Gamut

The Colour Management Newsletter

Photoshop & Colour Management

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Photoshop
& Colour Management

One of the greatest assets and potentially the greatest challenges of working with Adobe Photoshop is are so many options available when it comes to colour management. When working with colour it is essential that you have Photoshop's Color Settings properly configured to give you the best possible reproduction quality possible.

Photoshop Colour Setup:

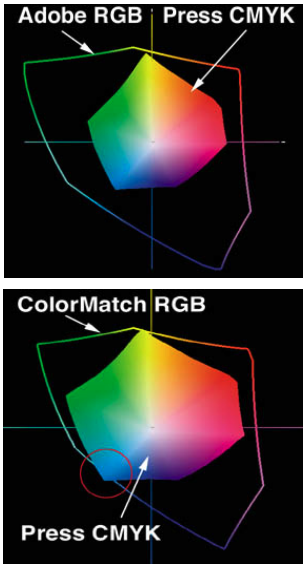
How do we setup Photoshop for the best colour reproduction? Well, Adobe helped us out in this area by creating an excellent preset called U.S. Prepress Defaults. You should turn on this preset by going to the Color Settings dialog box under the Edit menu.

Which RGB Space is Best?

By turning on this preset you are setting up a number of things. One you are choosing the Adobe RGB (1998) Working Space. This is an excellent choice as an RGB space as it encompasses the majority of the press colours as shown in the gamut map at right.

I would avoid using ColorMatch RGB because it can clip the maximum densities available when you convert to CMYK. Due to the reduced Cyan and Yellow component in ColorMatch RGB the best green you can get when you convert from a vibrant green (R: 51 G: 164 B: 87) to CMYK would be 78 Cyan and 78 Yellow. In Abode RGB I was able to achieve a 99 Cyan and a 99 Yellow, using the same RGB values in both files. See the two examples at right.

Converting from RGB to CMYK has always been challenging due to the reduced gamut of CMYK so why would you want to limit yourself by choosing an RGB colour space that is smaller, in some areas, than CMYK.



RGB Working Space Comparisons

Adobe RGB to CMYK
C: 99
M: 1
Y: 99
K: 0

ColorMatch RGB to CMYK
C: 78
M: 2
Y: 78
K: 0

CMYK Conversion Comparison

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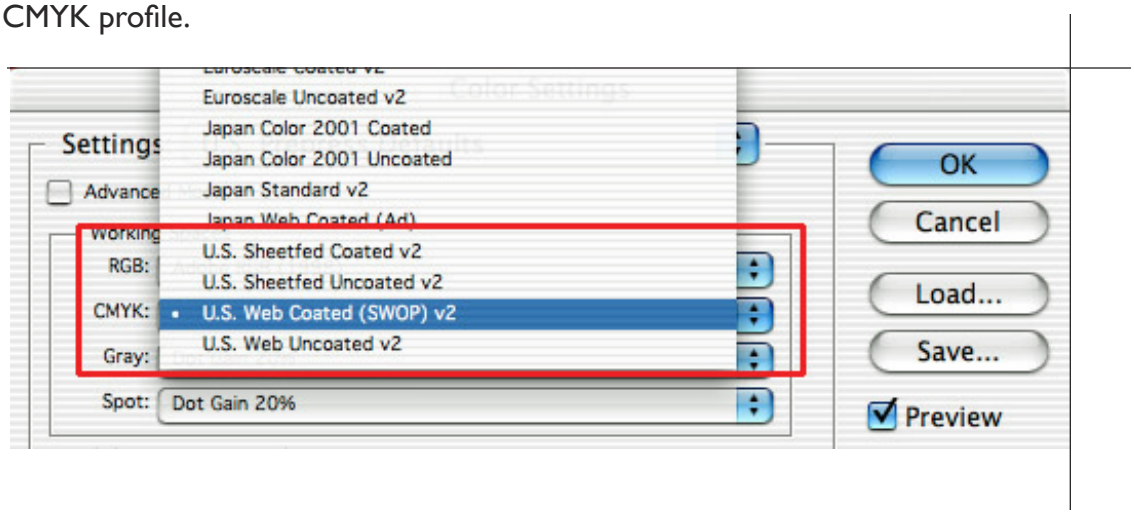
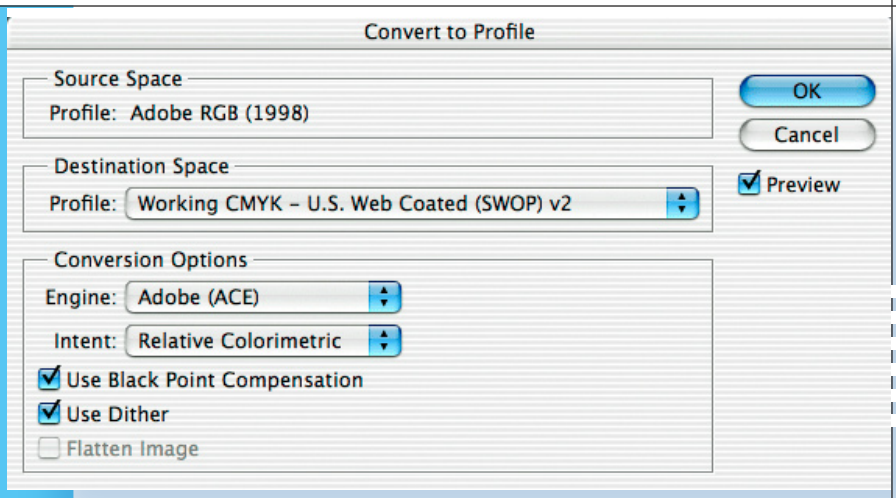
CMYK Conversions:

