What is color management?

Part 4: Photoshop and Color Settings

Color Settings has to be the scariest looking dialog in Photoshop.

This month I'll try to explain what's going on here and make it less frightening.

To access the Color Settings, go under Photoshop's Application menu and pick Color Settings (or cmd/ctrl-shift-K). This dialog is a lot easier to deal with if you break it down into six sections as seen in **Figure 1**.

1. Settings. This area has a number of color setting presets from Adobe and, at the top, a Custom option. Each menu item is a preset that controls every option in the dialog below. Therefore, by picking U.S. Prepress Defaults, all the subsequent options in this dialog are automatically filled in. Toggle to Web Graphics Defaults, and the options change based on this preset. For most Photoshop users, the U.S. Prepress Defaults are ideal. If you do nothing else, set this and click OK.

2. Working Spaces. We discussed the role of working spaces last month (March, *Professional Photographer*, p.68). This area of the color settings divides the working spaces into the various colorspaces Photoshop supports; otherwise the four pop-up menus behave the same. This setting informs Photoshop what you want the *preferred* working space to be. In Photoshop 5 through 7, when you made a new document, the preferred colorspace would be used for this new document. In Version 8, CS, you can now pick any colorspace in the New Document dialog, so this pop-up plays a smaller role. Photoshop uses this preferred
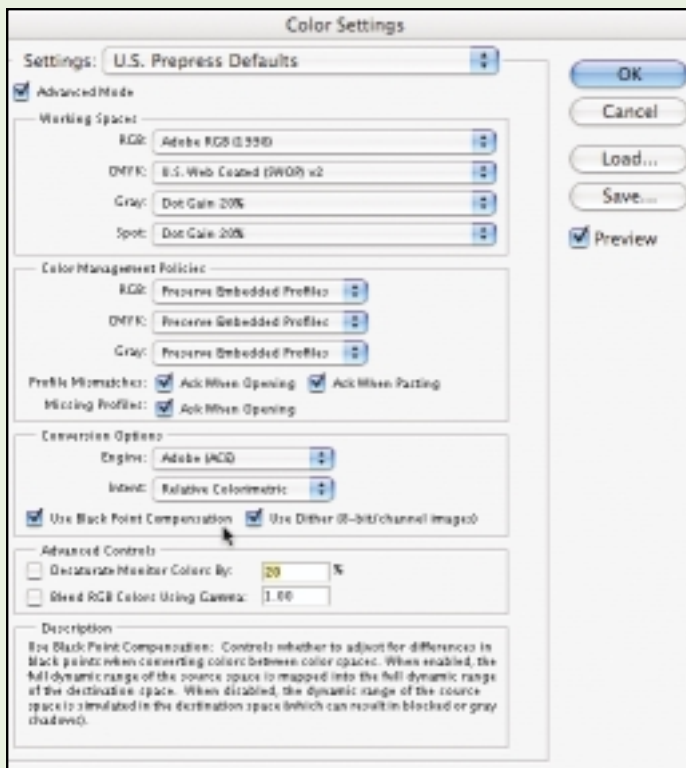

Figure 1: Photoshop Color Setting dialog. Notice that the cursor is over the Black Point Compensation check box and the description at the bottom of this dialog provides some information about this setting.
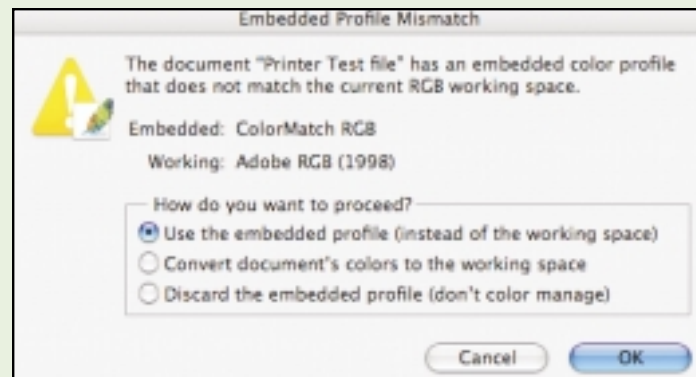

