your edit.

Smart Objects

Smart objects can be used on many tools or filters when you want your changes to be dynamic, where you can return after the saving the image and make additional changes or edits.
A partial list of tools that allow the use of smart objects are:
• Most filters including sharpening, blur and noise filters
• Edit tools, including Edit>Transform and Puppet Warp
mart Filters function similar to adjustment layers where your changes are not permanent and can be re-edited as the need require

4. High Dynamic Range

1. Adjust camera RAW version of same image, one for shadows, one for highlights. Save as two PSD files.
2. Use move tool, drag the underexposed image on top of the overexposed image. Darker photo will be on top. Make layer mask>Reveal All on top layer.
3. Select>all on lighter image (Background) and copy to clipboard. Open layer mask on upper layer (option double-click). Paste clipboard into layer mask.
4. Adjust contrast and brightness of mask with curves as needed.
5. View image by clicking on the Background.