

Printing in a Color-Managed Workflow

Understand how to print a perfect photo with *Photoshop Elements*!



A properly color managed workflow will ensure that your color inkjet prints consistently as you'd expect and match what you see on your monitor. Successful color management is dependent on three tasks: 1) Configuring *Photoshop Elements* for color management by choosing a **working color space** (generally, **Adobe RGB** for printing to inkjet and **sRGB** for email, websites, monitors, and online printing services), 2) Setting up your monitor to display images accurately, and 3) Setting up your printer to print images accurately. Before we focus in on printing, a word about your monitor and about your working color space.

Monitor Calibration and Profiling

An important piece of the color managed workflow is a properly **calibrated and profiled** monitor. This involves the use of an inexpensive piece of computer hardware called a colorimeter. The colorimeter and its software are easy and intuitive to use. They will properly profile your monitor so that *Elements* will understand exactly how your display treats color. Some recommended colorimeters are the *Spyder3Express* (spyder.datacolor.com) and the *Pantone Huey* (www.pantone.com). These are available at many electronics dealers or online at Amazon.com.



Typical Inkjet Printing – the Color Managed way

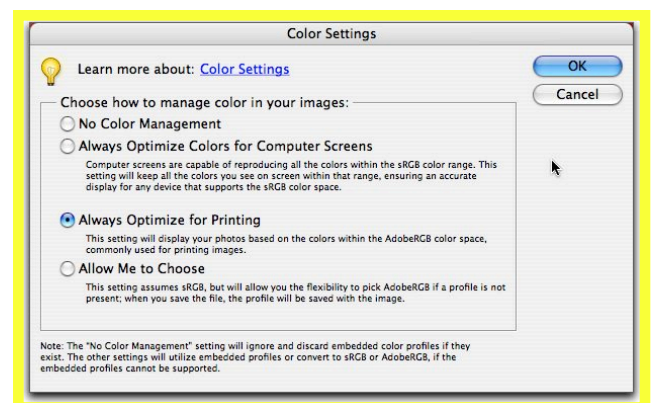
The other end of a digital workflow is the proper use of an inkjet printer and printing software in such a way as to ensure consistent and predictable results. After all, you should expect no less than to produce a print with colors that perfectly match how the image displays on your monitor.

The secret here is to **let Photoshop manage your color - not the printer!** Read on to learn more and to understand what this means.

Setting the Working Color Space in *Photoshop Elements*

Let's assume your file is sharpened, backed up and ready to print... here are the steps to take to properly print it out on your inkjet printer. But, before we print, check your Color Settings in *Photoshop Elements*. Go to menu:EDIT>COLOR SETTINGS.

The settings here tells *Elements* how to manage the colors in your images. The choices are few and self-explanatory. Take the time to read them. Basically you will decide whether to use Adobe RGB or sRGB



depending on your output – to your inkjet printer or to be viewed on-screen (including websites and slideshows). By the way, on-line commercial printing services, such as Mpix or Shutterfly, will require sRGB. You should not select the “no color management option.”

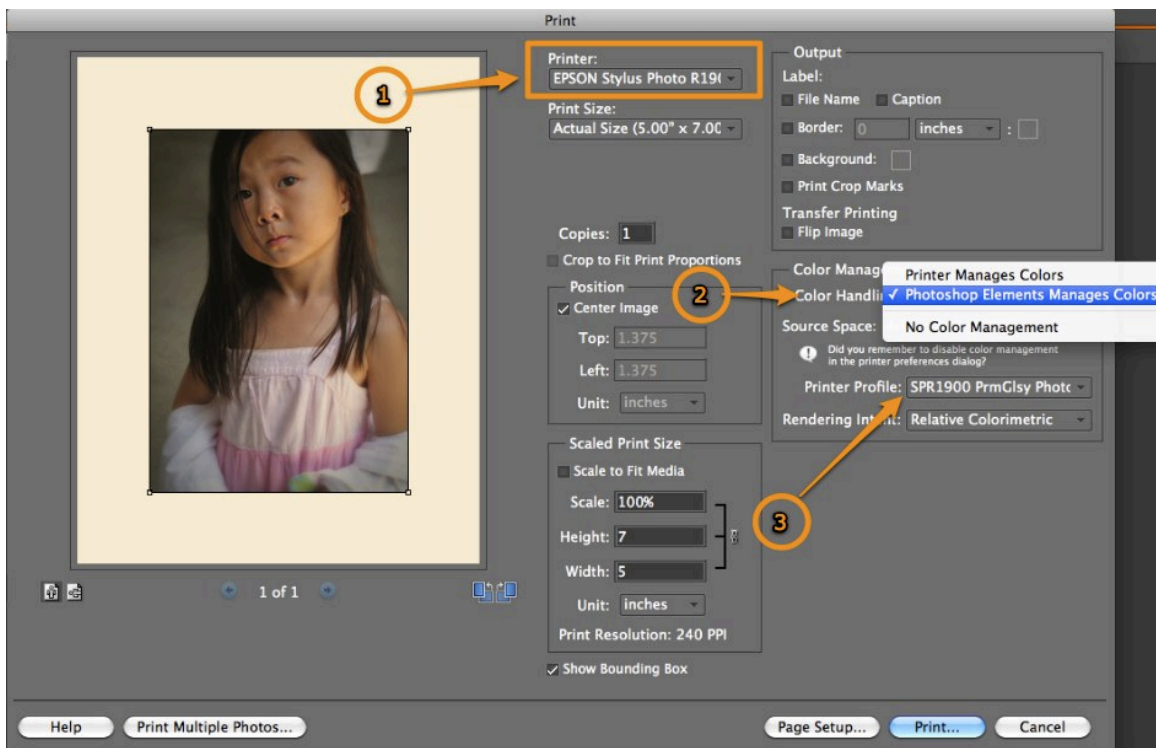
Let’s assume you only print your images to your own inkjet printer; choose the option to **Always Optimize for Printing** (the **sRGB** working color space).

