Adobe Photoshop CS2 is now available, with changes in the handling of color management in the printing process. Here, we outline the software's new options.

Print with Preview in Photoshop CS2

Print with Preview is dramatically changed in Photoshop CS2. Once you've configured the print dialog interface, you can tell Photoshop how to prepare a document for printing, and Photoshop will hand-off the data to the print driver that appears when you click on the *Print* button. To view all of the options in this dialog, click on the *More Options* button.

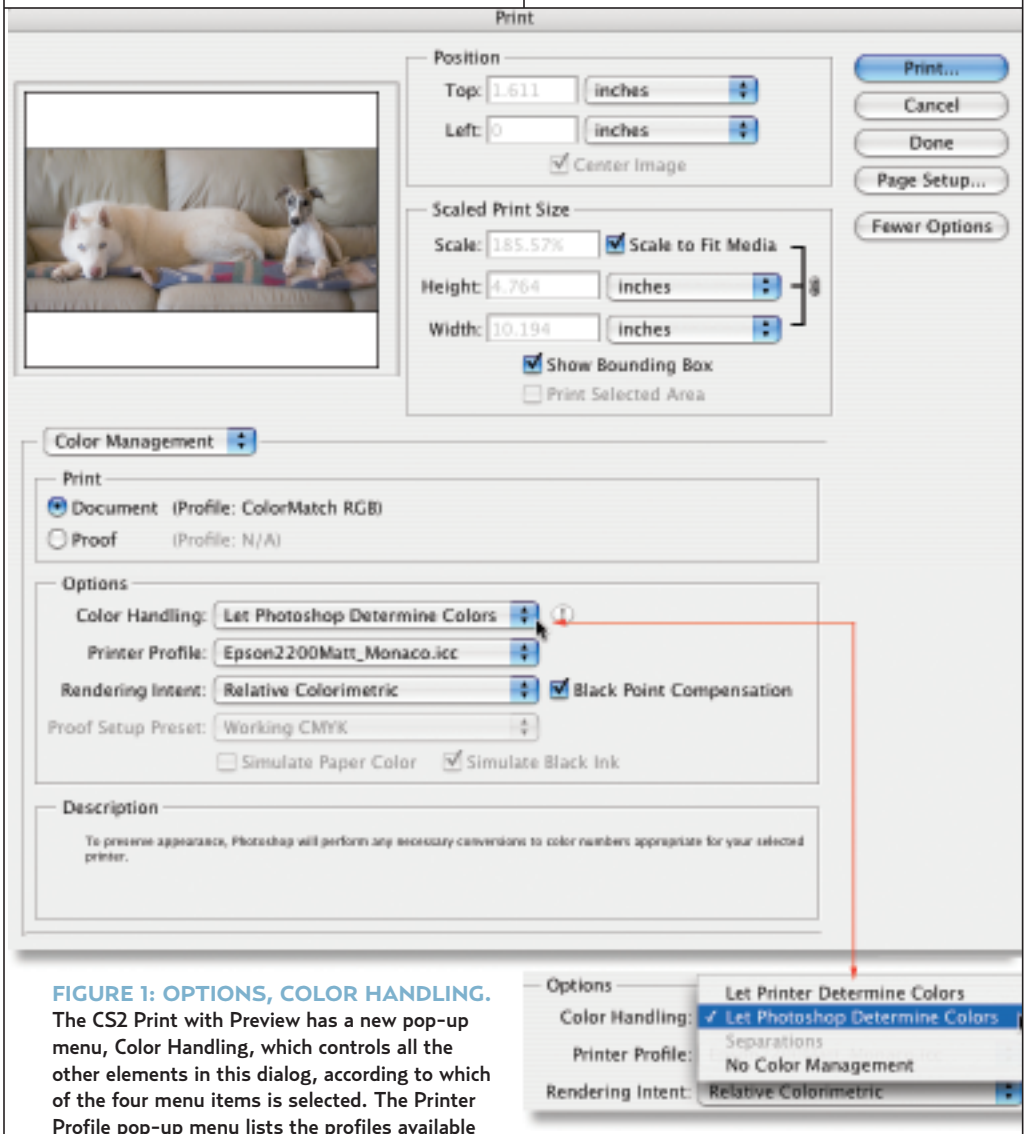
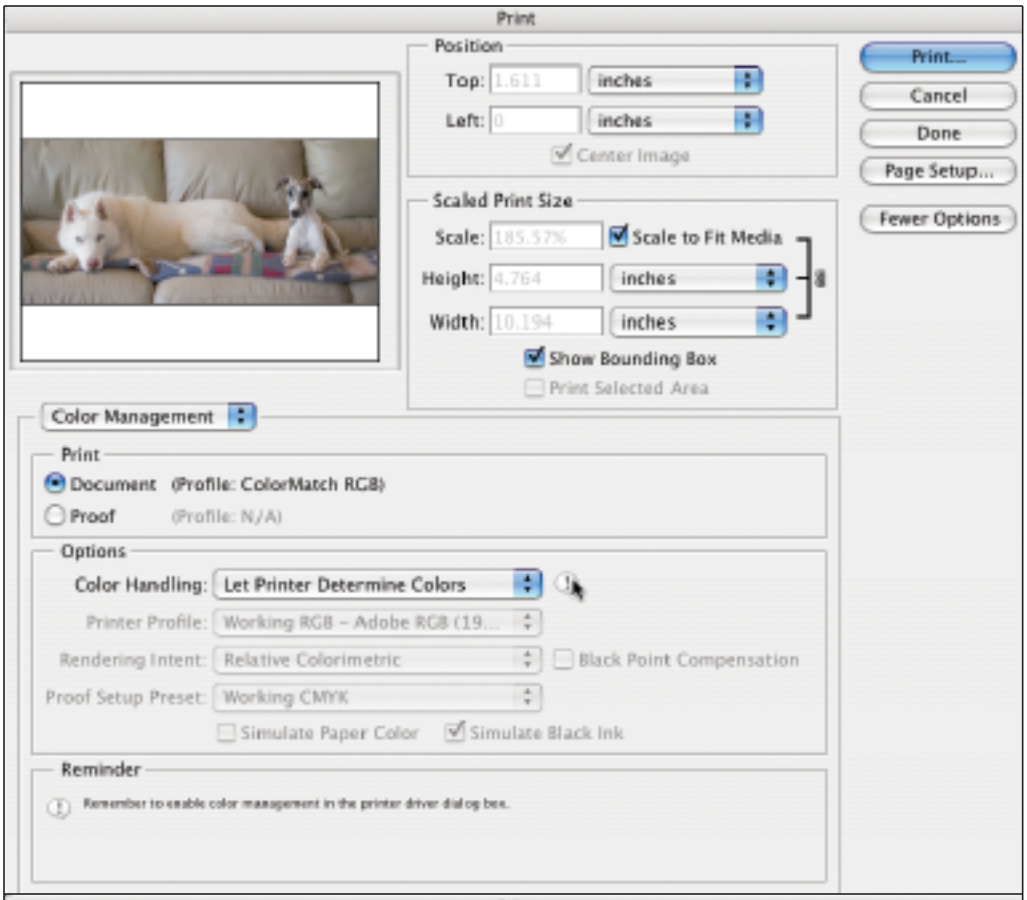


