

Sharpening an image

Images that have been scanned or digital images that have been reduced or manipulated in some way can often become soft or somewhat fuzzy looking. There are a number of ways to improve the sharpness of an image.

The most often-used and easiest method is the Photoshop filter Unsharp Mask. This is a quick fix for many images when used with a light hand. The problem with using this method is that the filter can change the image colors as it increases the contrast of the dark and light edges. Additionally any JPG artifacts in the image can be enhanced to the point of becoming a distraction.

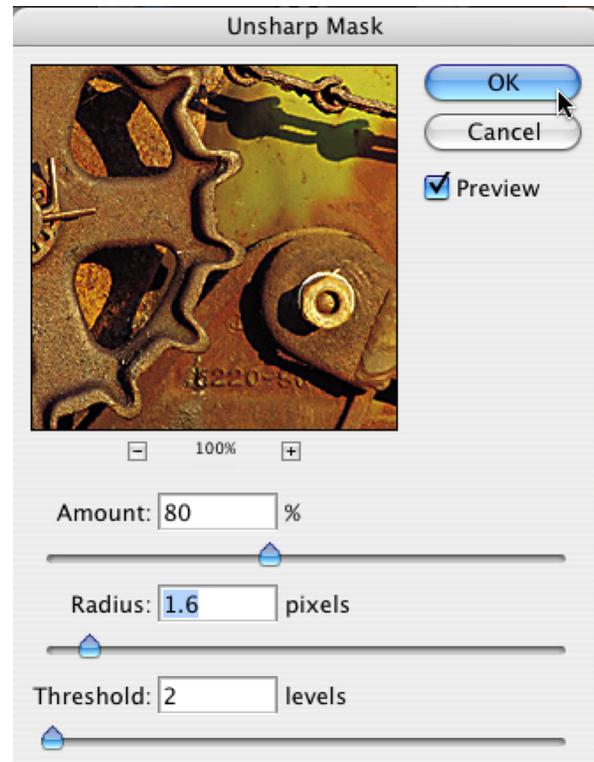
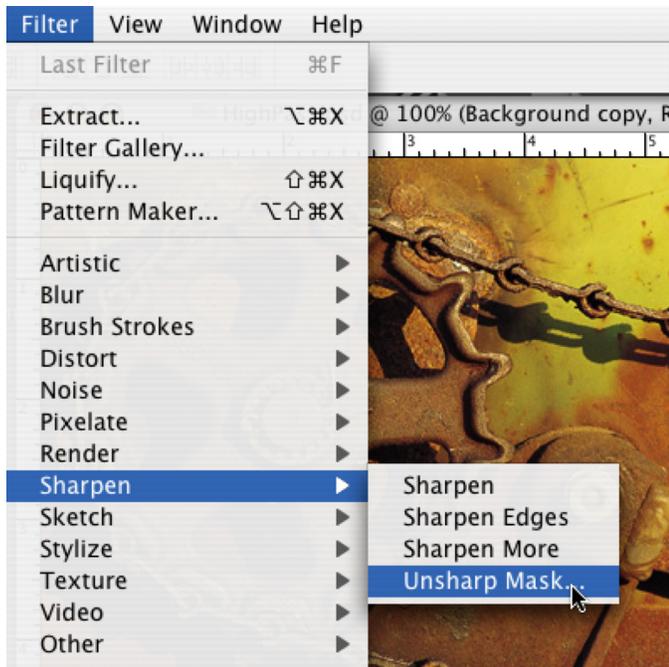
Here are a few other methods to try when sharpening your image. Note that all sharpening should be applied after all image manipulation is completed. This is especially true if the image will be reduced in size. Reducing an image's size will often soften the image.

Luminosity Sharpening

Here is an Unsharp Mask modification trick to try. Use the Fade command, but instead of fading the filter, apply a Luminosity Bend Mode.

This is a permanent filter effect and should be applied to a copy of the original image, in case you change your mind about using this technique.

