

Editing 16-bit Images in Photoshop 6

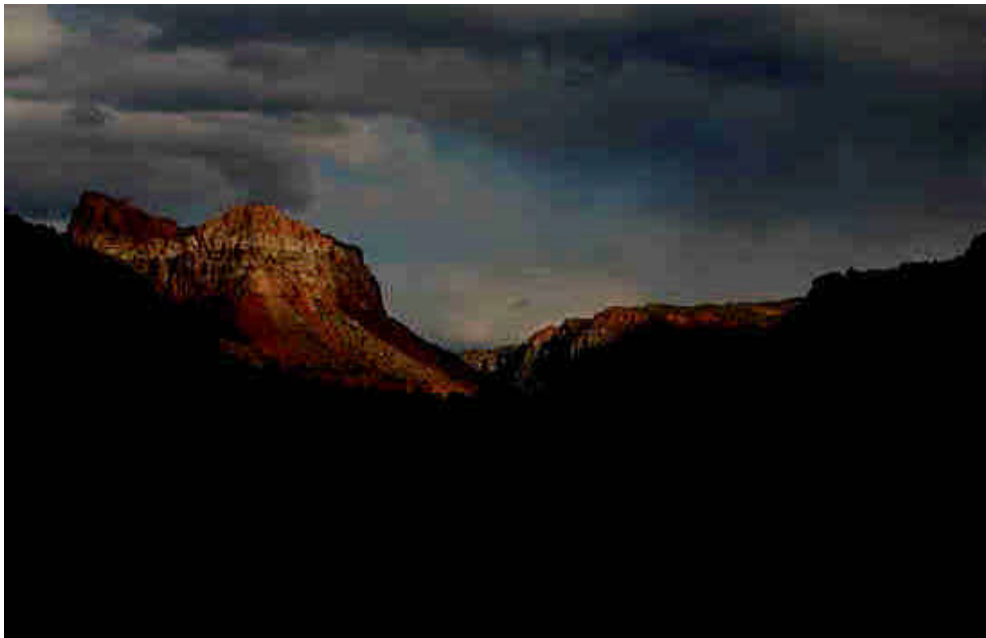
By Ian Lyons

I'm sure, like me, you have read the various recommendations that Photoshop users should endeavour to edit their images in high-bit mode. The argument has been that by doing so we can minimise the data loss that is inherent in any image editing operation. However, anyone who has opened a high-bit image in Photoshop will immediately realise that many of the tools with which they are familiar and so dependent are disabled.

Chief among the missing tools are adjustment layers and those that enable the selection of small and intricate areas of an image. Since 16-bit images contain vast amounts more data than an 8-bit image, we can do without adjustment layers. However, without the ability to make selections all edits will be applied globally. Therefore, when selective area edits are necessary we find ourselves with no option but to convert the image back to 8-bit mode. This tutorial will demonstrate a technique that allows the selection of these smaller areas and thus enable both local and global edits on 16-bit images.

Editing the High-bit Images

For the purposes of this tutorial I have assumed that the user has opened the scan or digital camera image in an already gamma corrected form. That is to say that the "overall" brightness of the image is already close to ideal. The following two images show what we mean by raw uncorrected and gamma corrected.



Raw Uncorrected Image from Scanner or Digital Camera



Gamma Corrected Image from Scanner or Digital Camera

Note: gamma correction is a function of the digital camera or scanner software and NOT Photoshop. Read the software manual for the camera or scanner to find out how this can be achieved.

The gamma corrected image still requires a considerable amount of editing, but increasing the global brightness isn't one of them. My own view of the above image is that it is generally flat, the sky has an unacceptable and inconsistent colour cast, and the foreground trees don't show any real sense of light. The predominant colour cast "seems" to be blue, but attempts at removing the cast by globally reducing blue only serves to make matters worse. How can we fix these problems when no single area of the image requires the same fix?

The Missing Selection Tools and Selective Area Editing

As suggested in the introduction the task in front of us is to fix the various colour, contrast and saturation problems. However, choosing the "Select" menu presents us with a dilemma - How can we select the sky or foreground when only the global selection tool is available? We could try the "Freehand Lasso" or "Polygon Lasso" tools, but neither is going to get us anywhere near what we need.