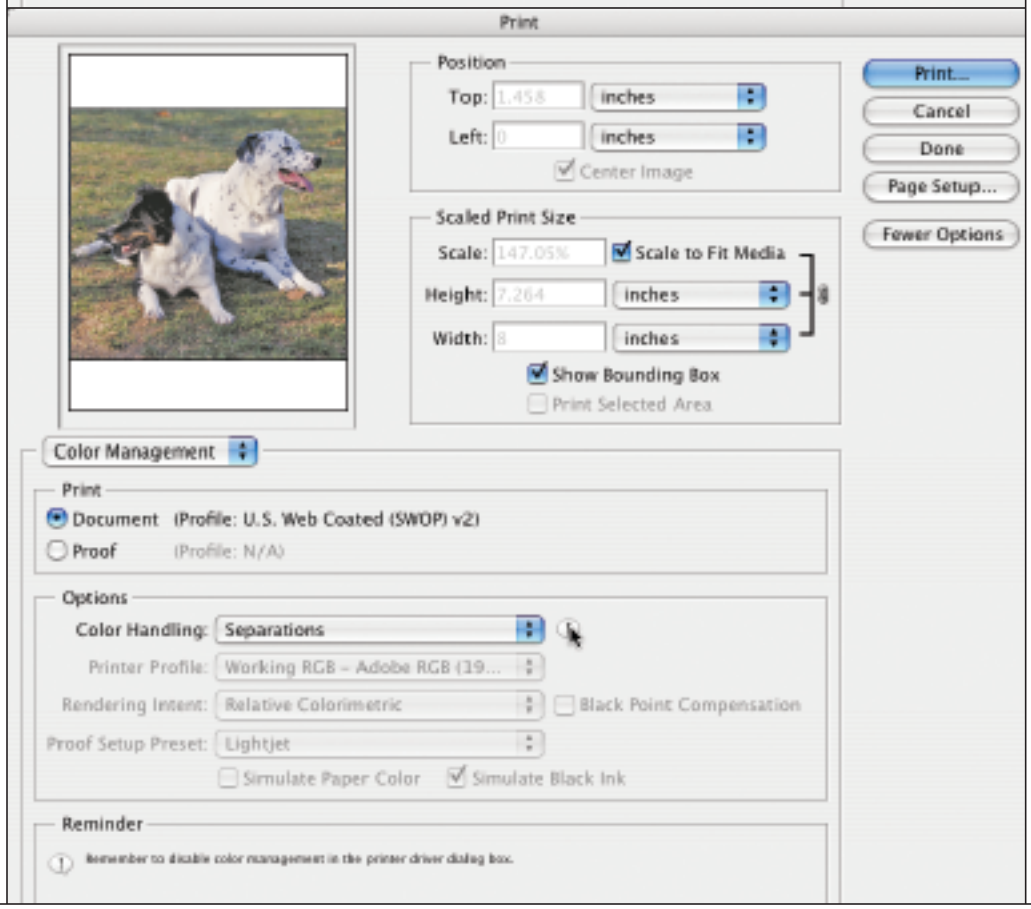
FIGURE 1: OPTIONS, COLOR HANDLING. The CS2 Print with Preview has a new pop-up menu, Color Handling, which controls all the other elements in this dialog, according to which of the four menu items is selected. The Printer Profile pop-up menu lists the profiles available for conversions. Like the Convert to Profile command, all you have to do to make a color space conversion is select the desired ICC profile. In this menu, the print/output profile will always be used to convert from the original document color space to your printer. Here the Color Handling is set to Let Photoshop Determine Colors. The document is in ColorMatch RGB and will be converted with the output profile for my Epson Stylus Photo 2200 using the Relative Colorimetric intent with Black Point Compensation. The description area at the bottom of this dialog reminds you that Photoshop will perform the conversion for your printer.