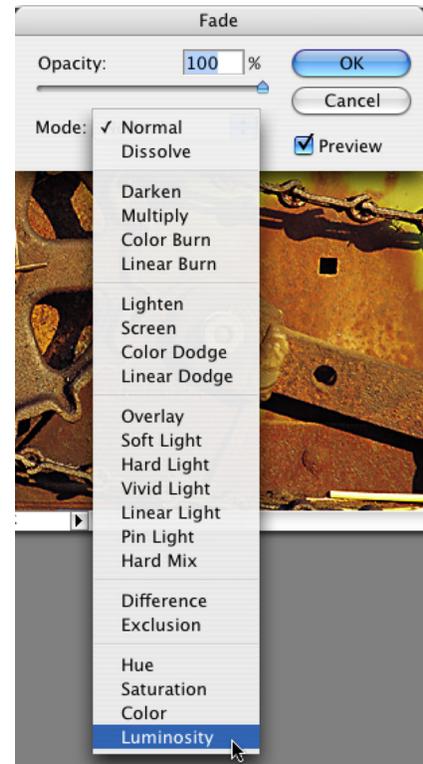
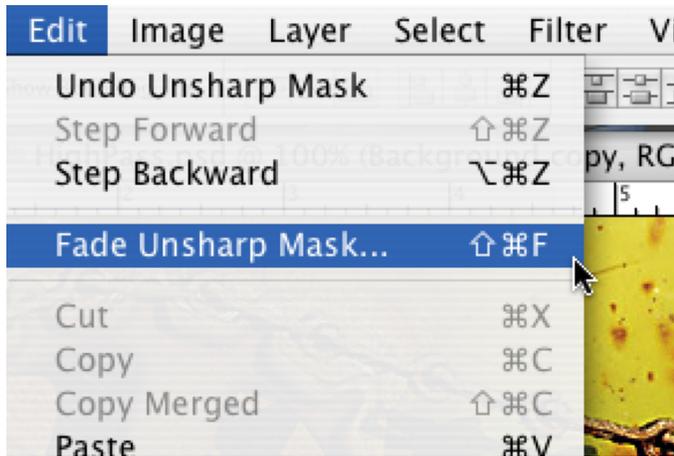
1. Apply the Unsharp Mask Filter to a copy of your image.



Sharpening an image - Luminosity & High Pass

2. Use the Edit -> Fade Command.

3. When the Fade window appears, switch the Mode setting from Normal to Luminosity.

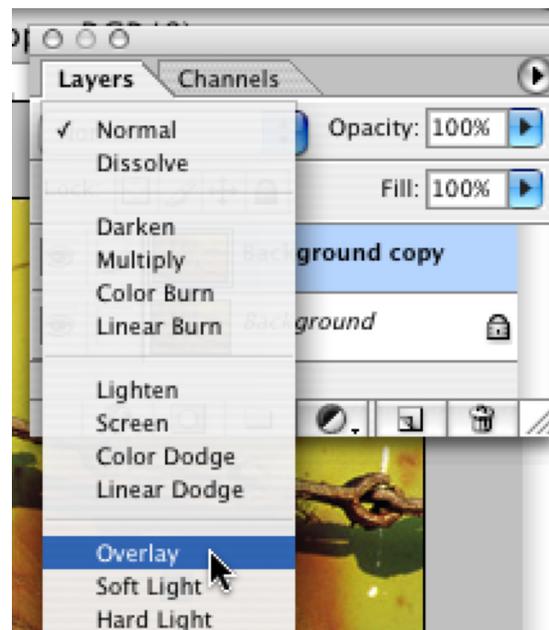
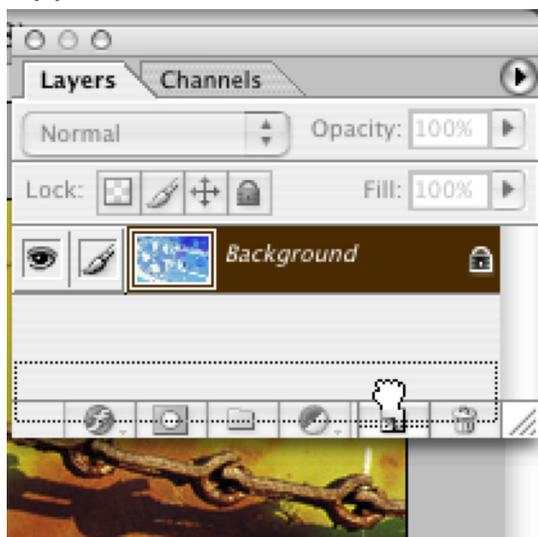


