THE DIGITAL PRINT

Preparing Images in Lightroom and Photoshop for Printing

JEFF SCHEWE

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Dedicated to the lasting memory and substantial contributions of Bruce Fraser.

Thanks Bruce, from all of us.

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Jeff Schewe

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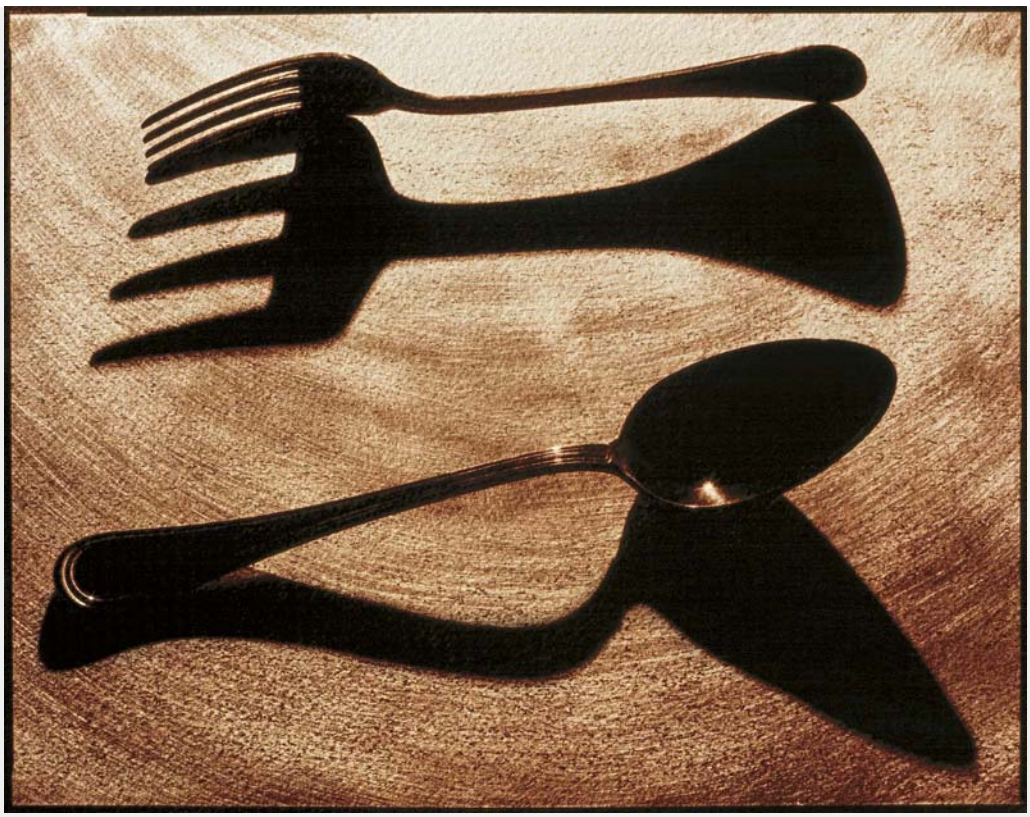

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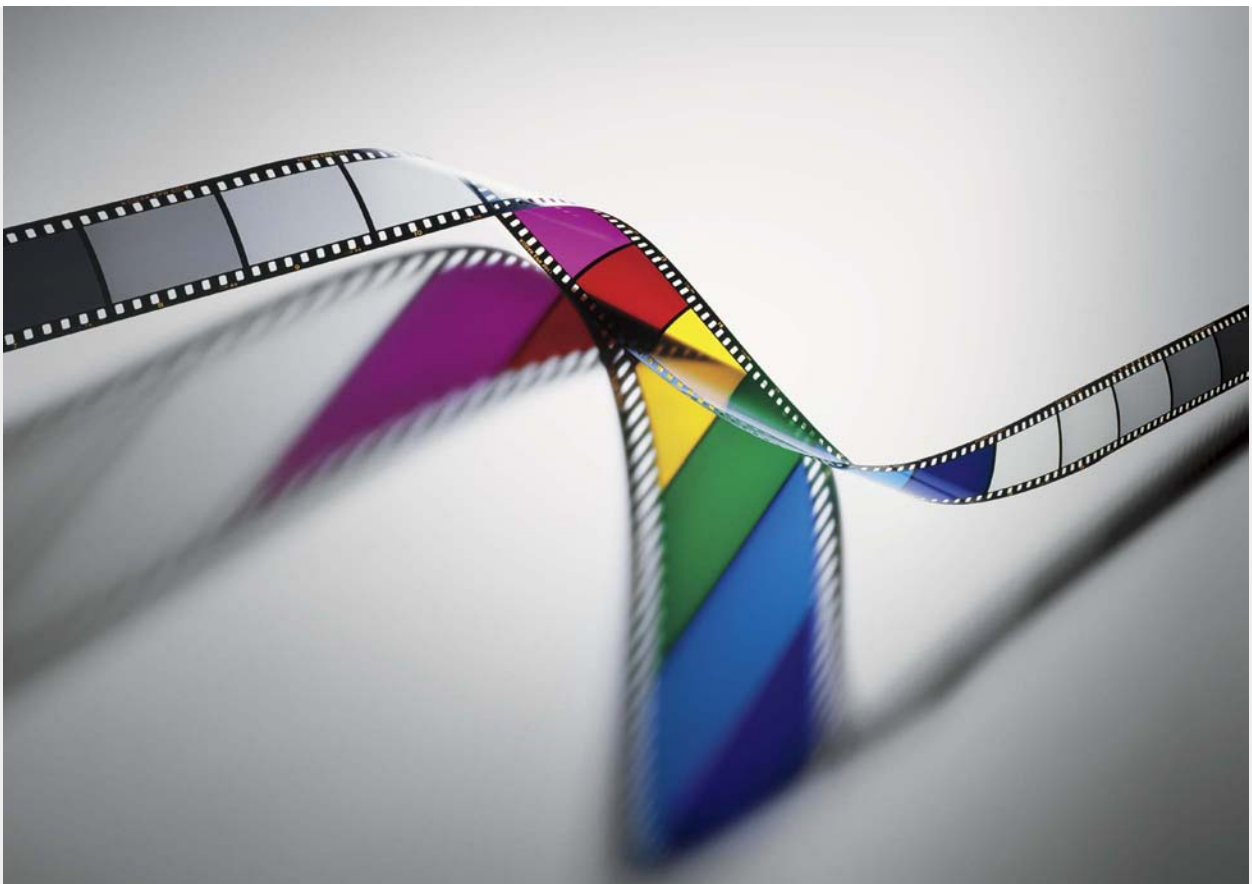

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INTRODUCTION

This book is about optimizing and printing your digital images using Lightroom and Photoshop. *The Digital Print* details what it takes to set up color management and how to optimize your images using soft proofing and the proper use of the print driver. It's also about what makes a truly great print and how to develop a fine art printing workflow to make printing more efficient and more fun!

I drill down on the tone, color, image sharpening, and noise reduction you need to apply to your images prior to printing. I outline the importance of image resolution and how it affects your printed image. I extensively cover converting color images to excellent black-and-white images and how to make great black-and-white prints. I also cover topics such as paper choices and deal with issues surrounding print permanence.

I wrote this book because there didn't seem to be an optimal source of information that suitably covered the main topics without being relegated to covering everything about a single application. The world doesn't need yet another Lightroom or Photoshop book, but the world does need a current book about the essence of image optimization for printing, regardless of the imaging application. I set out to write a book about cross-application integration that addressed the needs of photographers who want to optimize their images for the best-possible fine art print.

I called the book *The Digital Print* for a reason. In my formative years as a young photographer, I read a series of books by Ansel Adams that formed the genesis of my infatuation with and addiction to photography. Ansel's books—*The Camera*, *The Negative,* and *The Print*—had a huge impact and greatly helped advance my knowledge of photography. This book is the companion to my previous book, *The Digital Negative,* which details what makes for a really good digital negative and how to harness the massive power of Lightroom and Camera Raw to extract the best-possible raw rendering of that digital negative. With *The Digital Print,* I pick up where *The Digital Negative* left off and also add scans from film into the mix.

Who am I and why should I write this book? Well, I'm a graduate of Rochester Institute of Technology (RIT), with two degrees in photography. I was a commercial advertising photographer in Chicago for over 25 years (yeah, I won a few awards). I was an early adopter of digital imaging—my first photo assignment that was manipulated on a computer was in 1984 (the year the first Macintosh computer shipped). I didn't do the digital imaging—a pioneering company called Digital Transparencies, Inc., in Huston, Texas, did the imaging.

I started doing my own Photoshop digital imaging in 1992 using Photoshop 2.0. I was one of the first off-site Photoshop alpha testers (*alpha* meaning way before any sort of final coding is done and before the software is really usable). I got to know and work with many of the Photoshop engineers because of this testing. When I mention names like Thomas Knoll (the co-author of Photoshop) or Mark Hamburg (the number-two Photoshop engineer and founding engineer of Lightroom), it's not to drop names but because these guys are friends of mine. I've worked with them a lot over the years. I want people to know their names and give them the credit they deserve.

I was significantly involved in the early development of both Camera Raw and Lightroom—not because Adobe was paying me tons of money (alpha testers work for free), but for the selfish motive of advancing and improving the tools I personally wanted to use.

I've also had the good fortune to meet a lot of the leading experts in the field, and I want to express my sincere appreciation of one dearly departed friend, Bruce Fraser, noted author and educator, for taking me under his wing. I had the honor of joining Bruce and some other friends in forming a company named PixelGenius, which develops Photoshop plug-ins.

By way of disclosure, let me just say that I am not and never have been an employee of Adobe (even though over the years I've worked with Adobe on software development). I don't have any contracts or testimonials with any camera companies. In the book, I frequently mention specific cameras and lenses I used for image captures. I do so to provide a provenance of how and with what gear an image was captured, not to promote any specific camera. I used those cameras because, well, those are the cameras I bought and paid for (although I've gotten some really good deals).

I have had a long-standing relationship with Epson and personally own four Epson printers: a Stylus Photo R3000, a Stylus Pro 3880, a Stylus Pro 4900, and a Stylus Pro 9900. Yes, I am a printer junky! However, I arranged the loan of a Canon printer imagePROGRAF iPF6400 so I could write about printing from a more neutral position. I want to thank Canon for its support. I was impressed with the image output from the Canon and can honestly say that both Epson and Canon make great printers, so you really can't go wrong with either brand.

I owe a large debt of gratitude to many people, and since it's my book, I'll take the time to mention them. First, we all owe a huge debt of gratitude to two brothers, John and Thomas Knoll, who really started this whole digital image revolution by co-authoring Photoshop. I also send sincere thanks to Mark Hamburg, for his willingness to put up with my quirky ways and sometimes actually listen to me when I told him what he should do. There are many people at Adobe to thank: Russell Preston Brown for being a co-conspirator, Chris Cox for a lot of sneaky things he put into Photoshop, Russell Williams for striving for Photoshop excellence, and John Nack and Bryan Hughes for being Photoshop product managers who really care about the end user. On the Camera Raw team, special thanks go to Eric Chan, who will always listen and do the right thing (even if it's a pain), and the gone but not forgotten Zalman Stern (he didn't die—he just went to work for Facebook).

I also thank my good friends and partners at PixelGenius—Martin Evening, Mac Holbert, Mike Keppel, Seth Resnick, and Andrew Rodney—and our gone but not forgotten members, Mike Skurski and Bruce Fraser. We all miss them and so does the industry. I'll also give a shout out to the Pixel Mafia—you know who you are.

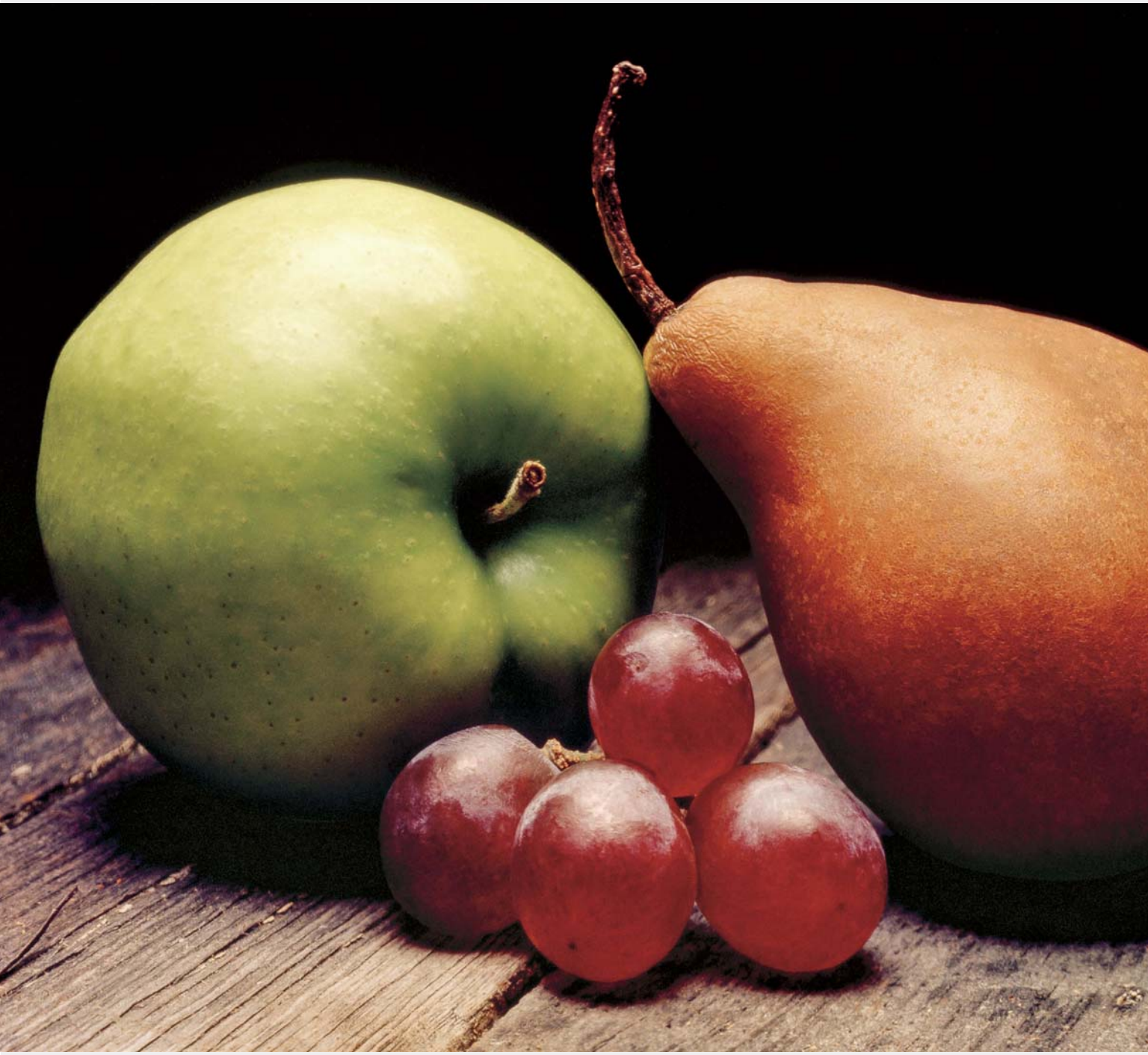
I want to thank the Peachpit "Dream Team" (that's what Bruce used to call them, and I wholeheartedly agree): Rebecca Gulick, who was the acquisitions and project editor (which means she had to put up with my foolishness and tardy submissions); my production editor, Lisa Brazieal, who conspired with me to allow me to do what I thought was best; and my development editor Brie Gyncild, who helped me sound like I have half a clue. Thanks also to the book's compositor, Kim Scott of Bumpy Design, who did an excellent job of laying out the book and making my figures work. Thanks to my copy editor, Patricia J. Pane, for catching all the small stuff, and to my indexer, Valerie Haynes Perry, for making stuff easy to find. Big thanks also go to Mimi Heft for the cover and interior design excellence (and for putting up with my histrionics)—seriously, I never would've picked *those* images for the covers of both books, but they really work!

I also owe a huge debt of gratitude and massive appreciation to my long-suffering wife, Rebecca (Becky), who is always the first person to read the drivel I write (and tell me how to make it sound intelligible, which always makes me look good to my copy editor). She stoically puts up with all my inattention and bad habits when I'm writing and seems to genuinely love me in spite of myself. Thanks also to my loving daughter, Erica, who suffers the loss of her dad while I'm under deadline. She gets back at me by being one my harshest critics, which, I think, makes us even.

My thanks also go to you, the reader, for taking the time to at least get this far. I hope you'll find this book beneficial in advancing your printing excellence.

—Jeff Schewe, June 2013

NOTE You can find additional information on the book's companion Web site at www.thedigitalnegativebook.com.



This is one of my oldest images. It was shot in 1976 for a school assignment. I used a Sinar 4x5 camera with a 360mm lens on 4x5 Ektrachrome transparency film, which I processed with one of the first E-6 home processing kits from Kodak. The image was scanned on an Epson Perfection V750-M Pro Scanner at 4800 ppi.

CHAPTER 4

MAKING THE PRINT

If you have survived the chapters on color management and preparing your images for printing, you'll find this chapter relatively simple. There's certainly less about theory here, and more about the mechanics. Once you've got your image prepared, and you've soft proofed with the appropriate profiles and tweaked the image just so, it's just a matter of printing them. Of course, as always, there are some potential roadblocks and technical issues (I call them "gotchas") to be aware of. But printing is actually kind of fun. I like making prints—which is a good thing, since I'm writing a book about printing!

NOTE What's the best and fastest way to connect your printer to your computer? In terms of speed, it really doesn't matter whether you connect via USB, FireWire, or using an Ethernet connection. The easiest way is usually USB, but that might not be the most convenient, since the length of USB cables is restricted to 5 meters (about 16 feet) without a repeater (which can cause potential problems). FireWire is falling out of favor and is not included on many recent pro printers. So while it can be tedious to set up and maintain, I suggest setting up printers using a local area network, ideally with a switch instead of a hub—and while most printers connect using 10/100 Mbit/sec, I suggest setting up a 10/100/1000 Mbit/sec switch. Another alternative might be using a wireless connection, particularly if the printer comes with one.

BEFORE YOU PRINT

Pay attention to the details as you prepare to print. It's easy to introduce errors that can be frustrating (and time-consuming, and potentially expensive) to troubleshoot and fix.

Before you print, you obviously need to install the printer and printer driver. When you buy a new printer, you might be tempted to pop the CD in the computer's disc drive and double-click the installer to install the printer driver. But ideally, the first thing you should do is read the frigging manual (RTFM). Generally speaking, by default, when you buy a printer, the printer driver on the installation CD is likely to be out of date. It's even likely that there's updated firmware available for the printer. So when I get a new printer, I start by reading the manual. Then I go to the printer manufacturer's Web site and download the most recent printer driver, utilities, and firmware, if an updated version is available.

INSTALLING A PRINTER ON A MAC

Installing a printer on the Mac is relatively simple. You run the installer—ideally the most recent downloaded installer. Then you can plug the printer in. Most printers have multiple methods of connectivity—USB, Ethernet, or FireWire (though FireWire is becoming less and less common). Because I have a lot of printers spread out throughout my studio, I connect most of mine by Ethernet (there are a couple of reasons for the exceptions, which I'll cover later).

After installing the printer driver and connecting the printer on the Mac, open the System Preferences, and then click Print & Scan. Then, click the Plus button at the bottom of the Printers area on the left side of the dialog box. The Add Printer dialog box opens. On the Mac, Bonjour lets your computer find all the printers it can connect with. In my case, a bunch of different printers show up. If you've connected your printer using USB, Ethernet, or FireWire, it should appear. When you see an option of connecting via Bonjour or TCP/IP, I recommend connecting via the manufacturer's Ethernet connection. Click the printer you want to add, as shown in **Figure 4.1**.

Once you've selected the printer, click Add. The printer shows up in the column of installed printers on the left. Now you have some options. You can share the printer on the network. Since I'm the only person using this printer, I don't select that. You can set the default printer. I usually choose Last Printer Used—unless you know you'll usually be printing to a particular printer. In fine art printing you'll always set a specific paper size at the time of printing, so I set the default paper size to US Letter. **Figure 4.2** shows the result of adding the printer.

▲ THE MAIN PRINT & SCAN DIALOG BOX SHOWING WHERE TO CLICK TO ADD A PRINTER

▲ THE ADD PRINTER DIALOG BOX SHOWING THE SELECTION OF THE EPSON STYLUS PRO 4900 CONNECTED VIA TCPIP (NETWORK)

FIGURE 4.1 Adding a new printer to a Mac.

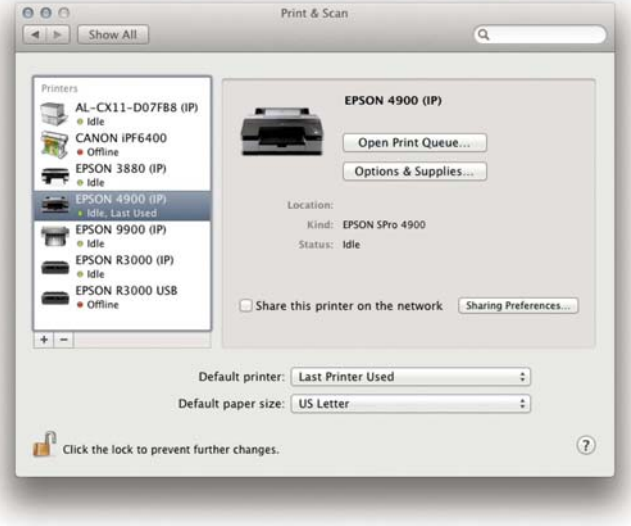
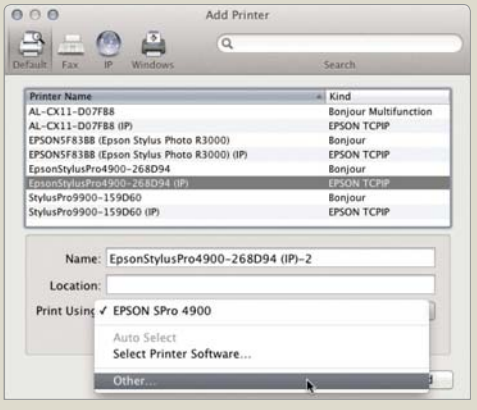


FIGURE 4.2 The result of adding the Epson 4900 (IP) printer.

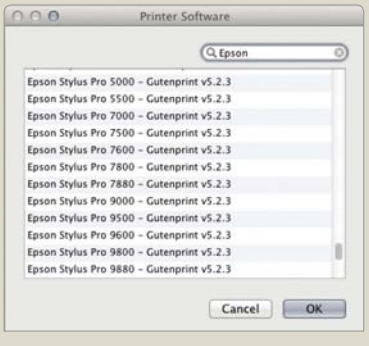
GOTCHA: USE CAUTION WHEN INSTALLING CONSUMER PRINTERS ON THE MAC

By default, many consumer printers are installed by Mac OS under the Gutenprint open-source printer driver initiative. These are generic versions of printer drivers that may give you different and often fewer options than the manufacturer's printer driver. If you plug in the printer without installing the driver from the manufacturer, the printer shows up and you can print to it, but the options are different or limited because a generic printer driver controls the printer. In cases where what you are seeing is not what you're expecting to see, check to see whether the Gutenprint open-source driver is being used by the system. If it is, remove the printer and install the manufacturer's driver, then add the printer again. **Figure 4.3** shows selecting *Other* in the Add Printer dialog box and the Printer Software dialog box showing the generic Gutenprint drivers that you should try to avoid.