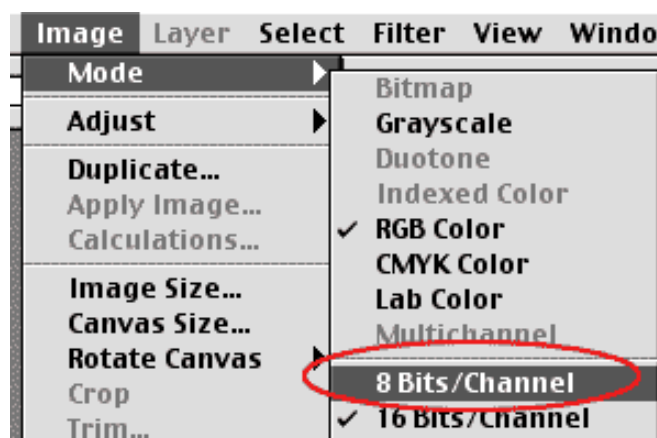
Photoshop Select Menu

Photoshop 5 and upward includes the "Duplicate" and "Load Selection" commands and it is these two commands that hold the key to editing local areas within high-bit images. By following the steps outlined below we can go a long way to making the original image more acceptable.

Step 1 - Enabling the selection Tools

Since the majority of the selection tools are only available in 8-bit mode we must create an 8-bit duplicate image. The process involved is fairly straightforward: -

- Highlight the 16-bit image
- Choose "Duplicate" from the "Image" menu
- Choose "Image>Mode" menu
- "Convert" the duplicate image to 8-bit/channel



We should now have two visually identical images on our desktop. One will be the 16-bit original, the other an 8-bit duplicate.

Step 2 - Making Local Area Selections

Once the duplicate image is in 8-bit mode all the selection tools become available. The first task is to correct the colour cast in the sky. In this example we have chosen to make the sky selection using the "Magic Wand" tool. In the screen capture shown below we have used the Photoshop "Quick mask" tool to show the area that will be protected (masked) from any edits that we may apply to the image.

With "Quick Mask" engaged we can also tidy up any overspill using the "Eraser" tool. We can also increase the area of the mask (reduce the selected area) using the "Paintbrush" tool.

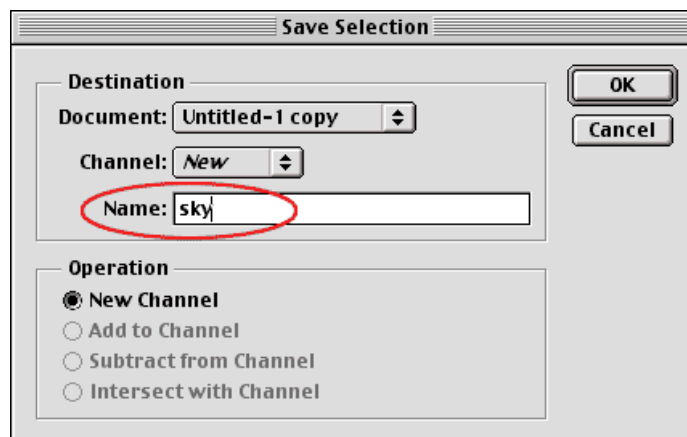


Foreground trees and central area protected from edits by mask

- Apply some "feathering" to the selection so that hard edges are avoided.
- From the "Select" menu we choose "Save Selection"



- Give the selection a name the example shown is "sky"

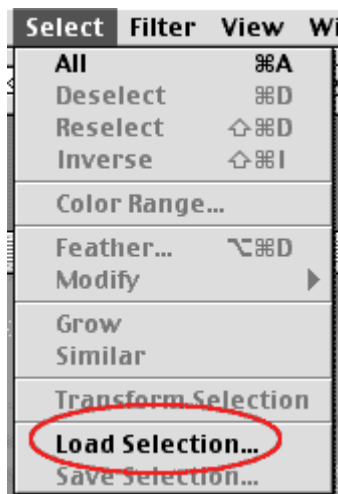


Save "sky" Selection

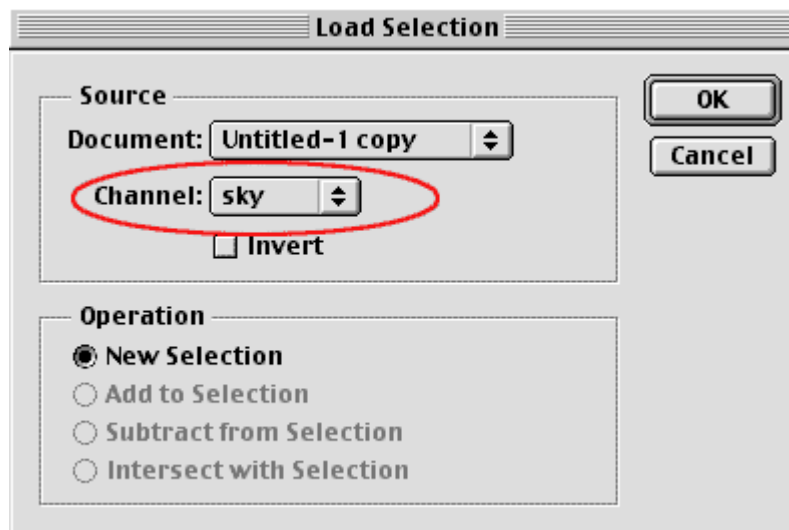
- Click "OK". We're done with the 8-bit duplicate for now, but we won't be deleting it, yet!