PRINT

At the top of the dialog under More Options is an area named *Print*. Its two radio buttons, *Document* and *Proof*, control how the current document will be printed, based on additional settings in this dialog. The Document setting affects only the current image and is designed to deal with a single output device. Next to the Document radio button is the name of the embedded profile in the current document. If the document is untagged, that will be specified here. Check this area of the Print with Preview dialog to confirm that the color space is correct for the document you're about to print.

When selected, the Proof radio button produces a three-way color space conversion for proofing, allowing you to use your local printer to simulate another output device. That would come in handy if, for example, I wanted a document I output to my Epson printer to have a look simulating the output of a printing press. In Photoshop CS2, any saved or currently loaded proof setup is available from the *Proof Setup* pop-up menu in this dialog. There's a direct connection between the Proof Setup dialog used to produce a soft proof and the *Proof Setup Presets* in the Print with Preview dialog. Users are expected to specify profiles and rendering intent in Proof Setup before we can use them for printing here.





LET PHOTOSHOP DETERMINE COLORS

Let Photoshop Determine Colors (as seen in Figure 1) produces a color space conversion based on the output profile selected in the Printer Profile pop-up menu. This operation is nearly identical to the Convert to Profile command under the Photoshop Edit menu. Ensure the document is not already in a print/output space, or else the printer profile will be applied twice, resulting in a very ugly print! Check the profile name listed next to the Document radio button; it should be your RGB working space, not a print/output space.