FIGURE 4.3 Adding a printer using generic Gutenprint drivers.

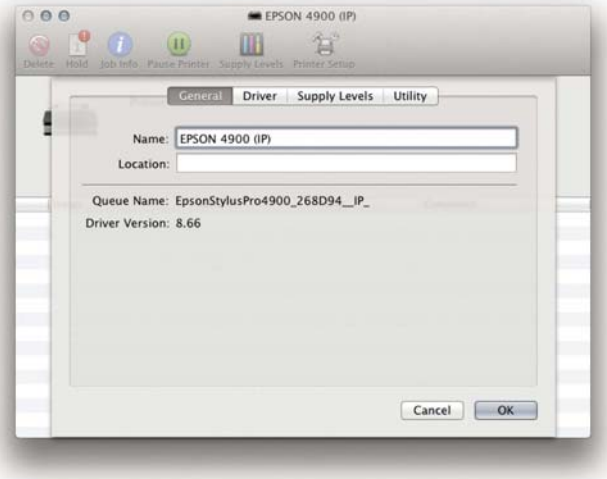


► ADDING A PRINTER BY SELECTING OTHER IN THE ADD PRINTER DIALOG BOX



► THE PRINTER SOFTWARE DIALOG BOX SHOWING GENERIC GUTENPRINT DRIVERS FOR VARIOUS EPSON PRINTERS

▲ THE PRINT QUEUE DIALOG BOX SHOWING THE PRINTER IS PRINTING



▲ THE PRINT QUEUE GENERAL TAB SHOWING CHANGING THE PRINTER'S NAME

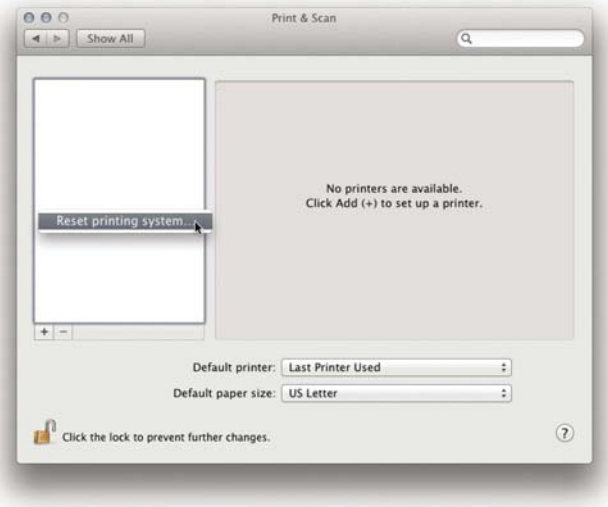
FIGURE 4.4 The Print Queue dialog box showing status and the General tab.

If you click Open Print Queue, it will show you the queue for that printer. In this case, it shows that the printer is printing. If you click Printer Setup, the General tab shows you the printer driver version number; you want to always make sure your driver is up-to-date. This is also where you can change the printer's name. **Figure 4.4** shows the Print Queue dialog box and also the General tab for changing the printer's name.

I like to rename printers; if you have more than one printer, giving them meaningful names is important, even more so if you have multiple printers of the same model. I recommend putting a piece of tape on the printer with its number or specific name, and that way you can be sure you're printing to the correct printer when you select it in the application.

When you click the Supply Levels tab, you can see the ink levels for the printer, if the printer you're using communicates that to the user. If your printer includes it, you can click Utility to open the printer utility, print a test page, and clean the printheads. The options available vary depending on the printer.

If you are having issues when trying to install or use a printer, there are a couple of things to be aware of. Depending on how you may have updated your operating system, you may have accumulated some older out-of-date printer drivers that are not compatible with your current system. If simply deleting the printer and re-adding it doesn't resolve the issue, you may need to totally reset your printing system. **Figure 4.5** shows how to reset the printing system.



▲ CONTROL-CLICKING (RIGHT-CLICK) ON THE MAIN PRINTER PANEL AND SELECTING RESET

▲ THE WARNING DIALOG BOX ASKING IF YOU REALLY WANT TO RESET THE PRINTING SYSTEM

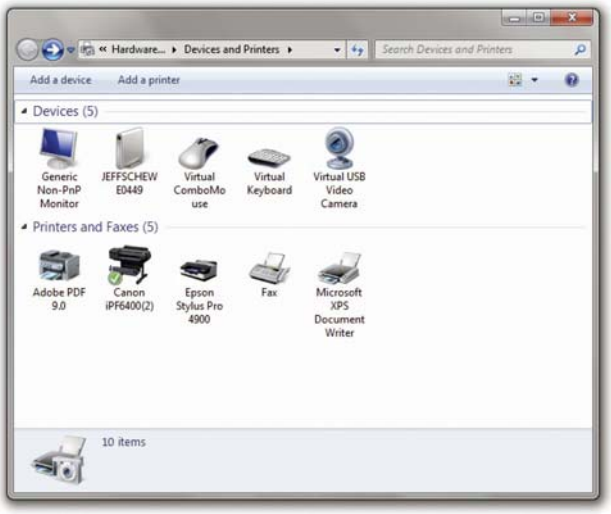
FIGURE 4.5 Resetting your printing system.

After a hard reset, you should download the most recent driver, reinstall it, and then reconnect the printer prior to adding the printer.

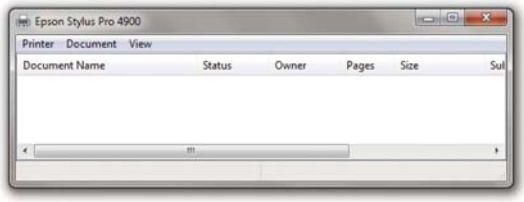
INSTALLING A PRINTER ON WINDOWS

When you install a printer on Windows, it's important to download and install the most recent version of the printer driver before you plug in the printer. When you connect the printer, it will announce itself to the computer and usually prompt you to install it. To double-check the information for your installed printer, choose Start > Devices and Printers (which is also in the Control Panel). Installed printers are listed in the Printers and Faxes section of the Devices and Printers control panel. If you right-click an individual printer, you can select a print queue similar to the one on the Mac. It shows you how many documents are in the queue. You can also show the main Printer Properties dialog box (not to be confused with the other Printer Properties you set when printing). **Figure 4.6** shows the main Devices and Printers dialog box as well as the Print Queue and the system-level Printer Properties dialog box.

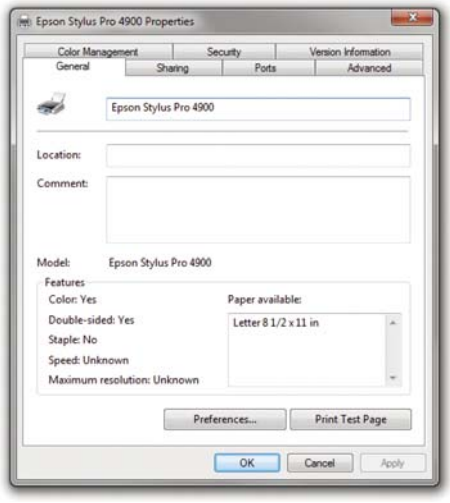
If you choose Printer > Properties, you can change the name and set other preferences, such as whether or not to share it. You can set up color management, but



▲ THE DEVICES AND PRINTERS DIALOG BOX



▲ THE PRINT QUEUE DIALOG BOX



▲ THE SYSTEM-LEVEL PRINT PROPERTIES DIALOG BOX

FIGURE 4.6 The Devices and Printers, Print Queue, and Printer Properties dialog boxes.

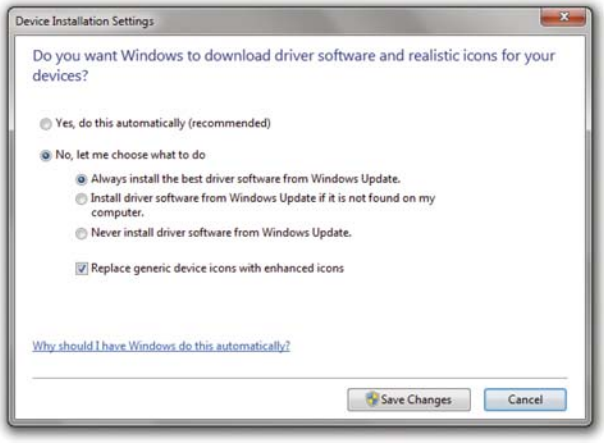
I suggest you not do anything with this here. As I said in Chapter 2, the Windows Color System doesn't really have a direct impact on fine art printing, because you'll use the application's color management features. If you have multiple printers, make sure you give each printer a meaningful name so that when you select a printer in Photoshop or Lightroom, it's the correct one.

If your connected printer is offline, the icon will be dimmed. However, if there are problems with the printer connection or driver, you'll see a yellow warning triangle on the printer, as shown in **Figure 4.7**. Clicking on the warning will bring up a troubleshooting dialog box. You can click the Change Settings button in the Driver Software Installation dialog box and try to walk through the troubleshooting steps in the Device Installation Settings dialog box, but I've found it's better to simply delete the printer, reinstall the driver, and then reconnect the printer.

▲ DETAIL SHOWING THE EPSON STYLUS PRO 4900 PRINTER WITH A WARNING

▲ THE DRIVER SOFTWARE INSTALLATION DIALOG BOX

FIGURE 4.7 Troubleshooting a printer on Windows.



▲ THE DEVICE INSTALLATION SETTINGS DIALOG BOX

PRINTING FROM PHOTOSHOP

The Photoshop Print Settings dialog box is a relatively complex and powerful print control center. On the left is a preview of your image. On the right are all the settings that you have to master. You have to make absolutely sure you've got each one correctly set; miss one and you've ruined your expensive fine art print.

When I was young, I had an art instructor who said you are embellishing the art of a previous artist whenever you put pencil to paper. What he meant was that someone has put a great deal of time and craftsmanship into creating this great piece of paper, so don't screw it up. Thinking about it that way gives you a healthy degree of respect for the medium and the substrate.

So, how not to screw up? I'll walk you through the dialog box so you know how to get the results you want.

Starting at the top, in the Printer Setup area, it's self-apparent to select the correct printer. Then click the Print Settings button.

THE PHOTOSHOP PRINT SETTINGS DIALOG BOX

Photoshop engineers have done a pretty good job of making the print dialog boxes the same across platforms. In essence, the options are identical on Mac and Windows. It's just the print properties versus print settings that are different. **Figure 4.8** shows the main Photoshop Print Settings dialog. If mine looks a bit different, I suspect it's because of some of the options I've chosen (which I'll highlight later). The dialog box is broken up by the panel areas for the various settings you must select.

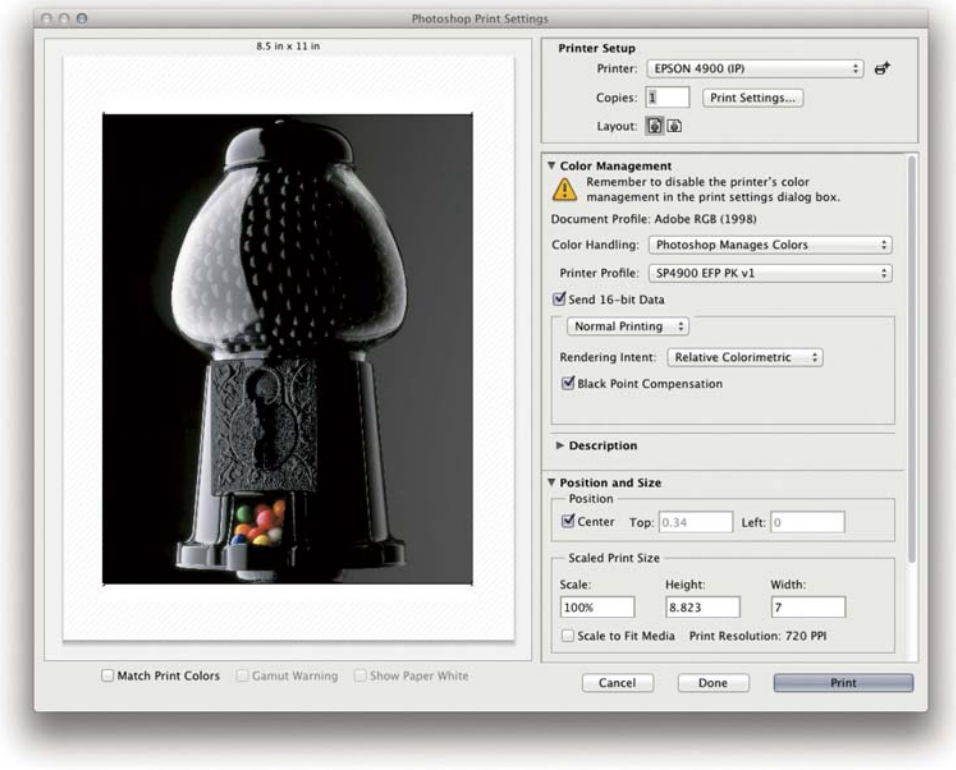
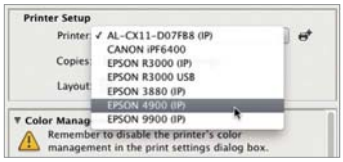


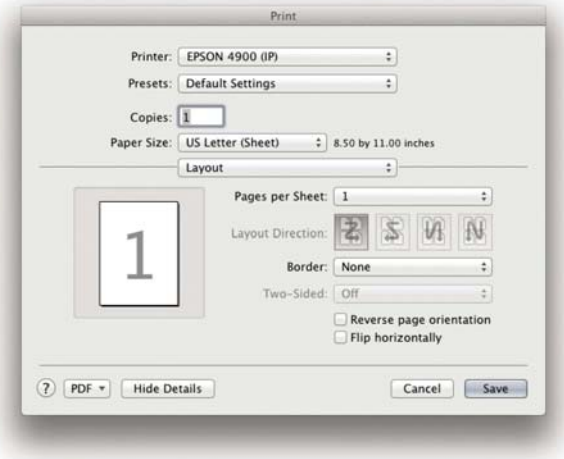
FIGURE 4.8 The Photoshop Print Settings dialog box.

Printer Setup panel

The first step is to select the printer and set up the print settings for your specific printer. The other thing to address in the Printer Setup area of the dialog box is Layout. You must set to print in portrait or landscape mode. Sadly, Photoshop's Print dialog box still can't auto-rotate your image. **Figure 4.9** shows the Printer dropdown menu (notice my nice tidy printer names) and the Print dialog box you get when you click the Print Settings button.



▲ PRINTER DROPDOWN MENU



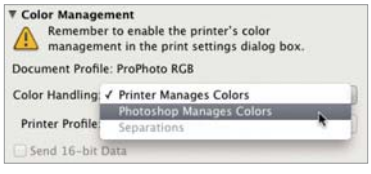
▶ THE PRINT DIALOG BOX

FIGURE 4.9 The Printer dropdown menu and the Print dialog box.

NOTE Photoshop CS6 started it and Photoshop CC continues with a new behavior of prefiltering your printer profiles to show only the type of output profiles relevant to your chosen printer—meaning if your printer is considered an RGB printer (as most all inkjet printers are, even if they use blends of CMYK inks), only RGB profiles will show up in your profile menu. Yes, it's an attempt by the Photoshop engineers to make selecting profiles "easier," but they should have gone down the route the Lightroom engineers went to allow the user to select which profiles appear in the dropdown menu. Maybe next time!

Color Management panel

In the Color Management area of the dialog box, choose a Color Handling option. You've got two, basically: Printer Manages Colors and Photoshop Manages Colors. Unless you're printing black-and-white images using a special module, which I'll describe later in this chapter, you want Photoshop to manage colors. **Figure 4.10** shows the Color Handling menu and the Printer Profile menu of ICC profiles.



▲ THE COLOR HANDLING MENU

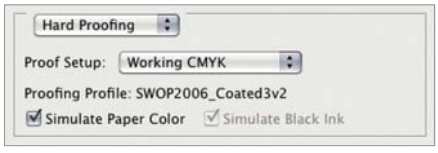
▶ THE REALLY LONG PRINTER PROFILE MENU

FIGURE 4.10 The Color Handling dropdown menu and the really long Printer Profile menu.

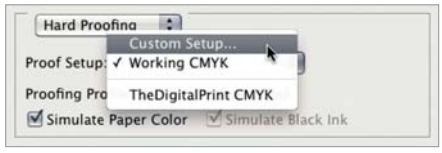
After you choose Photoshop Manages Colors, select the appropriate profile. Unfortunately, Photoshop shows you all of your installed profiles—and that list can be overwhelming. Be sure you select the correct printer profile. I'm climbing onto my soapbox for a moment here to say that each color profile should be named usefully, not as a marketing tool. It would be useful if Epson and Canon, for example, understood that creating a profile named Epson Stylus Pro 7900-9900 and then the actual media name is a royal pain in the ass for the user. I'd like to see a naming convention that groups profiles for a single printer together, but also makes it easy to identify the media you're selecting.

You have the option to send 16-bit data. I'll do that.

Next, choose either Normal Printing or Hard Proofing. Choose Hard Proofing when you're doing cross-rendered proofing, especially if you're proofing for halftone reproduction. When you select Hard Proofing, select your saved Proof Setup—or, in this case, I can select Working CMYK. Then select Simulate Paper Color. With that option selected, Photoshop will direct the printer to print a scum dot on the paper to simulate the paper white point that's in the paper profile. **Figure 4.11** shows the dropdown menu and the result of selecting Hard Proofing.



▲ THE PRINTING TYPE MENU



▲ THE HARD PROOFING OPTION

FIGURE 4.11 The printing type menu and the result of selecting Hard Proofing.

BE CAREFUL WITH COLOR MANAGEMENT IN WINDOWS

On the Mac, either the application manages colors or the printer does color management, but not both. If you select Photoshop Manages Color, the printer's own color adjustments are locked out and dimmed. Generally, this is a good thing (which was why Apple insisted applications and printer drivers do this for the Mac). However, it is a rather draconian measure. With Windows, you can have the application manage colors, the printer manage colors, or have both or neither do it. You have more opportunity to screw up in Windows than you do on the Mac. So make sure you choose the correct settings in both the Photoshop Print Settings dialog box and the printer's settings dialog box.

In most cases, you'll choose Normal Printing. The next parameter to select is Rendering Intent. In this case, I'll choose Relative Colorimetric or Perceptual. I'll choose Relative Colorimetric rendering because that was the best intent when soft proofing. Absolute Colorimetric and Saturation aren't good choices for fine art printing. The reason I selected Relative Colorimetric was, of course, because that was the best rendering intent when I was soft proofing the image. Always select Black Point Compensation because it maps the image's black point to paper black, going above and beyond the ICC specification. It's a good thing. **Figure 4.12** shows the Rendering Intent dropdown menu.

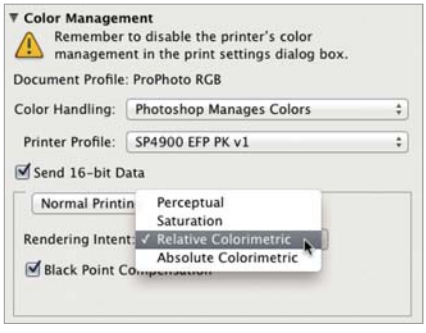


FIGURE 4.12 The Rendering Intent dropdown menu.

Description panel

The Description panel is basically a tool tip. As you hover your cursor over different areas of the dialog box, it provides a description of the options. I won't bother with a figure; try it yourself next time you print.

Position and Size panel

In the Position and Size area of the Photoshop Print Settings dialog box, you can choose to center the image. Remember that it will be centered within the printable margins. If you have asymmetrical margins, it will be centered not according to the paper dimensions but relative to the printable margins. You control those printable margins when you set up your custom paper size. **Figure 4.13** shows the Position and Size panel.

As I said in Chapter 3, you want to resize and resample way before you get here—so don't click Scale to Fit Media, or change the height and width. You've already done that. I'll also warn you that trying to move the image within the printable area by grabbing and moving can be problematic, and using the Top and Left text entry

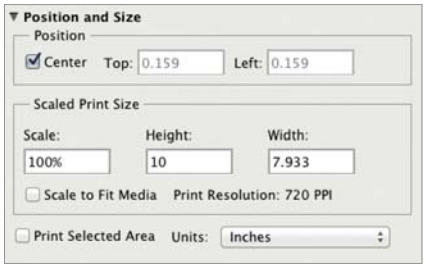


FIGURE 4.13 The Position and Size panel.

FIGURE 4.14 Adjusting the area to print after selecting Print Selected Area option.

boxes is a pain. There needs to be a redesign of this function that makes it easy to accurately position the image on the page (sort of like Lightroom).

If you wanted to print a quick proof of a selected area, you could select Print Selected Area. When you select it, you get little cropping marks in the preview, so you can print a swath. **Figure 4.14** shows the option to print only a selected area if you check the Print Selected Area button.

Printing Marks, Functions, and PostScript Options panels

The options in both the Printing Marks and Functions areas of the dialog box are typically useful only in the graphic arts and not something you would normally use when fine art printing.

If you're using a PostScript printer, there would PostScript options. But most inkjet printers are not PostScript. With a non-PostScript printer selected, those options aren't available. **Figure 4.15** shows the three panels. To be honest, I never use these options, but they could come in handy someday (although I doubt it).

FIGURE 4.15 The Printing Marks, Functions, and PostScript Options panels.

Match Print Colors

There are three options under the image preview: Match Print Colors, Gamut Warning, and Show Paper White. These options essentially allow you to soft proof right in the Photoshop Print Settings dialog box. It's interesting, but not all that useful, because you're not in a position to do anything about it. All the soft proofing should have been done before you choose Print, so I leave those all unchecked. **Figure 4.16** shows before and after selecting the Match Print Colors option. There is one situation where using this option can come in handy, and that is if you have short-term memory loss and you can't remember which rendering intent looked the best for your image. In that case, select the Match Print Colors option and try toggling back and forth through the rendering intents.

FIGURE 4.16 With and without the Match Print Colors options.

▲ BEFORE

▲ AFTER

Customizing the Photoshop Print Settings dialog box

In the beginning of this chapter I mentioned that my Photoshop print dialog box might look different than yours. Here's why: I used the context menu (Control-click on the Mac or right-click in Windows) to change the background display. By default, it has a rather "distracting" diagonal line pattern that I really hate. **Figure 4.17** shows the default display and the context menu to change it. I selected a simple white custom color. I think it makes it look more like a "print"!

FIGURE 4.17 The default dialog appearance with a distracting diagonal pattern and the context menu.