Step 3 - Applying the "Sky" Selection to the 16-bit Image

- Choose the 16-bit original image by simply mouse clicking it
- From the "Select" menu we choose "Load Selection"

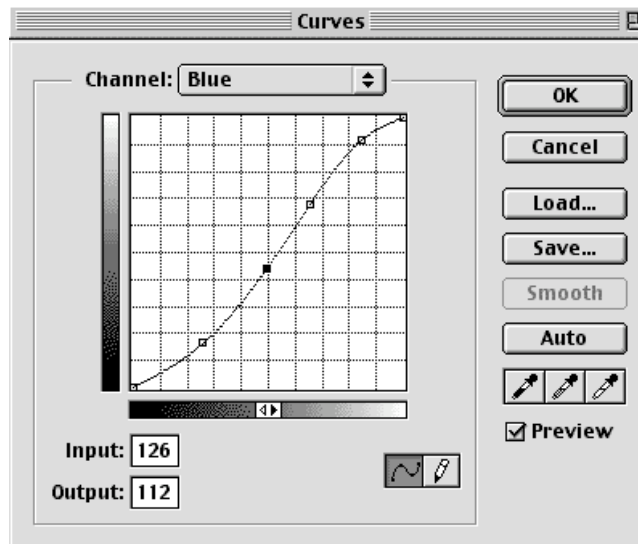


- In the "Channel" popup we choose "sky"



Load "sky" Selection

The example image required a reduction in yellow to some areas of the sky and an increase in blue to others. The screen capture below shows the actual "Blue Channel" curve as it was applied to the sky area.

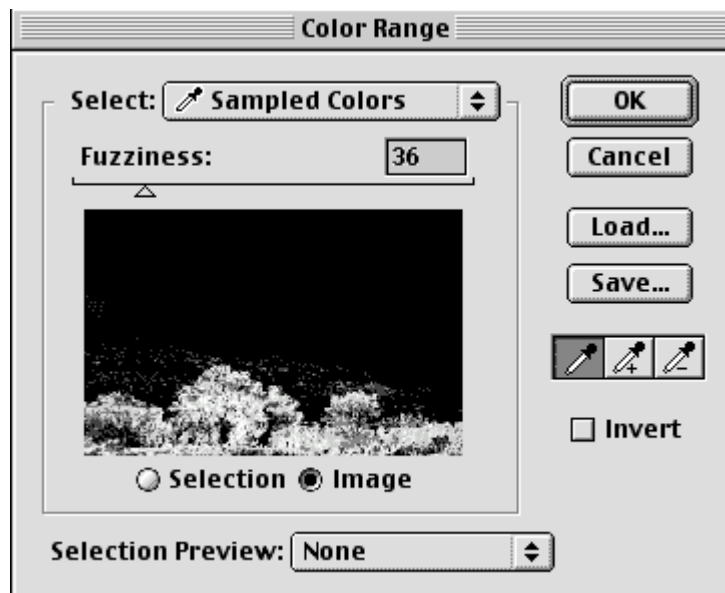


Blue Channel Curves Adjustment

We have completed our "Sky" area edits; next step the foreground trees.

Step 4 - Selecting the Foreground Trees

We now return to the 8-bit duplicate image. For the previous selection we used the magic wand. For the trees we will use the "Color Range" tool. Using the "Sample Colors" option we can select only those colours we wish to correct. We can also fine-tune the selection using the "Fuzziness" slider.



Creating a Selection with the Color Range Tool



Sky and central area of image are masked

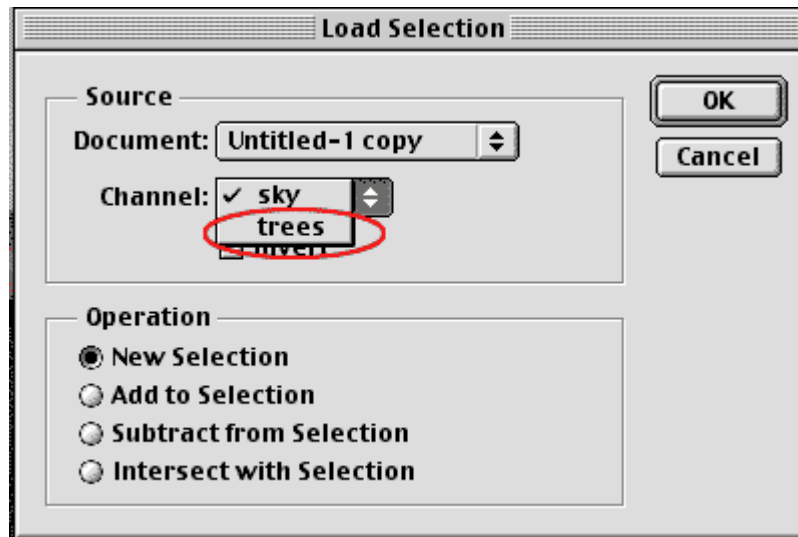
Again we must save the selection using the "Save Selection" command, remembering to give it a name.



