



Photoshop Printing Tips

Avoiding Common Pitfalls

By [Chris Murphy](#)

Printing from Photoshop and getting the color you expect is not the most intuitive thing. Not only can Photoshop do color conversions at print time, but so can the printer driver itself. To make matters worse, they can both do color conversions at the same time, and this usually results in disaster. This tip sheet, based on [Real World Color Management](#), chapters 11 and 12, will explain how to avoid “double color management” and help you better achieve the results you expect.



Basics

Ensure that your display is calibrated and profiled, and that you have a suitable profile for your printer. Many “canned” printer profiles supplied by manufacturers are less than ideal, but actually work reasonably well if they are for newer products. If you are using manufacturer supplied profiles, you must use that manufacturer’s recommended inks and media, or you won’t get expected results.

Photoshop: Print with Preview

By default, Photoshop 7 brings up the **Print with Preview** dialog instead of the regular **Print** dialog. Ensure you are requesting the Print with Preview dialog. At the bottom is a **Show More Options** checkbox that when checked will reveal a pop-up menu. Select **Color Management** in the pop-up menu. You should see something like Figure 1.

Adobe uses the term “Source Space” to refer to the profile assigned to the document you have chosen to print. The profile listed here is the document's assigned profile.

Adobe uses the term “Print Space” to refer to the destination profile. To keep things simple, I’ll discuss the two most likely options you could select here.

1. In the **Print Space** section of the **Color Management** dialog, select the profile for your printer and media—if you are using ICC-based color management. (See Figure 1.) Photoshop will do the color conversion at print time. When setting your printer drivers’ color management features, ensure that they don’t also use ICC-based color management. (See “Color Management in Printer Drivers: Turn it Off” on the other side of this page.)

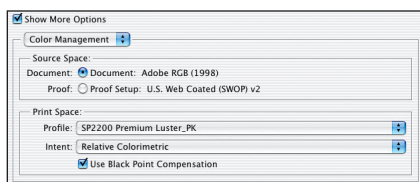


Figure 1

2. In the **Print Space** section of the **Color Management** dialog, select **Same As Source**. This makes the Source Space and Print Space the same, and therefore Photoshop will not convert the document at print time. When setting your printer drivers’ color management features you can use whatever driver settings you want, knowing that Photoshop isn’t affecting the output. (See Figure 2.)

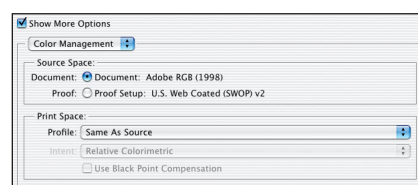


Figure 2

I recommend using a good profile for your printer, and letting Photoshop do the conversion (which means going with option 1). In conjunction with a calibrated and profiled display, this will provide the most accurate screen to printer “match.” Some people may prefer a more pleasing and less accurate result than using ICC profiles, so it’s possible you will prefer option 2.

Proofing

If you want Photoshop to help you generate proofs of your RGB images, change the radio button in **Source Space** to **Proof Setup**. This tells Photoshop to first convert your document using the profile listed after Proof Setup, and then convert it to the Print Space profile. Ensure the following three things:

1. That **Proof Setup** (found in the View>Proof Setup>Custom dialog) is set to the profile for the output device you want to simulate, such as a printing press.
2. That **Print Space** is set to the profile for the local printer you will be printing to.
3. That **Color Management** in the printer driver is turned off.



Rendering Intents and Black Point Compensation

To obtain the most accurate color reproduction, select **Relative Colorimetric** from the Intent drop-down menu in Photoshop's **Print with Preview** dialog's **Color Management** section. This tells Photoshop to attempt to exactly reproduce colors that are in the original. However, you may prefer sacrificing some accuracy for more pleasing effects such as improved saturation at the expense of hue, increased contrast, or increased rendering of detail at the expense of saturation. Therefore you may prefer the **Perceptual** or **Saturation** rendering intents with some of your images. There are no rules that define how these intents must behave, so it's just a matter of experimenting with the profiles and seeing which one you like better. Ultimately, that's all that matters.

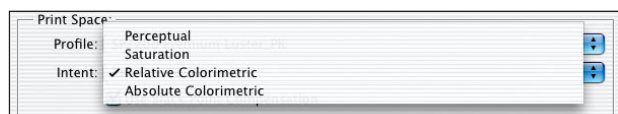


Figure 3

Absolute Colorimetric rendering is functionally similar to **Relative Colorimetric** rendering except that the source white is simulated on the destination. This is often called the "Proofing Intent" because it's used when proofing something like a printing press, which typically uses paper stocks that are more yellow and gray than inkjet papers. This intent will cause your printer to simulate that yellow-gray paper color using ink.

Black Point Compensation is really a scaling function. It scales the entire dynamic range of the image based on the source and destination black points. If the source black is darker than the destination black, Black Point Compensation will allow shadow detail to be rendered on the destination instead of clipping it. If the source black is lighter than the destination black, Black Point Compensation will expand the dynamic range of the image so that black prints as dark as possible. While there is sometimes a slight sacrifice in saturation when using Black Point Compensation, it is usually outweighed by the benefits.

GATF/RHEM Light Indicator

Non-standard lighting conditions are one of the most common reasons for color matching problems from screen to print. Most people don't believe it when they hear it, or don't realize the potential magnitude of the problem. We have included the GATF/RHEM Light Indicator with each copy of *Real World Color Management*. It is a small strip that contains two color patches that look the same under standard viewing conditions, but look different when viewed in non-standard viewing conditions. See it to believe it, and standardize your viewing conditions!

Color Management in Printer Drivers: Turn it OFF!

We'll use the Epson Stylus 2200 as our example printer.

1. Ensure you select the correct Media Type for the kind of paper you are using. On Mac OS X, this is found by selecting **Print Settings** from the pop-up menu, and on Windows in the Main tab.
2. Next, we need to get to the drivers' color management features. On Mac OS X select **Color Management** from the pop-up menu. And on Windows, in the Main tab's Mode section, select **Custom**, then click the **Advanced** button. You should now see something like Figure 4 for Mac OS X and Figure 5 for Windows.
3. If you are using manufacturer supplied profiles, you must select **No Color Adjustment**. (See Figure 4.)
4. If you are using custom profiles, you must recreate the settings used at the time the profile was built. Most likely this is also **No Color Adjustment**.

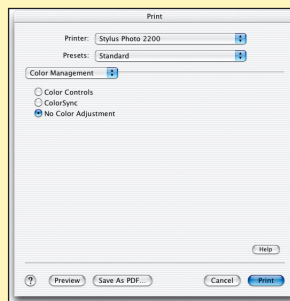


Figure 4

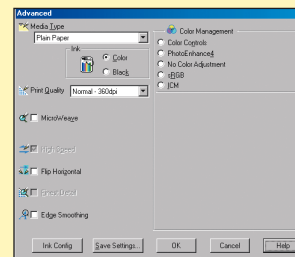


Figure 5

Summary

The main thing is to ensure that either Photoshop or the printer driver are doing color management, not both of them. For other photo printer drivers, you will need to do some digging around to find the "off switch." Look for the following possible options: color management, color correction, or simulation.

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