◀ THE DISTRACTING DEFAULT

▲ THE CONTEXT MENU ALLOWING YOU TO CHANGE IT (WHICH I HOPE YOU DO)

Done or Save buttons

At this stage, you're ready to print or save the print settings for use later. You should realize that clicking Done or Print will actually "dirty" your file. By *dirty* I mean it adds the print settings you've selected into the file, which will require saving it. You can choose to close the file without saving, but I find it useful to store the last print settings in the image. By the way, hitting Cancel will cancel the settings and your file won't be dirtied.

PRINTER-SPECIFIC SETTINGS

When you click the Print Settings button, you leave the Photoshop dialog box and communicate directly with the printer driver. You'll be selecting options that are specific to your printer model.

To my mind, there are really only two fine art printer manufacturers left: Canon and Epson. HP was doing great for a while, but it doesn't seem to be updating its printers nor (I've heard) manufacturing parts for its fine art printers anymore. So, I'll walk through the options for the Epson Stylus Pro 4900 and the Canon iPF6400 printers I have at my disposal. Both are pro-level printers. Consumer-level printers

won't have the exact same sort of options in the printer driver, so you'll have to extrapolate the settings you need for your own printer. I'll talk about the settings on the Mac first and address the differences in Windows a little later.

Epson Stylus Pro 4900 settings

You have the ability to make printer presets. Generally, I consider that useful if you're printing from Photoshop, but it's contraindicated if you're printing from Lightroom. Once we get through this, if you want to create a custom user preset, I'll leave that up to you.

Printing on a Mac. When you click on the Print Settings button, you get a special OS-supplied combination of the old Page Setup and the printer-specific driver functions. **Figure 4.18** shows the initial Print dialog box with the main dropdown menu expanded. The items at the top of the list are from the old Page Setup dialog box, and the ones below the line are from the printer driver itself. The bottom option, Supply Levels, connects to the printer and displays the current ink levels per color.

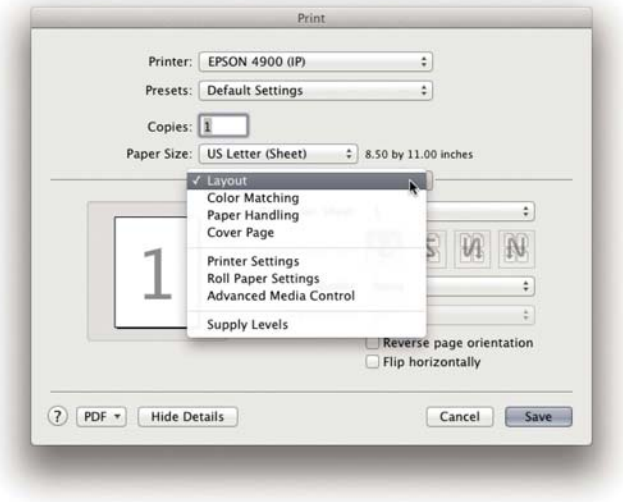


FIGURE 4.18 The main Print dialog box.

The first step before choosing the printer settings is to select the Paper Size. In this case, I'll select US Letter (Sheet). You can also select US Letter, Roll Paper – Banner, but I'm just going to print on a sheet. The paper you select here will alter the printer driver settings later in the Printer Settings dialog box. The Paper Sizes displayed are specific to the printer selected at the top Printer dropdown menu. **Figure 4.19** shows the selection of the paper size.

FIGURE 4.19 The Paper Size dropdown menu.

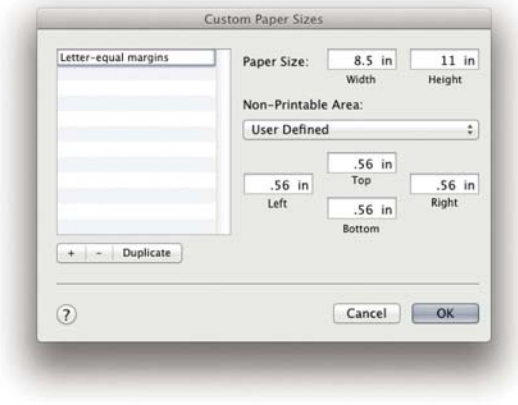


FIGURE 4.20 The Custom Paper Sizes dialog box.

I generally create custom sizes. If you scroll all the way to the bottom of the Paper Size menu for the Epson Stylus Pro 4900, for example, you'll see the Manage Custom Sizes option. In the Custom Paper Sizes dialog box, you can control the height, width, and printable margins. I'll enter 8.5 x 11 inches. Depending on the printer model, you may be able to center the image. Some printers have asymmetrical top and bottom margins. The Epson Stylus Pro 4900 that I'm working with here has a default of 0.56 inches on the bottom and 0.13 inches on the top and sides. So to center my image, I'll change those margins to 0.75 inches all the way around, and then click OK. **Figure 4.20** shows the Custom Paper Sizes dialog box.

Generally, when I print, I want a minimum margin of paper around the printed image for purposes of handling and long-term conservation. You don't want to print all the way to the edge where people will use sticky fingers to hold it. Depending on whether you do an overmat, the margin may not even show. It's a way of being more conservation-minded.

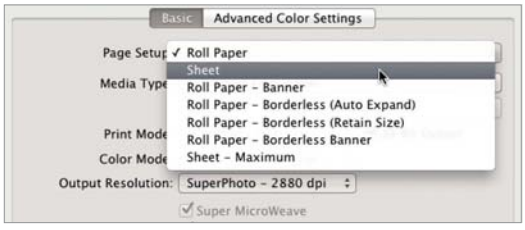
NOTE On the Mac, you can change the units systemwide on the Formats tab of the Language & Text System Preferences. In Windows, you can change the units in the Region and Language control panel; click Additional Settings to see the Measurement System menu.

After you click OK, it's important to make sure the paper size is actually what you selected. Sometimes changes you make in these dialog boxes have unintended consequences. This is a prime opportunity for error. It's been my experience that you need to send the correct paper size to the printer or you won't get the expected results (this is an ironic comment).

Color matching is something you don't need to control. If you've set the color handling in the color management section of Photoshop to Printer Manages Color, those options aren't changeable.

Next, set the printer specifications, such as whether the printout is based on sheet or roll paper. It would be nice if the printer driver would communicate with this dialog box, because it seems like it should pick up the options I already set, but it doesn't. Be careful here. This is another potential gotcha point—if you set it to print to a sheet in one place but not the other, it's a problem. If you've got a paper cassette for the Epson 4900, you can choose manual feed or cassette. **Figure 4.21** shows the options in the Page Setup dropdown menu. Depending on whether or not your page setup indicated sheet or roll, you'll have different options.

Note that, especially for Epson printers, the paper feed path often dictates the choice of media. If you select Paper Cassette, for example, you can't select some of the fine art heavy watercolor papers; to use those, you need to select manual feed. Additionally, different printers, such as the R3000 or 3380, can do a front or back manual feed. Depending on your printer model, selecting a media type is potentially



▲ PAGE SETUP OPTIONS WHEN THE PAPER SIZE IS SET TO A SHEET

FIGURE 4.21 The Page Setup dropdown menu.

▲ PAGE SETUP WHEN A CUSTOM PAGE SIZE IS SET WITHOUT SPECIFYING SHEET OR ROLL

rather complicated. The Epson Stylus Pro 4900 is compatible with different photo papers, and it's nice that they're organized hierarchically in the file menus. Previously, they were all in one menu, which was even more conducive to user error. I have menus for photo paper, proofing paper, and fine art paper. But in the fine art menu, papers such as velvet fine art or hot and cold press watercolor papers are dimmed because they can't be printed from the paper cassette, which is what I've selected. **Figure 4.22** shows the media options limited by the paper feed path.

If you're using a third-party paper, you should use a media type that is suggested by the manufacturer. You can use the ICC profile supplied by the paper manufacturer, but if you've made a custom profile, you should choose the paper media type that you used when you actually profiled the paper.

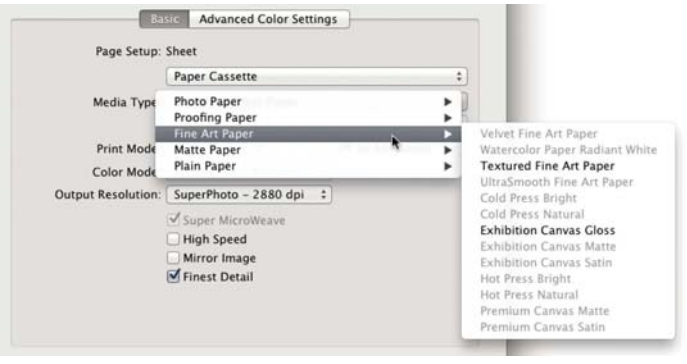
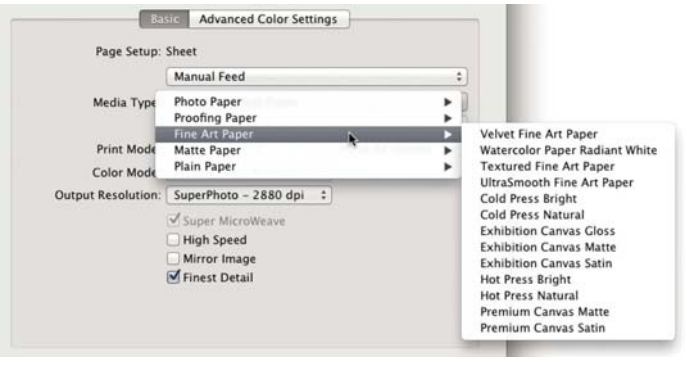


FIGURE 4.22 Comparing media options based on the paper feed path.

▲ MOST FINE ART PAPER OPTIONS ARE DIMMED BECAUSE OF THE PAPER CASSETTE PAGE SETUP SELECTION



▲ ALL FINE ART PAPER MEDIA OPTIONS ARE AVAILABLE IN MANUAL FEED PAGE SETUP

Below the Media Type menu, the Ink menu is dimmed, and it's set to Photo Black. You can't change it here; you'd have to do a photo black to matte black swap in the print driver or the front panel of the printer.

Because I've chosen Photoshop Manages Colors in the Photoshop Printer Settings dialog box, the Color Mode menu here is automatically dimmed. Color management is off. **Figure 4.23** shows the dimmed Print Mode and Color Mode with the 16-bit option selected. You'll see the 16-bit option available only if you are printing a 16-bit image.

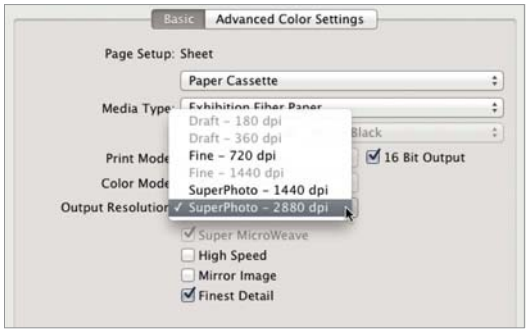
FIGURE 4.23 The dimmed Print Mode and Color Mode options.

TIP For Epson printers, some people ask whether printing to 1440 DPI instead of 2880 DPI would save ink. No. In essence, the ink used by the printer is dictated by the square inches you're printing and the color and density that you're printing. The difference due to resolution is negligible.

The next menu is Output Resolution. I talked about printer resolution in Chapter 3, and this is where you'll set it. I would prefer that menu items were technically accurate and not marketing jargon—SuperPhoto doesn't mean anything, but the resolution numbers do. Keep in mind that these numbers aren't dots per inch, but droplets per inch. Here, I'll select Exhibition Fiber Paper and set the resolution to 2880. **Figure 4.24** shows selecting SuperPhoto 2880 DPI and the final settings, with High Speed selected.

The High Speed option lets the printer heads spread ink bidirectionally, so images print literally twice as fast as they do when that option is off. Depending on your paper type and resolution, this is a good option and saves a lot of time. As I'll explain in a moment, you should deselect High Speed if you select Finest Detail.

The Finest Detail option is unique to Epson (although Canon pro printers also have a high-resolution reporting option as well). Normally, the Epson printer's reported resolution is 360 dots per inch, and the Epson Pro printers actually have 360 nozzles per inch on the printhead. When you select Finest Detail, the driver reports to the print pipeline that the printer is a 720-dots-per-inch device. This is a critical thing to understand. If you were printing a textural fine-detailed image and the native resolution, uninterpolated, is above 360 pixels per inch, you'd want to upsample to 720 and select Finest Detail. In Chapter 5, you'll see proof that printing at 720 is superior to printing at 360, but for now, take my word for it. If you have enough resolution natively, it's worth printing Finest Detail and upsampling to 720 PPI—and if you select Finest Detail, consider deselecting High Speed.



▲ SELECTING SUPERPHOTO – 2880 DPI

▲ HIGH SPEED DESELECTED AND FINEST DETAIL SELECTED

FIGURE 4.24 Selecting the Output Resolution and the additional High Speed and Finest Detail settings.

The advantage in selecting Finest Detail applies primarily to glossy media. The resolvable detail will vary considerably with matte media. Some matte media, such as Ultrasmooth Fine Art and enhanced matte (or ultrapremium presentation matte), can use a higher resolution, such as 1440 or 2880. If you're printing to canvas, you can set the resolution to 1440 or even down to 720. It all depends on the surface or substrate you're printing to.

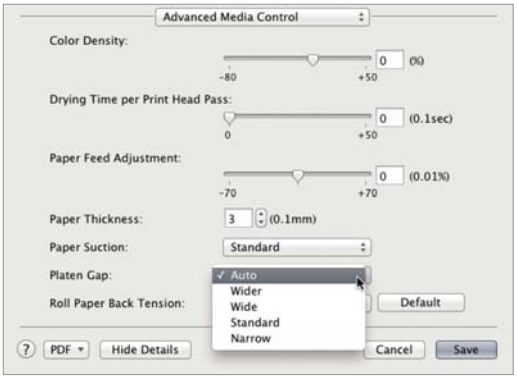
You also have a 16-Bit Output option on the Mac. If you've been working in 16 bits, there's no reason to drop down to 8 bits per channel just to make a print. However, it's generally going to make a strong difference only if you're printing images with various complex gradients from Illustrator. It doesn't apply that much when you're printing pixel images from Photoshop. But if you're printing from a Mac, the option is there, so go ahead and use it. Be aware that there have been cases reported where certain printers have a bug with 16-bit output, so double-check that printing with it on or off gives you the results you expect.

So far we've been in the Basic panel. There are other dialog boxes available that may need to be set depending on the media you are printing on. **Figure 4.25** shows the Roll Paper Settings (if you are printing on rolls) and the Advanced Media Control panel with the Platen Gap dropdown menu. Changing these options is needed only if you are setting up and printing out to non-Epson media. Setting the Media Type will set all of these options automatically for Epson media.

Printing in Windows. If you're working in Windows, you'll see the printer driver settings are very similar but in a different configuration. **Figure 4.26** shows the Epson Stylus Pro 4900 Properties dialog box with the Main tab selected. The dialog box in this figure has already been configured for all the standard settings and is ready to click OK.

NOTE Are there any good reasons for making changes in the Advanced Media Control? If you are printing on Epson media, I would say probably not. However, if you are printing to third-party papers or nonstandard substrates, then I would say absolutely yes. Just remember that if you change any of the settings it'll impact the results of ICC paper/printer color profiles. Changing the drying time may eliminate ink pooling. Changing the platen gap may eliminate head strikes. This is something you'll need to test for yourself based on your media choices and the results you achieve.

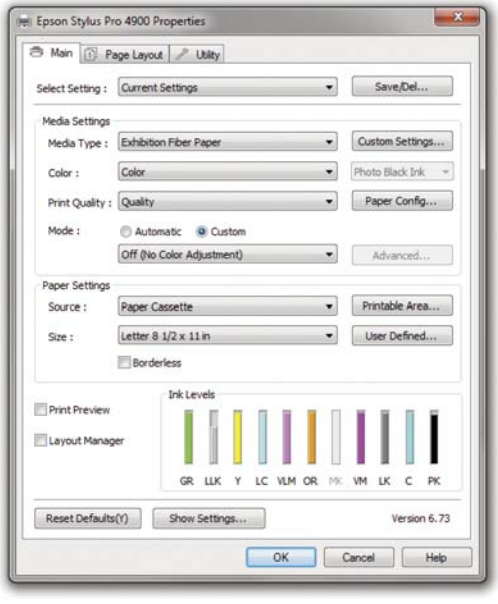
▲ ROLL PAPER SETTINGS



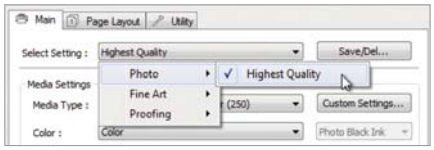
▲ ADVANCED MEDIA CONTROL

FIGURE 4.25 The Roll Paper and Advanced Media Control options.

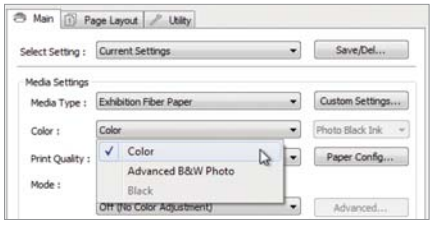
FIGURE 4.26 The Epson Stylus Pro 4900 Properties dialog box in Windows.



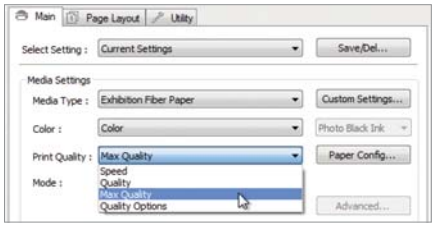
Select Settings and Media Settings. Starting with the Select Settings menu, select the printing quality (you'll want Highest Quality unless you are printing a draft). In the Media Settings area, select the Media Type (set to Exhibition Fiber Paper). In Media Settings, you have the same choices with the same limitations depending on the paper feed path, as previously mentioned in Figure 4.22. **Figure 4.27** shows each of the Main panel settings for Select Settings and Media Settings.



▲ SELECT SETTING MENU FOR HIGHEST QUALITY

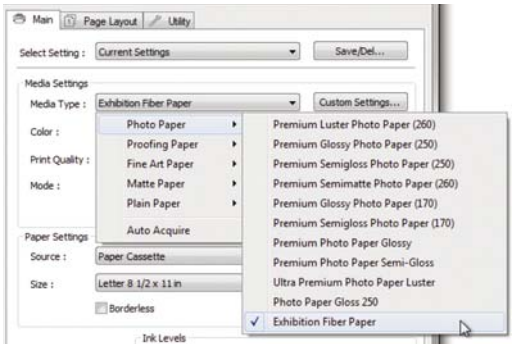


▲ SELECTING THE COLOR MENU

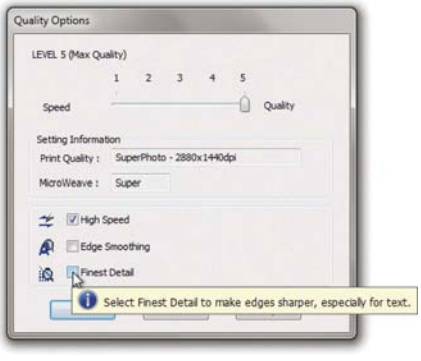


▲ SELECTING THE PRINT QUALITY MENU

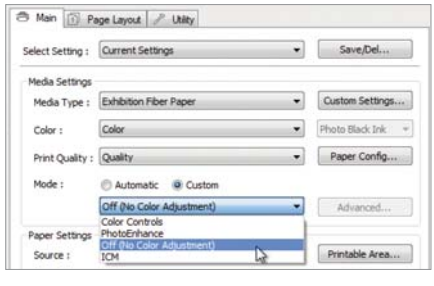
▲ SETTING THE PAPER CONFIGURATION (ACCESSED BY CLICKING THE PAPER CONFIGURATION... BUTTON)



▲ SELECTING THE MEDIA TYPE MENU



▲ SETTING THE QUALITY OPTIONS (ACCESSED FROM THE PRINT QUALITY MENU)



▲ SETTING THE MODE—CLICK CUSTOM AND SELECT OFF (NO COLOR ADJUSTMENT) FROM THE MENU

FIGURE 4.27 Selecting the quality and Media settings.

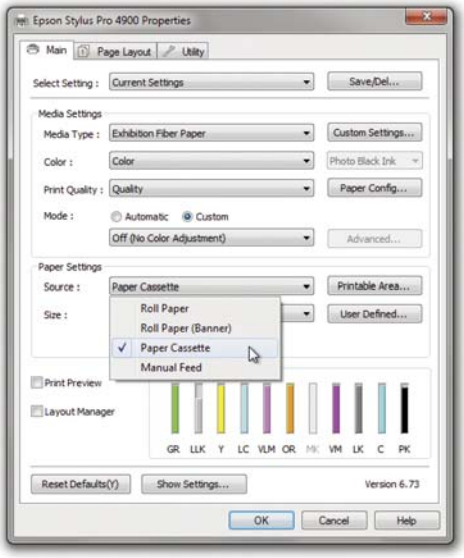
For color, you can select Color, Advanced B&W Photo. Black is dimmed because the image is in color. Print Quality doesn't give you the same geeky settings you have on the Mac: you have matte quality or quality options. If you select quality options, you can move the slider over to about 5. Just as with the Mac, you can select High Speed or Finest Detail—but you have to dive into the Quality Options area to find the Finest Detail option.

Under Mode, click Custom, and then turn color management off in the expanded options. On the Mac, ColorSync prevents you from doubling up on color management or accidentally turning it all off, but you can screw up more easily in Windows. It's a huge potential gotcha. I suggest turning it off here, and be sure to choose Photoshop Manages Colors in the Photoshop Print Settings dialog box.

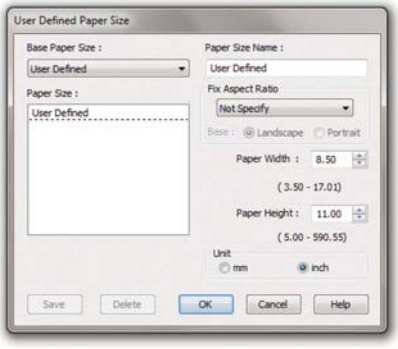
Paper Settings. Figure 4.28 shows the Paper Settings section, where you have the Source: Roll Paper, Paper Cassette, or Manual Feed. Depending on the media type you're using, you'll have to select the correct source. I'll select Paper Cassette. That enables a button that allows you to control the printable area, and this is a little different on Windows than it is on the Mac. Standard gives you standard printer margins; Maximum allows you to extend the printer margins but may produce poor quality near the bottom edge. Again, you can center the image within the printable margins.

Down below in the Page Settings you select the paper size. Unfortunately, in Windows, you choose from the A series, B series, Photo series, and others in a more complicated hierarchical display of paper sizes. However, you can also select User-Defined and then create a custom printer size.

Page Layout. Under Page Layout, you can set the orientation and, again, it's important that the printer driver and the printer have the same orientation settings. This is another potential gotcha. You can also enlarge or reduce, but you should already have done that. **Figure 4.29** shows the Page Layout tab. Note that in the Select Setting menu, I've selected a saved setting named 4900 EFP. You can save user-defined settings by clicking the Save/Delete button. It's useful because it allows saving often used settings to help cut down on user error.