Save Selection Dialog

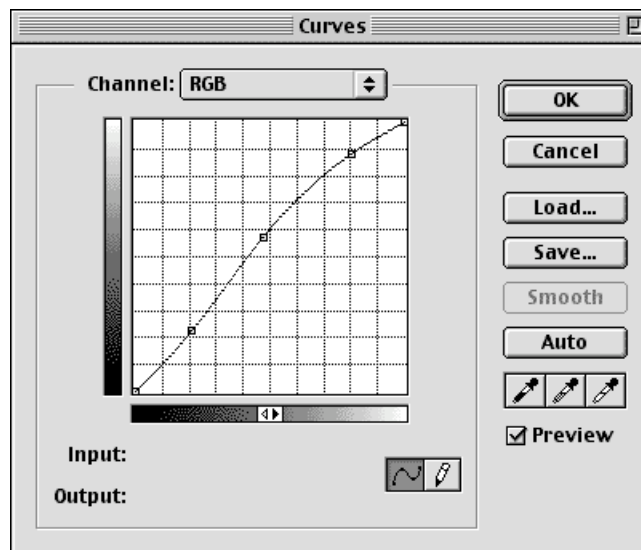
- Save "Tree" Selection

Step 5 - Applying the "Trees" Selection to the 16-bit Image



Load "Tree" Selection

- Repeat Step 3, but we select the "trees" channel in lieu of the "sky"



We apply the desired correction using the "Curve" tool to lift the trees in the foreground out of the gloom and create a better balance with the sky.

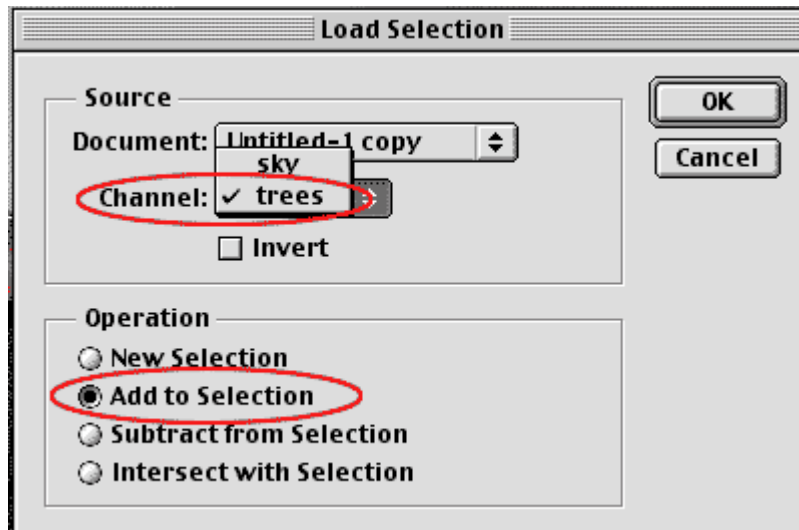
In the example shown below it should be possible to see the "marching ants". These provide us with visual feedback on the area of our selection. However, some Photoshop users don't like the marching ants. We can switch them off using the "Control/Command H" keystroke combination. As with the previous selections it is best to use some feathering to prevent hard edges.



Selection showing the “marching ants”

Step 6 - Selecting the Centre Area

Our next task is to add the "trees" selection to the "sky" selection and then inverse the combination. Using this approach we can select the centre of the image and then make our chosen edits to that area. Fortunately we don't need to use the 8-bit duplicate for this task as Adobe has provided the required tool within the "Load Selection" dialog panel.



Adding a Selection

- Click the "Add Selection" radio button and then choose the "trees" channel
- Click "OK"
- From the "Select" menu we choose "Invert"

The screen capture below shows the centre area of the sky and foreground trees to be protected from any edits we intend making.



Now that we have the central area selected we can progress with the required colour/contrast edits and finalise our image.

For more details on Photoshop selection tools and techniques I recommend **Real World Photoshop 6** by David Blatner and Bruce Fraser.