High Pass with Blend mode

1. Duplicate the layer you wish to sharpen.

2. Apply the Blend Mode -> Overlay Command.

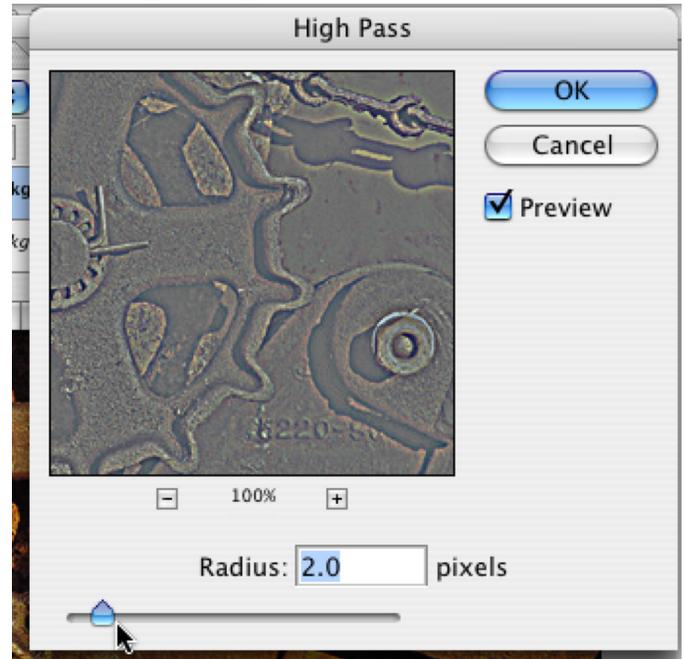
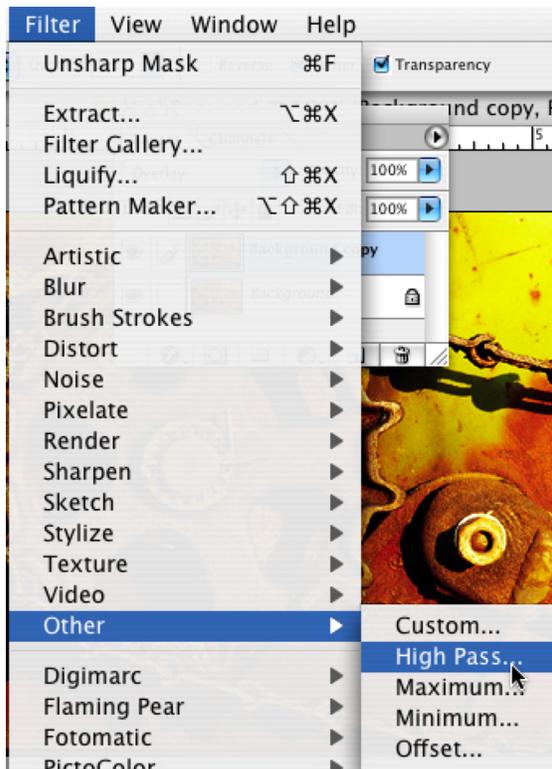
Applying the Blend Mode now will allow you to see the effects of the filter in the next step. If you forget to do this step first, you will not see the changes until after the filter has been applied.



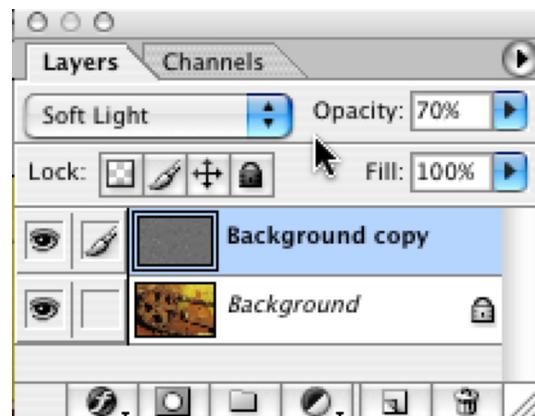
Sharpening an image - High Pass

3. Apply the High Pass filter -> Filter Menu -> Other -> High Pass Command.
The control window appears. Use the slider to adjust the amount of sharpening.

Note: Too much High Pass can create halos and major color shifts. You can desaturate this layer before applying the High Pass filter if you get too much color shifting.



4. Change the Blend Mode to Soft Light and/or adjust the Opacity of the layer to soften the effect if necessary.



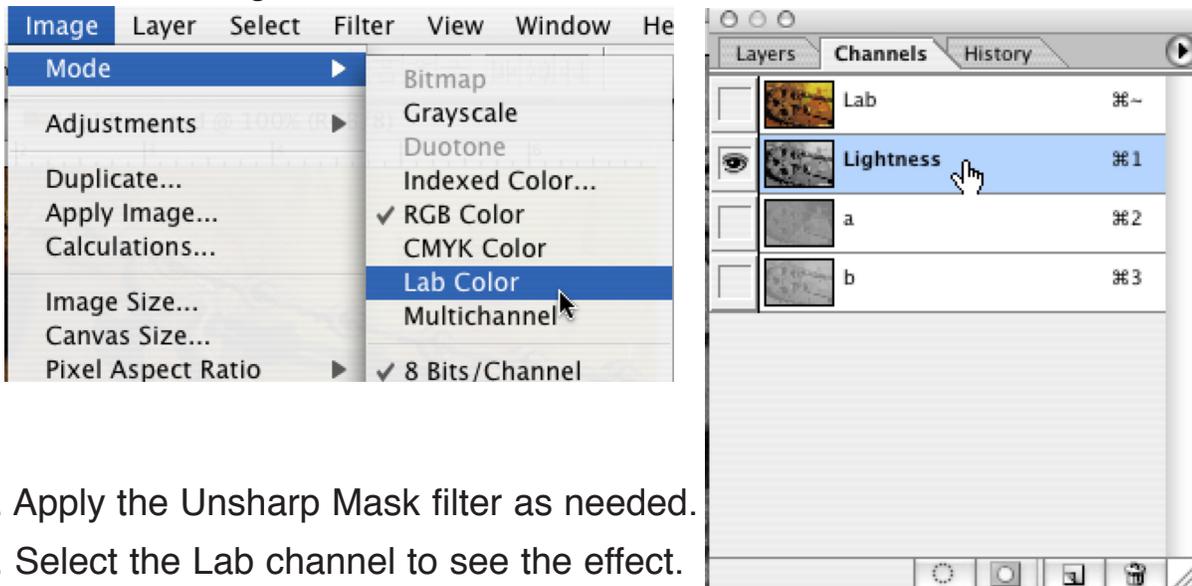
Sharpening an image -LAB

LAB Lightness Channel

As noted elsewhere in the Cookbook, LAB is a standard device independent color space. Photoshop uses it when it converts files between color spaces (S-RGB, to Adobe RGB, RGB to CMYK, etc.).