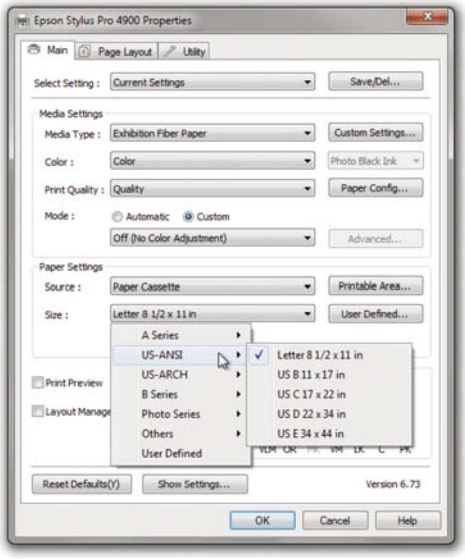


▲ SETTING THE PAPER SOURCE OPTIONS



▲ SETTING THE PAPER SIZE OPTIONS

▲ THE PRINTABLE AREA SETTINGS (ACCESSED BY CLICKING ON THE PRINTABLE AREA... BUTTON)



▲ THE USER-DEFINED PAPER SIZE DIALOG BOX (ACCESSED BY CLICKING THE USER DEFINED... BUTTON)

FIGURE 4.28 Setting the Paper Settings options.

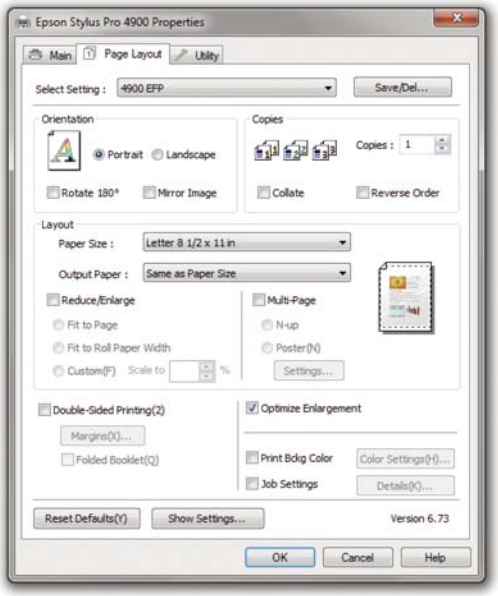


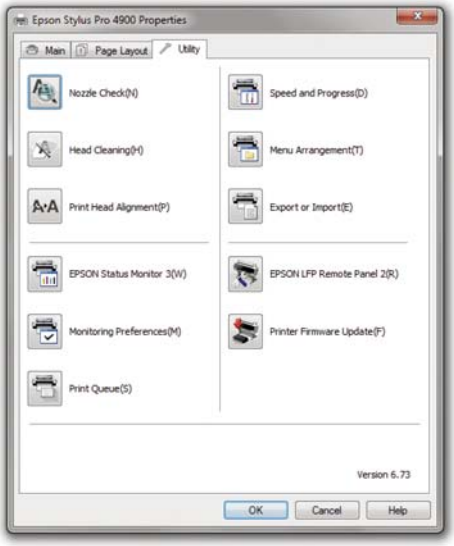
FIGURE 4.29 The Page Layout tab.

NOTE If you are wondering what the LFP stands for, it's an acronym for Large Format Printer. So simple it plum evaded me!

Utility. Under the Utility tab, you can do nozzle checks and cleaning. It allows you to alter the groups or the display order of the menu, which might be useful, but it's not necessarily something I would suggest doing willy-nilly. Sometimes Windows allows you to do things maybe you shouldn't be able to do, such as changing the menu order and changing what is or isn't displayed.

You can click the printer-specific utility. In this case, it's the Epson LFP remote panel. (LFP stands for large format printer.) The remote panel allows you to control and update the firmware, monitor and display the printer status, adjust the paper feed to fine-tune the actual speed, and perform other tasks. I'll talk about this more in Chapter 5. **Figure 4.30** shows the main Utility tab and the EPSON LFP Remote Panel 2 dialog box (launched as a separate application by clicking the EPSON LFP button in the Utility tab).

Click OK and you'll go back to the Photoshop Print Settings dialog box.



▲ THE UTILITY TAB OF THE EPSON 4900 PROPERTIES DIALOG BOX

▲ THE EPSON LFP REMOTE PANEL 2 DIALOG BOX

FIGURE 4.30 The Utility tab and the EPSON LFP dialog box.

NOTE If you see banding in the printout, the paper feed adjustment is going too far and the swath of the printhead going back and forth is not lining up. In that case, you want to adjust the paper feed. This is a very deep dive on a printer-specific issue, but you should check the manual for how to do that.

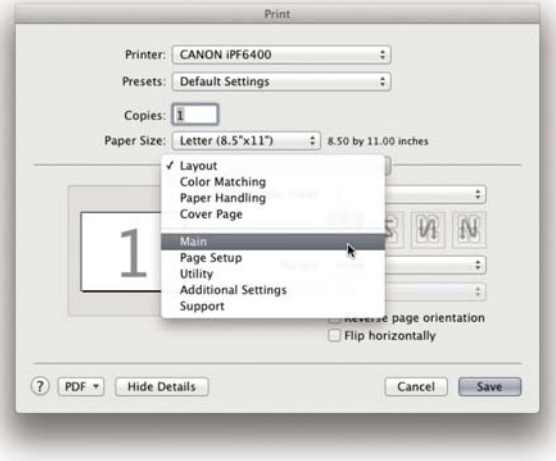
Canon iPF6400 settings

Just like the Epson 4900 driver on the Mac, you start off with the main Print dialog box after clicking the Print Settings button in the Photoshop print dialog box. **Figure 4.31** shows the Main panel of the Print dialog for the Canon iPF6400 printer.

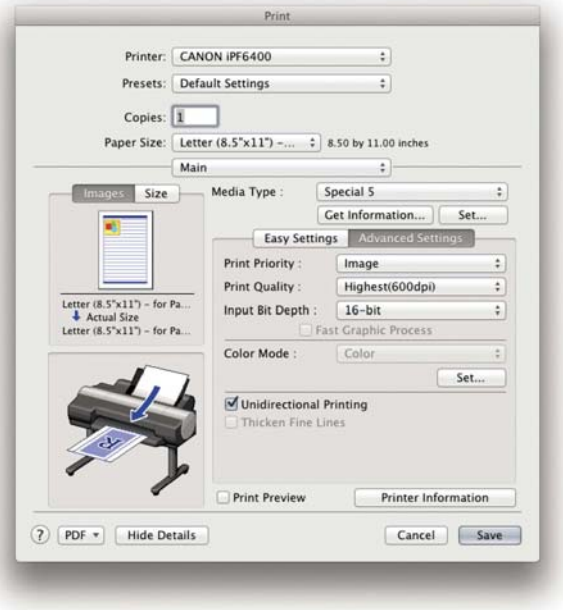
Main panel. In Figure 4.31, I've clicked on the Advanced Settings button to access the more advanced setting options. When you select Photoshop Manages Color, the Easy Settings are dimmed. In the Main dialog box, choose your media type. With Canon printers, you need to set the media type at the printer itself, and that setting has to match the media type you select in the driver. This is a potential gotcha, so make sure you correctly set the media type on the printer and in the Main printer dialog box. **Figure 4.32** shows the Media Type menu for Photo Paper and the "Special" menu. Since I'm printing out to Hahnemühle FineArt Baryta paper, the manufacturer suggests using the Special 5 Media Type settings.

TIP Baryta is a type of coating material used instead of optical brightening agents (OBAs) to brighten the paper without causing any fluorescence. I'll talk about OBAs and Baryta in the next chapter.

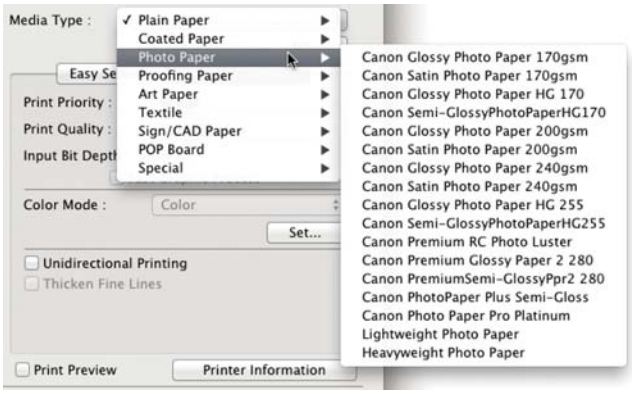
FIGURE 4.31 The Main panel of the Canon iPF6400 Print dialog.



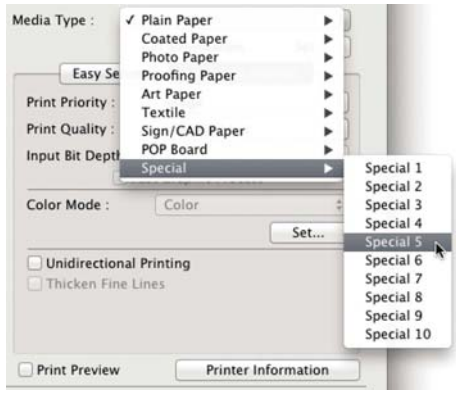
▲ MAIN PANEL OF THE PRINT DIALOG BOX SHOWING THE DROPDOWN MENU



▲ MAIN PANEL SHOWING THE ADVANCED PANEL OPTIONS



▲ THE PHOTO PAPER MENU



▲ THE SPECIAL MENU

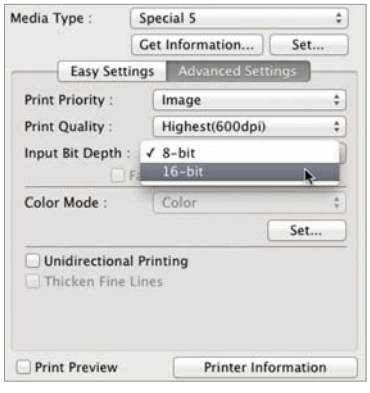
FIGURE 4.32 Selecting the Media Type settings.

Advanced settings. The Print Priority can be set to Image or Proof. I've never used the Proof setting. You can change the print resolution and the print quality. The quality is dictated by the media type. You can use Standard(600dpi) or Highest(600dpi), which reports 600 DPI to the operating system and uses a higher number of passes to achieve maximum image detail. If you have a 16-bit image, you can select 8- or 16-bit for the output. You can also choose unidirectional or bidirectional printing.

The color mode options would be enabled only if you chose to have the printer manage color. Those options are dimmed because Photoshop is managing the color. **Figure 4.33** shows the various options in the Advanced tab.

▲ PRINT PRIORITY MENU

▲ PRINT QUALITY MENU



▲ INPUT BIT DEPTH MENU

▲ UNIDIRECTIONAL OPTION

FIGURE 4.33 The Advanced tab options.

Page Setup. Under Page Setup, you have the same essential ability to control the page size and whether to resize to fit the page or to change the scale. Again, you should have made any scaling changes to the image prior to printing. You have the option to print the image centered within the printable margins. **Figure 4.34** shows the Page Setup panel and the Paper Source dropdown menu.

Utility. With the Utility dropdown, you can perform printer maintenance, start the print monitor, or configure the color image runner enlargement copy (don't ask; I have no clue what that is). **Figure 4.35** shows the Utility Panel options.

◀ THE PAGE SETUP PANEL

▼ THE PAPER SOURCE DROPDOWN MENU

FIGURE 4.34 The Page Setup panel.

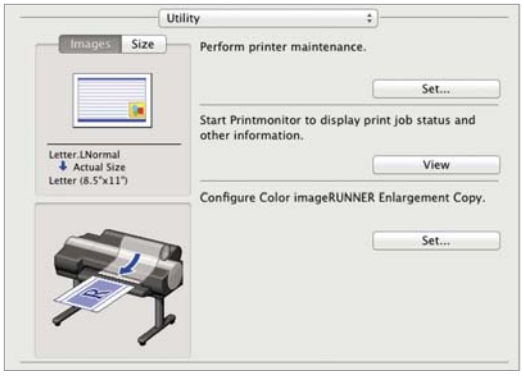


FIGURE 4.35 The Utility panel (with options I've never used).

Under additional settings, you can specify a data send method, whether to spool or print directly without spooling. If you send directly, it ties up the CPU for your computer; don't know if it's modal or not, but I'd send all print data as a batch to spool it to the printer so the CPU sends only what the printer can grab at a specific time. Since the settings are grayed out, I won't bother to show a figure.

Printing to Windows. Yes, the Canon iPF6400 has a Windows driver. **Figure 4.36** shows the Main panel of the Canon iPF6400 Properties dialog box. If you look closely at the dialog head in Figure 4.36, you'll see a (2) after the printer's name. I inserted the number because I added the printer two ways, once via USB and the other via Ethernet. I won't bother to drill down on the individual panels, but suffice it to say, all the same features for the Mac driver are available for the Windows driver—just in different locations.

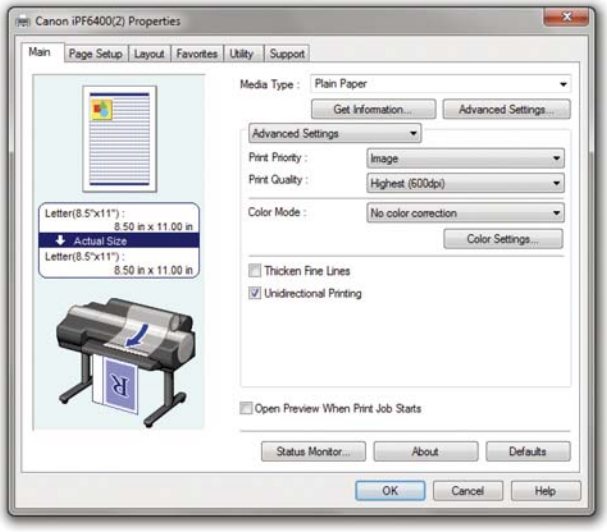


FIGURE 4.36 The Windows printer properties dialog box showing the Main panel.

PRINTING FROM A PHOTOSHOP PRINTER PLUG-IN

The only real print export plug-in that I'm aware of is provided by Canon. At one point, Epson had an excellent plug-in, but the company chose to concentrate on the printer driver and dropped it. To its credit, Canon has developed and maintained its plug-in. To access the Canon print plug-in, choose File > Export > iPF6400 Print Plug-in. **Figure 4.37** shows the imagePROGRAF Plug-In for Photoshop dialog.

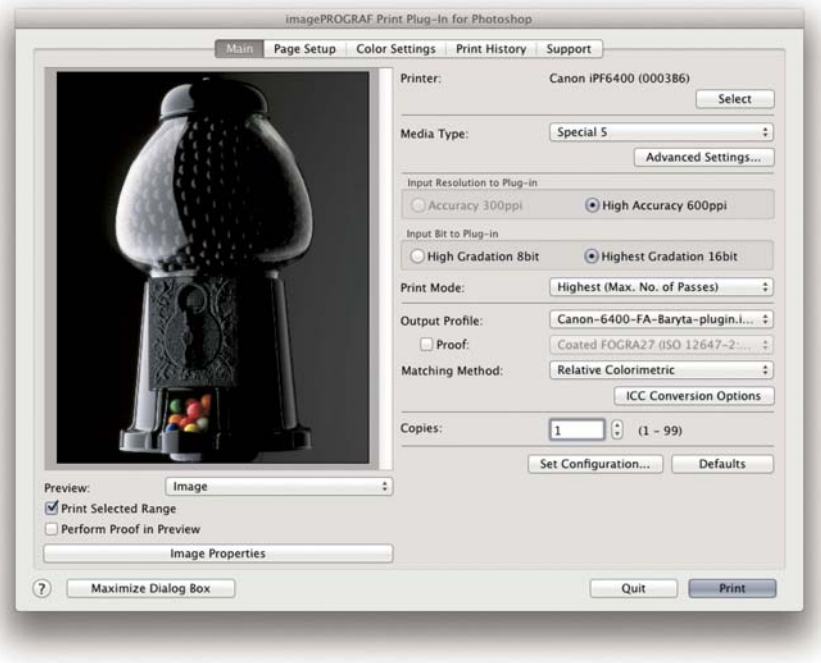


FIGURE 4.37 The Canon printer plug-in for Photoshop.

One reason to use the plug-in versus the printer driver is that Canon claims and my tests confirm that the gamut is a little bit bigger under the plug-in than through the printer driver. I will show a 3D gamut plot of the ICC profile I made through the actual application and print pipeline and the ICC profile I made or the Fine Art Baryta paper for the actual plug-in. It's subtle, but it's bigger. In terms of gamut, generally speaking, bigger is better. **Figure 4.38** shows a graph taken from ColorThink showing the gamut differences between the printer driver and the plug-in color gamut.

The plug-in provides a preview and has five main tabs. Under the Main tab, you can select the printer, and since I have just one, it's easy to select. It allows you to set the media type. I've chosen Special 5 because I'm printing out to Hahnemühle FineArt Baryta paper.

The Input Resolution to Plug-In is set to High Accuracy, which is 600 PPI. For the Input Bit Depth to Plug-In, high gradation is 8 bit, and the next highest gradation is 16 bit. The plug-in allows you to control the print mode, which is highest or highest maximum number of passes. You want to print the highest number of passes. That means the printhead passes back and forth more accurately. Under Output Profile, you can select the ICC profile. I'll select the profile I made for the plug-in. You either need to make custom profiles or use the general Canon profiles; they don't offer any

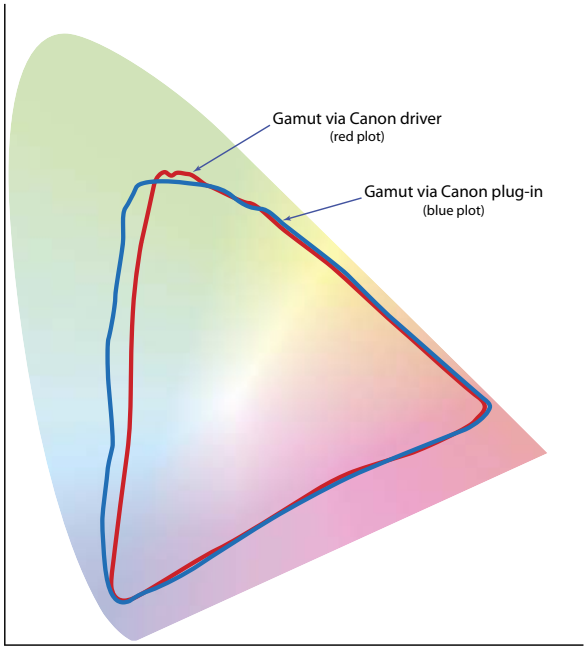


FIGURE 4.38 Gamut plots.

profiles specific to the plug-in. So, for optimum output quality, you'd want to make your own custom profile.

Under Matching Method, you can select Perceptual Colorimetric or Relative Colorimetric. You could also select Saturation, but it's not optimal. And you can control and change the ICC conversion options. You can use the OS standard (on Mac, that's Apple CCM) or you can choose the Adobe CCM. Currently, the Adobe CCM has not been released as a stand-alone CCM, so even though I was able to choose it, I got a warning that I'm locked into the OS standard. On the Mac, that's Apple CCM; for Windows, it would be the ICM CMM.

You can also set the configuration. You can actually apply sharpening, but you should never do output sharpening here—do it in Photoshop or Lightroom instead. You can also change the image enlargement method, but you should already have your image set to the proper size and PPI. The plug-in lets you perform printing in the background, so you can set it to automatically close the plug-in after printing.

Under the preview, you can view the print area layout or the image. I have it set to view the image. You can quickly see image properties, including height, width, resolution, and color space. If you're doing some pretty extensive work, one advantage of the plug-in is that you can maximize the dialog box and it goes full screen.

Under the Page Setup tab, you can choose the paper size and the layout and the paper source, whether it's roll or manual feed. You can set custom sizes in inches or millimeters. Under the Color Settings tab, you can combine both ICC-based color management plus direct print control of cyan, magenta, and yellow and gray tone, as well as brightness, contrast, and saturation. Since I'm using a custom profile, I don't want to use any of these controls. **Figure 4.39** shows the Color Settings panel and the Adjustment Pattern Settings dialog box. This would be useful if I were using the Monochrome output option to do black-and-white printing using color toning.

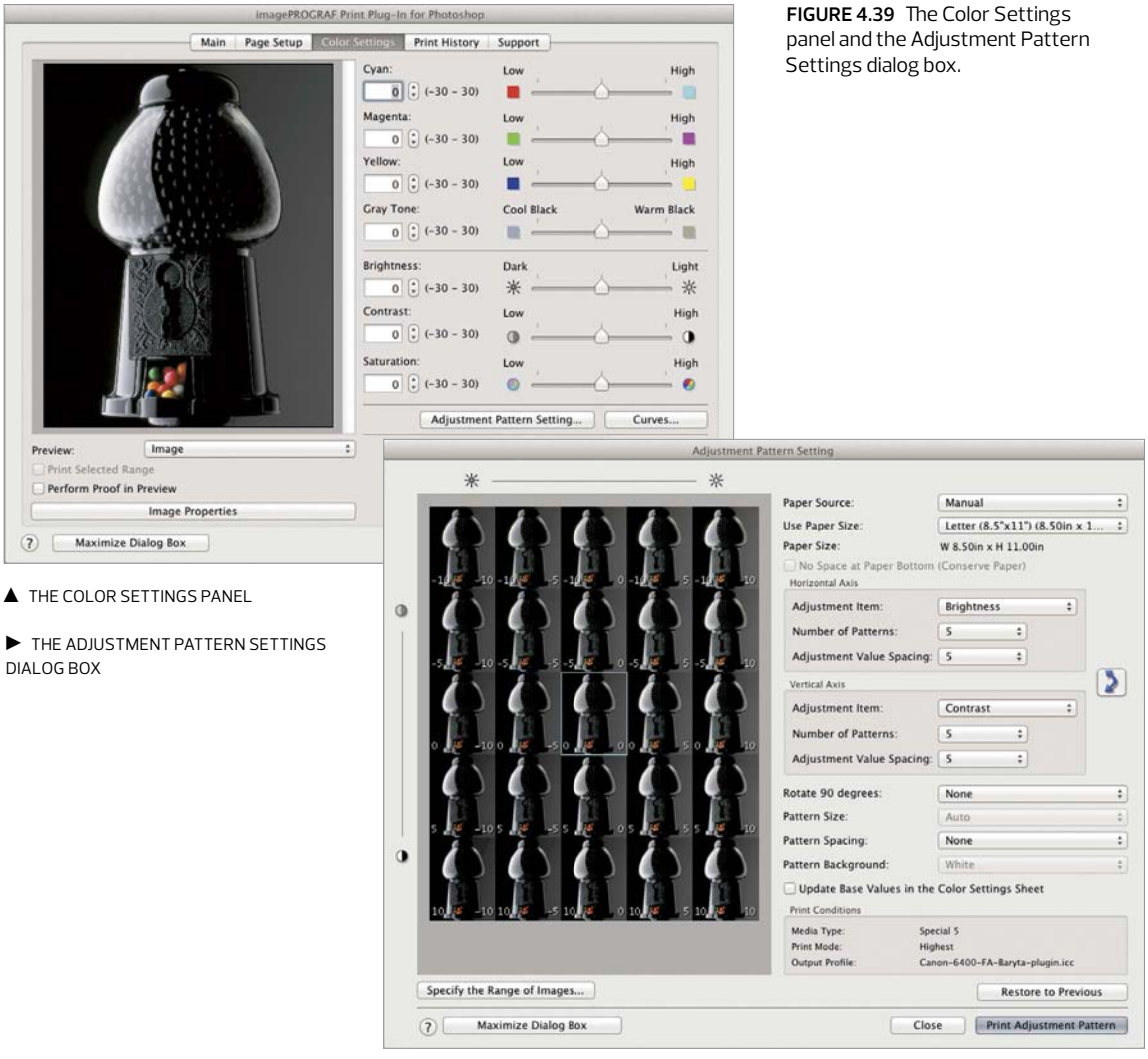


FIGURE 4.39 The Color Settings panel and the Adjustment Pattern Settings dialog box.