You are now ready to begin the printing process!

Color Managed Printing

For *predictable, consistent* results when printing, it is essential that you indicate to the software the printer *and paper* that you intend to use. *Photoshop* uses this information (called **printer profiles**) to convert the color values from your color working space to the printer space. To repeat: **It is essential that YOU select the proper printer/paper profile from within Photoshop Elements and during the printing process!** *Photoshop* will not do it for you! If you installed your printer software (driver) correctly, then you also installed all the necessary profiles for each type of photo paper that the printer manufacturer makes. Which leads to the important point that in order for all this to work, you must use the printer manufacturer’s own papers (and inks). However, for low-end printers and non-photo quality printers, only generic profiles are provided.

OK, Let’s get started ...



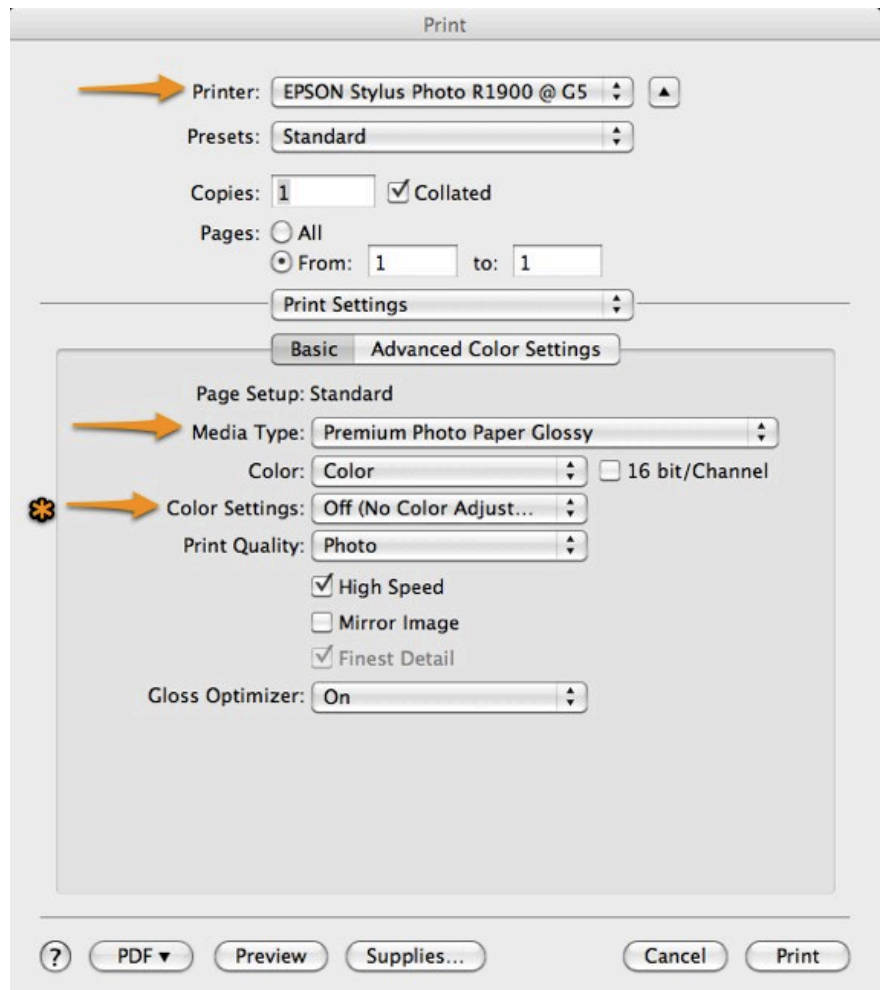
1. Select menu:FILE>PRINT. Elements displays the its own print management dialog box [shown on previous page). Three critical settings are indicated with callouts.
2. **Critical Step 1:** Select your printer model via this pop-up menu.
3. At this point, you can choose from the other parameters regarding paper size, orientation, number of copies, scaling, etc. You might need to click on the **Page Setup button** at the bottom-right to confirm your settings with the printer software.
4. **Critical Step 2:** There is a very important section in the Print panel. It is called **Color Management**. In the **Color Handling** pop-up menu, select “Photoshop Elements Manages Colors.” This is important, as later you will indicated to the printer that it does not color-manage. There can only be one “color manager” for successful printing. *Elements* is best at this.
5. The next line in the Color Management section is for **Source Space**. This is the color work space that you set up previously in *Elements*’ Color Settings under the EDIT menu. Confirm that it is set to **AdobeRGB**. If not, you need to cancel out of the Print panel and return to the EDIT menu to change COLOR SETTINGS.
6. **Critical Step 3:** The next line in the Color Management section is for **Printer Profile**. This is where you must select the paper that you intend to print on from the pop-up menu. You will see lots of profiles listed, but you need to look for any profiles indicated the paper type. Sometimes the spelling is a bit cryptic. In my example figure, I have chosen my Epson Stylus Photo R1900 (“SPR1900”), and I am going to print to the Epson Premium Glossy Photo Paper (“PrmGlsy Photo Paper”). ***If you do not choose the correct paper, your results will be unpredictable!***
7. The next line in the Color Management section is for **Rendering Intents**. This ominous-sounding term refers to how *Elements* brings colors into line between different color spaces. For the time being, keep this at the default setting, **Relative Colorimetric**.