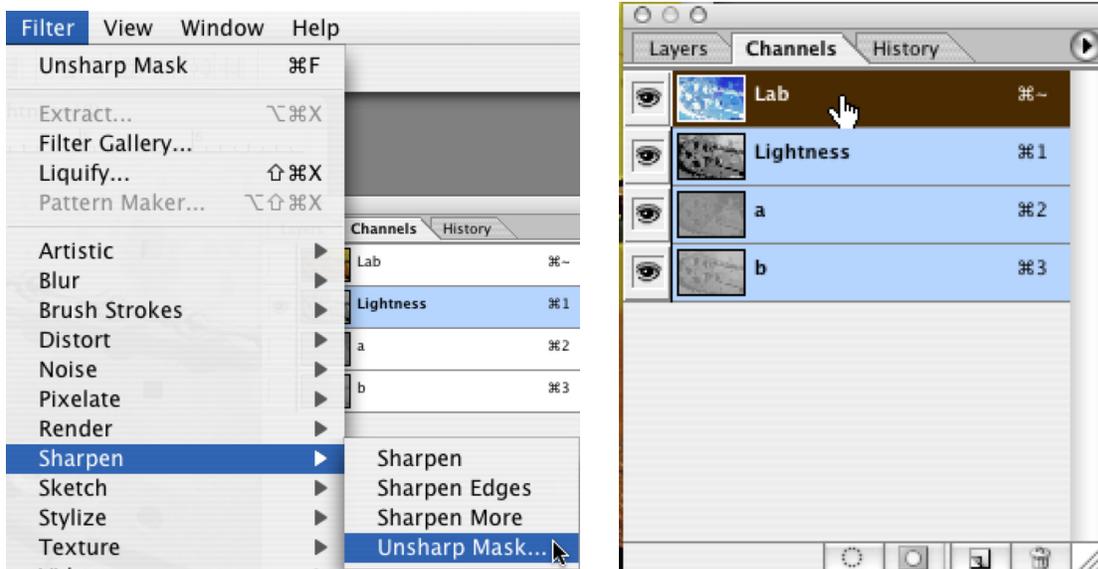
If you have a particularly noisy channel and using Unsharp Mask has magnified its appearance in the image, try using this method to improve image sharpness. The image is first converted to Lab, and then the Unsharp Mask filter is applied to the Lightness Channel. The Lightness Channel holds most of the image's details.

1. Convert the image to LAB Color:
Image -> Mode -> LAB Color.
2. Select the Channels Tab in the Layers window
3. Activate the Lightness Channel.



4. Apply the Unsharp Mask filter as needed.
5. Select the Lab channel to see the effect.
6. Toggle between the Undo (CMD +Z) and redo (CMD + Z) to see the before and after effect. If unhappy with these settings undo the filter and try other settings.

Convert the image back to RGB when happy with the sharpening.



Sharpening an image - Edges Only

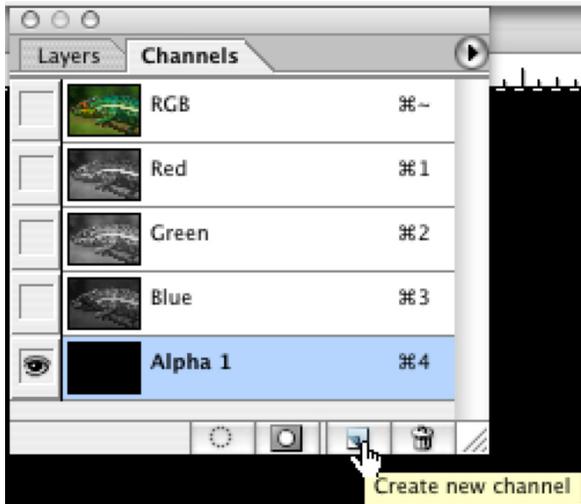
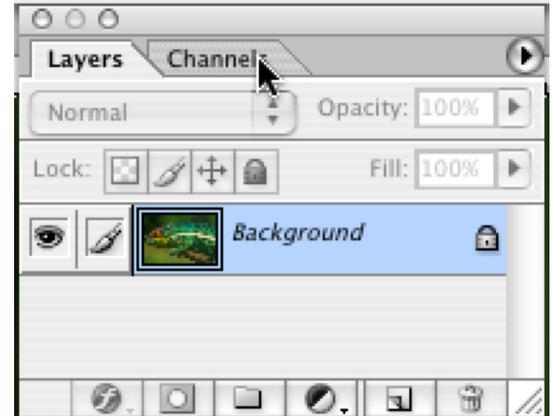
Edge Only Sharpening

Sharpening only the edges of an image will allow you to add finer detail to the image. For instance to the pores of an egg shell, veins in a leaf, or as in our example, bumps on a lizard.