▲ THE COLOR SETTINGS PANEL

► THE ADJUSTMENT PATTERN SETTINGS DIALOG BOX

If you click the Print Adjustment Pattern button, you see something similar to the old Photoshop Variations interface. You can select the adjustment item—any of the colors, brightness, saturation—the number of patterns (I could set it to between 3 and 7), then adjust the value spacing. You can see how much strength is in the modification. You can even control both the horizontal and vertical axes, which is what makes it look like the old Photoshop Variations option. I don't use this at all for color. I do use it for printing to black and white, which I cover later in the chapter.

Under the Print History tab, you can control whether information is included on the print, such as the printer name, time, or filename. This could be useful if you're doing a myriad of test prints; you could automatically print specific information so you could keep the different prints straight.

The last tab is Support. Click there to go to the Canon support Web page or user manual.

That is it for the plug-in. So, would I use the Canon printer plug-in on a regular basis? Probably not. There are some shortcomings, such as its inability to save settings—every time you print, you would need to go through and set all the settings correctly. I'm a big believer in making printing efficient and error free, which segues nicely to the next section!

AUTOMATED PRINTING USING ACTIONS

I believe the ability to record printing actions started with Photoshop 5, without a great deal of fanfare. Dave, the engineer in charge of the Photoshop Print module, based in Minneapolis, worked very hard to clean out and re-engineer the Print dialog box. He was the one who made it possible to record the Print dialog box as an action.

I won't teach an extensive tutorial on creating actions, but I will show you briefly how to record an action to make a print, and then I'll show you how to use that action to do fast printing in Bridge.

In the Actions panel, click Create New Action. Name it (I'll call it *4900 letter*), select a set to add it to (I'll create a new set called *Printer Actions*), and then click Record.

Now choose File > Print to open the Print dialog box. All the changes you make in the Print dialog box and the print settings will be recorded as a component of the action. I start by setting the printer to the Epson Stylus Pro 4900, click Print Settings, set it to US Letter Sheet, select Paper Cassette, Exhibition Fiber, SuperPhoto 2880, and set Finest Detail to On. There are no more paper settings involved, and I won't alter the advanced media control. Then I click Save.

Back in the Photoshop Print Settings dialog box, choose Photoshop Manages Colors. Select the profile; I'm going to select the Epson – 4900 – FA- Baryta, which uses the Exhibition Fiber paper settings I selected in the printer settings.

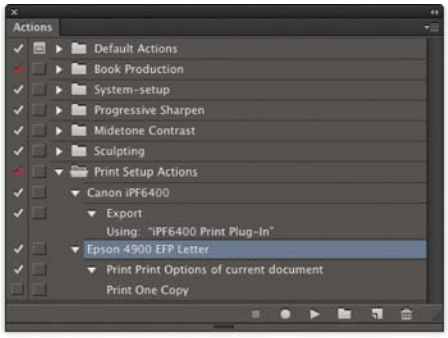


FIGURE 4.40 The recorded action.

Select Normal Printing, then Relative Colorimetric, with Black Point Compensation turned on. For the purposes of this demonstration, I'll select Scale to Fit Media. Then I'll click Print. **Figure 4.40** shows the result of recording the action in Photoshop.

Figure 4.41 shows the expanded display of all the parameters recorded in the action. Notice the print options included in the action: color space, RGB color, the profile, the rendering intent, the printer name—literally everything that was set in both the Photoshop Print dialog box as well as the printer driver. Notice that the Print One Copy is checked in the action steps. If I played that action, it would send the image to the printer and make a print. If you only want to set the settings, uncheck that option. The result will be the same as simply clicking Done in the Photoshop Print dialog box.

Once you've recorded an action, you can close the document without saving and have access to all the settings quickly in any document. For example, when I open a new image that hasn't had any printer settings stored in it, I can just select the 4900 Letter action in the Actions panel and click Play, and all the settings that were recorded in the action have been propagated into the Photoshop Print Settings dialog box: the color handling, printer profile, print settings, size, and position. So once all the settings are propagated, I need only make any changes on a per-image basis and then I can print. The action serves as a print preset so that all the settings are handled and you just need to customize it for your specific image. Sadly, the Canon printer plug-in does not capture all the plug-in settings—a weakness of the plug-in.

You can extend this basic action by incorporating a series of additional actions before you play the print action. For example, you could create actions for sizing, positioning, and output sharpening. You can actually create a multiset action. Then, in Bridge, select the images, choose Photoshop > Photoshop Batch, and set up your Photoshop actions in the Batch dialog box.

FIGURE 4.41 The recorded parameters of the action and unchecking the Print One Copy step.

◀ THE RECORDED PARAMETERS

▲ UNCHECKING THE PRINT ONE COPY STEP

▲ THE MAIN DIALOG BOX

▶ THE IF CURRENT DROPDOWN MENU

FIGURE 4.42 The Conditional Action dialog box.

But wait, there's more! With the release of Photoshop CS6.1 (13.1), and continued in Photoshop CC, is the ability to record actions using a Conditional Action step in your actions. After creating a new action, go to the Actions panel flyout menu and select Insert Conditional. **Figure 4.42** shows the Conditional Action dialog box and the If Current menu showing all the possible potential conditional options.

This is a simple if/then set of conditions. If the condition is met, then you can select a previously recorded action to play. If the condition is not met, then you can choose a different action to play. OK, I'll admit this is sort of geeky, but if you are experienced in recording actions, this new functionality is an important feature of Photoshop automation. But if you combine a conditional action step in a series of recorded steps, then you can do a Batch command from Photoshop or Bridge. **Figure 4.43** shows the recording of a simple conditional step to rotate a landscape image to portrait orientation prior to printing.

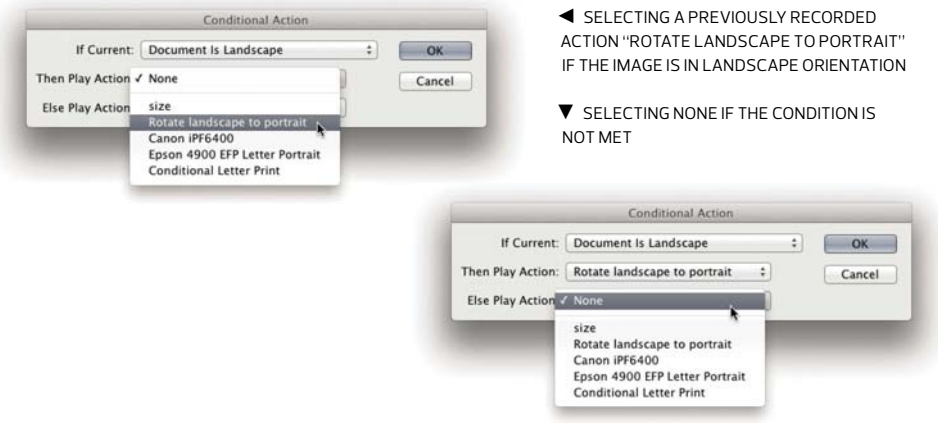


FIGURE 4.43 Recording a conditional action step.

When run on an image, if the orientation is Landscape (meaning wider than taller), the conditional will run the action to rotate the image from landscape to portrait orientation. If the image is not landscape, nothing will be done. If this conditional step is added to additional action steps, then you can use the series of steps to automate the processing of multiple images. **Figure 4.44** shows an action named Conditional Letter Print that contains the previous example conditional step plus the running of an image resize step, a Print Options step, and a Print One Copy step followed by a Close step (without saving).

The conditional action step will rotate landscape images to portrait, but it won't impact square or portrait images. All images will be sized to an 8-inch height and then printed. Since the last step is to close without saving, you don't need to worry about overwriting your original files. Using Bridge you could select a series of images and print them without having to deal with landscape or portrait orientations, then size them and make prints using a Photoshop Batch command.

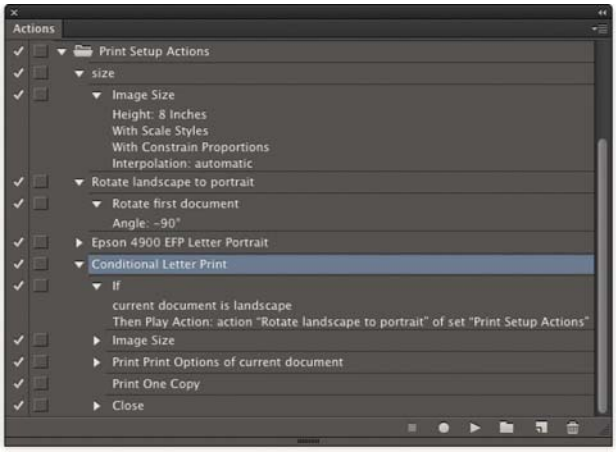


FIGURE 4.44 The Conditional Letter Print action.

PRINTING FROM LIGHTROOM

Unlike Photoshop, Lightroom is built on the concept of modularity. Different functionality is available in different modules. In the Library module, you can create collections. When you're getting ready to print, create a collection of the images that have been soft proofed and are ready to go. It's best to select an image from a collection when you're in the Print module. You can select a single image from the library and print it, but one of the major benefits of working in the Lightroom is the ability to work with larger volumes of images at a time.

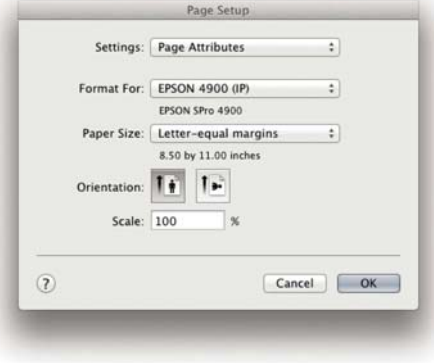
When you've soft proofed and prepared your images, go to the Print module (you can use the Mac keyboard shortcut Command+Option+6 or Control+Alt+6 for Windows). The right side of the Print module has panels that let you set up parameters for printing. The left side has panels for templates and collections. **Figure 4.45** shows an image in the Print module (note I've hidden the top bar and collapsed the Collections panel to save space). Select your collection from the Collections panel on the left. Then select the image you want to work with from the filmstrip at the bottom of the application window.

First, you need to set up a page. Click Page Setup at the bottom of the panel set on the left side. Then select a printer and a paper size. I'm selecting a custom 8.5 x 11 inches with four equal margins of 0.75 inch. Then click OK. Unlike Photoshop, which combines the page setup and printer settings in one dialog box, Lightroom separates them into two. I'll come back to the Print Settings dialog box later. **Figure 4.46** shows my Collections panel with Prints selected and the Page Setup dialog box for the Mac.

FIGURE 4.45 The Lightroom Print module.

FIGURE 4.46 The Collections panel and Page Setup dialog box.

▲ COLLECTIONS PANEL



▲ PAGE SETUP DIALOG BOX

In Windows there's a single button named Page Setup that launches the standard Printer Properties dialog box. The reason I suggest starting with selecting the printer and page setup first is that all of the parameters you'll be adjusting in the panels on the right will be set based on the paper and margin sizes. It's more efficient to start with the correct paper size!

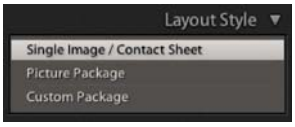


FIGURE 4.47 The Layout Style panel.

THE LAYOUT STYLE PANEL

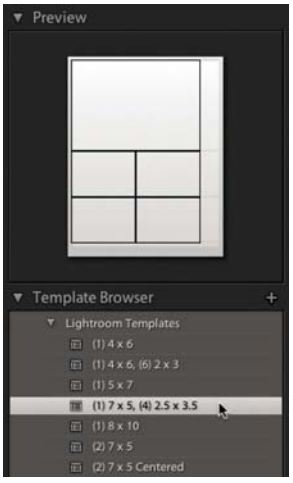
The first panel on the right side is the Layout Style panel. If you're making a single print or a contact sheet, select Single Image/Contact Sheet. **Figure 4.47** shows the Layout Style panel.

Picture Package

Picture Package lets you include different sizes of the same image on a single page. This option is often used for portraits or wedding photos, when a client might order an 8 x 10, a 5 x 7, and a couple of wallet prints. It's useful in a production environment because you can gang multiple images on a sheet, and then cut them into separate images after printing.

If you select Picture Package, you'll usually select a template from the Template Browser panel on the left side of the application window. I chose (1) 7 x 5, (4) 2.5 x 3.5. However, you don't have to use Lightroom templates. When you select Picture Package, a Cells panel appears; in that panel you can create a new page and add preconfigured sizes to it, mixing and matching to suit your needs. Click the triangle next to an option to see more sizes, or choose Edit from the dropdown menu and create a new custom size. **Figure 4.48** shows the Template Browser and Preview as well as the Cells panel. The Height and Width sliders are active because I've selected the 5 x 7 image. Otherwise, if no cell is selected, the sliders are dimmed.

Picture Package always uses a single image in an array of differently sized images. Once the images are arrayed, you can click Auto Layout, which configures and rotates the images for maximum efficiency on the paper. In the Cells panel, you can adjust individual cells to make them bigger or smaller. How the Height and Width sliders affect the cell depends on the options selected in the Image Settings panel. If Zoom to Fill is selected, the image zooms in or out to fit the cell borders. If you want to maintain a specific crop, deselect Zoom to Fill. Rotate to Fit is probably one of the things I like best about the Lightroom Print module, because you can rotate images and not have to worry about the landscape and portrait mode. **Figure 4.49** shows the result of selecting the template with the Zoom to Fill option unchecked.



▲ TEMPLATE BROWSER SHOWING PREVIEW

▲ CELLS PANEL

FIGURE 4.48 The Template Browser and Cells panel.

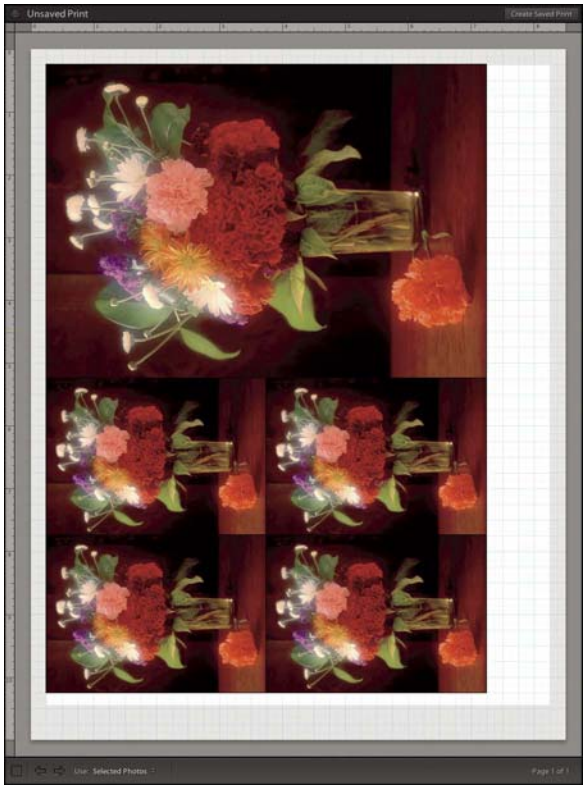
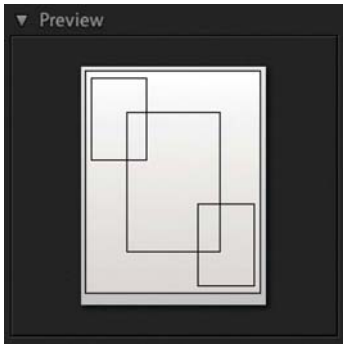


FIGURE 4.49 The results of selecting the (1) 7 x 5, (4) 2.5 x 3.5 template.

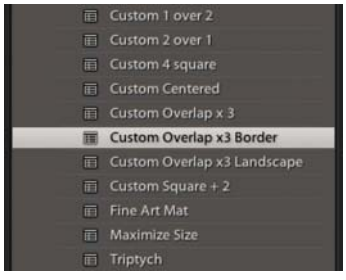
Custom Package

Below Picture Package is Custom Package. Unlike Picture Package, Custom Package allows you to put different images on the same page. You can size and position them however you'd like. **Figure 4.50** shows an example of a really simple one using the template Custom Overlap x3 Border. Click and drag an image from the filmstrip and drop it into the individual cell. Using Custom Package, you can still add individual cells from the Cells panel. Figure 4.50 shows the template, preview, the template browser, and an array of three vertical images.

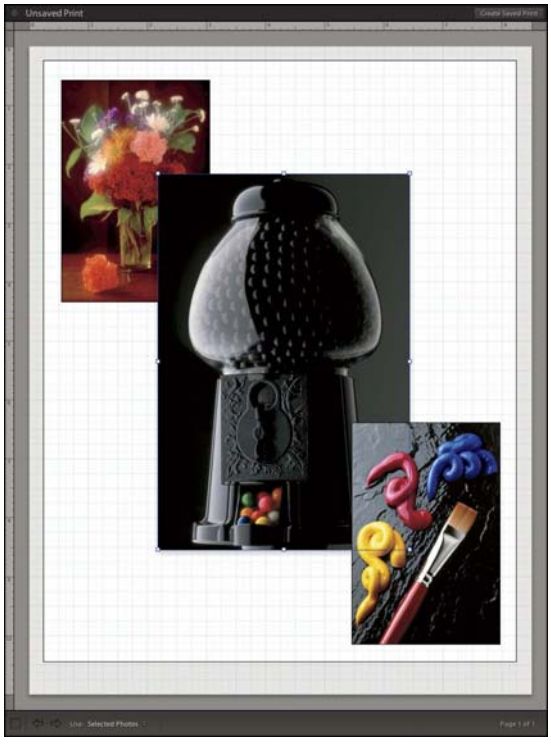
Photographers might use the custom package to do promotional prints. While Picture Package is often used for customers, Custom Package is often used for self-promotion. But a wedding photographer might have a custom package with a group shot up above and a variety of individual shots below. It's designed as a method of putting multiple images on the page in a somewhat limited layout design. It's certainly not intended to take the place of InDesign.



▲ TEMPLATE PREVIEW



▲ TEMPLATE BROWSER



▲ THE RESULT OF THE TEMPLATE WITH IMAGES PLACED

FIGURE 4.50 Custom Package.

For both package types, you can add a border and an inner stroke in the Image Settings panel. The border ends up being white; the inner stroke has a custom color—you can select any tone. You can't select a color, but you can select the tone. You can customize and eventually get a spectrum of colors, but generally speaking, my aesthetics are such that I wouldn't want to have a weird color border.

Contact Sheet

The Single Image/Contact Sheet layout style (shown in Figure 4.47) allows you to create traditional multi-image contacts similar to the old analog contact sheets where you would place a page of negatives over photo paper in the darkroom. The Lightroom contact sheet is a lot easier to use. **Figure 4.51** shows the result of selecting the Lightroom 4 x 5 Contact Sheet template and selecting the images in the collection to put into the contact sheet.

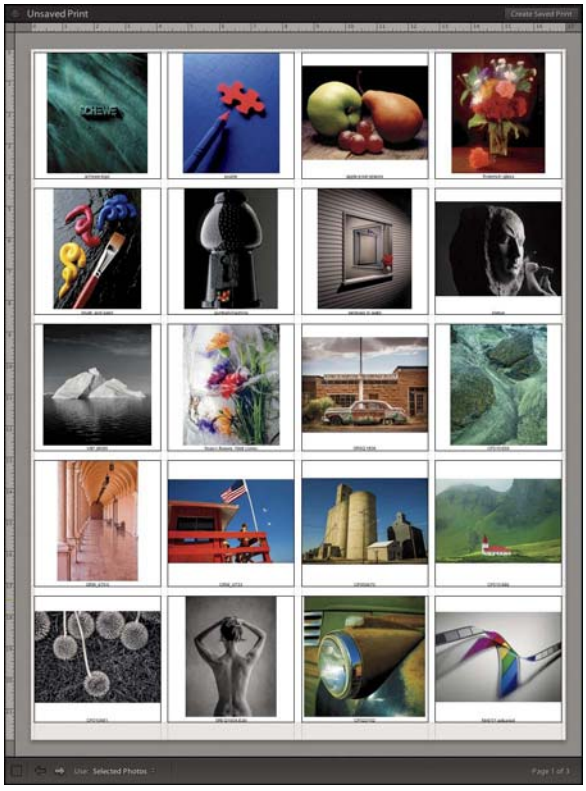
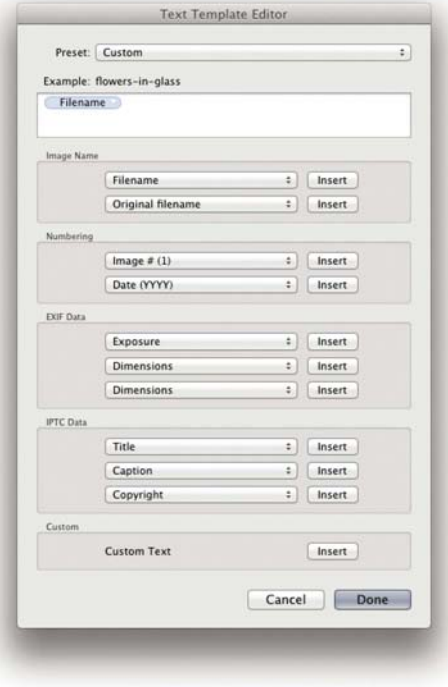


FIGURE 4.51 The results of putting images in a 4 x 5 Contact Sheet template.

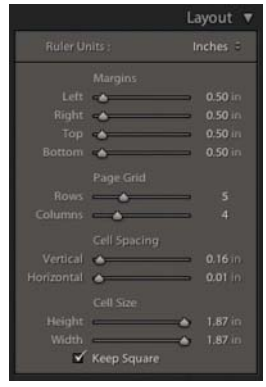
In the Page panel, I've selected a couple of options to add to the contact sheet. I'll include page numbers (because the resulting contact sheet will be three pages long) and select the Photo Info option to add the filename under the images. I'll also check the option to Keep Square in the Layout panel. **Figure 4.52** shows the Page panel, the Text Template Editor dialog box, and the Layout panel.

