

Photoshop B&W Conversions

Rob Dublin, April 2006

Observations

1. Always work with the maximum bit depth since converting to grayscale involves a loss of a lot of information.
 - a. 8-bit images only have 256 levels of gray Major tonal conversion will posterize (create discrete instead of smooth tonal areas) an 8-bit grayscale image.
 - b. 16-bit images have many more possible levels of gray: 65, 536. Currently most cameras capture 12-bits of information, which gives 4012 levels of gray.
2. Modern digital cameras are designed to capture color images. Convert in the editing and not in the camera. Once the camera throws away data it's gone forever.
3. In new Adobe product, Lightroom, you will be able to convert in raw. This may be a viable option. While it is currently possible to do it in raw, it involves a lot of guesswork.
4. Benefits of keeping converted image in RGB: tinting and allowing color to bleed through via a mask.

Conversion Methods

1. Convert to grayscale. This conversion from RGB uses a fixed formula to make the B&W image, approximately: 30% red, 60% green, 10% blue (Jeff Schewe).
 - a. Recipe
 - i. Image→Mode→Grayscale.
 - ii. Variation 1 to add toning: Image→Mode→Duotone (image must be 8-bit).
 - iii. Variation 2: Image→Mode→RGB Color.
 - iv. You can tone the new RGB image in any of several ways:
 1. My favorite is to add a curves adjustment layer on top of the B&W image and adjust the curves for the color channels. Paul Butzi on his web site has wonderful pre-built curves: <http://www.butzi.net/articles/toning.htm> .
 2. To use them download them to a directory. Then with the Curves dialog box open click the Load... button and point to the directory and file that has the saved curve you want to use.
2. Use Hue/Saturation to desaturate completely
 - a. Recipe
 - i. Create a Hue/Saturation adjustment layer: Layer→New Adjustment Layer→Hue/Saturation... or in the layers palette click on the half filled circle icon at the bottom.
 - ii. Give the layer a meaningful name.

- iii. Drag the Saturation (middle) slider all the way to the left, -100.
 - b. Variation per Russell Brown is to use two H/S layers, one that converts the image to gray scale and one to allow tonal shifts.
 - i. Add two Hue/Saturation adjustment layers as described above.
 - ii. Desaturate the top layer to -100.
 - iii. Set the Mode (top left drop down box on the layers palette) of the bottom Hue/Saturation layer to Color.
 - iv. Play around with Hue slider on this bottom layer to adjust tones.
 - c. Using Hue/Saturation to tone an image:
 - i. Create a new Hue and Saturation adjustment layer as above.
 - ii. Check the Colorize box
 - iii. Set saturation to a low value, say 5-10
 - iv. For a sepia tone, set color between 32-36
- 3. Use a single channel
 - a. Recipe
 - i. View image in Channels Palette (make sure your Preferences are set to view the channels as gray scale images (in preferences, Edit→Preferences→Display & Cursors... with Color channels in Color box unchecked) . Alternately click and make active the red, green, and blue channels to see which provides the best image.
 - ii. Make your preferred channel active and select all, Select→All.
 - iii. Edit→Copy
 - iv. Click on the RGB channel to view your image as a color image.
 - v. Go to the layers Palette and Edit→Paste the copied channel as a new B&W image.
- 4. Channel mixer (my personal favorite in that it provides relative simplicity and great control).
 - a. Recipe
 - i. Create a new Channel Mixer adjustment layer: Layer→New Adjustment Layer→Channel Mixer... or in the layers palette click on the half filled circle icon at the bottom and select channel Mixer...
 - ii. Click and check the Monochrome box on the lower left.
 - iii. Adjust sliders to taste: To keep tonal range consistent keep total percent to 100; if you are at a loss for ideas, start with red 30, green 60, blue 10, like for grayscale conversions. Rules are meant to be broken so feel free to play, e.g., minus values of blue and high amounts of red and green will produce dramatic dark skies from clear blue ones.
- 5. LAB conversion and keeping only brightness. Per Greg Gorman, one can take this to a new level by adding a tint in the shadows. The Lab color is composed of three channels, a lightness channel, and color channels “a”, which contains red/green info, and “b”, which contains blue/yellow info. The idea behind this method is to use only the brightness channel in our conversion.
 - a. Recipe
 - i. Image→Mode→Lab Color.

- ii. In the Channels Palette, click on the Lightness channel to select it.
 - iii. Convert to gray scale: Image→Mode→Grayscale. Click OK to discard other channels.
 - iv. Proceed as with 1, Grayscale conversion, above.
- 6. Convert an image copy to grayscale and then add grayscale image layers of each of the original image color channels to this copy. By using layer masks for these additional layers, each area of the final image can be composed from the color channel that provides the best gray scale tonality (after Jean Paul Caponegro and Jeff Schewe).
 - a. Duplicate your image, Image→Duplicate...
 - b. Convert to Grayscale as in 1.
 - c. Make your original image the active image. Go to the Channels Palette and click on the Red channel, make sure you are viewing it as a grayscale image, to make it active.
 - d. Select the entire channel, Select→All.
 - e. Now copy this selection, Edit→Copy.
 - f. Go to your Grayscale copy and paste the Red channel via Edit→Paste into the image. It should create a new layer on top of the background.
 - g. Name the new layer Red.
 - h. Repeat “c” through “g” for the green and blue channels and name them accordingly.
 - i. For each of these layers create a layer mask set to black; Layer→Layer Mask→Hide All.
 - j. Using your original color image as guide paint each of the layers masks white (or gray) where you want that layer to replace the underlying grayscale conversion. E.g., to darken a blue sky, paint the sky in the Red layer white. Remember that this layer is from the original red channel and the blue sky contains little red so it is relatively dark.
- 7. Calculations (Bruce Fraser), Image→Calculations... let you combine channels using various blend modes. It takes a while to get used to using it. I suggest reading about this method in Bruce Fraser’s “Real World Photoshop” book if you are interested.
- 8. Convert in raw (Russell Brown @ Russell Brown.com):
 - a. Desaturate by pulling the Saturation slider all the way to the left.
 - b. Adjust using raw curves, accessed via the Curves tab. Changes are more subtle than using the curves palette in Photoshop.
 - c. Adjust tone using the Calibrate sliders. Changes are subtle.

References:

Web notes, Laura Balsam, NYPC Photoshop SIG Chairman:

http://www.hookbuilt.com/nypc/ps_res_handouts.html

Toning curves, Paul Butzi: <http://www.butzi.net/articles/toning.htm>

Russel Brown's use of Raw to create a B&W image:

http://www.russellbrown.com/images/tips_movies/PhotoStyler2.mov

John Paul Caponigro: <http://www.johnpaulcaponigro.com/resources/index.html>

"The Art of Digital Black and White," Jeff Schewe (from the Epson Print Academy)

"Real World Photoshop 7," David Blatner and Bruce Fraser