There are a couple of ways to do this. But the basic instructions and results are pretty much the same. You will use either Levels or Threshold to fine-tune your initial selection. If one way doesn't work for you try the other option.

1. Open the file -> Select All (CMD +a), then Copy the image (CMD +c)

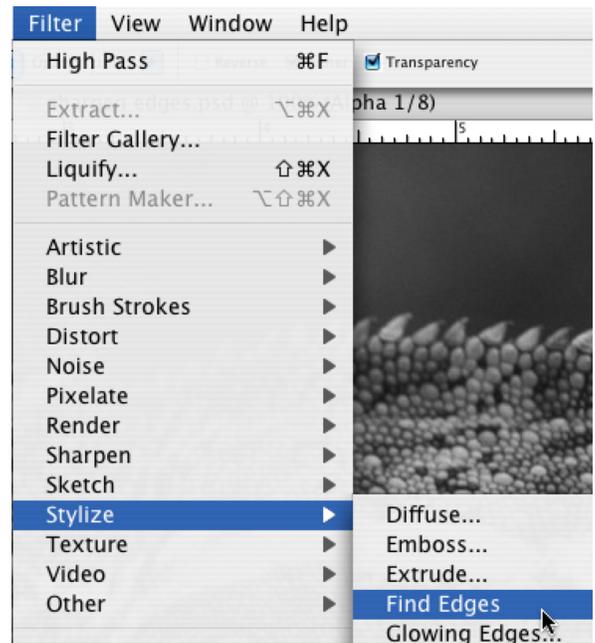
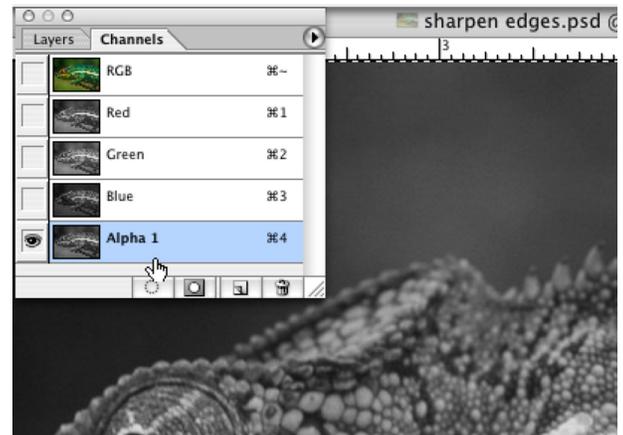
2. In the Channels window, add a new channel, Paste the image into the new channel (CMD +v)
Deselect your selection (cmd. +d)



3. Filter Menu -> Stylize -> Find Edges

Find Edges has found all the edges of the image, but it tends to pick up even the unimportant ones as well.

So we will need to get ride of the extra edges, and leave only the most important one for sharpening. You'll do that with a levels layer.



Sharpening an image - Edges Only

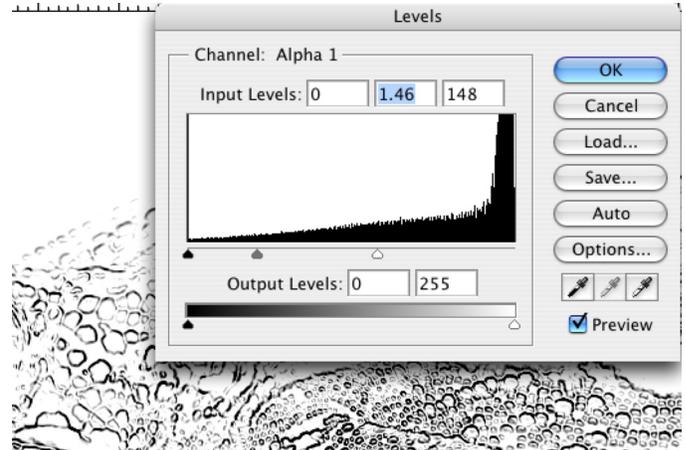
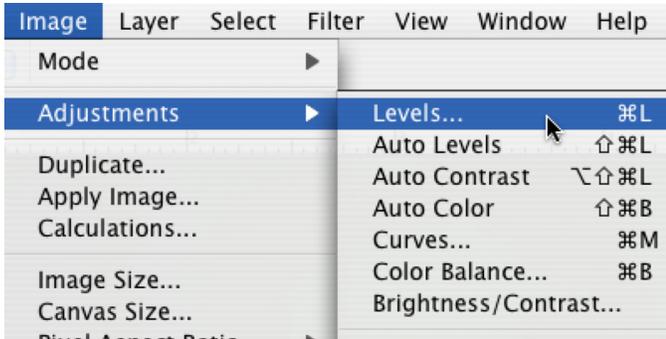
In the following steps you will have to decide which of the fine tuning methods to use. Levels or Threshold.