The Text Template Editor allows you to select various options and insert them as "tokens" into the text that will be displayed in the print. For a contact sheet, obviously you would want the filename for identification, but you could also add additional text such as your copyright info. You can't add a hard return (hitting the enter or return key will close the dialog box), but you can add spaces to separate the tokens. The text will wrap to multiple lines, depending on the overall text length. Also note you can simply enter text directly into the editor and not be bound by the tokens. At the top is a menu that allows you to save the text settings as a preset. The ability to add text under the images isn't limited to contact sheets; you can add text to any layout

▲ THE PAGE PANEL



▶ THE TEXT TEMPLATE EDITOR DIALOG



▲ THE LAYOUT PANEL

FIGURE 4.52 The Page Info panel, Text Template Editor dialog, and Layout panel for configuring the contact sheet.

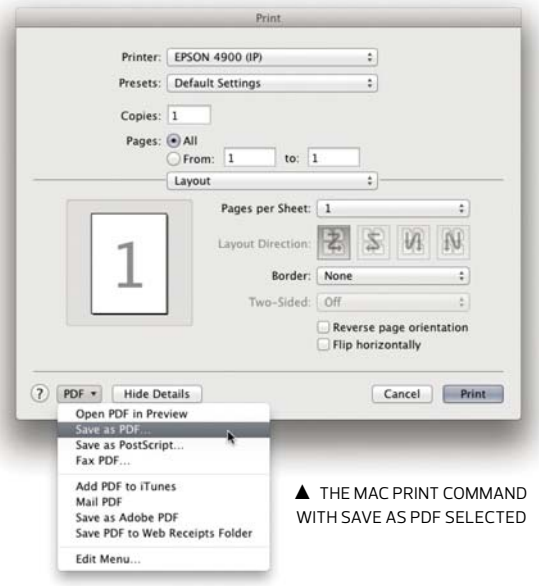
style. The limitation is that you can't alter the font or the color (it's a default sans serif font that will be different on Mac and Windows), but you can alter the font size.

You can change the grid, the cell spacing—vertical and horizontal—and the cell size. For the most part, if you're creating contact sheets, I'd suggest keeping the cells square so that horizontal, vertical, and square images all fit within the same area. That will make your contact sheet more coherent and make it easier to identify image by image. To add pictures to the contact sheet, just select multiple images in the filmstrip. You can see the grid you're using in the Preview panel in the upper-left corner of the application window.

For making contact sheets to send as PDF files, you can select Draft Mode Printing in the Print Job panel to use Draft Mode Printing; this will render the images from Lightroom previews without rendering the full resolution from your original images. This option is really fast. **Figure 4.53** shows the Print Job panel set to Draft Mode Printing, the Print dialog box choosing the Save as PDF option, and the final saved contact sheet PDF (which was a 4 MB file on disk). Note that the Mac Print command includes the ability to print to PDF. For Windows, you'll need to download a utility add-on to print to PDF (do a Google search for "print to PDF on Windows").

FIGURE 4.53 Saving the contact sheet PDF.

▲ THE PRINT JOB PANEL WITH DRAFT MODE PRINTING OPTION SELECTED



▲ THE MAC PRINT COMMAND WITH SAVE AS PDF SELECTED

▲ THE FINAL PDF FILE SAVED ON DISK

THE IMAGE SETTINGS PANEL

As I mentioned in the Picture Package section, you should leave Zoom to Fill unchecked if you want to maintain the crop on your image. That's true no matter which layout style you've selected. I selected Rotate to Fit; in this case, if I deselect it, the image becomes a smaller image in the center of the page, but with Rotate to Fit selected, the same image is rotated to fill the cell size automatically. **Figure 4.54** shows the Image Settings panel with Rotate to Fit checked. It also shows the horizontal image auto rotated, and the unrotated size and position with the Rotate to Fit unchecked.

Depending on how many images you have selected in the filmstrip, you may want to select Repeat One Photo Per Page. Another option is to apply a stroke border. Normally, I wouldn't have a border on anything other than a high-key shot that might have white or very light tones all the way to the edge. I like to use a stroke border as a method of creating a holding rule on the image. **Figure 4.55** shows a high-key image with a 2-pt black stroke around the image. Here, the stroke border will help contain the image and provide a final border around it, giving an indication of where the image ends and the margins start.

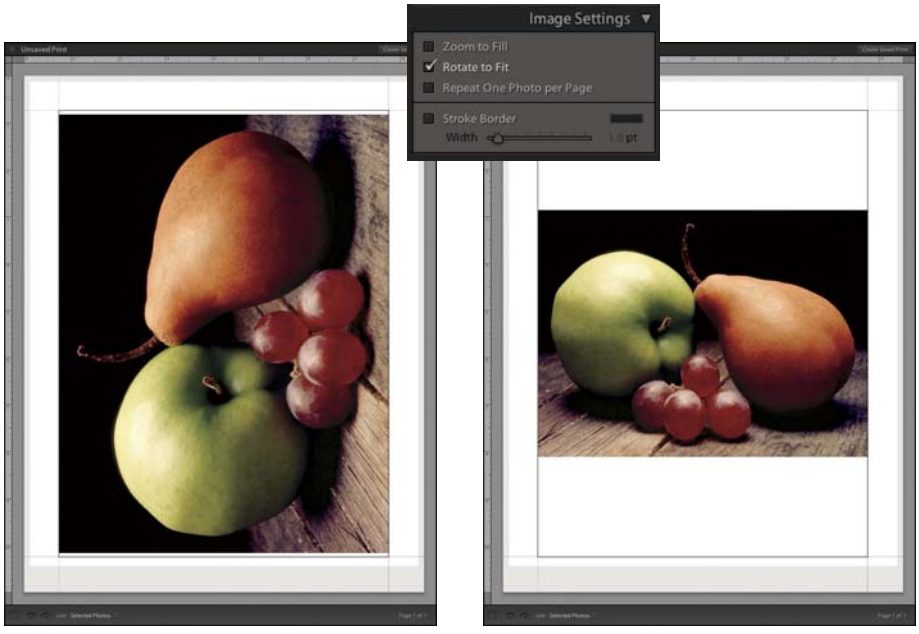


FIGURE 4.54 Using the Rotate to Fit option in the Image Settings panel.

FIGURE 4.55 Using a 2-pt black stroke to contain a high-key image.

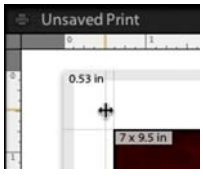
THE LAYOUT PANEL

You can choose to use inches, centimeters, points, or picas, but I'll stick with inches. You can independently control the top, left, right, and bottom margins. Use the slider to vary the width. In this case, I'm moving the slider for the left margin to the right; instead of using the slider, you can enter a number, which I find is generally more precise. You can also hover your cursor over the margin in the image window and drag the margin on the page itself. When you do that, the cursor changes from a pointer to a cross with horizontal arrows. **Figure 4.56** shows the Layout panel, using the scrubby slider to adjust a margin or dragging the cursor directly on the print margin guides.

FIGURE 4.56 The Layout panel and margin adjustments.

▲ THE LAYOUT PANEL

▲ ADJUSTING THE LEFT MARGIN WITH THE SCRUBBY SLIDER



▲ ADJUSTING THE LEFT MARGIN BY DRAGGING THE MARGIN GUIDE

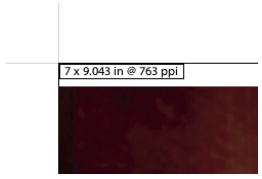
While you can make borderless prints, my general recommendation is to print with a margin of some width for conservation purposes. In this case, I've created a ¾-inch margin on all four sides.

If you're printing a single image, the cell size is the equivalent of the image size in Photoshop. It lets you make the image on the print larger or smaller. It will always print only within the margins you set up above, but this allows you to precisely control the size of the printable cell. This is useful, particularly when you're making multiple prints at once. Just set up the cell size and click Print.

THE GUIDES PANEL

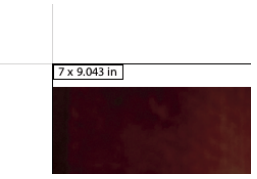
If you select Dimensions in the Guides panel, the physical dimensions and the native resolution of the image are displayed in the upper-left corner of the image itself. The width and height are displayed in three-decimal-point precision, because engineers

▲ THE GUIDES PANEL



▲ THE DISPLAY OF DIMENSIONS AND RESOLUTION ON THE PRINT DISPLAY

▲ CHECKING THE PRINT RESOLUTION OPTION IN THE PRINT JOB PANEL



▲ THE DISPLAY OF DIMENSIONS ON THE PRINT DISPLAY

FIGURE 4.57 The Guides panel with the Dimension guide checked.

are nothing if not precise. This image will print at 763 pixels per inch. If I select Print Resolution in the Print Job panel, the image dimensions remain, but the PPI goes away because Print Resolution resamples the image to the resolution entered in the entry field. **Figure 4.57** shows the Guides panel with all the guides checked.

You can deselect Show Guides and they all go away. Then the image preview looks like a print hanging on a wall because it shows the image, the white margin of the paper, and a subtle drop shadow. It looks like a real print. While I'm actually working, though, I find it's useful to keep Show Guides selected so I can see the rulers, margins, image cells, and gutters if the image breaks across two pages. By the way, you can change the background of the area around the print display by right-clicking in Windows (Control-click on the Mac) on the background. **Figure 4.58** shows the context menu.

FIGURE 4.58 The context menu to change the Background Color.

THE PAGE PANEL

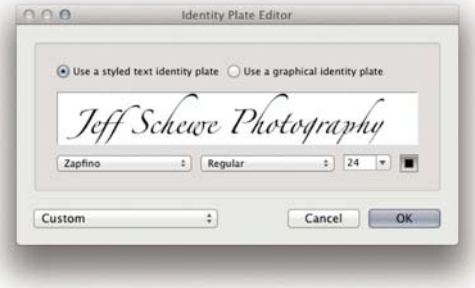
In the Page panel, you can change the background color or tone for the page. If you select Page Background Color, the tone or color you select will be printed within the printable margin of the image. The only warning I'd give is that if you're going to print a solid-color background, you'll be using up a lot of ink. Also, if you want an absolute jet black background, it will use an enormous amount of ink and the paper may get a little wavy until the ink is dry.

You can also add an identity plate to the image. When Lightroom was first developed, the Lightroom engineers originally called these *vanity plates*, and the early betas showed your name in an image that looked like a license plate. But by the time they shipped the product, they'd switched to calling them *identity plates*. You can select an existing identity plate from the dropdown menu or click Edit to customize one. In the Identity Plate Editor dialog box, type in text and choose a font. You can also create a graphical identity plate, using an image you copy and paste into this space.

▲ THE IMAGE WITH THE IDENTITY PLATE BEING POSITIONED

▲ THE PAGE PANEL

FIGURE 4.59 Adding an Identity Plate to an image in the Page panel.

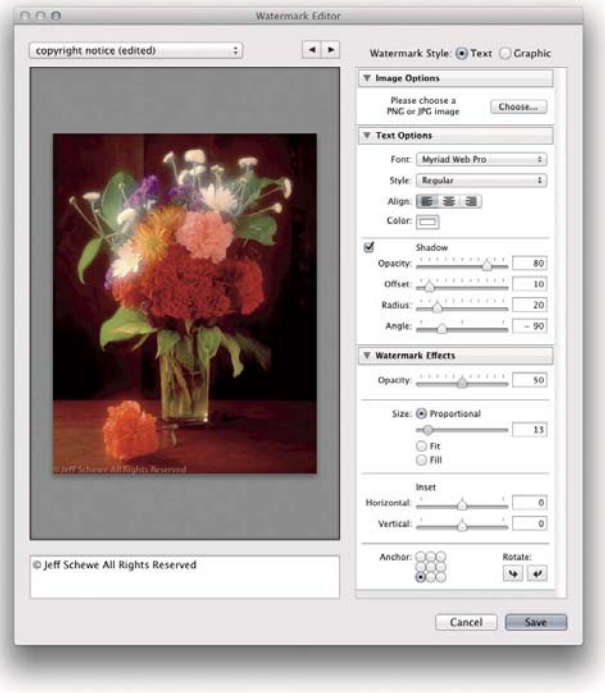


▲ THE IDENTITY PLATE EDITOR (ACCESSED FROM THE TRIANGLE DROPDOWN MENU IN THE IDENTITY PLATE PREVIEW)

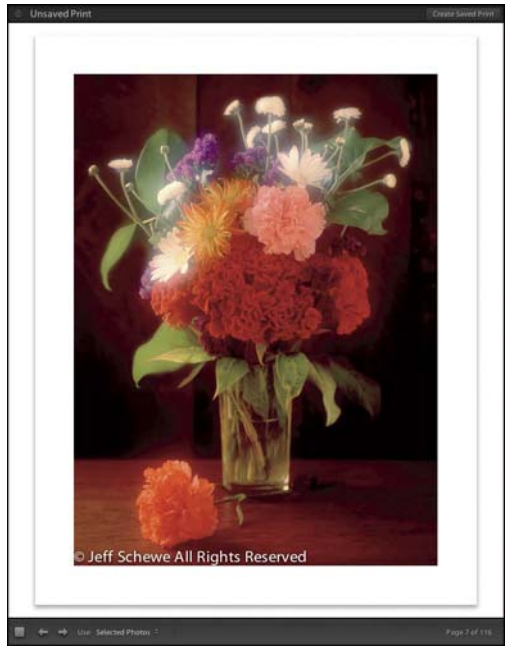
Identity plate images can contain transparency, so you could copy a logo you'd done in Illustrator and saved as a PNG with transparency. (You could also use it anywhere else in Lightroom that uses identity plates, including slideshows and preparing images for the Web.) **Figure 4.59** shows the addition of an Identity Plate to an image.

You can position the identity plate anywhere you want. To resize it, click and drag an edge or a corner and it will keep its proportion. You can override the text color: click Override Color and select a new color. I'll drag my name to the center underneath the image and scale it to 30%. The Identity Plate is giving the appearance of an actual signature (sort of). You can also change the opacity. You can even render it behind the image, which I always thought was a cruel joke, because if it's behind the image, you can't see it, but it could come out from underneath the image depending on the design element you're using.

The Page panel also gives you the option to add a watermark. If you're providing proofs to people that you don't want them to keep, you can add a copyright notice, which is what I have it set to by default. (To get the copyright symbol, press Option+G on the Mac. In Windows, press Alt+0169 on the numeric keyboard.) If you've saved watermarks, you can choose one; otherwise, choose Edit Watermarks from the pop-up menu. In the Watermark Editor, you can create a text watermark,



▲ THE WATERMARK EDITOR



▲ THE WATERMARK ADDED TO THE IMAGE

FIGURE 4.60 Adding and editing a watermark on the image.

customizing text options that include a shadow, radius, and angle, or place a graphic. You can control the watermark effect, including its opacity and size. The anchor point ensures that the watermark stays in the proper position even if you rotate or reposition the image. To save the watermark, click Save, and then name it. **Figure 4.60** shows adding a watermark to the printed image.

You can print page numbers, which would be useful on a multipage contact sheet. If you select Page Info, Lightroom includes the sharpening setup, the profile saved relative to the soft proof, and the printer. You can also print crop marks at the corners. This can be useful with a picture package, especially if you need cutting guides.

The Photo Info option lets you print custom text or multiple metadata fields. The only problem that I have with Photo Info is that you don't have any control over where it prints. It automatically defaults to be centered beneath the image. The only control you have is the font size, not even font colors or the font itself.

THE PRINT JOB PANEL

You can print to a printer or a JPEG file. Printing to a JPEG file lets you set up a custom layout, either a single or multi-image layout, with identity plates and page options, and then save that as a JPEG to send to a third-party printer. When you choose JPEG File from the Print To menu, the Print Job panel changes. You have options for file resolution, print sharpening, JPEG quality, custom file dimensions, and a color management profile, usually set to sRGB because most print labs unfortunately are not color-managed and request sRGB JPEGs. You also have Print Adjustment options, which I'll address later in this section. **Figure 4.61** shows the Print To dropdown menu and the Print Job panel when set to Printer and JPEG File.

When you choose JPEG File from the Print To menu, you have fewer options in the Print Job panel. Let's go through them.

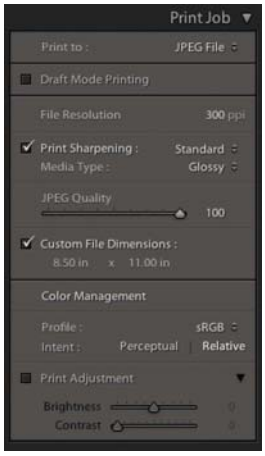
The Draft Mode Printing option uses the saved preview of the image, so printing is very fast. Lightroom already has previews and thumbnails of all the images, so if you print using the existing preview, you don't need to re-rasterize the raw file. This is very useful if you're creating a contact sheet, whether you're printing one or saving it to PDF to send through email. When Draft Mode Printing is selected, the other options in the Print Job panel are dimmed. The contact sheet templates that come with Lightroom all select Draft Mode Printing.

You can use the Print Resolution setting to override the native resolution of the file, and then upsample or downsample. It uses Lightroom's optimized interpolation method, as described in Chapter 3. I feel strongly about interpolation. In the

FIGURE 4.61 The Print Job panel.

▲ THE PRINT JOB PRINT TO MENU

▲ THE PRINT JOB PANEL SET TO PRINTER



▲ THE PRINT JOB PANEL SET TO JPEG FILE

next chapter, I'll demonstrate why you'd want to upsample, which I also talked about in Chapter 3.

Note that when you select Print Resolution, the dimensions in the upper-left corner of the actual image no longer show the native resolution. That's because you're overriding the native resolution and resampling. I'll keep it at 720 PPI, which is the maximum. It comes up with a little warning, and it tells you the higher resolution could cause memory issues on some printers. It's really asking if you know what you're doing. We do, so click OK.

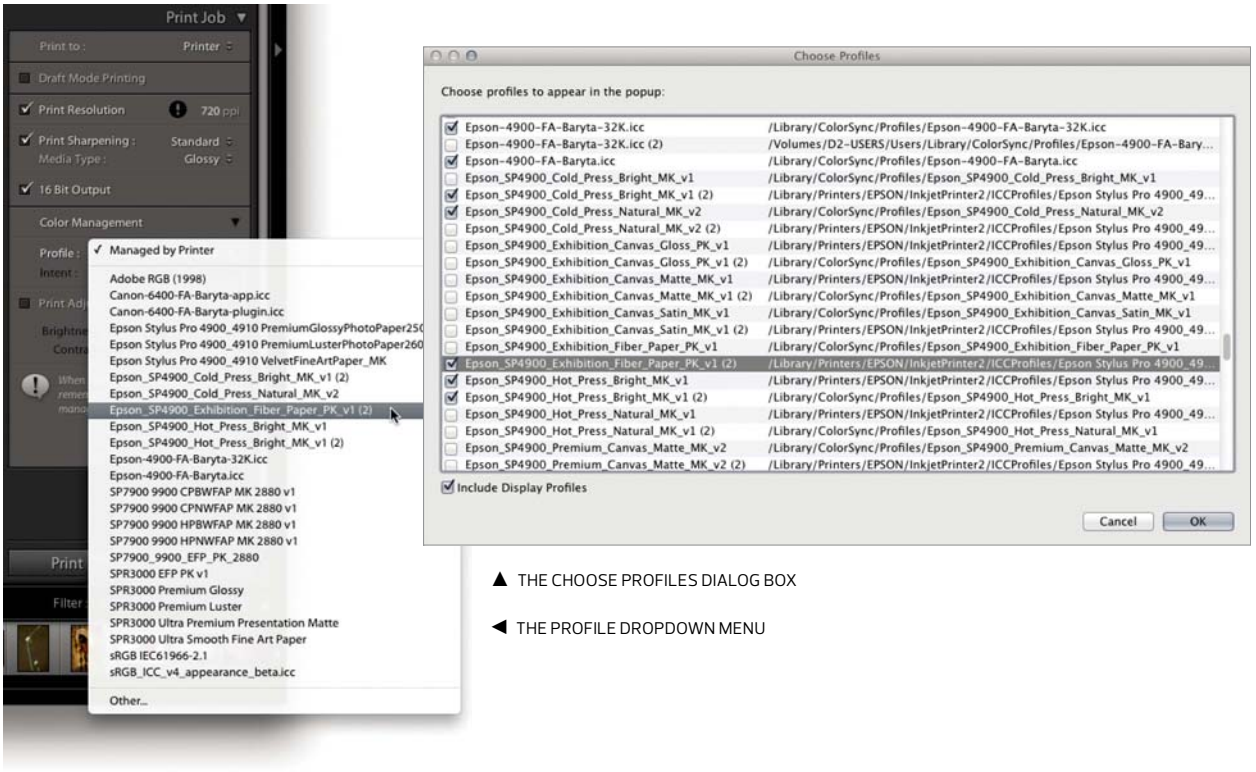
The next option is Print Sharpening. As discussed in Chapter 3, if you know what you're doing in the Develop module, use Standard here. If your sharpening settings were set at the default, use High. If you've oversharpened, use Low. This is something you'll just have to test to convince yourself that this stuff really does work very well.

For Media Type, choose Glossy for anything that has a sheen or is a coated paper. If you're printing to matte, watercolor, or fine art paper, generally speaking, choose Matte. The sharpening is different because the paper itself has an impact on the way detail is rendered. Through testing, the Lightroom engineers and I have optimized this. In fact, Adobe licensed the output sharpening routines from PhotoKit to include in the Lightroom and Camera Raw print modules, so I feel pretty good about them.

On the Mac, you can select 16 Bit Output. In Windows, you cannot. I discussed the benefits earlier so I won't dwell on it here.

In the Color Management section (shown in **Figure 4.62**), if you choose Managed by Printer, Lightroom will just send the data tagged with its internal RGB space—the ProPhoto RGB color coordinates but with linear gamma—to the printer. There are a couple of reasons you may want to use this option. If you're using the Epson Advanced Black & White mode, you want the printer to manage color, because the Advanced Black and White mode is a component of the printer driver and lets you control how the color image is printed in black and white.

However, if you're printing color or a color image with monochromatic toning or split toning, select the profile that is correct for the printer and the paper you're using. In Lightroom, you can control what profiles you actually see in the dropdown menu. To add profiles, click Other, and the Choose Profiles dialog box displays every single RGB color profile that is installed on your system. I have a lot because I've got so many printers. The Choose profiles dialog box shows RGB profiles, but Lightroom won't display or use CMYK profiles or grayscale profiles. If you want to see display profiles, select Include Display Profiles at the bottom of the dialog box, then just click the check box next to each profile you want to display. If you're printing to JPEG, you'll always have the option of selecting your profile, regardless of what is displayed in the main color management dropdown menu.