8. At any time, remember that you can access Adobe’s Help feature. In the Print dialog box there is a big “Help” button on the lower-left corner.
9. Click the **PRINT button**. *Elements*’ now transfers control out to OS X’s print dialog button, which will also contain settings specific to your printer. These are provided to your Mac’s operating system *by the printer drivers* that are installed when you first set up your printer or obtain later updates. During your OS X upgrades, Apple also installs manufacturer-specific printer components. *See the screen shot of the OS X print dialog on the next page.* The arrows call your attention to the critical settings.
10. Your printer should already be selected here. If you have more than one printer attached, just verify that the correct one is indicated. If it’s not, select it from the pop-up menu.
11. Confirm that the correct paper is selected here. If it’s not, do so via the pop-up menu.

12. The most critical selection is the one called “Color Settings.” Since you previously told *Elements* that it would manage color, you can’t have the printer manage or make any color adjustments. If it does, the two will clash and you will get unpredictable results in your final print! Here, make sure that Color Settings is set to “Off (No Color Adjustment).”

13. You may then need to set the various other settings -- depending on your printer, it may look different than this illustration, which is specific to the Epson Stylus Photo R1900 printer attached to a Mac running OS X 10.6 Snow Leopard.

14. Note that OS X printing software allows you to save your settings for future use. This can be managed at the top where it says “**Presets.**”

15. You are finally finished setting up everything for color-managed printing of this fine image! Click on the **PRINT button** to send the image out to your printer.



TIPS FOR BEST PRINTING RESULTS

- Use paper and ink produced by your printer's manufacturer
- Clogged printer ink nozzles can cause color shifts in your prints. Run any built-in test routines found in OS X print utility available when printing. This will keep all your printer printhead nozzles in good operating order. Consult your Owner's Manual for printer-specific information.
- Keep your printer's software "drivers" and profiles up-to-date for latest fixes and compatibility. You can check your printer manufacturer's website for the latest updates. This is especially important when there is a major OS X update.
- Allow your prints to dry thoroughly (15 minutes to 1 hour) before making decisions based on your examination of the prints. Preferably, view your prints under natural light to avoid color casts from indoor ambient lighting.
- To best understand your how your printer works and what your options are, READ THE OWNER'S MANUAL!!