4. Add a Levels Adjustment.

Image Menu -> Adjustments -> Levels (CMD +I)

The Levels Options box appears.

5. Slowly move the White slider towards the middle. As you do, the lighter lines will fade away and the thicker lines will turn gray. Adjust the sliders until only the important edges you want to sharpen remain.



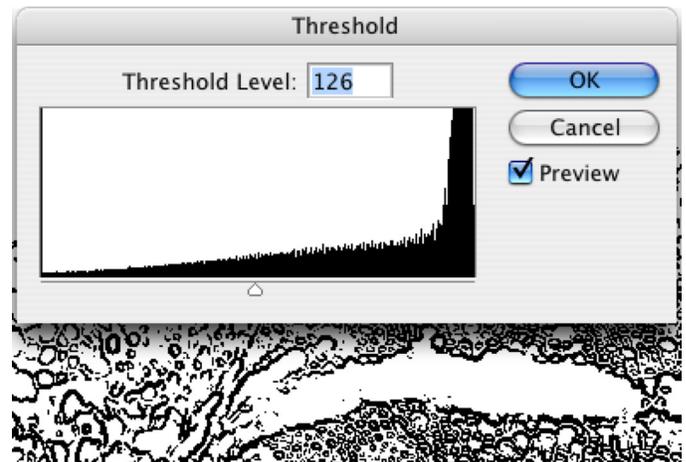
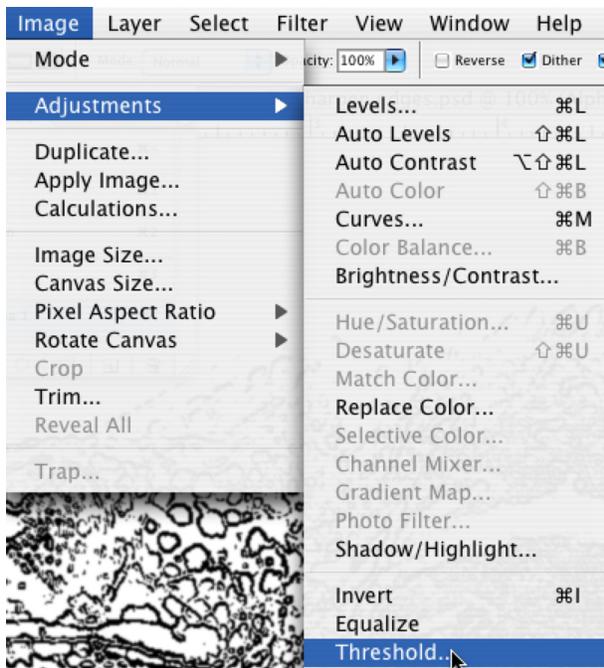
Or use Threshold.

Image Menu -> Adjustments -> Threshold

The Threshold Dialog box appears.

Move the single slider until the unwanted areas disappear.

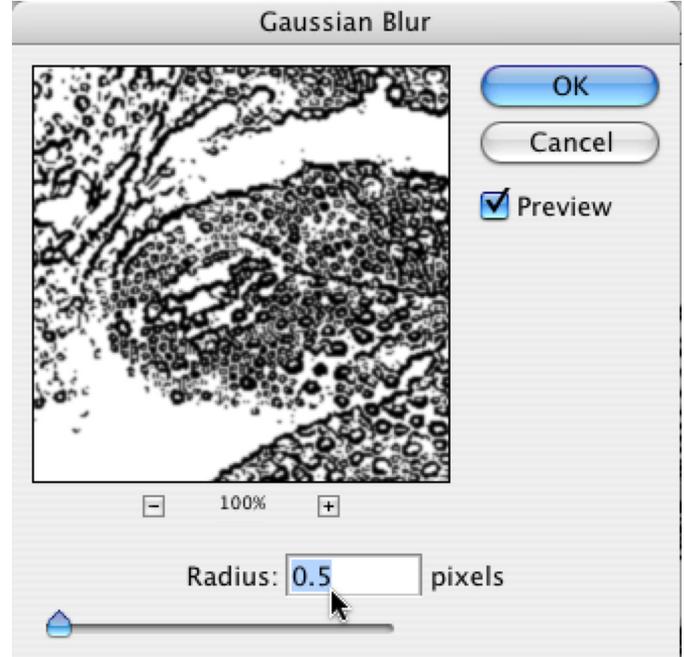
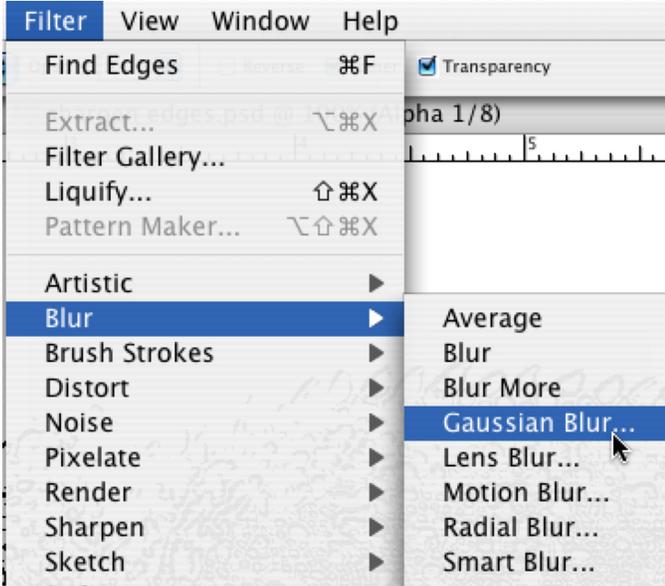
The Threshold settings are a little rougher than the Levels. This is because the pixels are either back or white.