▲ THE CHOOSE PROFILES DIALOG BOX

◀ THE PROFILE DROPDOWN MENU

FIGURE 4.62 The Color Management section.

Now you can select the rendering intent. This is something you've already determined in the soft proofing. Selecting one or the other will have no impact on the preview in the print module; you should have already determined which will work best for your image.

The last section in the Print Job panel is Print Adjustment, which is Thomas Knoll's answer to the age-old problem "Why do my prints look so dark?" Many people have a problem with a computer display that pumps out 200 cd/m^2 (candelas per meter squared). Computer displays are so bright that the image is brighter on the display than under the viewing light, so your print ends up looking dark. If you have a proper viewing environment, which I talked about in Chapter 2 and showed the results of in Chapter 3, the image on your display and the image on the print should match under the viewing light. However, if you don't have a proper viewing environment, you can adjust Brightness and Contrast here. People were complaining, and Thomas Knoll said, "Let's just put a gamma adjuster in the print module so people can make the changes right there without going back and adjusting image settings." Color management folks were aghast, but this is actually a very elegant solution.

SOFT PROOFING AND THE PRINT MODULE

When you're soft proofing, and you've created a virtual copy, that virtual copy retains the name of the profile you used when you printed. It will automatically communicate to the print module the correct profile and rendering intent that you chose in the soft proofing, which I think is actually pretty darn cool. That's yet another benefit in the Lightroom printing workflow. However, of course, you can override that.

If you have a consistent problem with your images coming out dark, you can use the Brightness slider to adjust how the image is handled without messing around with your profile or image settings. The Brightness slider is literally a gamma adjustment, moving the midpoint lighter or darker. As you move the slider to the plus side, say +50, it's brighter by 50 units, but those units don't translate to anything—it's just an arbitrary unit. The differences are actually quite subtle. Moving the slider to 10 is barely visible, 30 is noticeable, and over 50 it's a strong adjustment. Test your assumptions in print, though, because you get no feedback from these sliders in the preview on the screen.

The Contrast slider gives you a simple S-curve contrast adjustment. You can't decrease it, only increase it. **Figure 4.63** shows the result of modifying the output by altering the Print Adjustment settings.

I recommend setting up your computer display and viewing environment so that the white you see on your computer and on the paper in your print visually match, so you won't have to worry about print adjustments. However, the adjustment sliders are definitely helpful if you know you're printing for a specific condition, such as dim home lighting. This is something to test on your own. If you make prints for sale, you can make prints that are designed for a good viewing environment, such as a proper home display, or for a dim home display. You can use the brightness and contrast adjustments to alter the final output based on the display conditions.

FIGURE 4.63 Comparing results using the Print Adjustment sliders.

▲ THE IMAGE PRINTED WITHOUT PRINT ADJUSTMENTS

THE PREVIEW PANEL

As I mentioned earlier, the Preview panel shows you the configuration of cells on the page. If you hover your cursor over a template, its configuration shows up in the Preview panel so you can quickly see how it's set up. Since I'm usually working with a single image, I hide the Preview panel so the entire left column is available for the Template Browser and Collections panels. Roll over the Lightroom Templates and see the preview for yourself!

THE TEMPLATE BROWSER PANEL

The Template Browser panel contains a variety of templates that come with Lightroom, as well as any user templates you've created. The use of templates is one of the major reasons I love printing from Lightroom. When, not under pressure, I can create a template for the standard way I like to print, including the margins, sizes, sharpening, print resolution, color management—all captured in the template. That way I can select a template, click Print, and then make the print quickly without worrying about selecting each setting correctly. The other thing that's cool is if you have a bunch of images selected in the film strip, you can just click the template you want to use and click Print. If you have ten images selected, you'll have ten printed. You don't have to open them image by image, or fiddle with dialog boxes for drivers and print setups, as you would in Photoshop, where you have to open each one and set the settings and hit Print ten times. **Figure 4.64** shows my tidy Template Browser with folders of templates for my printers. I don't really like storing a bunch of loose templates in the default User Templates folder.

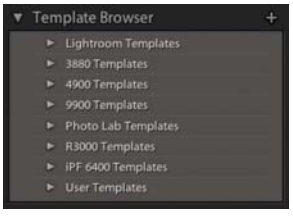
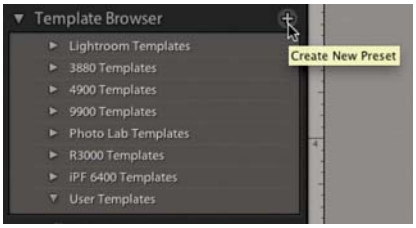


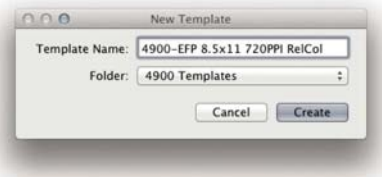
FIGURE 4.64 The Template Browser panel.

To create a user template, set up the right-panel parameters the way you want them, and also choose your page setup and print settings. Then click the Plus button at the top of the Template Browser panel and give your new template a meaningful name. You can click and hold down the Folder button—either just add it to User Templates or create a new folder. I like to create a new folder for each printer's templates. **Figure 4.65** shows clicking the Create New Preset (meaning template) button, naming a new template, and the New Folder dialog box accessed in the Folder dropdown menu of the New Template dialog box.

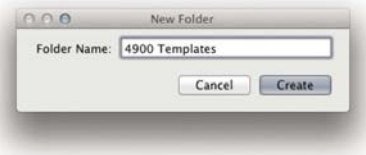
When you select a template, the chosen template is highlighted so you know that all of the right-side parameters and the page setup and printer driver settings are as they were when the template was created. You are free to modify any of the settings on the fly. If you do, the template that you started from is dimmed (although any unchanged parameters are still preserved). If you want to change the template to include any newly updated parameters, right-click in Windows (Control-click on



▲ THE CREATE NEW PRESET BUTTON

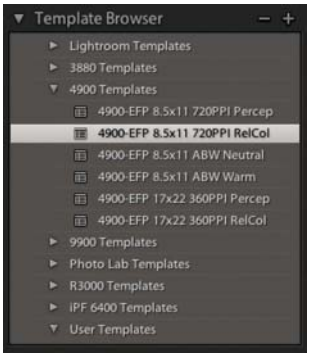


▲ THE NEW TEMPLATE DIALOG BOX



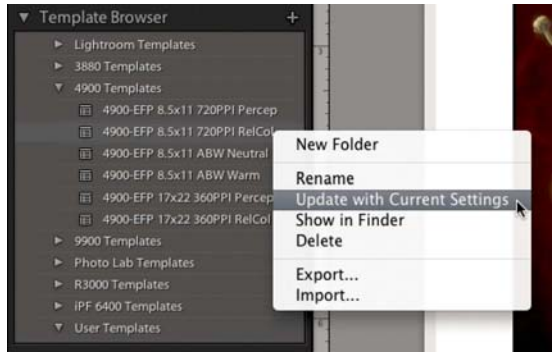
▲ THE NEW FOLDER DIALOG BOX

FIGURE 4.65 Making a new template.



▲ THE ACTIVE TEMPLATE HIGHLIGHTED

▲ THE TEMPLATE WITH CHANGED PARAMETERS



▲ THE CONTEXT MENU TO UPDATE THE TEMPLATE

FIGURE 4.66 Updating a template.

the Mac) the template you want to update. **Figure 4.66** shows the active template highlighted, the template dimmed (because of a changed parameter), and the context menu to update the template.

To update a template, select it and make a change in any of the settings. Once you've made a change from the saved state of the template, the template is dimmed. Right-click (Windows) or Option-click (on the Mac) the template, and then choose Update With Current Settings. The changes you've made are saved in the existing template.

The context menu also lets you rename the template, delete it, or import or export templates. Importing templates is useful if you're updating from an earlier version of Lightroom.

You can make changes without saving them to a template, too. You can use the template as a starting point, and then adjust settings on the fly for an individual print or set of prints. You can also save a new template with the slightly different settings.

THE COLLECTIONS PANEL

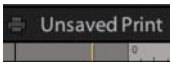
The Collections panel lists all your saved collections. You create collections in the main library, which is a great way to collect a bunch of images. I've got a collection called *Prints*, which is inside a Collection Set named *TDP-collection* (the TDP stands for the title of this book). I've got a collection of images that have all been prepared for printing. **Figure 4.67** shows my Prints collection.

The Collections panel lets you select any of your saved collections from the main part of the library. Note that you'll need to create and save collections in the Library module of Lightroom. All you can do in the Print module is select a collection and an image from the filmstrip. To further extend the usefulness of Collection, you can, however, create what is called a *Saved Print collection* from within your library created collection.

FIGURE 4.67 My Prints collection.

CREATING A SAVED PRINT COLLECTION

Everything I've talked about so far is about printing a single one-off print or contact sheet. You may have noticed the words Unsaved Print in the image window; that indicates it's a single-image print setup with a specific template, but it's not saved anywhere. But Lightroom will create a saved print collection when you click Create Saved Print above the right side of the image window. In the Create Print dialog box, you can name it and control where it appears in a collection. **Figure 4.68** shows the Unsaved Print indicator and the Create Saved Print button.



▲ THE UNSAVED PRINT INDICATOR

▲ THE CREATE SAVED PRINT BUTTON

FIGURE 4.68 The Unsaved Print indicator and the Create Saved Print button.

The Create Print dialog box offers some options to use while making a new creation (**Figure 4.69**). You can choose Make New Virtual Copies. You may want to go in on an image-by-image basis to change things such as cropping, for example, for a specific print show or for standard pre-cut mats. Then you'd definitely want to make new virtual copies. The Include Only Used Photos option is more useful in the Book module. If you select Set As Target Collection, anytime you go to a saved creation in the collections panel, the same group of images will be available automatically.

After selecting the options you want, click Create. Notice that where the Prints name was just a single entry in the Prints collection in Figure 4.67, now it appears as a hierarchical menu (**Figure 4.70**). It shows that 58 of the 116 images were selected as shown in Figure 4.70. If I need to add or subtract images from the Saved Print creation, I can add or delete them from the Library module. The saved creation is really saving a collection of the images and attaching them to a group. It's an enormous time-saver if you have to do this on a regular basis. For example, a photographer can save a print portfolio this way, and then easily add new images to the print show creation or take images out, always ready to print a new portfolio.

NOTE I'm a big fan of "creationism," but it has nothing to do with religion. Creationism is the concept of saving a certain creation so you can always get back to it. All of the Lightroom modules where you "create" things like prints, slideshows, books, or Web galleries have this same "create" capability.

FIGURE 4.69 The Create Print dialog.

FIGURE 4.70 The saved Print creation.

THE TOOLBAR

Below the image window, you have a toolbar. If you hit the T key, it goes away. From the Use menu, you can choose Selected Photos, All Filmstrip Photos, or Flagged Photos. Be careful that you don't select All Filmstrip Photos unless you absolutely know how many are in the filmstrip and that you want to print them all, or you may end up with hundreds or thousands of photos printed. I always choose Selected Photos so I know I'll get the photos I've chosen. Flagged photos are photos you've marked in the Library. **Figure 4.71** shows the main Toolbar and the Use dropdown menu.

FIGURE 4.71 The Toolbar (upper center) with filmstrip and the Use dropdown menu.

▲ THE TOOLBAR

► THE USE MENU

PRINTING

Lightroom for the Mac has two buttons at the bottom of the left pane: Page Setup and Print Settings. We've already looked at the Page Setup dialog box. The Print Settings dialog box gives you the Print dialog box with the same basic options you had in Photoshop. **Figure 4.72** shows the Mac Page Setup and Print dialog boxes.

In Windows, there's just one button: Page Setup. Clicking that button opens the Print dialog box. Click Properties to see printer-specific settings, as shown in **Figure 4.73**.

▲ PAGE SETUP

▼ PRINT

FIGURE 4.72 The Page Setup and Print dialog boxes.

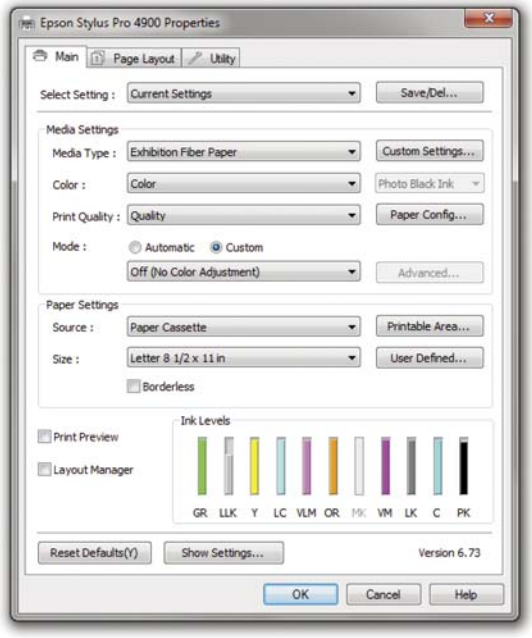


FIGURE 4.73 The Windows printer Properties dialog box.

After you've set everything up, if you click the Print button in the toolbar, Lightroom sends the image to the printer in the configuration you have set up. No additional dialog box is necessary. However, if you click Printer in the toolbar, you'll see the standard operating system Print dialog box so you can control the printer features.

PRINTING A BLACK-AND-WHITE IMAGE

When you print a black-and-white image, approach the process differently than when you're printing color images. I'm using a collection of 27 images called Print Show Sepia. I'll work with an image of driftwood that is sepia-toned, essentially split toned. It's a natural split tone because these are copies of prints that were chemically toned and made in my darkroom (yes, I still have one) that have now been digitized.

PRINTING BLACK-AND-WHITE TONED IMAGES USING ICC-BASED COLOR MANAGEMENT

If your image is black and white with a tone, and you want to maintain the classic split-tone look, print using ICC-based color management. Select the profile for the printer and paper you want to use, then proceed as you would for a color print. **Figure 4.74** shows the image in the Print module and a scan of the final print. You can see that the print maintains the split-toned look of the original image.

▲ THE SCAN OF THE FINAL PRINT

◀ THE IMAGE IN LIGHTROOM PRIOR TO PRINTING

FIGURE 4.74 The sepia split-tone image in Lightroom and the scan of the final color print.

PRINTING BLACK-AND-WHITE IMAGES USING A SPECIAL BLACK-AND-WHITE MODE

There are some advantages and disadvantages to printing black-and-white images using a normal color-managed workflow. Particularly when printing neutral images, there is a tendency to have the prints contain a slight tint or color cast. This is because ICC output profiles are really designed to handle color appearance, not render neutral black and white. For really neutral black-and-white prints, I would suggest one of the following options.

Epson Advanced B&W Photo mode

The Epson Advanced Black and White (ABW) mode works the same in Photoshop and Lightroom. To print using the Epson ABW mode, choose Managed by Printer, then click Print Settings. In the Print dialog box, choose Advanced Black & White Photo from the Print Mode menu. **Figure 4.75** shows the Epson Stylus Pro 4900 printer driver selecting the Advanced B&W Photo option.

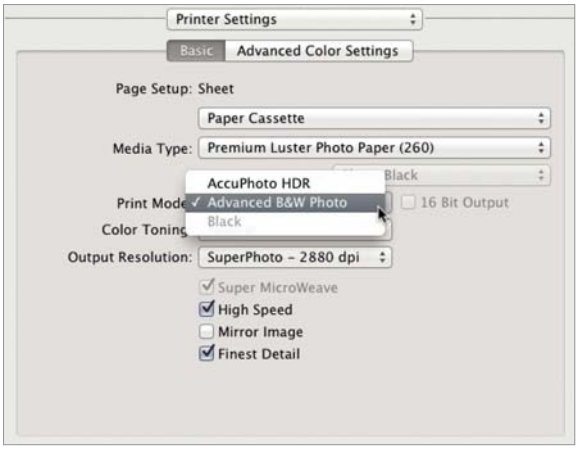


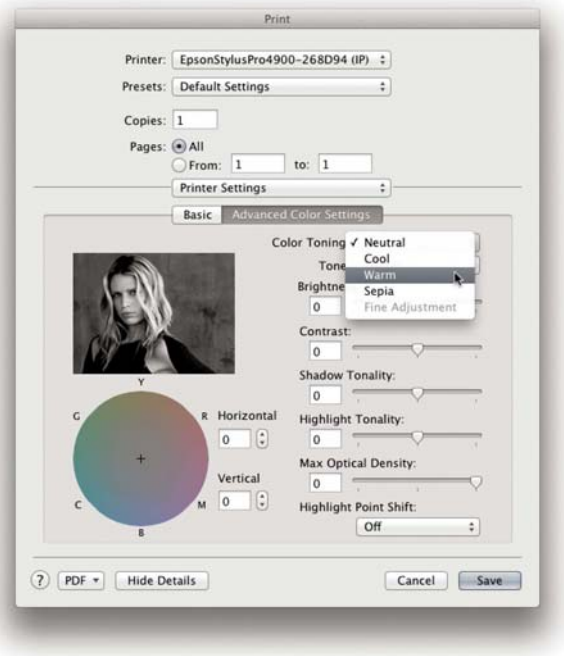
FIGURE 4.75 Selecting the Advanced B&W Photo in the Print Mode menu.

NOTE The image that is previewed in the Advanced B&W Photo mode in Epson is an image taken by a friend whose name is Greg Gorman (a celebrity photographer in L.A.).

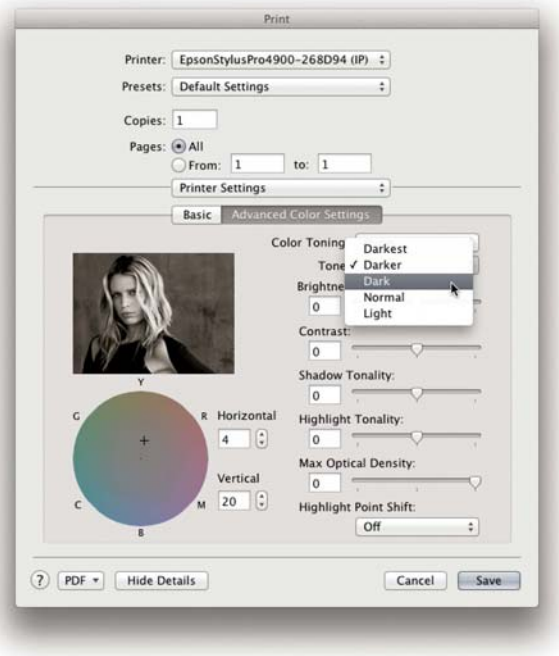
For color toning, you have defaults of natural, warm, cool, and sepia. My preference is to click Advanced Color Settings to open a whole different dialog box that lets you select the tone, brightness, contrast, shadow tonality, highlight tonality, and maximum optical density. I don't adjust any of those. I will only change from Darker, the default, to Dark.

In Advanced Color Settings, if you adjust the brightness, you see the effect on Greg's image, not yours. Neither Mac nor Windows offers a pipeline for interactivity; because the printer driver hasn't gotten the image yet, it can't preview the image you're going to send it. **Figure 4.76** shows the Color Toning menu and the Tone menu in the Advanced Color Settings panel.

The other option I use is the ability to add a color toning. You can select Warm, which isn't too bad and kind of looks like traditional Sepia—but if you select Sepia, it looks kind of like baby-poo brown.



▲ THE COLOR TONING MENU



▲ THE TONING MENU

FIGURE 4.76 The Advanced Color Settings tab for the Advanced B&W Photo option.

The color wheel and a crosshair lets you change the horizontal or vertical numbers to adjust the color tint that's applied. On the side, there's a horizontal and a vertical readout. When you center it up at 0,0, it is intended to be neutral, but I actually think it looks a tiny bit too cool, so I use a horizontal setting of 4 and a vertical setting of 8 to reduce the coolness.

I tend to keep the Optical Point Shift option off. You can turn it on or on full page. It prints a very, very light scum dot over the entire image. The scum dot cuts down on the gloss differential, explained in detail in the next chapter. I keep that at 0. In fact, I use all the controls at 0 because I don't want to fiddle with numbers and sliders when I can't actually see how I'm affecting things.

When you've adjusted your settings, click Save. Also, I suggest creating a new template previously shown in Figure 4.65—then, just make the print. **Figure 4.77** shows scans of prints using each of the default Color Toning settings.

▲ NEUTRAL

▲ COOL

▲ WARM

▲ SEPIA

FIGURE 4.77 Comparing results from the Epson Advanced B&W Photo mode.

Canon Monochrome Photo

In order to print black and white to the Canon, I can print from Photoshop or Lightroom. Printing a black-and-white image using the printer driver is the same. The Canon special Monochrome (Photo) color mode is available in both the printer driver as well as in the Canon Photoshop plug-in (although the plug-in offers some extra functionality). When using Monochrome (Photo) in the printer driver in Photoshop or Lightroom, you must set the color management to be managed by printer on the Mac (in Windows it doesn't matter—yet) **Figure 4.78** shows selecting the Monochrome (Photo) option from the Color Mode menu.

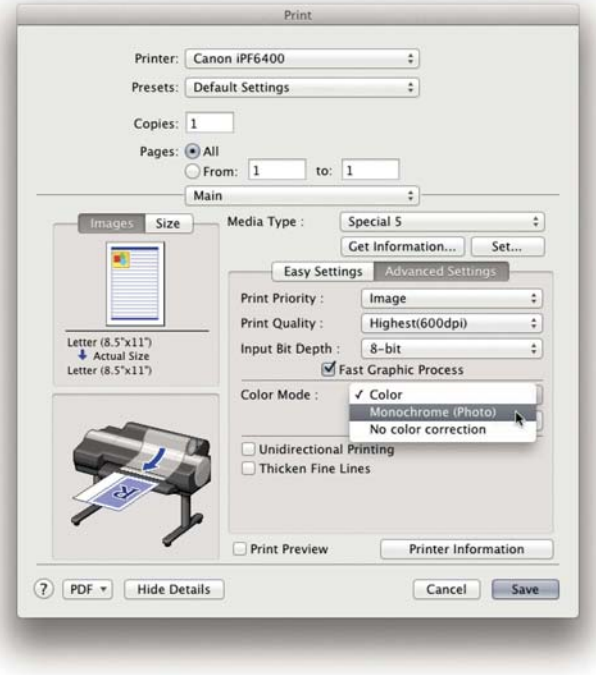
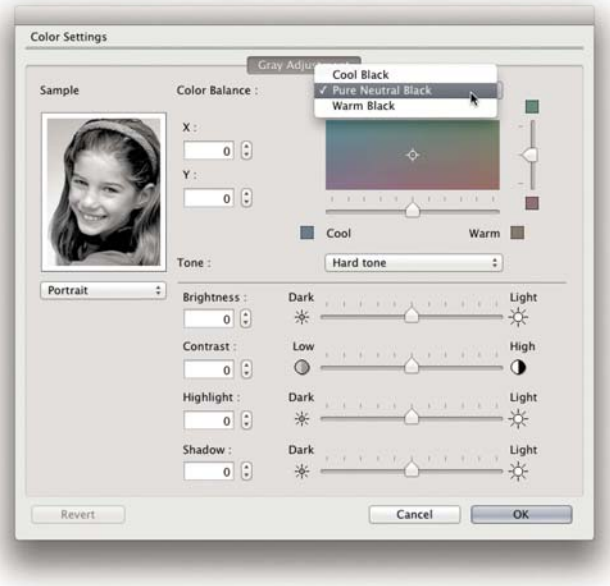


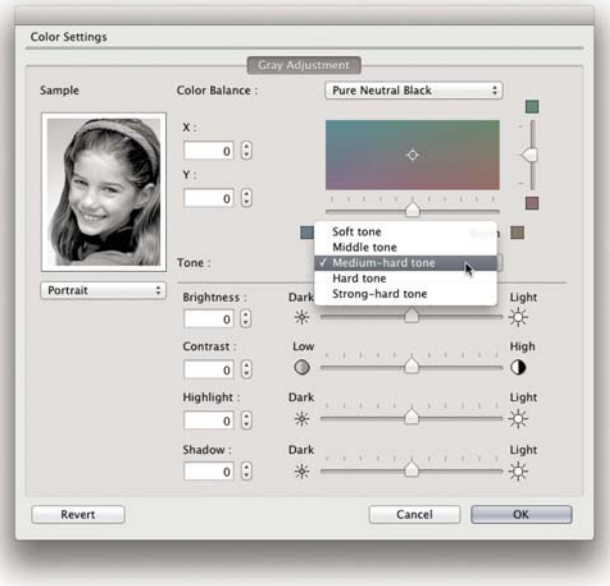
FIGURE 4.78 Selecting the Monochrome (Photo) option in the Color Mode menu.

