

Global Chroma Noise Reduction the reduction of color noise

I thought I would throw my two cents into the fray on the subject of chroma noise reduction. I use two work flows, one for the printing press and the second work flow for my personal work. For chroma noise reduction, I use LAB color and remove the chroma noise early in both work flows. In the first place, I find myself using chroma noise reduction less and less with the higher quality of noise reduction in the newer cameras but for underexposures, high ISO and very long exposures, it is sometimes still required. For chroma noise reduction I use LAB color which divides the image channels into a lightness or luminance channel and two more channels of color information. The channels with the color information are labeled A and B. The A channels is red and green with middle gray (50% gray) being neutral. The B channel is yellow and blue with the middle gray as neutral.



From middle gray in channel A and B the lighter the channel, the warmer the color and the darker the channel, the cooler the color.



For the A channel, everything lighter than middle gray is red and darker is green.



For the B channel, anything lighter than middle gray is yellow and darker is blue.

What is important to understand is if you have noise, you will see it immediately and know what channel it is in since the A and B channels have only color (chroma) information and no luminance information. If only one channel has noise you only need to apply your noise reduction to that channel but most often both channels will have noise. If you have noise you will also see noise in the lightness channel but that noise will look like grain which does not look as bad as color noise which appears as random colors.

Enough for now on how lab color works.



Noise shows at edge of desk



A channel clearly shows noise in the red and green.



B channel shows noise in the blue and yellow.

Step by Step Using Photoshop CS2 or CS3

Reducing the noise in one or both channels:

- 1 Select the A or B channel by clicking on the channel in the channels pallet.
- 2 Go to filters > blur > surface blur. Use the threshold and amount sliders until the noise is gone.
- 3 Do the same for the other channel as needed.
- 4 In the channels Pallet click on LAB and view the finished color image. Don't forget to change your image back to your normal working space.

Using lab is very visual and allows you to see not only what type of noise but what color and also allows you view the L channel to see how much luminous noise there is in the image.

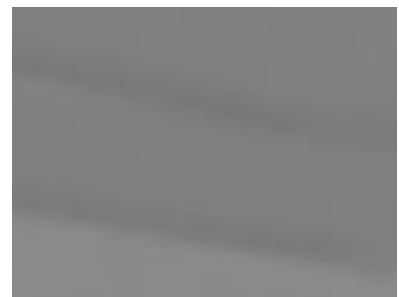
John Aydelotte aka Digital John



Final Image



A channel with a blur setting of 20 radius and 16 threshold



B channel with a blur setting of 20 radius and 16 threshold