FIGURE 2: LET PRINTER DETERMINE COLORS

The Let Printer Determine Colors setting instructs Photoshop to send the document data and embedded profile to the printer, allowing the print driver to apply the print/output color space conversions. The document goes directly to the printer with no further color processing by Photoshop. Only a few Postscript RIPs actually pay attention to this information, and all non-Postscript drivers ignore it. If you're unsure that your print driver can produce ICC color space conversions from these settings, it's best to use Let Photoshop Determine Colors instead. Here, Color Handling is set to Let Printer Determine Colors. The Printer Profile pop-up menu is grayed out because this setting assumes that the printer driver can use the print/output profile. The rendering intent can be specified if the driver is able to apply a color space conversion.

FIGURE 3: SEPARATIONS

Separations, a new option in the Color Handling popup menu, is available only for CMYK documents. Selecting Separations prints the image as individual color channels. Some users need to output four separate color plates of CMYK images, which is the kind of task this option allows the print driver to handle. In this dialog Color Handling is set to Separations. The source space of this document is U.S. Web Coated (SWOP) v2. The Separation option will send the four individual color channels to the printer separately. Notice the reminder in the dialog to disable color management in the driver.

FIGURE 4: NO COLOR MANAGEMENT
When the Color Handling pop-up menu is set to No Color Management, all other options are unavailable. No Color Management prevents the use of any output profile. If you wish to send the data directly to the print driver untouched, No Color Management will do so. It functions exactly the same as the Same as Source option in Photoshop CS. Here the Color Handling is set to No Color Management. In this example, the document is untagged, as indicated next to the Document radio button.