Sharpening an image - Edges Only

Next we will further define the edges. First we will soften the remaining lines with a small amount of blur to lighten them up a bit more. Then we will darken the remaining lines so what remains is extra sharp.

6. Filter -> Blur -> Gaussian Blur. Depending on the image use .5 - 1.0 for your setting.



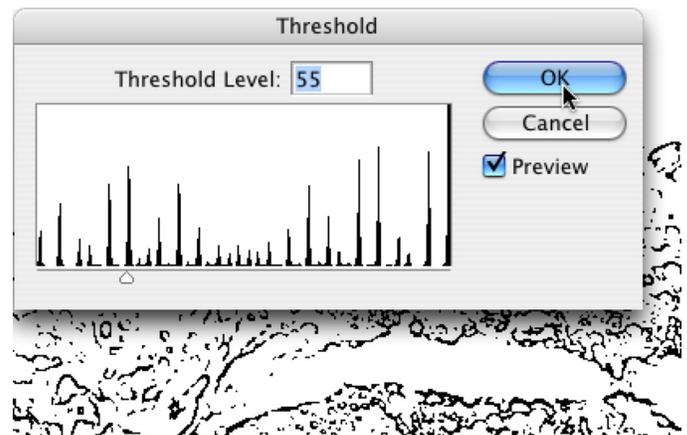
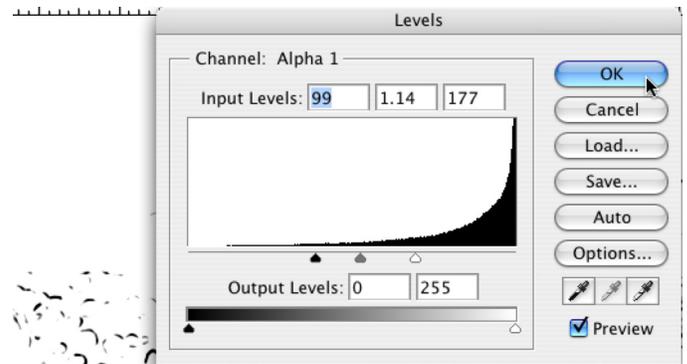
Now we will fine-tune the image by further reducing some of the newly created edges created by the Blur filter.

7. Add another Levels or Threshold Adjustment.

Image Menu -> Adjustments -> Levels (CMD +L)

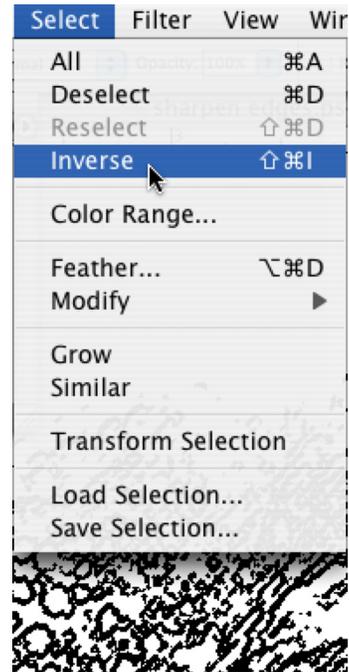
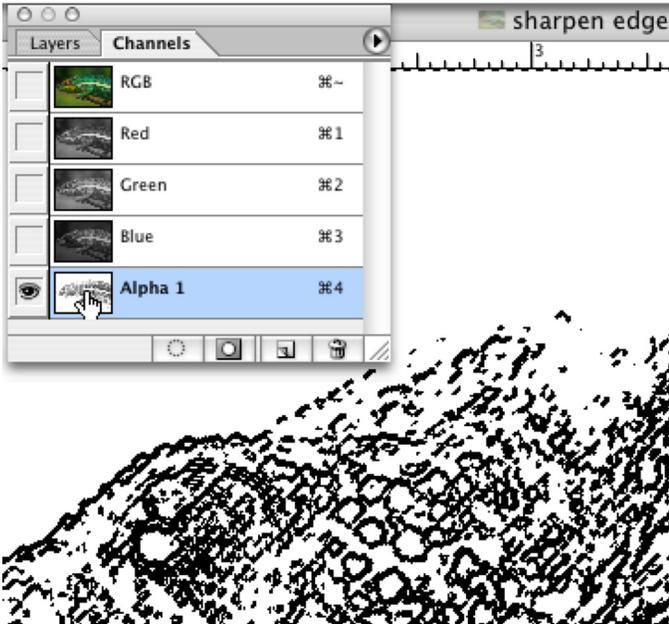
or Image Menu -> Adjustments -> Threshold

Move the Dark and White points in toward the center until you are left with very defined black and white areas.