Once you select Monochrome (Photo), click the Set button to access the special Color Settings option for Monochrome (Photo), as shown in **Figure 4.79.**

To adjust the color balance, select an option from the dropdown menu or drag the color sliders. Below the color balance settings is a Tone menu. You can change it to soft (light) or strong (makes it darker). I'll set it to Medium-hard tone. You can alter the brightness, contrast, highlight, shadow, and tint. In the printer driver version, you don't have access to special curves or a preview of the effect on your image (just like the Epson printer driver), but you do in the Photoshop plug-in version.



▲ COLOR BALANCE MENU SHOWING THREE DEFAULTS



▲ TONE MENU OPTIONS

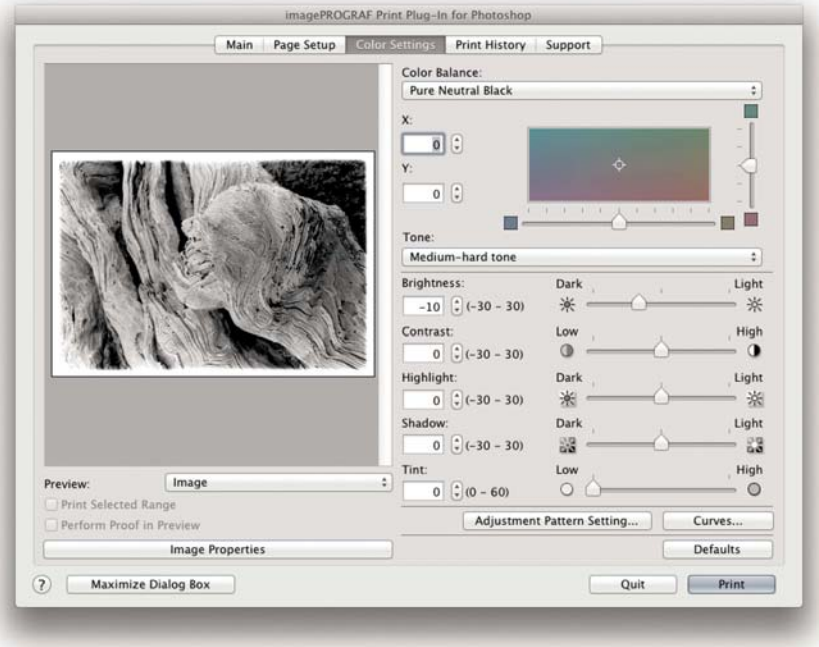
FIGURE 4.79 The Color Settings options for Canon's Monochrome (Photo) output (via the printer driver).

NOTE There is a difference in the usability between the Canon printer driver and the Canon Photoshop plug-in when printing to monochromatic images. The plug-in offers some options the printer driver doesn't. Which you choose depends on you own workflow and image adjustment needs.

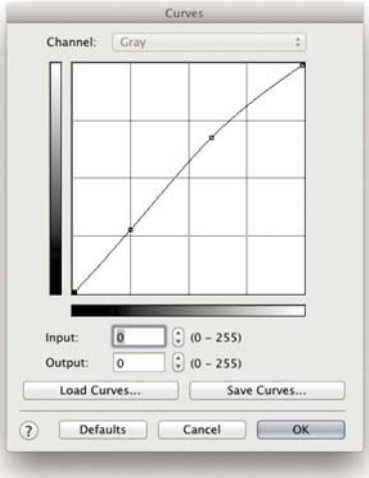
In the Photoshop plug-in (**Figure 4.80**), below the sliders you can also do a custom curve adjustment by clicking on the Curves button. And since it's monochromatic, you don't do it per color; it's just a grayscale adjustment. If you click Adjust Pattern Settings, you see a preview in a ring-around for the different adjustments for toning, similar to the old Photoshop Variations interface.

Back in the Page Setup area, set up the paper size and orientation, and then click Print. One of the limitations of this plug-in is that you can't capture your settings to use again later. Since you're printing from an export plug-in in Photoshop, all of these image settings are one-off. If you find settings you like, take copious notes on them. **Figure 4.81** shows a comparison of the Pure Neutral Black, Cool Black, and Warm Black options, and a fourth print using the maximum warm and red settings.

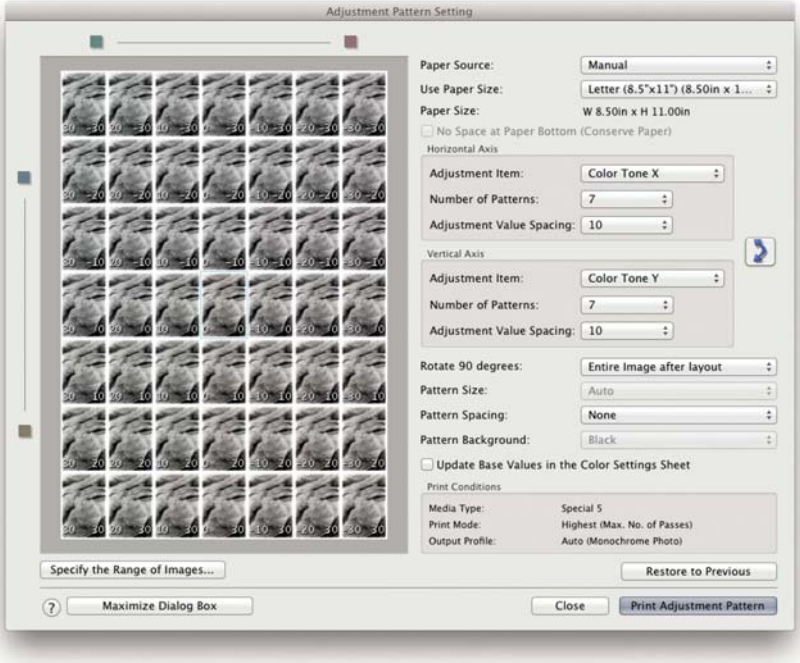
So, of all the different outputs, which is my favorite? For this image, I like the results shown in Figure 4.74 using an ICC profile-based color-managed output, because it's the only one that kept the split-toned look of the original chemical sepia toning. For neutral black-and-white output with really subtle color tinting, either the Epson or the Canon output is excellent. However, if you want to really dive into a deeper level of black-and-white printing, I suggest using a special third-party raster image processor (RIP).



▲ THE MAIN COLOR SETTINGS TAB IN THE PLUG-IN



▲ THE CURVES DIALOG BOX



◀ THE ADJUSTMENT PATTERN SETTING DIALOG BOX

FIGURE 4.80 The extended options using the Photoshop plug-in version of Monochromatic (Photo).

▲ NEUTRAL

▲ COOL

▲ WARM

▲ MAXIMUM WARM

FIGURE 4.81 Comparing the results from the Canon Monochrome (Photo) output.

TIP If I find settings I like when printing from Photoshop, I take a screenshot of them, and then paste them into a hidden layer in the image. You can also use Photoshop's Note tool to write yourself a note. I'll cover other workflow techniques that make life easier in Chapter 6.

PRINTING BLACK-AND-WHITE IMAGES USING A THIRD-PARTY RIP

If you are a hardcore lover of fine black-and-white printing, and you find the manufacturer's printer drivers or plug-ins too limiting, let me point you to an alternative third-party RIP called Quad Tone RIP, developed by an excellent black-and-white photographer named Roy V. Harrington. Quad Tone RIP is a shareware product priced at $50 and available for download at www.quadtonerip.com. A couple of points before I go on: first, it's not really a "plug & play" solution. It's a rather geeky way of creating a pseudo printer driver that can be installed on the Mac and in Windows. Second, it's only for Epson Photo or Pro printers.

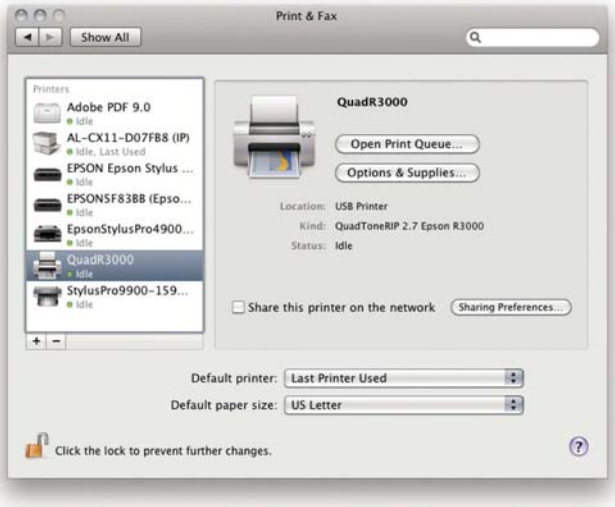
NOTE I suggest you visit Roy Harrington's photo Web site (www.harrington.com) to see some excellent black-and-white work. I don't know Roy personally, but I think I'll send him a copy of this book as thanks for creating Quad Tone RIP (and, yes, I paid the shareware price).

With those points out of the way, here's what I really like about Quad Tone RIP: it works like a printer driver allowing you to print out of Photoshop or Lightroom and not from a separate application. The RIP allows you to use up to three curves to achieve a true split-tone look (I always wondered why it was called "quad" when it directly supports only three curves). You can build custom curves and even ICC profiles for use in soft proofing. **Figure 4.82** shows Quad Tone RIP installed as a printer driver on the Mac. It also shows Photoshop Print Settings dialog box set to the QuadR3000 (I installed it on my Epson R3000 because I could connect to that via USB).

In the Print dialog box and with the QuadToneRIP panel selected, you'll see a variety of various settings to choose from. For the Mode, I've selected 16-bit because the image I'm printing is in 16 bit. Currently, I've got a Curve 1 selected that reads "UCpk-raw-neut." This is the curve to use for a neutral output using Photo K ink in the Epson R3000 printer. **Figure 4.83** shows the main QuadToneRIP dialog box with additional sections highlighted.

FIGURE 4.82 The Quad Tone RIP driver selected in Photoshop.

▶ THE PRINT & FAX DIALOG BOX WITH THE QUADR3000 SELECTED



▼ THE PHOTOSHOP PRINT SETTINGS DIALOG BOX SET TO PRINT TO THE QUADR3000

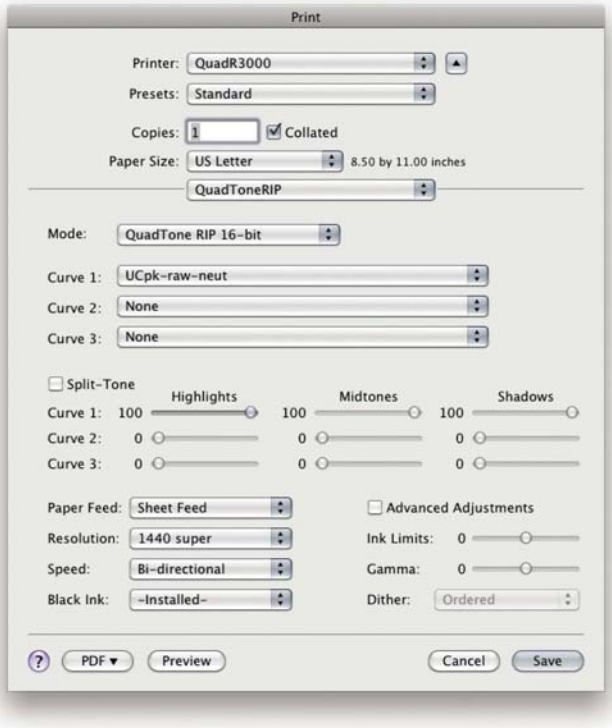
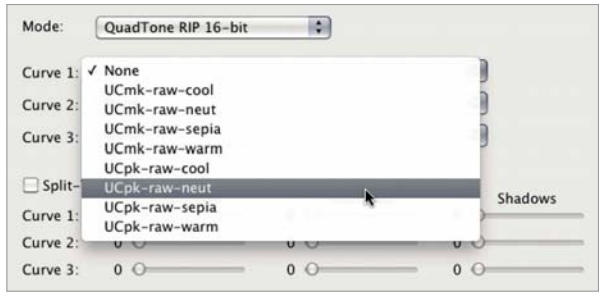
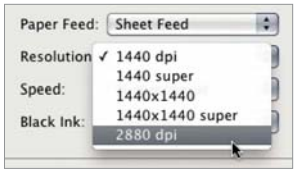


FIGURE 4.83 The main QuadToneRIP panel with various options selected.

◀ THE MAIN QUADTONERIP PANEL

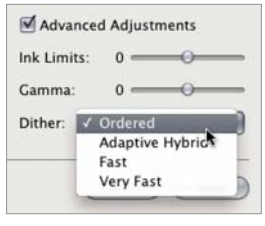


▲ SELECTING INSTALLED CURVES



▲ SELECTING OUTPUT RESOLUTION

▲ SELECTING THE BLACK INK (I USED INSTALLED)



▲ THE ADVANCED ADJUSTMENTS OPTIONS (WHICH I DIDN'T CHANGE)

For the first round of comparisons, I simply printed out each of the basic default curves, starting with cool, neutral, sepia, and then warm. **Figure 4.84** shows scans of the printed output. Yeah, I know, I didn't use the same image I used on the Epson and Canon examples. Sorry, but I was bored printing that same driftwood image and wanted to do something different!

▲ COOL

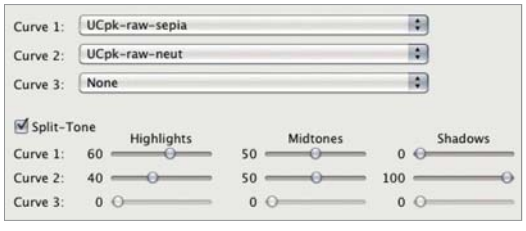
▲ NEUTRAL

▲ SEPIA

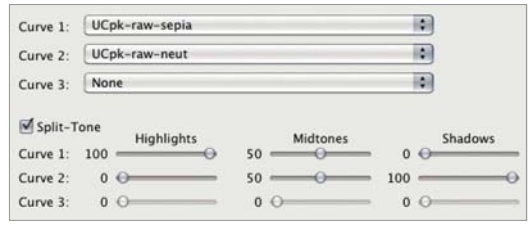
▲ WARM

FIGURE 4.84 Comparing the default curves.

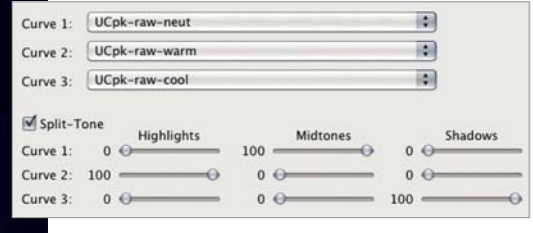
Looking at the results, the neutral is really nice—but the default colorations of cool, sepia, and warm are not really optimal. However, it's really the ability to blend different curves for the highlights, midtones, and shadows that allows Quad Tone RIP to really excel over the printer manufacturers' drivers. **Figure 4.85** shows the result of three different split-tone curve settings.



▲ DUAL CURVE SEPIA AND NEUTRAL (GENTLE SPLIT TONE)



▲ DUAL CURVE SEPIA AND NEUTRAL (STRONG SEPIA SPLIT TONE)



▲ THREE CURVE SPLIT TONE

FIGURE 4.85 Comparing the results of split toning in Quad Tone RIP.

I really like Quad Tone RIP because it's installed as a printer driver. In Lightroom you can capture all the settings in a print template—which is way cool. Sadly, it doesn't seem like the Quad Tone RIP settings can be recorded in an action in Photoshop.

ALTERNATIVE BLACK-AND-WHITE PRINTING

If you try Quad Tone RIP and decide you really want to go down an even deeper rabbit hole of ultimate black-and-white printing, I have a suggestion for you: consider going all the way to a dedicated black-and-white printer with custom inks. Fair warning, it ain't cheap nor easy—but if you love rich black-and-white prints (and don't love color), go for it! The downside is it will require dedicating a printer to special black-and-white inks and use a rather tedious workflow for printing, but I've seen some remarkable prints using the Piezography system (www.piezography.com).

NOTE When referring to Cc, Mm, Y & K inks, I'm referring to the fact that most of today's pro inkjet printers use two different cyan and magenta inks. There's usually a strong cyan and magenta and a light or weak cyan or magenta. This is done to get better color gradations of the color gamut. I refer to them as C or M for strong (or vivid) and c and m for the light versions of the inks.

A well-known fine art printer—in printing circles anyway—named Jon Cone (Cone Editions Press, Ltd.) developed a set of special inks that can be loaded into Epson printers and a few select others that use piezo printheads. The special inks replace the standard Cc, Mm, Y & K inks with seven distinct shades of carbon-based pigment ink. There are several different toning options, including Warm Neutral, Selenium, Carbon, Neutral, and Special Edition inks designed for split toning. The upside of the Piezography system is that it works well in an integrated manner with Quad Tone RIP (which makes using the system a lot easier).

In addition to using the Piezography system inks for prints, you might want to look into using inkjet printers for making film positives or negatives for making traditional black-and-white contact prints using silver gelatin or hand-coated platinum papers. One of the leading practitioners of this is a photographer named Dan Burkholder (www.danburkholder.com). The key to this practice is to prepare digital images to print to film. The film positive or negative (depending on the final coated paper) is used in contact with the paper to produce potentially stunning results. Dan has tutorials and offers workshops on the process.

What do I think about all these "alternative" black-and-white processes? Well, I've seen some really excellent prints, but the technical and workflow hurdles are simply too daunting for me. I don't want to dedicate a printer to third-party inks, nor do I want to spend a lot of time in the darkroom hand-coating papers to make platinum prints—been there, done that. It's just not my cup of tea!

But if you want to wander down the path of unusual processes, exotic inks, and spending time in a stinky darkroom, go right ahead! I will commend you, but not follow you.

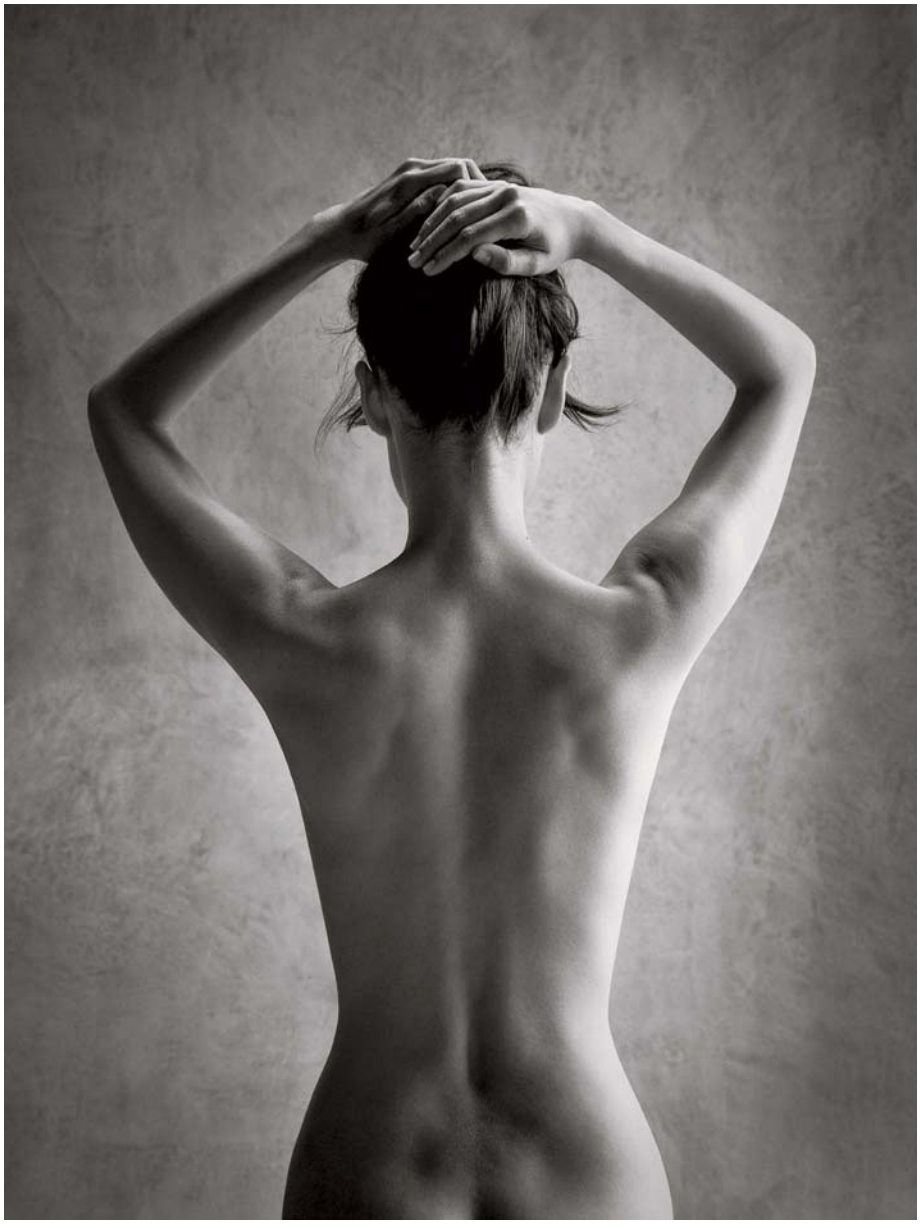


FIGURE 4.86 The nude by the window was shot using filtered window light at Greg Gorman's Mendocino, California studio. The image was shot with a Canon EOS-1Ds Mark III camera with a 24-105mm lens at 65mm and ISO 400. The image was retouched in Photoshop and converted to black-and-white in Lightroom with a slight warming split-tone applied.

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