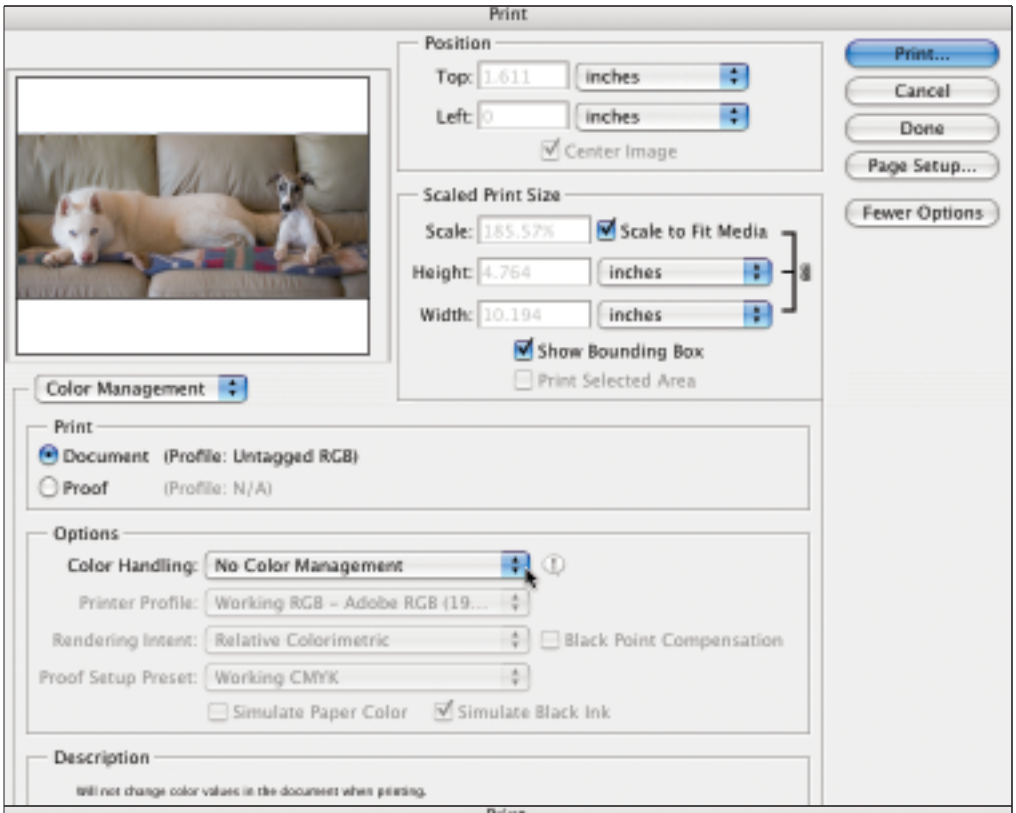
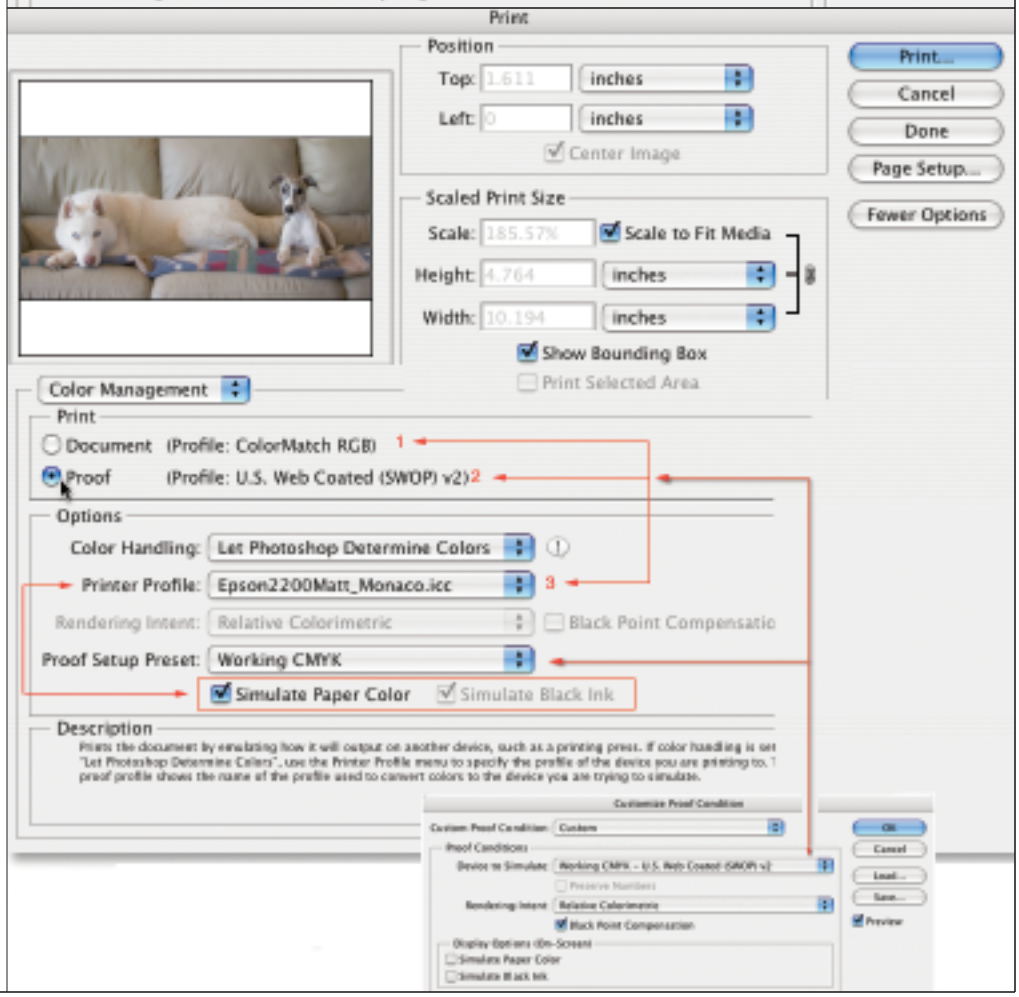


FIGURE 5: PROOF, LET PHOTOSHOP DETERMINE COLORS. Let's examine the three-way conversion using Proof plus the Let Photoshop Determine Colors option in the Color Handling pop-up menu. Once you select Let Photoshop Determine Colors, you must select the printer profile for the secondary printer from the Printer Profile pop-up menu, then select a Proof Setup Preset. In this example, I've selected the Working CMYK Preset, which happens to be U.S. Web Coated (SWOP) v2. This ICC profile is listed next to the Proof radio button, so this three-way conversion is from ColorMatch RGB to U.S. Web Coated (SWOP) v2, and finally to the Epson Stylus Photo 2200. The conversion from ColorMatch RGB to U.S. Web Coated (SWOP) v2 will use the Relative Colorimetric rendering intent, the one that was selected in the Proof Setup dialog. Because the Simulate Paper Color checkbox is on, the rendering intent from U.S. Web Coated (SWOP) v2 to Epson will use the Absolute Colorimetric rending intent. This will produce the paper-white simulation on the Epson to match the paper-white of the CMYK print process.