The next thing you have chosen, by using the U.S. Prepress Default, is the U.S. Web Coated (SWOP) v2 as your CMYK Working Space and it is the setting used if you invoke a mode change from RGB to CMYK or you create a new CMYK document. Within Photoshop there are four excellent ICC profiles created by Thomas Knoll, the brains behind Photoshop. What I like most about these profiles is that they have taken a lot of the guess work out of converting an image from RGB to CMYK and they do and excellent job of retaining most of the RGB's original colours. All you need to do is determine how the file is to be printed and select the appropriate CMYK profile.



I prefer to use the Convert to Profile command anytime I do a conversion as apposed to the usual Image/Mode/CMYK. By using the Convert to Profile command (Image/Mode/Convert to Profile) you now can see how the selected profile will work with a particular image by turning the Preview button on and off. You can also check the info pallet before selecting OK to check that the conversion is going to give you the numerical results you expect. For most conversions I would convert using the settings shown in the following image. If you are converting images for a particular printer call ahead and ask which of these four options they would recommend.



To Embedding or not to Embedding?

In an ideal world every image should have an embedded profile, that way the receiving application knows exactly how to display the image. If the file is received without an embedded profile and you choose not to colour manage it, then Photoshop will use your colour settings to display the file. What are the chances that the sender and the receiver are using the same settings! But if the sender saves the image with an embedded profile then the receiver's application can load that file with the understanding of how it was created, thus rendering an accurate display of the image. The embedded profile travels with the file wherever it goes, from Mac or PC. At every stop it can be previewed accurately, assuming that the receiver has an accurate monitor profile. That last part about the accurate monitor profile is the weakest link in the puzzle, but with time and with less expensive monitor calibration devices coming to market it will become a reality to send an image to another workstation and have the receiver see what you intended.

So rule number one, always save your images with an embed profile - in either RGB or CMYK. If you are selling images and not embedding the profile with the image you should be shot, because the receiver's application (Photoshop) has no information about how to build a proper preview and thus the image will be displayed, as mentioned, using whatever settings are set in the receivers colour settings dialog box.

The ColorSync Control Panel:

I have been asked numerous times how should I set up my ColorSync Control Panel? The answer is very simple - it doesn't matter. What does matter is what you load in the monitor control panel OS 9, the Displays Tab in OS X or in the Display control panel in Windows. Applications like Photoshop do a call out to the above-mentioned locations. It is this monitor profile that is used by color sync aware applications to do what is called display compensation. The ColorSync control panel is really just a future option. One day their will be one place where we can set all of our colour settings and all applications will do a call out and find this info. But for now all colour settings are done within the application.

Till next time, keep yourself colour correct and don't let your colour manage you.