Figure 2: Profile Mismatch dialog. The Preserve (Use the embedded profile) radio button is set as the default because the Color Management Policy is set to Preserve in the Color Settings (Figure 1). Simply click OK and the file will open in the original colorspace (in this case, ColorMatch RGB, even though the preferred working space is Adobe RGB 1998).
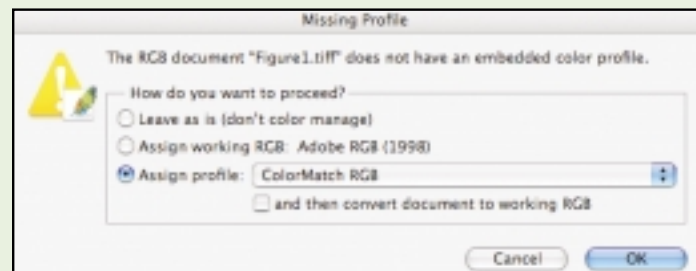

Figure 3: Missing Profile dialog. This dialog shows up when untagged files are opened if the warning check box (Missing Profile) seen in Figure 1 is on.

working space in two critical areas. First, depending on the color warnings (which we are coming to), if you open a file that is NOT in this preferred colorspace, Photoshop will display a warning telling you this. More important, if Photoshop opens a file that does not have an embedded profile, Photoshop will assume the colorspace of this file is the working space selected here. This is quite important to understand. If you have the U.S. Prepress Defaults set, the preferred working space is Adobe RGB 1998. **Any** untagged document opened will be assumed to be in Adobe RGB 1998. Photoshop has to guess something about the numbers in the untagged file. Here's how it makes that guess.

3. Color Management Policies/Warnings. If you have set the color settings to U.S. Prepress Defaults, you see the policies and their associated warning check boxes set for the safest behavior for dealing with files. Color Policies cause Photoshop to default to certain behaviors when a user opens a file that is not in the preferred working space. If a user has his color settings on U.S. Prepress Defaults and opens a file that is not in Adobe RGB 1998 and the Profile Mismatch warning check box is on, Photoshop alerts the user and defaults to the Preserve policy option seen in **Figure 2**. If the file is in Adobe RGB, the file just opens. The policies allow one to preserve (open the file in the colorspace as it is tagged), to convert into the preferred working space (in this example Adobe RGB 1998) or to open the file and remove the profile, which is a bad idea! There is a policy for each colorspace. In most cases, if someone provides a file in a certain colorspace, the intention is that you view and use that colorspace. Preserve simply allows the file to open in that colorspace.

The Preserve policy, along with the Profile Mismatch warning (**Figure 3**) ensures that the user knows this and can alter the settings if necessary. The Off policy is dangerous and should rarely be used. The Warning check boxes ensure that the user is

informed if the file he is opening is not in the preferred Working Space, if the file has no embedded profile or if he is attempting to copy and paste one color space into a different color space. Here is a tutorial that walks you through each option: http://digitaldog.imagingrevue.com/files/Color_Policy_Tutorial.pdf.

4. Conversion Options: This tells Photoshop what CMM (Color Matching Module) to use. This is the algorithm used when color space conversions are made. Rather than get into a long color geek discussion, my advice is to set the conversion Engine to Adobe ACE, using this CMM from Adobe to convert files. The Intent should be set to Relative Colorimetric at this point (we'll cover intents later) and both check boxes should be on.

5. Advanced Controls. Here are some dangerous options that should not be altered! If you must know what they do and why, check out p. 17 of this PDF: http://digitaldog.imagingrevue.com/files/II-PS6ColorManagement.pdf.

6. Description. Moving your mouse over any of the check boxes, pop-up menus or other items provides a description that appears in this area of the dialog as seen in **Figure 1**. Think of this like an "online" set of instructions.

The color settings dialog might still seem somewhat mysterious, but look over the two PDFs referenced above and give the U.S. Prepress Defaults setting a try. As you work with files, the various roles will become clear and these settings have a safety net, so it's very difficult to ruin your files. ❏