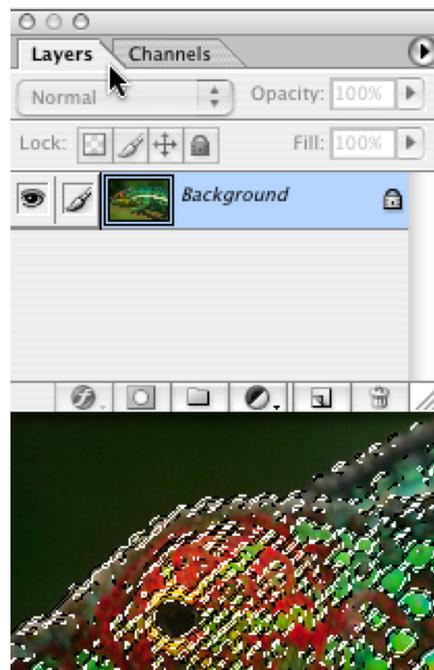


Sharpening an image - Edges Only

8. Select the Channel by holding down the CMD Key and clicking on the channel image icon. The white areas of the channel are now selected. You need to have the black areas selected.
9. To select the black areas of the channel, select the Inverse of your selection by by: Selection Menu -> Inverse.
Click on the RGB channel to preview your selection in the Color image.

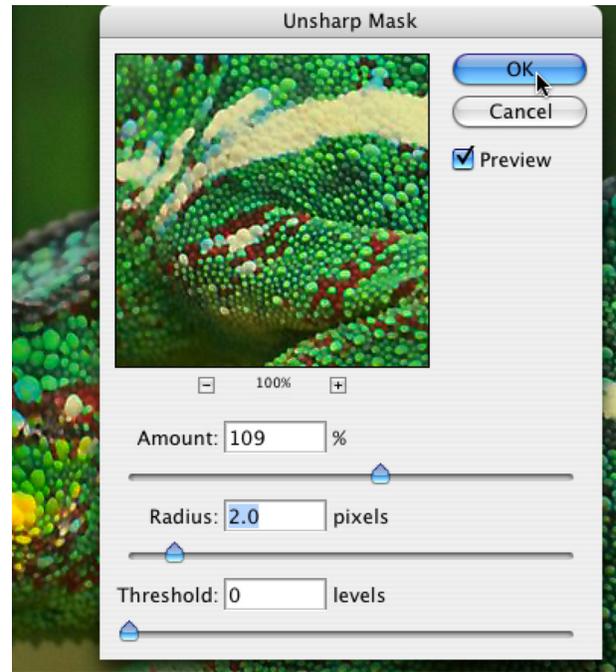
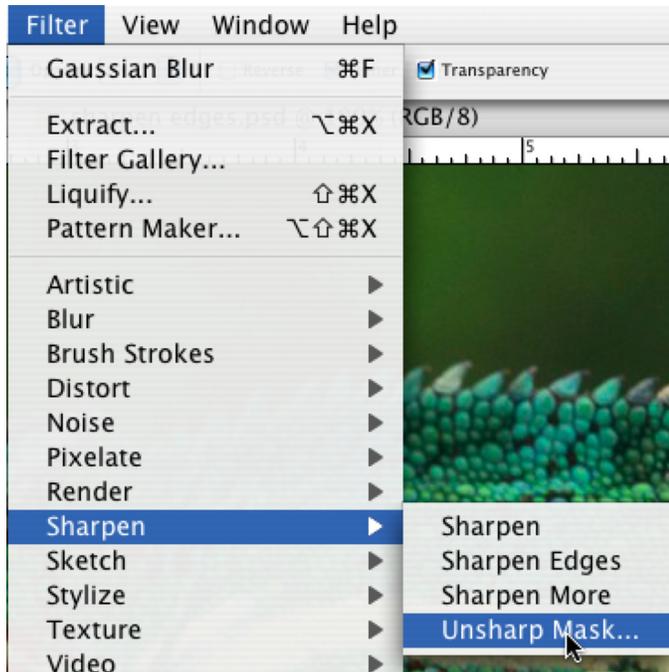


10. With the selection active, Click on the Layers tab in the Layers window. Your selection will be active on your image.



Sharpening an image - Edges Only

11. Apply the Unsharp Mask Filter as needed.
Filter Menu -> Sharpen -> Unsharp Mask



Note: If you find the effect to be a little strong, remember you can use the Fade Menu Option to reduce the opacity of the effect.
Edit -> Fade