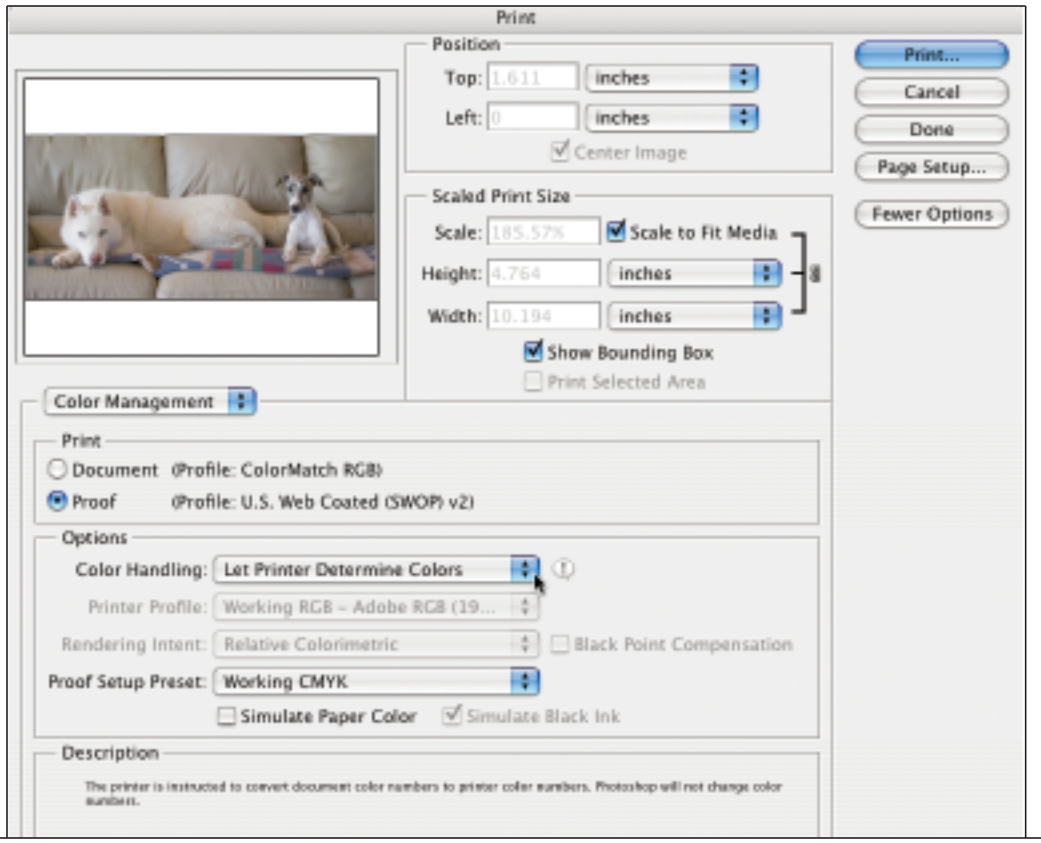


FIGURE 6: PROOF, LET PRINTER DETERMINE COLORS

If I want to produce a three-way color space conversion and let the print driver handle the third conversion, I select Let Printer Determine Colors. This grays-out the Printer Profile pop-up menu because I'll be using the actual print driver to apply the profile instead. The functionality is the same as using the Proof radio button and selecting Let Photoshop Determine Colors, if I could pick the Epson profile in the subsequent driver. The assumption being that the final print driver has the ability to conduct color space conversions. Not all drivers can handle this kind of color management, so be sure to check before using this method. If not, ignore this option and use Proof and Let Photoshop Determine Colors.